

COMPUTER OPERATOR AND PROGRAMMING ASSISTANT

NSQF LEVEL - 3

Volume I of II

TRADE PRACTICAL

SECTOR: IT & ITES

(As per revised syllabus July 2022 - 1200 hrs)



Directorate General of Training

**DIRECTORATE GENERAL OF TRAINING
MINISTRY OF SKILL DEVELOPMENT & ENTREPRENEURSHIP
GOVERNMENT OF INDIA**



**NATIONAL INSTRUCTIONAL
MEDIA INSTITUTE, CHENNAI**

Post Box No. 3142, CTI Campus, Guindy, Chennai - 600 032

Sector : IT & ITES
Duration : 1 Year
Trade : COPA - Volume I of II Trade Practical - NSQF Level - 3 (Revised 2022)

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FOREWORD

The Government of India has set an ambitious target of imparting skills to 30 crores people, one out of every four Indians, to help them secure jobs as part of the National Skills Development Policy. Industrial Training Institutes (ITIs) play a vital role in this process especially in terms of providing skilled manpower. Keeping this in mind, and for providing the current industry relevant skill training to Trainees, ITI syllabus has been recently updated with the help of Mentor Councils comprising various stakeholder's viz. Industries, Entrepreneurs, Academicians and representatives from ITIs.

The National Instructional Media Institute (NIMI), Chennai has now come up with instructional material to suit the revised curriculum for **COPA Volume I of II Trade Practical NSQF Level - 3 (Revised 2022) in IT & ITES Sector**. The NSQF Level - 3 (Revised 2022) Trade Practical will help the trainees to get an international equivalency standard where their skill proficiency and competency will be duly recognized across the globe and this will also increase the scope of recognition of prior learning. NSQF Level - 3 (Revised 2022) trainees will also get the opportunities to promote life long learning and skill development. I have no doubt that NSQF Level - 3 (Revised 2022) the trainers and trainees of ITIs, and all stakeholders will derive maximum benefits from these IMPs and that NIMI's effort will go a long way in improving the quality of Vocational training in the country.

The Executive Director & Staff of NIMI and members of Media Development Committee deserve appreciation for their contribution in bringing out this publication.

Jai Hind

Addl. Secretary/Director General (Training)
Ministry of Skill Development & Entrepreneurship,
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New Delhi - 110 001

PREFACE

The National Instructional Media Institute (NIMI) was established in 1986 at Chennai by then Directorate General of Employment and Training (D.G.E & T), Ministry of Labour and Employment, (now under Ministry of Skill Development and Entrepreneurship) Government of India, with technical assistance from the Govt. of the Federal Republic of Germany. The prime objective of this institute is to develop and provide instructional materials for various trades as per the prescribed syllabi (NSQF LEVEL - 3) under the Craftsman and Apprenticeship Training Schemes.

The instructional materials are created keeping in mind, the main objective of Vocational Training under NCVT/NAC in India, which is to help an individual to master skills to do a job. The instructional materials are generated in the form of Instructional Media Packages (IMPs). An IMP consists of Theory book, Practical book, Test and Assignment book, Instructor Guide, Audio Visual Aid (Wall charts and Transparencies) and other support materials.

The trade practical book consists of series of exercises to be completed by the trainees in the workshop. These exercises are designed to ensure that all the skills in the prescribed syllabus are covered. The trade theory book provides related theoretical knowledge required to enable the trainee to do a job. The test and assignments will enable the instructor to give assignments for the evaluation of the performance of a trainee. The wall charts and transparencies are unique, as they not only help the instructor to effectively present a topic but also help him to assess the trainee's understanding. The instructor guide enables the instructor to plan his schedule of instruction, plan the raw material requirements, day to day lessons and demonstrations.

In order to perform the skills in a productive manner instructional videos are embedded in QR code of the exercise in this instructional material so as to integrate the skill learning with the procedural practical steps given in the exercise. The instructional videos will improve the quality of standard on practical training and will motivate the trainees to focus and perform the skill seamlessly.

IMPs also deals with the complex skills required to be developed for effective team work. Necessary care has also been taken to include important skill areas of allied trades as prescribed in the syllabus.

The availability of a complete Instructional Media Package in an institute helps both the trainer and management to impart effective training.

The IMPs are the outcome of collective efforts of the staff members of NIMI and the members of the Media Development Committees specially drawn from Public and Private sector industries, various training institutes under the Directorate General of Training (DGT), Government and Private ITIs.

NIMI would like to take this opportunity to convey sincere thanks to the Directors of Employment & Training of various State Governments, Training Departments of Industries both in the Public and Private sectors, Officers of DGT and DGT field institutes, proof readers, individual media developers and coordinators, but for whose active support NIMI would not have been able to bring out this materials.

Chennai - 600 032

EXECUTIVE DIRECTOR

ACKNOWLEDGEMENT

National Instructional Media Institute (NIMI) sincerely acknowledges with thanks for the co-operation and contribution extended by the following Media Developers and their sponsoring organisations to bring out this Instructional Material (**Trade Practical**) for the trade of **COPA Volume I of II** (NSQF LEVEL - 3) (Revised 2022) under **IT & ITES** Sector for ITIs.

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NIMI records its appreciation for the Data Entry, CAD, DTP operators for their excellent and devoted services in the process of development of this Instructional Material.

NIMI also acknowledges with thanks the invaluable efforts rendered by all other NIMI staff who have contributed towards the development of this Instructional Material.

NIMI is also grateful to everyone who has directly or indirectly helped in developing this Instructional Material.

INTRODUCTION

TRADE PRACTICAL

The trade practical manual is intended to be used in workshop . It consists of a series of practical exercises to be completed by the trainees during the course of the **COPA Vol I of II Trade** supplemented and supported by instructions/ informations to assist in performing the exercises. These exercises are designed to ensure that all the skills in compliance with NSQF LEVEL - 3 (Revised 2022)

- Module 1 - Safe Working Practices**
- Module 2 - Assemble a Desktop PC**
- Module 3 - Using Windows Operating System**
- Module 4 - Computer Basics & Software Installation**
- Module 5 - DOS Command Line Interface**
- Module 6 - Install Ubuntu Linux operating system and execute basic Linux commands**
- Module 7 - Using Word Processing Software**
- Module 8 - Format documents**
- Modfule 9- Manage Tables and Lists**
- Module 10 - Create and Manage References**
- Module 11 - Manage Graphic Elements**
- Module 12 - Manage Document Collaboration**
- Module 13 - Manage Mailings**
- Module 14 - Spread Sheet Application, Manage Worksheets and Workbooks**

- Module 15 - Manage Data Cells and Ranges**
- Module 16 - Manage Tables and Table Data**
- Module 17 - Perform Operations using Formulas and Functions**
- Module 18 - Manage Charts**
- Module 19 - Manage Pivot Tables**
- Module 20 - Power Point Presentations**
- Module 21 - Format Presentations**
- Module 22 - Manage Tables and Bulleted Text**
- Module 23 - Manage Graphic Elements**
- Module 24 - Manage Audio & Video Elements**
- Module 25 - Manage Transitions and Animations**
- Module 26 - Manage Collaboration**
- Module 27 - Demonstrate on**
- Module 28 - Demonstrate on**
- Module 29 - Demonstrate on**

The skill training in the shop floor is planned through a series of practical exercises centred around some practical project. However, there are few instances where the individual exercise does not form a part of project.

While developing the practical manual a sincere effort was made to prepare each exercise which will be easy to understand and carry out even by below average trainee. However the development team accept that there is a scope for further improvement. NIMI, looks forward to the suggestions from the experienced training faculty for improving the manual.

TRADE THEORY

The manual of trade theory consists of theoretical information for the course of the **COPA Trade**. The contents are sequenced according to the practical exercise contained in the manual on Trade practical. Attempt has been made to relate the theoritical aspects with the skill covered in each exercise to the extent possible. This co-relation is maintained to help the trainees to develop the perceptual capabilities for performing the skills.

The Trade theory has to be taught and learnt along with the corresponding exercise contained in the manual on trade practical. The indicating about the corresponding practical exercise are given in every sheet of this manual.

It will be preferable to teach/learn the trade theory connected to each exercise atleast one class before performing the related skills in the shop floor. The trade theory is to be treated as an integrated part of each exercise.

The material is not the purpose of self learning and should be considered as supplementary to class room instruction.

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LEARNING / ASSESSABLE OUTCOME

On completion of this book you shall be able to

S.No.	Learning Outcome	Ref. Ex.No.
1	Install and setup operating system and related software in a computer following safety precautions. (Mapped NOS: SSC/N3022)	1.1.01 - 1.6.29
2	Create, format, and edit document using word processing application software. (Mapped NOS: SSC/N3022)	1.7.30 - 1.13.48
3	Create, format, edit and develop a workbook by using spreadsheet application software. (Mapped NOS: SSC/N3022)	1.14.49 - 1.19.67
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5	Create and manage database file by using MySQL. (NOS: SSC/N9401)	1.27.89 - 1.29.100

SYLLABUS

Duration	Reference Learning Outcome	Professional Skills (Trade Practical) with Indicative hours	Professional Knowledge (Trade Theory)
Professional Skill- 94 Hrs; Professional Knowledge - 32 Hrs	Install and setup operating system and related software in a computer following safety precautions. (Mapped NOS: SSC/N3022)	Safe working practices (10 Hrs) <ol style="list-style-type: none"> Visit COPA Lab. of the institutes and locate the electrical connections with computer system setup. (3 Hrs) Identifying safety symbols and hazard identification. (3 Hrs) Practice safe methods of fire fighting in case of electrical fire. (2 Hrs) Use of fire extinguishers. (2Hrs) Assemble a Desktop PC (8 hrs) <ol style="list-style-type: none"> Identify computer peripherals and internal components of a desktop computer. (4 Hrs) Assemble components of desktop computer. (4 Hrs) Using Windows Operating Systems (20 hrs) <ol style="list-style-type: none"> Practice on Windows interface and navigating windows. (3 Hrs) 	Introduction to Computers (3 Hrs) <ul style="list-style-type: none"> Safe working practices Scope of the COPA trade. Safety rules and safety signs. Types and working of fire extinguishers. Introduction to Computer components Introduction to computer system (4 Hrs) <ul style="list-style-type: none"> Concepts of Hardware and Software. Function of mother board components and various processors. Various Input/ Output devices in use and their features Introduction Windows Operating System (9 Hrs)

	<p>8. Practice on managing files and folders using removable drives. (4 Hrs)</p> <p>9. Customize the desktop (2 hrs)</p> <p>10. Settings and manage user accounts. (1 Hr)</p> <p>11. View system properties and control panel details. (3 Hrs)</p> <p>12. Work with keyboard shortcut commands. (4 Hrs)</p> <p>13. Print and scan document using different commands. (3 Hrs)</p> <p>Computer basics and Software Installation (20 Hrs)</p> <p>14. View the BIOS settings and their modifications. (3 Hrs)</p> <p>15. Install Windows operating system. (4 Hrs)</p> <p>16. Format hard disk and create partition. (3 Hrs)</p> <p>17. Identify and rectify common hardware and software issues during OS installation. (3 Hrs)</p> <p>18. Install necessary application software for Windows i.e. Office Package, PDF Reader, Media Player etc. (2 Hrs)</p> <p>19. Configure Bluetooth and Wi-Fi settings. (1 Hr)</p> <p>20. Install Drivers for printer, scanner, webcam and DVD etc. (2 Hrs)</p> <p>21. Burn data, video and audio files on CD/DVD using application software. (2 Hrs)</p> <p>DOS Command Line Interface (9Hrs)</p> <p>22. Use basic DOS commands for directory listing. (5 Hrs)</p> <p>23. Manage files and folders using DOS commands. (4 Hrs)</p> <p>Install Ubuntu Linux operating system and execute basic Linux commands (27 Hrs)</p> <p>24. Installation of Ubuntu Linux operating system (6 Hrs)</p> <p>25. Install necessary application software for Linux i.e. Office Package, PDF Reader, Media Player etc. (4 Hrs)</p> <p>26. Use Basic Linux commands for directory listing, file and folder management, password etc. (6 Hrs)</p> <p>27. Use the Linux graphical user interface for file and folder management, exploring the system etc. (6 Hrs)</p> <p>28. Customize desktop settings and manage user accounts in Linux. (3 Hrs)</p>	<ul style="list-style-type: none"> • Introduction to operating System • Main features of Windows OS • Concept of various shortcut commands. <p>Introduction to the booting process (6 Hrs)</p> <ul style="list-style-type: none"> • Introduction to various types of memories and their features. • Basic Hardware and software issues and their solutions. • Usage of Application software and Antivirus. <p>Introduction to DOS Command Line Interface & Linux Operating Systems (10 Hrs)</p> <ul style="list-style-type: none"> • Introduction to basic DOS Internal and External Commands. • Introduction to Open Source Software • Introduction to Linux Operating System features, structure, files and processes • Basic Linux commands.
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		29. View system properties and manage system setting in Linux. (2 Hrs)	
Professional Skill - 47 Hrs.; Professional Knowledge - 14 Hrs	Create, format, and edit document using word processing application software. (Mapped NOS: SSC/N3022)	<p>Using Word Processing Software (47 hrs)</p> <p>Manage documents (11 Hrs.)</p> <p>30. Navigate within documents (2 Hrs)</p> <ul style="list-style-type: none"> • Search for text • Link to locations within documents • Move to specific locations and objects in documents • Show and hide formatting symbols and hidden text <p>31. Format documents (4.6 Hrs)</p> <ul style="list-style-type: none"> • Set up document pages • Apply style sets • Insert and modify headers and footers • Configure page background elements <p>32. Save and share documents (2 Hrs)</p> <ul style="list-style-type: none"> • Save documents in alternative file formats • Modify basic document properties • Modify print settings • Share documents electronically <p>33. Inspect documents for issues (2.4 Hrs)</p> <ul style="list-style-type: none"> • Locate and remove hidden properties and personal information • Locate and correct accessibility issues • Locate and correct compatibility issues <p>Format documents (8 Hrs.)</p> <p>34. Insert text and paragraphs (2 Hrs)</p> <ul style="list-style-type: none"> • Find and replace text • Insert symbols and special characters <p>35. Format text and paragraphs (3 Hrs)</p> <ul style="list-style-type: none"> • Apply text effects • Apply formatting by using Format Painter • Set line and paragraph spacing and indentation • Apply built-in styles to text • Clear formatting <p>36. Create and configure document sections (3 Hrs)</p> <ul style="list-style-type: none"> • Format text in multiple columns • Insert page, section, and column breaks • Change page setup options for a section <p>Manage tables and lists (9.5 Hrs)</p> <p>37. Create tables (3 Hrs)</p> <ul style="list-style-type: none"> • Convert text to tables • Convert tables to text 	<p>Using Word Processing Software (14 Hrs)</p> <ul style="list-style-type: none"> • Introduction to the various applications in MS office. • Introduction to Word features, Office button, toolbars. • Creating, saving and formatting and printing documents using Word. • Working with objects, macro, mail merge, templates and other tools in Word.

	<ul style="list-style-type: none"> • Create tables by specifying rows and columns <p>38. Modify tables (3 Hrs)</p> <ul style="list-style-type: none"> • Sort table data • Configure cell margins and spacing • Merge and split cells • Resize tables, rows, and columns • Split tables • Configure a repeating row header <p>39. Create and modify lists (3.5 Hrs)</p> <ul style="list-style-type: none"> • Format paragraphs as numbered and bulleted lists • Change bullet characters and number formats • Define custom bullet characters and number formats • Increase and decrease list levels • Restart and continue list numbering • Set starting number values Create and manage references (3 Hrs.) <p>40. Create and manage reference elements (1.4 Hrs)</p> <ul style="list-style-type: none"> • Insert foot notes and end notes • Modify footnote and endnote properties • Create and modify bibliography citation sources • Insert citations for bibliographies <p>41. Create and manage reference tables (1.6 Hrs)</p> <ul style="list-style-type: none"> • Insert tables of contents • Customize tables of contents • Insert bibliographies <p>Manage graphic elements (8.5 Hrs.)</p> <p>42. Insert illustrations and text boxes (3 Hrs)</p> <ul style="list-style-type: none"> • Insert shapes • Insert pictures • Insert 3D models • Insert SmartArt graphics • Insert screenshots and screen clippings • Insert text boxes <p>43. Format illustrations and text boxes (3 Hrs)</p> <ul style="list-style-type: none"> • Apply artistic effects • Apply picture effects and picture styles • Remove picture backgrounds • Format graphic elements • Format SmartArt graphics • Format 3D models <p>44. Add text to graphic elements (1 Hr)</p> <ul style="list-style-type: none"> • Add and modify text in text boxes • Add and modify text in shapes • Add and modify SmartArt graphic content
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	<p>45. Modify graphic elements (1.5 Hrs)</p> <ul style="list-style-type: none"> • Position objects • Wrap text around objects • Add alternative text to objects for accessibility <p>Manage document collaboration (3.5 Hrs.)</p> <p>46. Add and manage comments (1 Hrs)</p> <ul style="list-style-type: none"> • Add comments • Review and reply to comments • Resolve comments • Delete comments <p>47. Manage change tracking (2.5 Hrs)</p> <ul style="list-style-type: none"> • Track changes • Review tracked changes • Accept and reject tracked changes • Lock and unlock change tracking <p>Manage Mailings (3.5 Hrs)</p> <p>48. Perform mail merge (3.5 Hrs)</p> <ul style="list-style-type: none"> • Create envelopes • Create labels • Create a new mailing list • Perform mail merge using an existing list 	
Professional Skill - 72 Hrs.; Professional Knowledge - 18 Hrs	<p>Create, format, edit and develop a workbook by using spreadsheet application software. (Mapped NOS: SSC/N3022)</p> <p>Spread Sheet Application (72 Hrs)</p> <p>Manage Worksheets and Workbooks (12 Hrs.)</p> <p>49. Open files in MS Excel (1.5 Hrs)</p> <ul style="list-style-type: none"> • Open MS Excel • Create a new Excel file • Create a new Excel file from a template • Open an existing Excel file <p>50. Import data (1.5 Hrs)</p> <ul style="list-style-type: none"> • Import data from txt files • Import data from csv files <p>51. Navigate within workbooks (2 Hrs)</p> <ul style="list-style-type: none"> • Search data • Navigate to named cells, ranges or workbook elements • Insert and remove hyperlinks <p>52. Format worksheets and workbooks (2 Hrs)</p> <ul style="list-style-type: none"> • Modify page setup • Adjust row height and column width • Customize headers and footers <p>53. Customize options and views (3 Hrs)</p> <ul style="list-style-type: none"> • Display and modify content in different views • Freeze rows and columns • Change window views • Modify basic workbook properties • Display formulas 	<p>Spread Sheet Application (18 Hrs)</p> <ul style="list-style-type: none"> • Introduction to Excel features and Data Types. • Cell referencing and linking Sheets. • Introduction to various functions in all categories of Excel. • Concepts of sorting, filtering and validating data. • Analyzing data using charts, data tables, pivot tables, goal seek and scenarios

	<p>54. Configure content for collaboration (2 Hrs)</p> <ul style="list-style-type: none"> • Set a print area • Save workbooks in alternative file formats • Configure print settings Manage data cells and ranges (12 Hrs.) <p>55. Manipulate data (3 Hrs)</p> <ul style="list-style-type: none"> • Paste data by using special paste options • Fill cells by using Auto Fill • Insert and delete multiple columns or rows • Insert and delete cells <p>56. Format cells and ranges (5 Hrs)</p> <ul style="list-style-type: none"> • Merge and Unmerge cells • Modify cell alignment, orientation and indentation • Format cells using Format Painter • Wrap text within cells • Apply number formats • Apply cell formats from the Format cells dialog box • Apply cell styles • Clear cell formatting <p>57. Define and reference named ranges (4 Hrs)</p> <ul style="list-style-type: none"> • Define a named range • Name a table • Summarize data visually Insert spark lines • Apply built-in conditional formatting • Remove conditional formatting <p>Manage tables and table data (12 Hrs.)</p> <p>58. Create and format tables (4 hrs)</p> <ul style="list-style-type: none"> • Create excel tables from cell ranges • Apply table styles • Convert tables to cell ranges <p>59. Manage tables and table data (5 Hrs)</p> <ul style="list-style-type: none"> • Add or remove table rows and columns • Configure table style options • Insert and configure total rows <p>60. Filter and sort table data (3 Hrs)</p> <ul style="list-style-type: none"> • Filter records • Sort data by multiple columns Perform operations using formulas and functions (12 Hrs.) <p>61. Insert references (3 Hrs)</p> <ul style="list-style-type: none"> • Insert relative, absolute and mixed references • Reference named ranges and named tables in formulas <p>62. Calculate and transform data (5 Hrs)</p> <ul style="list-style-type: none"> • Perform calculations using AVERAGE(), MIN(), MAX() and SUM() • Count cells by using COUNT(), COUNTIF() and COUNTBLANK() • Perform conditional operations by
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	<p>using the IF() function</p> <p>63. Format and modify text(4 Hrs)</p> <ul style="list-style-type: none"> Format text using RIGHT(), LEFT() and MID() functions Format text using UPPER(), LOWER() and LEN() functions Format text using CONCAT() and TEXTJOIN() functions <p>Manage Charts (12 Hrs.)</p> <p>64. Create Charts (3 Hrs)</p> <ul style="list-style-type: none"> Create charts Create chart sheets <p>65. Modify charts (4 Hrs)</p> <ul style="list-style-type: none"> Add data series to charts Switch between rows and columns in source data Add and modify chart elements Add trend lines to chart <p>66. Format charts (5 Hrs)</p> <ul style="list-style-type: none"> Apply chart layouts Apply chart styles Add alternative text to charts for accessibility <p>Manage Pivot Tables (12 Hrs.)</p> <p>67. Create Pivot Tables(12 Hrs)</p> <ul style="list-style-type: none"> Create Pivot tables from cell ranges Manipulate fields (columns) to get desired analysis Use Filters for pivot tables Represent data as Count, Sum, Average & % of row / column Group data in Columns & rows for aggregate reports 	
Professional Skill - 53 Hrs; Professional Knowledge - 13 Hrs	<p>Create and customize slides for presentation. (Mapped NOS: SSC/N3022)</p> <p>Power point Presentations (9.5 Hrs.)</p> <p>68. Open files in MS PowerPoint (1 Hr)</p> <ul style="list-style-type: none"> Open MS PowerPoint Create a new PowerPoint file Create a new PowerPoint file from a template Open an existing PowerPoint file <p>69. Format Power Point Presentations (1.5 Hrs)</p> <ul style="list-style-type: none"> Add slides Add titles and text Select slide layouts Add PowerPoint templates Duplicate slides <p>70. Modify slide masters, handout masters, and note masters (2 Hrs)</p> <ul style="list-style-type: none"> Change the slide master theme or background Modify slide master content Modify slide layouts <p>71. Change presentation options and views (1.5 Hrs)</p> <ul style="list-style-type: none"> Change slide size Display presentations in different views 	<p>Power point Presentations (13 Hrs.)</p> <ul style="list-style-type: none"> Image editing, Presentations Introduction to Open Office. Introduction to the properties and editing of images. Introduction to different formats of images and their uses. Introduction to Power Point and its advantages. Creating Slide Shows. <p>Fine tuning the presentation and good presentation technique</p>

	<p>72. Save and share PowerPoint Presentations (1.5 Hrs)</p> <ul style="list-style-type: none"> • Save presentations in alternative file formats • Configure different Print settings • Share presentations electronically <p>73. Configure and present slide shows (1 Hr)</p> <ul style="list-style-type: none"> • Hide unwanted slides while presenting • Configure slide show options • Present slide shows by using Presenter View <p>74. Prepare presentations for collaboration (1 Hrs)</p> <ul style="list-style-type: none"> • Protect presentations by using passwords • Export presentations to other formats <p>Format presentations (6.5 Hrs.)</p> <p>75. Insert text and paragraphs (2 Hrs)</p> <ul style="list-style-type: none"> • Find and replace text • Insert symbols and special characters <p>76. Format text and paragraphs (2 Hrs)</p> <ul style="list-style-type: none"> • Apply text effects • Apply formatting by using Format Painter • Set line and paragraph spacing and indentation • Apply built-in styles to text <p>77. Create and configure sections (2.5 Hrs)</p> <ul style="list-style-type: none"> • Format text in multiple columns • Text and image presentation styles • Clear formatting <p>Manage tables and bulleted text (8 Hrs)</p> <p>78. Create tables (3 Hrs)</p> <ul style="list-style-type: none"> • Insert tables in PowerPoint • Apply built-in table styles • Create tables by specifying rows and columns <p>79. Modify tables (3 Hrs)</p> <ul style="list-style-type: none"> • Insert and delete table rows and columns • Configure cell margins and spacing • Merge and split cells • Resize tables, rows, and columns <p>80. Create and modify bulleted text (2 Hrs)</p> <ul style="list-style-type: none"> • Format paragraphs as numbered and bulleted lists • Change bullet characters and number formats • Increase and decrease list indents
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	<ul style="list-style-type: none"> • Set starting number values • Restart and continue list numbering on different slides <p>Create and manage reference elements (hyperlinks) (1.25 Hrs)</p> <ul style="list-style-type: none"> • Create hyperlinks within presentations • Create hyperlinks in presentations for files and other sources <p>Manage graphic elements (11.5 Hrs)</p> <p>81. Insert illustrations and text boxes (3.5 Hrs)</p> <ul style="list-style-type: none"> • Insert shapes • Insert pictures • Insert SmartArt graphics • Insert screenshots and screen clippings <p>82. Format illustrations and text boxes (4 Hrs)</p> <ul style="list-style-type: none"> • Apply artistic effects • Apply picture effects and picture styles • Remove picture backgrounds • Crop images • Format graphic elements • Format SmartArt graphics <p>83. Add and modify text in graphic elements (4 Hrs)</p> <ul style="list-style-type: none"> • Add and modify text in text boxes • Add and modify text in shapes • Add and modify SmartArt graphic text • Create, insert and modify charts <p>Manage Audio & Video elements (6.5 Hrs)</p> <p>84. Add Audio elements (2 Hrs)</p> <ul style="list-style-type: none"> • Import audio files in presentations • Configure audio playback options <p>85. Add Video elements (4.5 Hrs)</p> <ul style="list-style-type: none"> • Import video files in presentations • Resize video to fit slide • Configure video playback options <p>Manage transitions and animations (9 Hrs)</p> <p>86. Add slide transitions (5 Hrs)</p> <ul style="list-style-type: none"> • Add same slide transition for all slides • Set transition effect duration • Configure transition start and finish options • Customise select slide transitions <p>87. Add animations (4 Hrs)</p> <ul style="list-style-type: none"> • Animate text and graphic elements • Order shapes, images, and text boxes • Group shapes, images, and text boxes 	
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		<ul style="list-style-type: none"> Configure animation effects Configure animation paths Reorder animations on a slide <p>Manage collaboration (0.75 Hrs)</p> <p>88. Add and manage comments (0.75 Hrs)</p> <ul style="list-style-type: none"> Add comments Review and reply to comments 	
Professional Skill - 53 Hrs.; Professional Knowledge - 13 Hrs	Create and manage database file by using MySQL. (NOS: SSC/N9401)	<p>Demonstrate on (15 Hrs.)</p> <p>89. Installation of MySQL. (1 Hr)</p> <p>90. Troubleshooting basic installation issues. (1 Hr)</p> <p>91. Creation and use of database. (3 Hr)</p> <p>92. Designing of tables. (3 Hr)</p> <p>93. Applying data integrity rules. (2 Hr)</p> <p>94. Using the DDL, DCL and DML statements. (2 Hrs)</p> <p>95. Enforcing constraints, primary key and foreign key. (2 Hrs)</p> <p>96. Adding indices to Tables. (1 Hr)</p> <p>Demonstrate on (15 Hrs)</p> <p>97. Simple select queries. (5 Hrs)</p> <p>98. Insert and delete queries Update queries. (10 Hrs)</p> <p>Demonstrate on (23 Hrs)</p> <p>99. Using the Number, Date and Character functions. Joins and Functions (11.5 Hrs)</p> <p>100. Joins, Group by, Having, Sub query. (11.5 Hrs)</p>	<p>Database Concepts (4 Hrs.)</p> <ul style="list-style-type: none"> Concept of DBMS, RDBMS. Data Models, Concept of DBA, Database Users. Database Schema. Designing Database using Normalization Rules. Various data types Data integrity, DDL DML and DCL statements. Enforcing Primary key and foreign key. Adding Indices. <p>Queries (4 Hrs)</p> <ul style="list-style-type: none"> Concepts of Transactions ACID Property of Transaction Constraints. <p>Joins and Functions (5 Hrs)</p> <ul style="list-style-type: none"> Joining of tables Sub Queries " Functions used in query like sum, average, max, min, count etc.
Professional Skill - 68 Hrs; Professional Knowledge - 16 Hrs	Install, setup/configure, troubleshoot, and secure computer network including Internet. (Mapped NOS: SSC/N3022)	<p>Computer Network (68 Hrs.) Set-up & configure a Computer Network (48 Hrs.)</p> <p>101. View Network connections. (2 Hrs)</p> <p>102. Connect a computer to a network and share Devices i.e. Printers, files, folders and drives. (4 Hrs)</p> <p>103. Work with various Network devices, connectors and cables. Create straight and cross cable and punch a UTP cable in the patch socket and test the connectivity. (4 Hrs)</p> <p>104. Practice IP Addressing and Subnet masking for IPV4/ IPV6 and pinging to test networks. (4 Hrs)</p> <p>105. Configure Hub and Switch. (4 Hrs)</p> <p>106. Set up and configure wired and wireless LAN in a Computer Lab within at least three computers. (6 Hrs)</p> <p>107. Use patch panel & I/O Box for wired LAN and installing & configuring Internet connection in a single PC and in a LAN. (6 Hrs)</p> <p>108. Set up a proxy server/ DHCP Server with firewall. (8 Hrs)</p> <p>109. Set up video conferencing using open-source software. (4 Hrs)</p>	<p>Communicating in a Connected World (12 Hrs.)</p> <ul style="list-style-type: none"> Local Networks, Communicating on a Local Network, Principles of Communications, How do Ethernet Networks Work?, How are Networks Built?, Routing Across Networks Explain how end-user devices and local networks interact with the global Internet. Communicating in a Connected World Explain the concept of network communication. Local Networks Explain the roles of devices in a network. What Does a Home Network Look Like? How Does Wi-Fi Work? Introduction to LAN Devices, Internetworking Devices, <p>Internet Concepts (4 Hrs)</p> <ul style="list-style-type: none"> Introduction to www, Concept of Internet, Web Browsers, internet servers and search engines. Concepts of Domain naming Systems and E mail communication. Introduction to video chatting tools and Social Networking concepts.

		<p>110. Use various tools (by open source /free) for network troubleshooting, maintenance and security for both Wired and Wireless (6 Hrs)</p> <p>111. Set up Internet access & communication (10 Hrs)</p> <ul style="list-style-type: none"> • Set-up internet connectivity • Set-up digital communication <p>112. Use the Internet (10 Hrs)</p> <ul style="list-style-type: none"> • Browse the Internet • Use e-mail • Use Social Media • Use the phone for online activities 	
<p>Professional Skill - 67 Hrs;</p> <p>Professional Knowledge - 17 Hrs</p>	<p>Develop web pages using HTML and CSS. (Mapped NOS: SSC/N0503, SSC/N0501)</p>	<p>Create simple static web pages using HTML tags (67 Hrs.)</p> <p>113. Practice HTML (46 Hrs)</p> <ul style="list-style-type: none"> • Practice with basic HTML elements (e.g. head, title, body), tag and attributes. • Design simple web page with text, paragraph and line break using HTML tags • Format text, change background colour and insert pictures in web page • Design simple web page with tables and lists. • Use marquees, hyperlinks and mail to link in designing web pages • Create frames, add style and design layout. • Display a web page within a web page using iframes. • Insert text, check and combo box in web page. • Design web page using password field, submit button • Reset button and radio button etc. • Design a web page adding flash file, audio and video files. • Design web page with forms and form controls using HTML tags <p>114. Create simple static web pages using CSS (21 Hrs)</p> <ul style="list-style-type: none"> • CSS syntax, Adding colors, fonts, backgrounds, images borders, text alignment, text transformation, Lists etc. • 3 types of CSS • Adding a Navigation Bars(vertical/horizontal bars) • CSS drop downs & Forms • CSS counters and website layout, Multiple backgrounds & Putting the stylesheet in a separate file • CSS Animations & CSS Buttons 	<p>Web Design Concepts (17 Hrs)</p> <ul style="list-style-type: none"> • Concepts of Static and Dynamic Web pages. • Introduction to HTML and various tags in HTML. • Concepts of different controls used in Web Pages. • Concepts of CSS and applying CSS to HTML. • Introduction to open source CMS viz, Joomla, Word press etc. and Web authoring tools viz. Kompozer, WordPress, Front Page etc.
<p>Professional Skill - 173 Hrs;</p>	<p>Develop web pages using JavaScript. (Mapped NOS:</p>	<p>JavaScript (173 Hrs)</p> <p>Embed JavaScript in HTML Pages (127 Hrs)</p>	<p>Introduction to JavaScript (35 Hrs)</p> <ul style="list-style-type: none"> • Introduction to Programming and Scripting Languages.

Professional Knowledge - 35 Hrs	SSC/N0503, SSC/N0501)	<p>115. Practicing the JavaScript in creating dynamic HTML pages. (53 Hrs)</p> <p>116. Embed JavaScript in HTML to Display Information in Web pages. (31 Hrs)</p> <p>117. Use error handling techniques in JavaScript. (11 Hrs)</p> <p>118. Use objects and classes in JavaScript. (31 Hrs)</p> <p>119. Describe Animation and Multimedia using JavaScript. (1 Hr)</p> <p>Create a dynamic website using an open-source tool (40 Hrs)</p> <p>120. Develop dynamic HTML pages using JavaScript.</p> <p>Deploy a simple web project (6 Hrs)</p> <p>121. Deploy web project using IIS.</p>	<ul style="list-style-type: none"> • Introduction to JavaScript and its application for the web. • Introduction to Web Servers and their features. • JavaScript Basics - Data types, Variables, Constants and Conversion between data types. • Arithmetic, Comparison, Logical Operators in JavaScript. Operator precedence. • Program Control Statements and loops in JavaScript. • Arrays in JavaScript - concepts, types and usage. • The String data type in JavaScript. Introduction to String, Math and Date. • Introduction to Functions in JavaScript. • Built in JavaScript functions overview. • Concepts of Pop Up boxes in JavaScript. • Introduction to the Document Object Model. • Concepts of using Animation and multimedia files in Java Script.
Professional Skill - 73 Hrs Professional Knowledge - 17 Hrs	Create workbooks with advanced formulas, macros, charts, pivot tables and demonstrate ability to use Power tools. (NOS: SSC/N9402)	<p>Data Visualization or analysis using Excel - (73 Hrs)</p> <p>Create advanced formulas and macros (24 Hrs)</p> <p>122. Create and modify simple macros (6 Hrs)</p> <p>123. Perform form controls and create simple data entry form with macros. (6 Hrs)</p> <p>124. Look up data by using functions. (6 Hrs)</p> <p>125. Use advanced date functions.(6 Hrs)</p> <p>Manage advanced charts and tables (21 hrs)</p> <p>126. Create and modify advanced charts. (10 Hrs)</p> <p>127. Create and modify PivotTables. (11 Hrs)</p> <p>Use Power Query and Power BI (24 Hrs)</p> <p>128. Create a Power Query, Power Query Function. Invoking the Power Query function and combining queries. Organize the workbook queries (12 Hrs)</p> <p>129. Use Power BI for simple data visualizations. (12 Hrs)</p> <p>Make a dashboard in Excel (4 Hrs)</p>	<p>Advanced Excel Concepts - Theory-(17 Hrs)</p> <ul style="list-style-type: none"> • MS excel revision (row, columns, basic formatting, insert menu, Print setup, etc.) and Look up introduction and functions • Types of references and cell naming • Excel Linkage Custom Format and Excel Protection • Tips and tricks • Pivot table and Pivot chart • Conditional formatting • Advanced Graphs • Power Queries

Professional Skill - 25hrs; Professional Knowledge - 10 Hrs.	Browse, select, and transact using E-commerce websites (NOS: SSC/N9403)	Browse e-Commerce sites to identify products & services (6.5 Hrs) 130. Demonstrate e-Commerce sites. (1.5 Hrs) 131. List features of e-commerce sites. (2 Hrs) 132. Use e-commerce sites to source an item. (3 Hrs) Shop online (4.5 Hrs) 133. Undertake transactions on an e-commerce site. (4.5 Hrs) Manage e-commerce operations (14 Hrs) 134. Add products to an ecommerce website. (4 Hrs) 135. Practice order processing. (3 Hrs) 136. Practice payment processing. (4.5 Hrs) 137. Identify common security issues. (3.5 Hrs)	e-Commerce (10 Hrs) <ul style="list-style-type: none"> Introduction to E Commerce and advantages. Building business on the net. Payment and Order Processing, Authorization, Chargeback and other payment methods. Security issues and payment gateways.
Professional Skill - 20 Hrs Professional Knowledge - 10 Hrs.	Secure information from Internet by using cybersecurity concept. (NOS: SSC/N9404)	138. Protect information, computers and networks from viruses, spyware and other malicious code (19 Hrs) <ul style="list-style-type: none"> Explain Cyber security (2 Hrs) Secure computers & the network (5.5 Hrs) Reduce cyber security threats (2 Hrs) Secure a Wi-Fi Network (4 Hrs) Use Anti-Virus software (3 Hrs) Perform back-ups of files, data & information (2.5 Hrs) 139. Explain compliance with IT Act (1 Hr) <ul style="list-style-type: none"> Identify steps for information privacy. (0.5 Hrs) Identify common cybercrimes and penalties applicable. (0.5 Hrs) 	Cyber Security (10 Hrs) <ul style="list-style-type: none"> Overview of Information Security, SSL, HTTPS, Security threats, information Security vulnerability and Risk management. Introduction to Directory Services, Access Control, Security, Privacy protection, Audit and Security. Introduction to IT Act and penalties for cybercrimes.
Professional Skill -25 Hrs; Professional Knowledge 15 Hrs.	Explain Cloud concepts &services and Describe Application Development Life Cycle. (NOS: SSC/N9405)	Cloud Computing (15 Hrs) Working with Cloud Services (12 Hrs) 140. Practice with IaaS using free cloud services. (4 Hrs) 141. Practice with PaaS using free cloud services. (4 Hrs) 142. Practice with SaaS using free cloud services. (4 Hrs) Web hosting in Cloud (3 Hrs) 143. Host a website in a free cloud. (3 Hrs) Develop an application and perform the Application Development Life Cycle (10 Hrs) 144. Identify Phases of the Application Development Life Cycle. (5 Hrs) 145. Describe Roles in each of the phases of Application Development Life Cycle. (5 Hrs)	Introduction to Cloud Computing (12 Hrs) <ul style="list-style-type: none"> Benefits of cloud services, different categories. Resources available in cloud. Explain the Application Development Life Cycle (3 Hrs) <ul style="list-style-type: none"> Identify Phases of the Application Development Life Cycle. Describe Roles in each of phases of the Application Development Life Cycle.

To be selected either "Programming in Python" or "Programming in Java" as Elective Module for COPA.

COPA - Elective Module - I Programming in Python			
Professional Skill - 70 Hrs; Professional Knowledge - 30 Hrs.	Write programs using Python language. (NOS: SSC/N9406)	<p>Programming language (Python) Use Python from command line (7 Hrs)</p> <ol style="list-style-type: none"> 1. Install, set up the environment & run Python. (3 Hrs) 2. Use Command Line and IDE to create and execute a python program. (4 Hrs) <p>Perform Operations using Data Types and Operators (15 Hrs)</p> <ol style="list-style-type: none"> 3. Write and test a python program to demonstrate print statement, comments, different types of variables. (5 Hrs) 4. Write and test a python program to perform data and data type operations, string operations, date, input and output, output formatting and operators. (5 Hrs) 5. Determine the sequence of execution based on operator precedence. (5 Hrs) <p>Control Flow with Decisions and Loops (20hrs)</p> <ol style="list-style-type: none"> 6. Construct and analyze code segments that use branching statements. (10 Hrs) 7. Construct and analyze code segments that perform iteration. (10 Hrs) <p>Document and Structure Code (18 Hrs)</p> <ol style="list-style-type: none"> 8. Document code segments using comments and documentation strings. (3 Hrs) 9. Construct and analyze code segments that include List comprehensions, tuple, set and Dictionary comprehensions. (16 Hrs) <p>Perform Operations Using Modules and Tools (10 Hrs)</p> <ol style="list-style-type: none"> 10. Perform basic operations using built-in modules. (5 Hrs) 11. Solve complex computing problems by using built-in modules. (5 Hrs) 	<p>Programming language (Python) (30 Hrs)</p> <ul style="list-style-type: none"> • Introduction to Python History • Features, Setting up path Basic Syntax, Comments, Variable • Different Data Types • Casting, string, Boolean • Python Operators • Conditional Statements • Looping • Control Statements, String Manipulation, Lists, Tuple, sets • Dictionaries • Arrays • Iterators, modules, dates, math, • Modules, Input and Output.

COPA - Elective Module - II Programming in JAVA

Professional Skill - 70 Hrs; Professional Knowledge - 30 Hrs.	Writing programs using JAVA. (SSC/N9407)	<p>Object Oriented Programming and JAVA Language (15 Hrs)</p> <ol style="list-style-type: none"> 1. Installing JAVA. 2. Setting the Class path. 3. Writing and Executing a simple JAVA Program to display "Hello". <p>Demonstrate writing JAVA programs:</p> <ol style="list-style-type: none"> 4. Use of various data types in JAVA. 5. Use of various operators in JAVA. 6. Create and use of Local, Instance and Class variables. 	<p>Explain the following:</p> <ul style="list-style-type: none"> • Object Oriented Programming with Core Java • Java Programming features • JVM, Byte codes and Class path • Java Program Development • Compilation and Execution of JAVA programs • Basic JAVA language elements - keywords, comments, data types and variables.
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	<p>7. Read text from the keyboard using scanner class read text from the keyboard using console class.</p>	<ul style="list-style-type: none"> • JAVA Arithmetic, Assignment, Relational, Logical, Increment / Decrement operators and expressions. • JAVA String Operators • JAVA Input and Output streams, System in, System out. • Input using Scanner class and Console class methods. (10Hrs.)
	<p>JAVA Program Flow Control (20 Hrs) Demonstrate writing JAVA programs:</p> <p>8. Use of the if and if ... else statements. 9. Use of the Switch statement. 10. Use of the Do ... While and while - do loops. 11. Use of the For Loop. 12. Use of the Break and Continue Keywords. 13. Use of the JAVA Numbers Class methods. 14. Use of the JAVA Character Class methods. 15. Use of the JAVA String Class methods. 16. Create and use of arrays.</p>	<p>Explain the following:</p> <ul style="list-style-type: none"> • Decision making and flow control using if...then, if then else, nested if, switch case and the conditional ternary operators in JAVA. • Loop control flow using while - do, do - while loops, for loop, using the break, continue statements. • Terminating the JAVA program. <p>JAVA Number, Character and String Classes. Arrays in JAVA. (6Hrs.)</p>
	<p>JAVA Classes, Overloading and Inheritance (20 Hrs) Demonstrate writing JAVA programs:</p> <p>17. Create and use of simple classes, objects and methods in JAVA. 18. Pass data and Objects to Methods. 19. Return data and Objects from Methods. 20. use of constructors in JAVA. 21. Create and use of Overloaded methods in JAVA. 22. Override methods in JAVA. 23. Create and use of Super class, Sub class in JAVA.</p>	<p>Explain the following:</p> <ul style="list-style-type: none"> • JAVA Objects, Classes and Methods. • Passing data and objects as parameters to methods. • Method Overloading. • Constructors and Overloaded constructors. • Inheritance in JAVA. • Method Overriding in JAVA. (8Hrs.)
	<p>Abstract Classes and Interfaces in JAVA (15 Hrs) Demonstrate writing JAVA programs:</p> <p>24. Create and use virtual methods. 25. Create abstract classes and methods. 26. Create interfaces in JAVA. 27. Override methods in JAVA. 28. Create and implement an interface. 29. Extend interfaces in JAVA. 30. Create and use a package in JAVA.</p> <p>Troubleshooting Java issues Download and Install Java, Check and Verify Java Configurations, Test Java, Remove Old Versions of Java, Find Java version, Always redirected to the java.com download page</p>	<p>Explain the following:</p> <ul style="list-style-type: none"> • Concept of Virtual methods. • Concept of Abstract classes and methods • Features of Abstract Classes • JAVA Interfaces and their advantages • Method Overriding in JAVA • Polymorphism in JAVA • Creating, implementing and extending interfaces • Creating and using Packages in JAVA. (6Hrs.)

Industrial Visit/Project work / Broad Area:

- Create and host a web site of at least 6 web pages using JavaScript & CSS containing interactive objects, functions etc.
- Create a project with Excel on Payroll Systems.
- Create a database with MySQL on Library management system.
- Create project in Python/Java programming language.

COPA - Safe Working Practices**Locate the electrical connections with computer system setup**

Objectives: At the end of this exercise you shall be able to

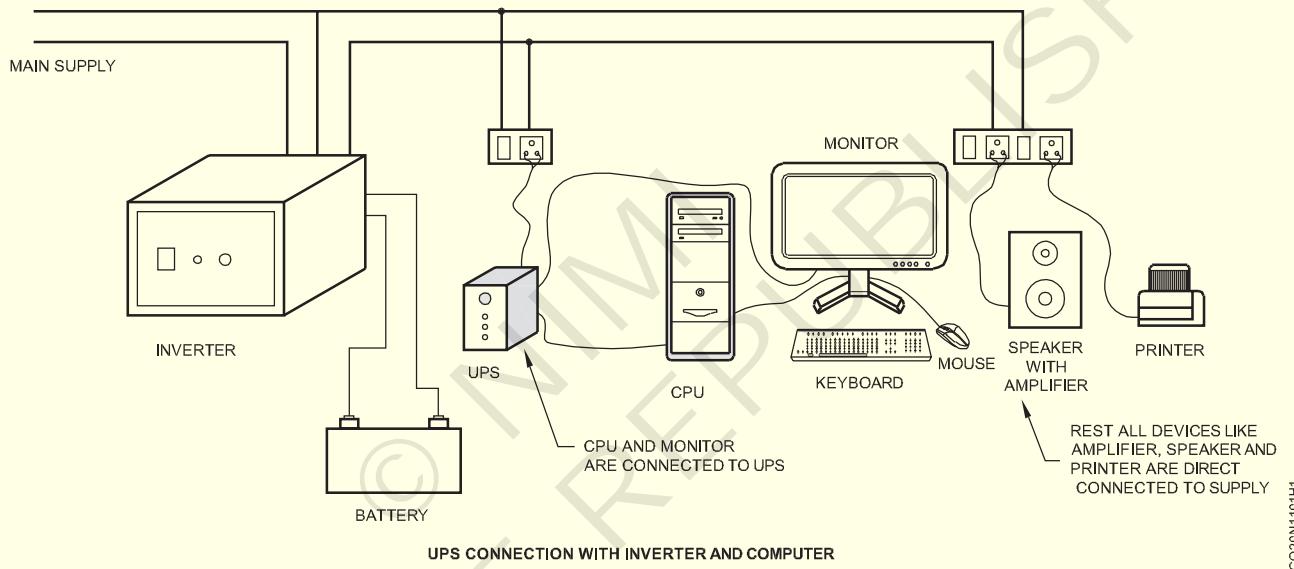
- identify the power location and connections.

PROCEDURE**TASK 1: Identify the proper power location**

- 1 Identify the proper power location and draw the layout of Electrical connections to the computer system.

Note: Write connection type and connector.
like: Power Pin Plug.

Fig 1



COPA - Safe Working Practices

Identifying Safety symbols and Hazard identification

Objectives: At the end of this exercise you shall be able to

- identify the four basic categories of safety signs.

PROCEDURE

TASK 1: Identify the four basic categories of safety sign

Sign	Type	Meaning
	SMOKING AND NAKED FLAMES PROHIBITED	
	DO NOT EXTINGUISH WITH WATER	
	PEDESTRIANS PROHIBITED	
	WEAR HEAD PROTECTION	
	WEAR EYE PROTECTION	
	WEAR HEARING PROTECTION	

Sign	Type	Meaning
	RISK OF FIRE	
	RISK OF ELECTRIC SHOCK	
	TOXIC HAZARD	
	GENERAL WARNING RISK OF DANGER	

COPA - Safe Working Practices**Practice safe methods of fire fighting in case of electrical fire**

Objectives: At the end of this exercise you shall be able to

- demonstrate the ability of fire-fighting during electrical fire
- as a member of the fire-fighting team
- as a leader of the group.

Requirements**Equipment/Machines**

- Fire extinguishers- CO₂ - 1 No.

PROCEDURE**General procedure to be adopted during electrical fire**

- 1 Raise an alarm. Follow the methods giving below to raise an alarm signal when the fire breaks out.
 - Raise your voice and shout Fire! Fire! to draw attention.
 - run towards fire alarm/bell to activate
 - switch off the mains (if possible)
- 2 when you hear the alarm signal:
 - stop working
 - turn off all machinery and power
 - switch off fans/air circulators/exhaust fans. (it's good to switch off the sub-main)
- 3 If you are not involved in the firefighting:
 - leave the place using the emergency exit.
 - evacuate the premises
 - assemble at a safe place along with others
 - check, if anyone has called the fire services
 - close the doors and windows, but do not lock or bolt

As a member of the fire-fighting team

- 4 If you are involved in firefighting:
 - take instructions to extinguish fire in an organized way.

If taking instructions:

- follow the instructions, and obey. Be safe and do not get trapped.
- do not use your own ideas.

As a leader of the group

If you are giving instructions:

- locate and use co2 fire extinguisher
- seek for sufficient assistance and inform the fire brigade
- locate locally available suitable means to put out the fire
- judge the magnitude of the fire, ensure that emergency exit paths are clear with no obstructions and then attempt to evacuate the place. (Remove explosive materials, substances that would easily catch fire.)
- Put off the fire with assistance identifying people with assigned responsibility for each activity.

- 5 Report the measures taken to put out the fire, to the authorities concerned.

Detailed reports on the fire accidents, even if they are small accidents, shall help in identification of the causes of the fire. The identified causes shall help in taking preventive measures to avoid similar occurrences in the future.

COPA - Safe Working Practices**Use of fire extinguishers**

Objectives: At the end of this exercise you shall be able to

- select fire extinguishers according to the type of the fire
- operate the fire extinguisher
- extinguish the fire.

Requirements**Equipment/Machines**

- | | |
|---------------------------------------|---------|
| • Fire extinguishers- CO ₂ | - 1 No. |
| • Scissors 100mm | - 1 No. |
| • Cell phone | - 1 No. |

PROCEDURE

- 1 Alert people in the surrounding area by shouting fire, fire, fire when you see fire.
- 2 Inform fire service or arrange to inform them immediately.
- 3 Open the emergency exit and ask the people inside the area to go away.
- 4 Switch "OFF" all electrical power supply.
Do not allow people to go near the fire.
- 5 Analyze to identify the type of fire. Refer Table1.
- 6 Assume that is it type D fire (Electrical fire).
- 7 Select CO₂ (carbon dioxide) fire extinguisher.
- 8 Locate and take the CO₂ fire extinguisher. Check for its expiry date.
- 9 Break the seal. (Fig 1)

Fig 1



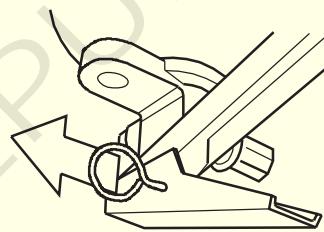
BREAKING OF SEAL

CO2DN1104H1

Keep yourself low.

- 12 Slowly squeeze the handle lever to discharge the agent. (Fig 3)

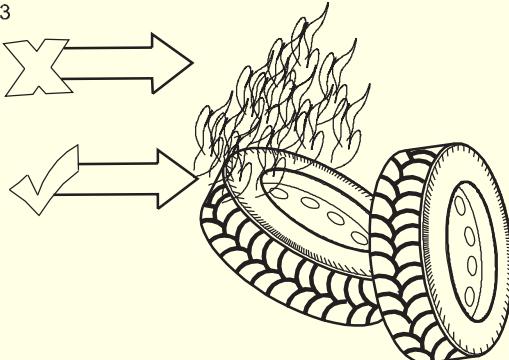
Fig 2



PULLING THE SAFETY PIN

CO2DN1104H2

Fig 3



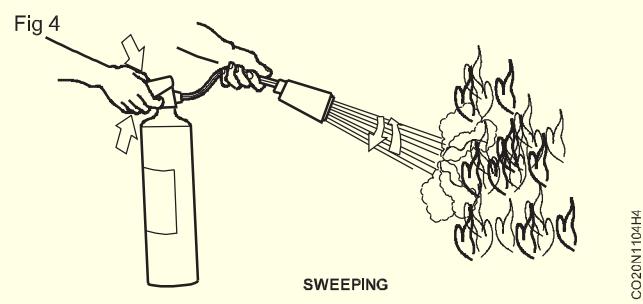
AIMING THE NOZZLE AT THE BASE OF THE FIRE

CO2DN1104H3

- 13 Sweep from side to side approximately 15 cm over the fuel fire until the fire is put off. (Fig 4)

Fire extinguishers are manufactured for to use distance from 75 feet (22.9 m) or less.

- 10 Pull the safety pin from the handle. (Fig 2) (the Pin is located at the top of the fire extinguisher.)
- 11 Aim the extinguisher nozzle or hose at the base of the fire. (This will remove the source of the fuel fire.) (Fig 3)



Caution

- While putting off fire, the fire may flare up.
- Do not panic so long as it is being put off promptly
- If the fire does not respond well even after you have used the fire extinguisher, move away from the fire point.

- Do not attempt to put out a fire when it emits toxic smoke. Leave it to the professionals.
- Remember that your life is more important than the property. So do not take risks.

In order to remember the simple operation of fire extinguisher, remember P.A.S.S.

This will help to use the fire extinguisher.

P for pull

A for aim

S for squeeze

S for sweep

COPA - Assemble a Desktop PC

Identify computer peripherals and internal components of a desktop computer

Objectives: At the end of this exercise you shall be able to

- identify various input/output device connected to the computer
- identify front and back panel of desktop computer
- identify the internal parts of a desktop computer.

Requirements**Tools/Equipment/Machines**

- A Working PC with Internet Connection - 1 No./batch.

Among the three identical PC's, one PC will be used for demonstration by the instructor where as the other two will be used by two groups of trainees.

PROCEDURE

TASK 1: To identify various input/output devices of connected to the computer

Instructor will show the different input/output devices (available in your lab) connected to

the computer and the trainees will make a record of it in Table 1. (Fig 1)

**Table 1**

Sl.No.	Name of the devices	Type
1		
2		
3		
4		
5		

Sl.No.	Name of the devices	Type
6		
7		
8		
9		
10		

TASK 2 : Identify front and back panel of desktop computer

The instructor will demonstrate the uses of the following indicators, switches controls in Fig 2 and ports external to the processor found on the system unit shown in and the trainees will make a record of it in Table 2 and Table 3. (Fig 3)

Fig 2



Table 2

Sl. No.	Name the parts on the CPU Front Panel
1	
2	
3	
4	
5	
6	
7	

Fig 3

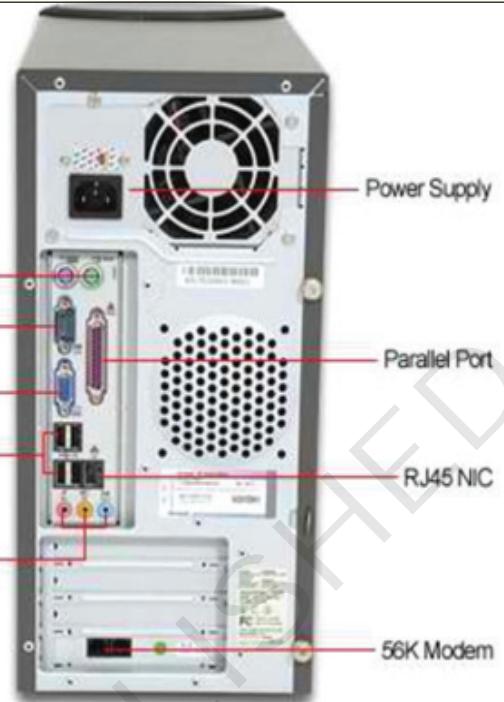


Table 2

Sl. No.	Name the parts on the CPU back Panel
1	
2	
3	
4	
5	
6	
7	
8	
9	

TASK 3 : Identify the internal parts of a desktop computer

The instructor will open the system unit (available in your lab) and show the parts of system unit and motherboard components as shown in Fig 4 & Fig 5 and the trainees will make a record of the parts in Table 4 & 5.

Fig 4



Table 4

Sl.No.	Name the internal parts of desktop CPU
1	
2	
3	
4	
5	
6	
7	
8	

Fig 5

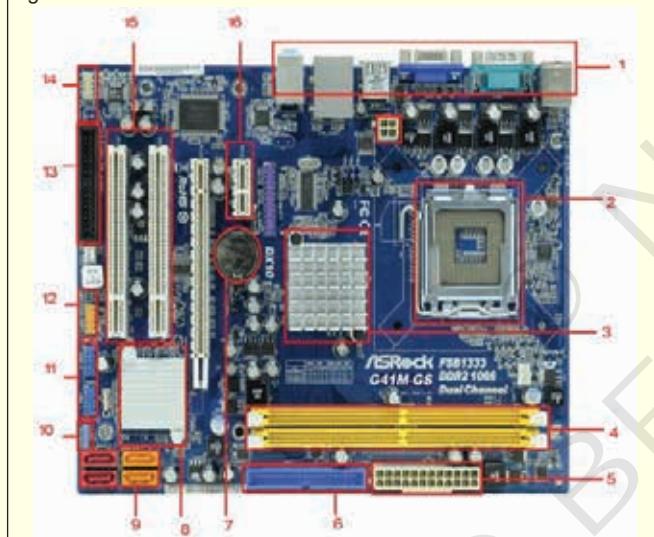


Table 5

Sl.No.	Name the parts of Mother board
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

COPA - Assemble a Desktop PC**Assemble components of desktop computer**

Objectives: At the end of this exercise you shall be able to

- identify the assemble components of desktop computer.

Requirements**Tools/Equipment/Machines**

- | | | |
|---|--------|---------------------------------|
| • Intel Motherboard supported with (I3/I5/I7/I9 Processor and DDR4/DDR5 / Latest Model) | – 1 No | • RAM (DDR4/DDR5) – 1 No |
| • I3/I5/I7/I9 Process with heat Zink Fan | – 1 No | • Hard Disk SATA 3.5" – 1 No |
| • Thermal Paste | – 1 No | • DVD Optical Drive SATA – 1 No |
| | | • Cabinet – 1 No |
| | | • SMPS ATX – 1 No |

PROCEDURE

- 1 Prepare the Mainboard (motherboard). If you want to assemble you should use Intel i3,i5,i7,i9 processor supported Motherboard. (Fig 1)

Fig 1



- 2 Mount the CPU in the socket of the Motherboard. Be careful not to install the CPU in wrong direction, it could short-circuit and damage your motherboard. (Fig 2)

Fig 2



- 3 Connect the CPU cooler to the Mainboard if required use Thermal Paste. (Fig 3)

Fig 3



- 4 Attach the RAM (memory) modules in the corresponding slots. Make sure the pins on the RAM cards line up with the pins on the motherboard connector. (Fig 4)

Fig 4



- 5 Open the Cabinet case and mount the power supply which is ATX type. Make sure to connect all the connections to the drives and the motherboard. (Fig 5)

Fig 5



- 6 Attach the Motherboard back plate to the case and check the Motherboard mounting positions. (Fig 6)

Fig 6



- 7 Suitably position the Motherboard in the cabinet. (Fig 7)

Fig 7



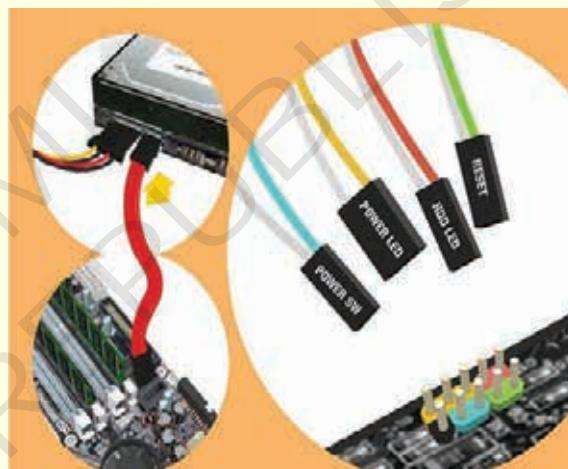
- 8 Mount the Hard disk and connect it to the power supply and the motherboard. There should be separate connections for the power supply, In SATA Hard disk case, should remove the jumper. (Fig 8)

Fig 8



- 9 Connect the SATA connectors to the drives and the USB connectors and the Cabinet Front Panel Power switches to the motherboard. The case and motherboard's instructions should tell where to connect the cables. (Fig 9)

Fig 9



- 10 Connect the 24 pin ATX connector and the 4-pin power supply control connector to the motherboard. (Fig 10)

Fig 10



11 Mount the DVD-ROM drive. After connecting the SATA cable to the device, hook it up to the power supply. (Fig 11)

Fig 11



12 Finally, select a compatible operating system, and install using DVD or USB then follow the instructions to install. (Fig 12)

Fig 12



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COPA - Using Windows Operating System

Practice on Windows interface and navigation Windows

Objectives: At the end of this exercise you shall be able to

- identify the files folders and drives in windows 10 desktop
- identify the utilities of Windows10 setting
- advanced search using Cortana
- application setting and pin up to desktop.

Requirements

Tools/Equipment/Machines

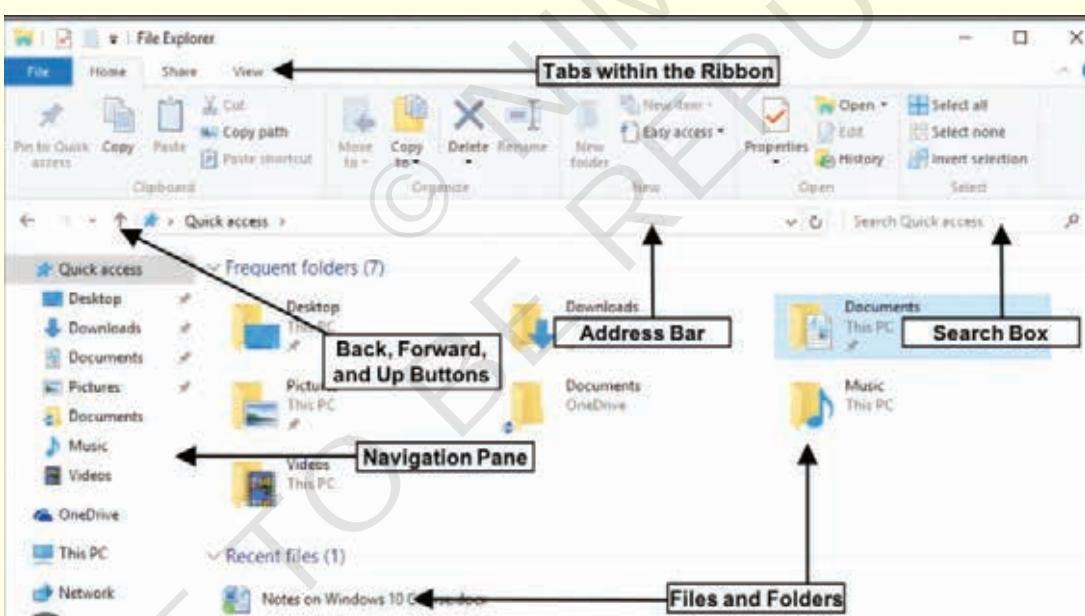
- PC with Windows 10 OS - 1 No.

PROCEDURE

TASK 1: Identify the files folders and drives in windows 10 desktop

- 1 Open File Explorer  from taskbar or Start Menu. Another way is by using the shortcut key Windows Logo +E to open File Explorer (Fig 1)

Fig 1



- 2 Select This PC 
- 3 Record the displayed drives and other icons in your notebook and get it checked by your instructor.
- 4 Select any Drive required and then click the desired file or folder in the drive.

- 5 Record the address path of the file chosen.

The address will be displayed in the address bar. Here the location of the selected file is :This PC > Local Disk(D:) > Books

- 6 Close the Window

TASK 2: Identify the utilities of Windows10 setting

- 1 Click Start →Setting or Click Windows logo + X to display a menu of Windows tools and utilities
- 2 Select Settings. (Fig 2)
- 3 Select your prepared tool to modify or customize
- 4 Click OK to apply the changes and close the Window. (Fig 3)

Fig 2

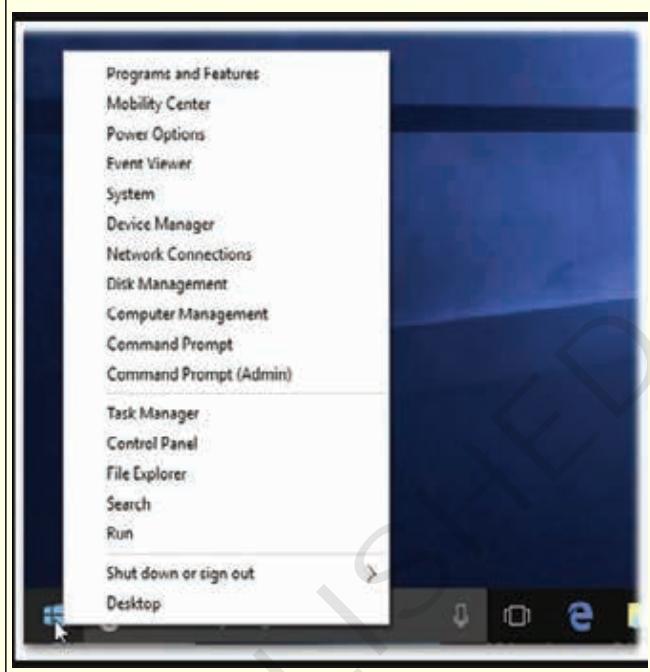
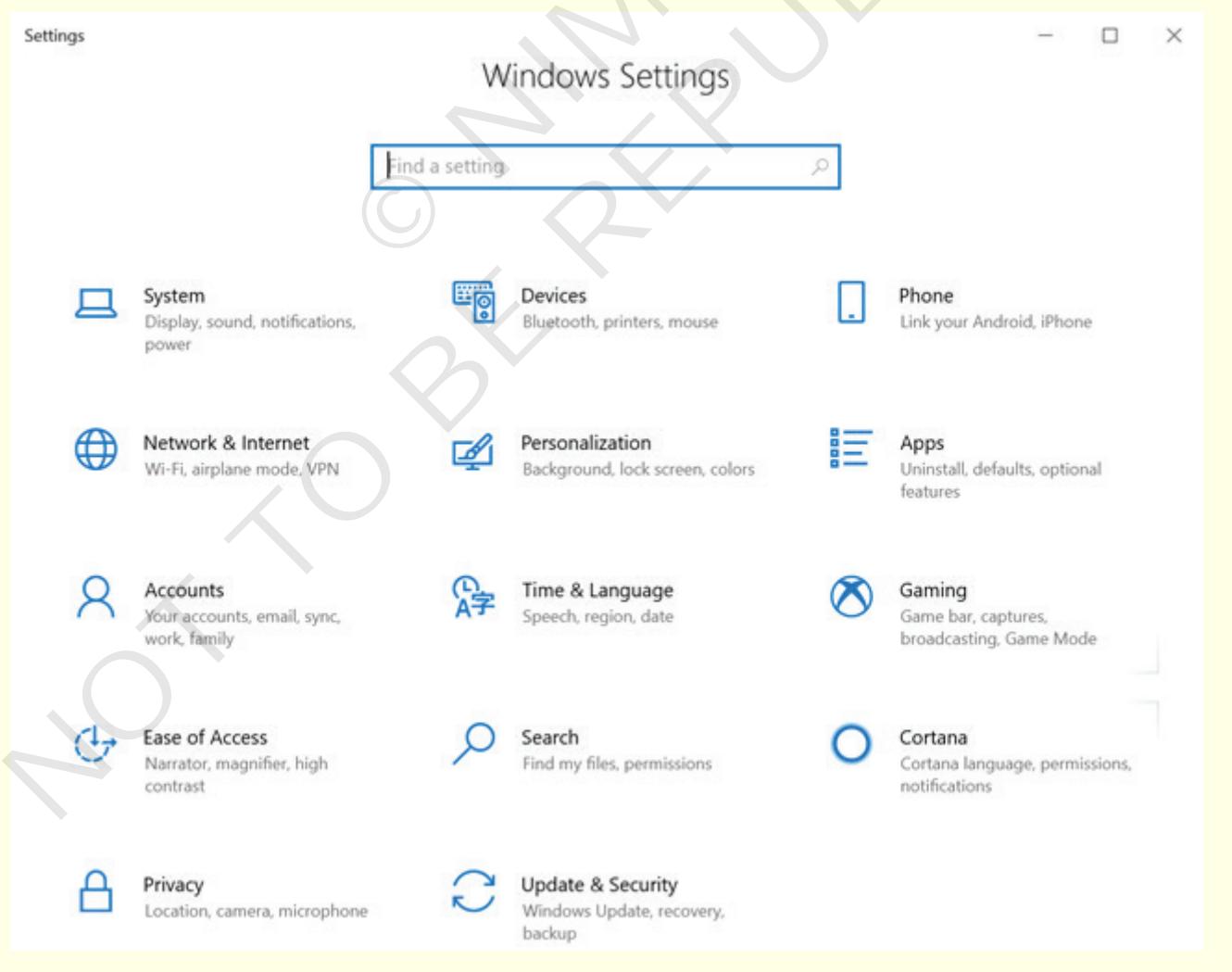


Fig 3

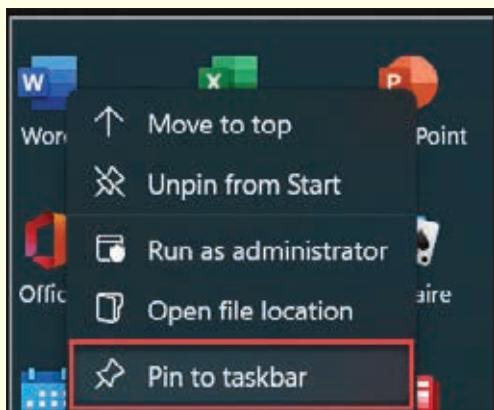


TASK 3: Application setting and pin up to Taskbar and Start menu

You can pin a program to the taskbar either from the Start menu or from the desktop.

- 1 To pin up using Start menu, Click Start and then locate the app you want to pin.
- 2 Right-click the app.
- 3 Click Pin to taskbar. (Fig 4)

Fig 4



- 4 To pin up using desktop, locate the app on the desktop.
- 5 Right-click the app
- 6 Click Pin to taskbar
- 7 To pin an app in Start menu, locate the app in desktop you want to pin
 - Right-click the app
 - Click Pin to Start (Fig 5)

To unpin an app, Click Unpin from start / desktop/taskbar.

To see the application setting of an app in the start menu, first locate the app Right click on the app and click on App Settings.

If you want to change any setting (default, uninstall, terminate, reset etc.), make the desired changes. (Fig 6).

Fig 5

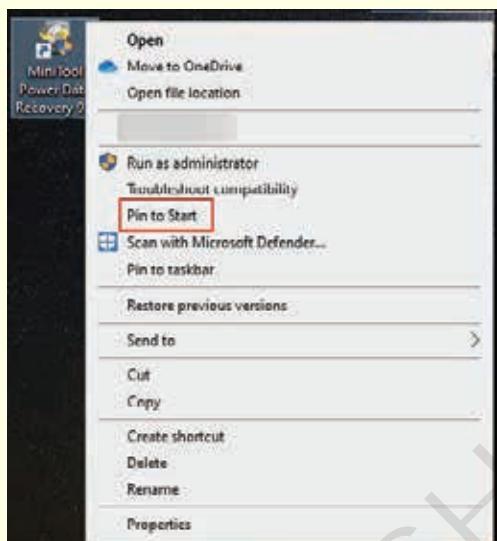
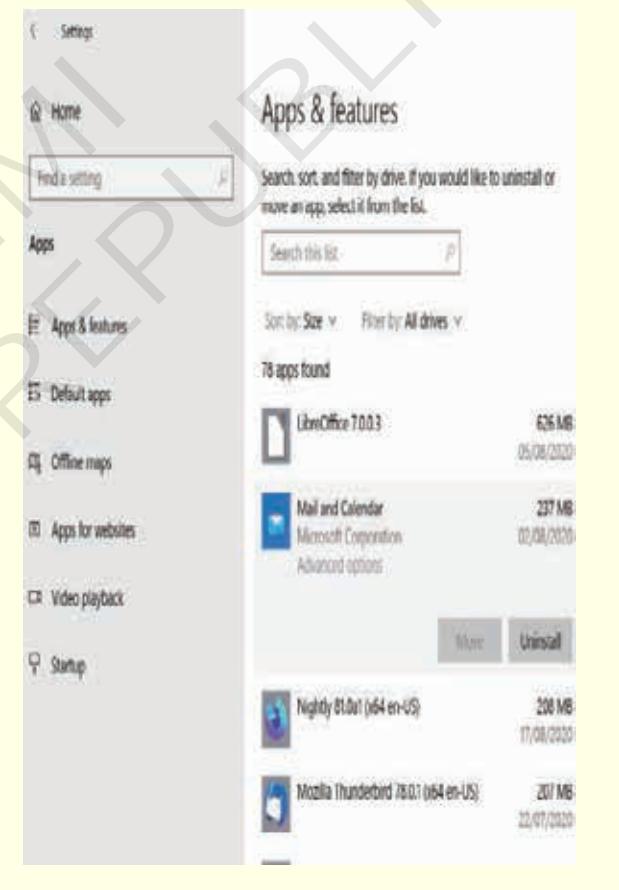


Fig 6



COPA - Using Windows Operating System**Practice on managing files and folders using removable drives**

Objectives: At the end of this exercise you shall be able to

- insert and remove the pen drive in proper way
- check the bad sectors and viruses in pen drive using antivirus software
- copy the files and folders from and to the pen drive.

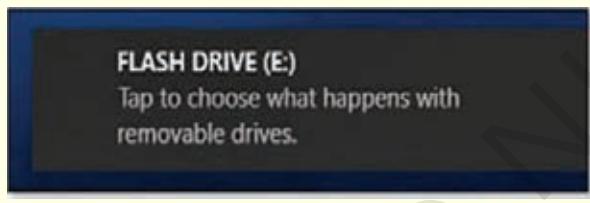
Requirements**Tools/Equipment/Machines**

- | | | | |
|-------------------------|---------|------------------------|---------|
| • PC with Windows 10 OS | - 1 No. | • Pen Drive (Any Size) | - 1 No. |
|-------------------------|---------|------------------------|---------|

PROCEDURE**TASK 1: Insert and remove the Pen drive in proper way**

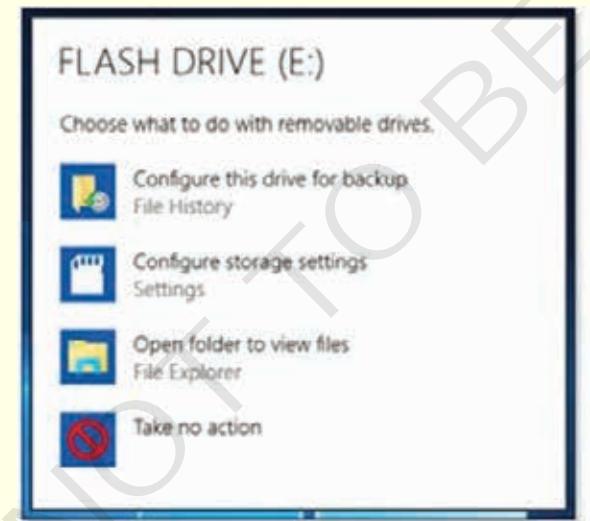
- 1 Insert the pen drive in the USB port.
- 2 Click on the notification that appears on the lower right corner of the screen. (Fig 1)

Fig 1



- 3 Click on Open folder to view files (Fig 2).

Fig 2



- 4 Choose the file or folder to view from the pen drive
- 5 Close the file or folder

- 6 Click on Show hidden icons (Fig 3)



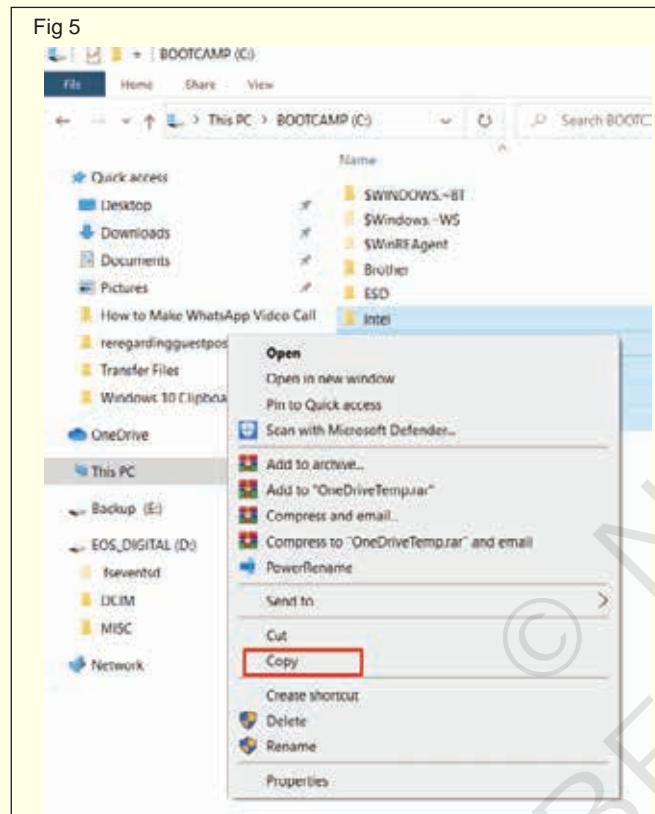
- 7 Click on Safely Remove Hardware and Eject Media icon
- 8 Click on the Eject Button
- 9 Remove the pen drive when Safe To Remove Hardware message is displayed on the screen (Fig 4)

Fig 4



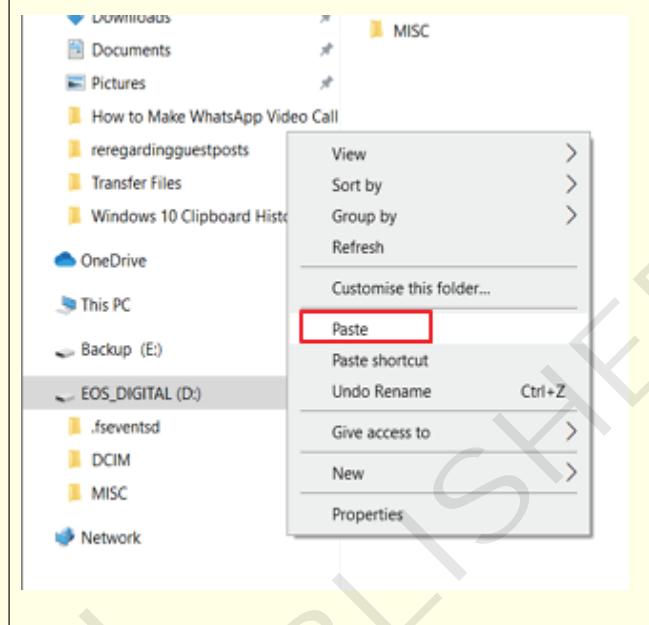
TASK 2: Copy the files and folders from and to the pen drive

- 1 Insert the pen drive in the USB port
- 2 Click on the notification that appears on the lower right corner of the screen.
- 3 Click on Open folder to view files.
- 4 Right click on the file or folder available from the pen drive.
- 5 Select Copy from the drop down menu. (Fig 5) or use Shortcut key **Ctrl+C** to copy.
- 6 Open the drive or folder on the computer to paste the file or folder from the pen drive



- 7 Right click and select Paste option in the drop down menu. (Fig 6) or use Shortcut key **Ctrl+V** to Paste

Fig 6



- 8 To copy files or folders from computer to pen drive, select the file or folder then copy and paste into pen drive. (Or)
- 9 Right click and select **Send to** from the drop down menu and the select the drive of the pen drive.

Copy option from the drop down menu can also be used to copy the file to the pendrive by right clicking the file. Then open the pen drive and right click. Select Paste option from the menu.

COPA - Using Windows Operating System

Customize the desktop

Objectives: At the end of this exercise you shall be able to

- open desktop settings
- modify desktop settings.

Requirements

Tools/Equipment/Machines

- PC with Windows 10 OS - 1 No.

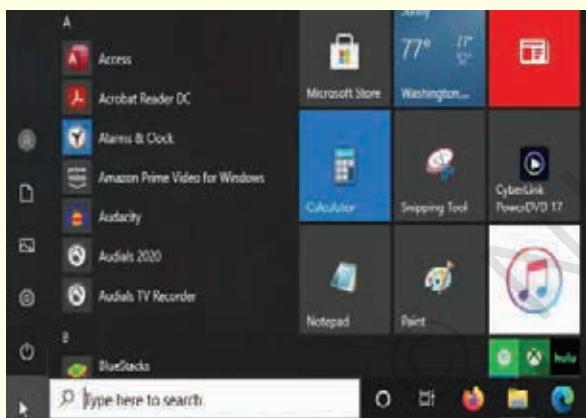
PROCEDURE

TASK 1: Open desktop settings

1 Click on Start menu.

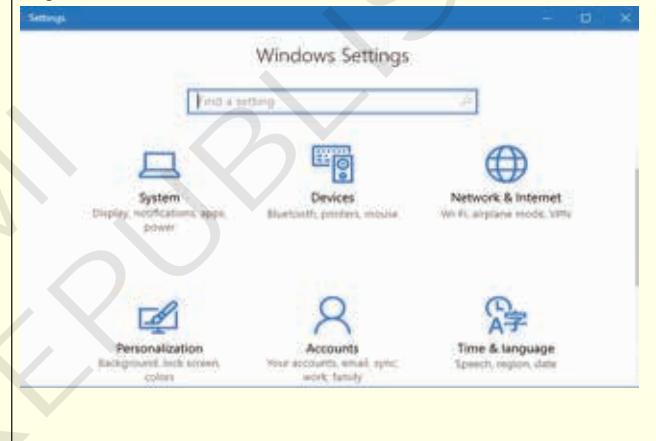
2 Select Settings tab. (Fig 1)

Fig 1



3 This will open Settings Window (Fig 2)

Fig 2



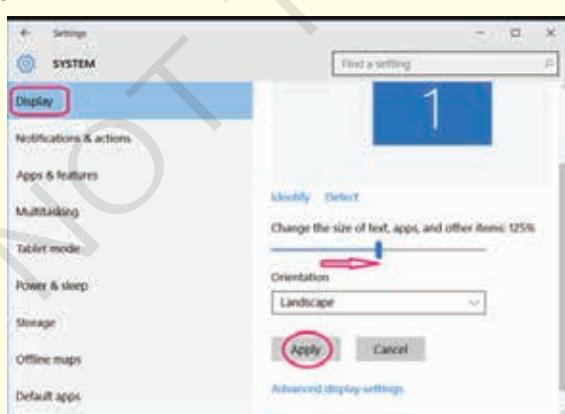
TASK 2: Modify the desktop settings

1 Open the Settings Window.

2 Click on System in the Settings Window

3 Click Display to change the display settings (Fig 3)

Fig 3



4 Change the brightness of the display by dragging the bar of Change brightness from left or right.

5 Record the brightness percentage at the left most and right most end of the Change brightness bar.

6 Change the orientation and note the how the display changes.

Note: To go back to the initial orientation, press Revert.

7 To change the background, click on the Personalization icon of settings window.

8 Click on the Background tab in the Personalization window.

9 Select the Type of Background you want to keep. If it is Picture, choose from picture given or You can browse your desired picture. (Fig 4)

10 Select Fill in Choose a fit. (Fig 5)

Fig 4

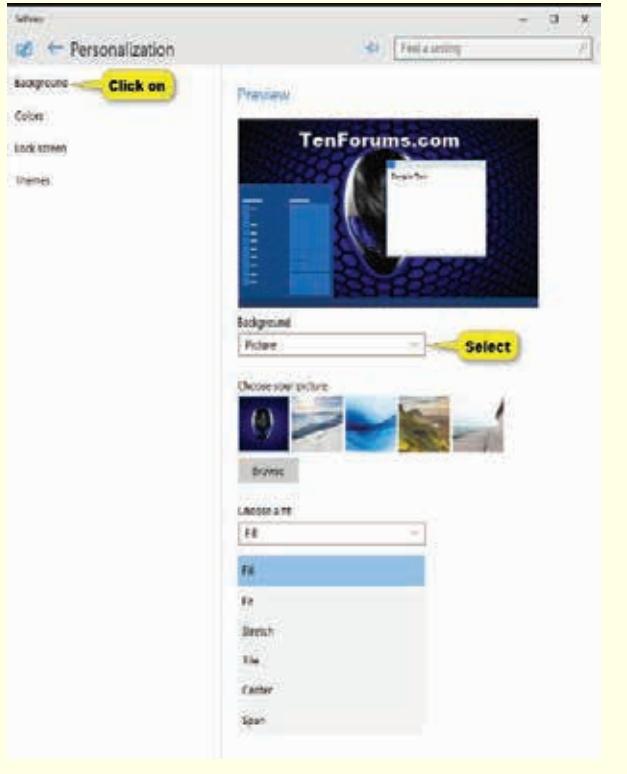
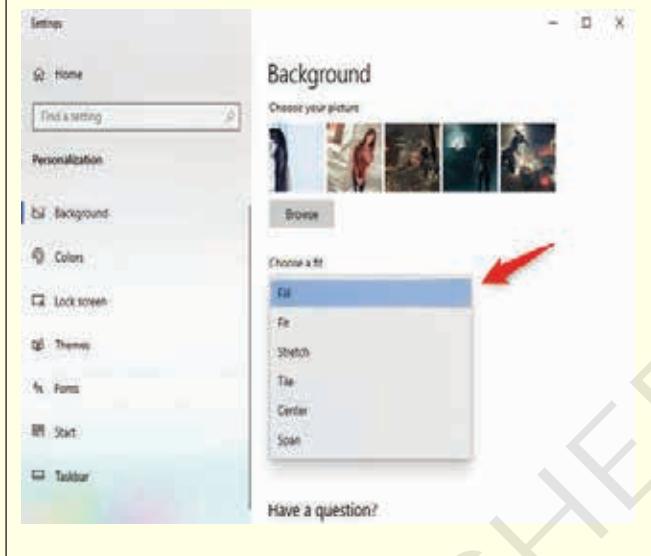


Fig 5



- 11 Repeat step 7 to modify color, lock screen, themes, fonts, start and task bar.

COPA - Using Windows Operating System

Settings and manage user accounts

Objectives: At the end of this exercise you shall be able to

- create new user
- grant and modify the user rights
- remove user account.

Requirements

Tools/Equipment/Machines

- PC with Windows 10 OS - 1 No.

PROCEDURE

TASK 1: Create new user

Create a local user account

- 1 Select Start > Settings > Accounts and then select Family & other users. (In some versions of Windows you'll see Other users.)
- 2 Select Add someone else to this PC.
- 3 Select I don't have this person's sign-in information, and on the next page, select Add a user without a Microsoft account.
- 4 Enter a user name, password, or password hint—or choose security questions—and then select Next.

Fig 1



TASK 2: Change a local user account to an administrator account

- 1 Select Start > Settings > Accounts .
- 2 Under Family & other users, select the account owner name (you should see "Local Account" below the name), then select Change account type.

Note: If you choose an account that shows an email address or doesn't say "Local account", then you're giving administrator permissions to a Microsoft account, not a local account.

- 3 Under Account type, select Administrator, and then select OK.
- 4 Sign in with the new administrator account. (Figs 2 & 3)

Fig 2

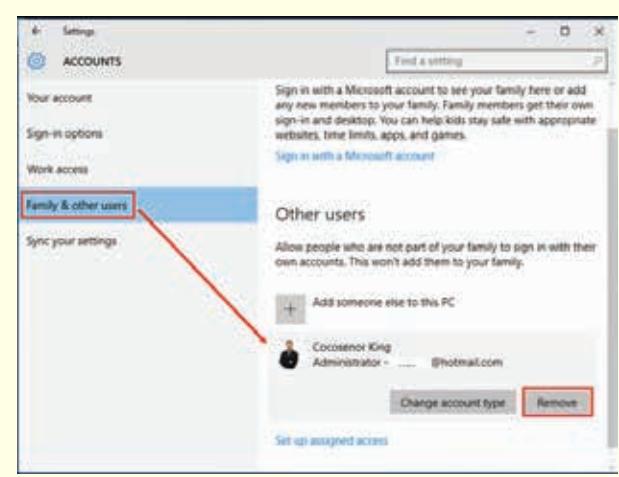
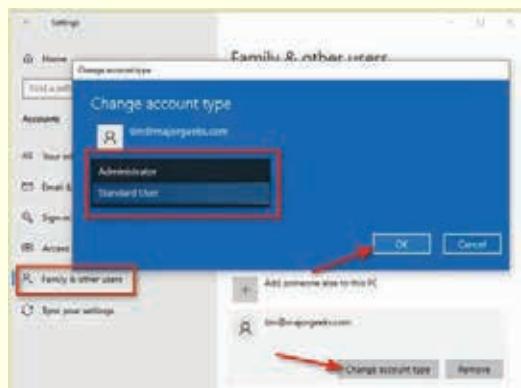


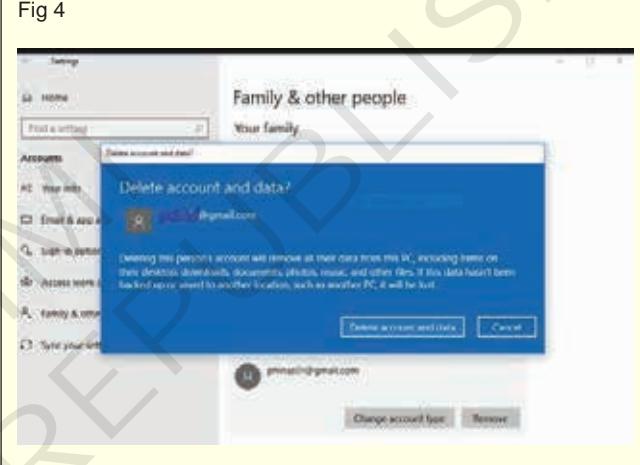
Fig 3



TASK 3: Remove user account

- 1 Open the Settings Window
- 2 Click on Accounts in the Settings Window.
- 3 Select Family & other people.
- 4 Click on the user account whose user rights have to be granted or modified.
- 5 If you want to delete the account of the user, Click the user account and select Remove.
- 6 Click on the Delete account and data tab to remove the selected user account from the system. (Fig 4)

Fig 4



COPA - Using Windows Operating System

View System properties and control panel details

Objectives: At the end of this exercise you shall be able to

- identify the desktop components in device manager
- change clock, date, regional language in control panel
- repair, modify and uninstall the applications in control panel.

Requirements

Tools/Equipment/Machines

- PC with Windows 10 OS - 1 No.

PROCEDURE

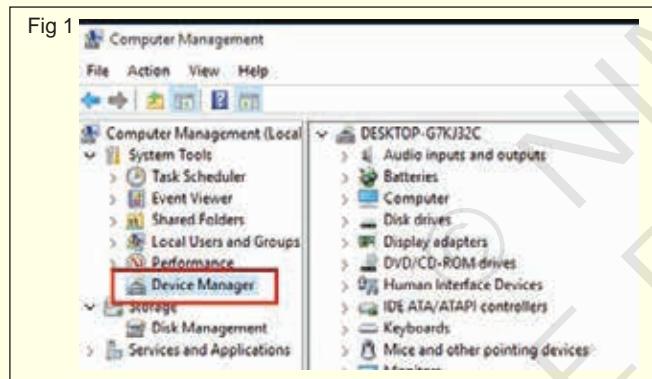
TASK 1: Identify the desktop components in device manager

1 Click on File manager in the taskbar.

2 Select and Right click This PC 

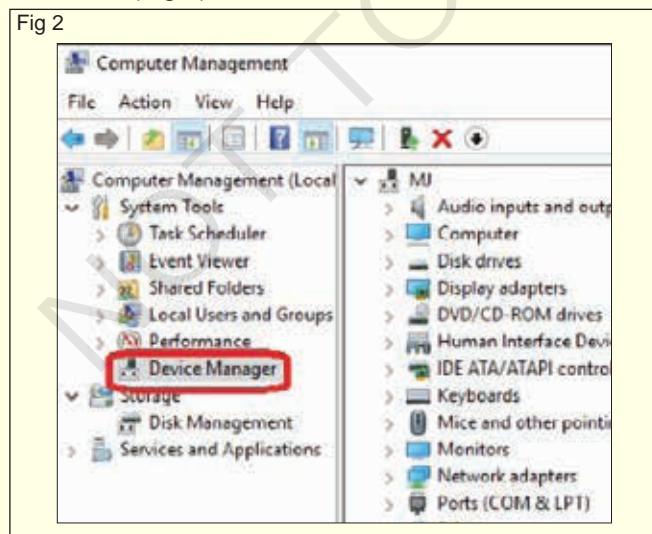
3 Right Click on Properties.

4 Click on Device Manager in Fig 1.



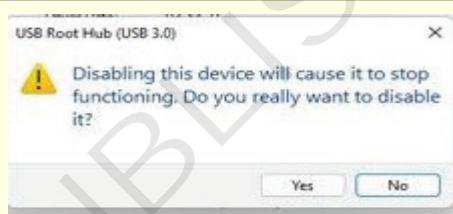
5 Double click on the Universal Serial Bus controllers in the menu.

6 Right click on USB Root Hub and select Disable device (Fig 2)



7 Click Yes in the USB Root Hub. (Fig 3)

Fig 3



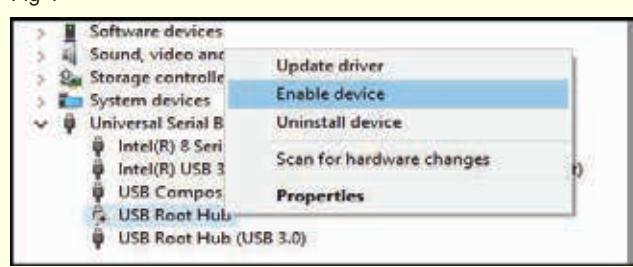
8 Insert a Pen drive/ USB in the USB slot

9 Check This PC folder to see if any removable device/ USB is shown.

10 Go to Device Manager and double click on the Universal Serial Bus controllers.

11 Right click on USB Root Hub and select Enable device (Fig 4)

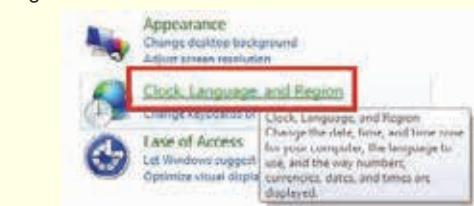
Fig 4



12 Insert a Pen drive/ USB in the USB slot

13 Check This PC folder to see if any removable device/ USB is shown. (Fig 5)

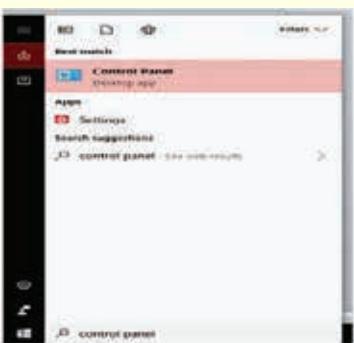
Fig 5



TASK 2: Change clock, date, regional language in control panel

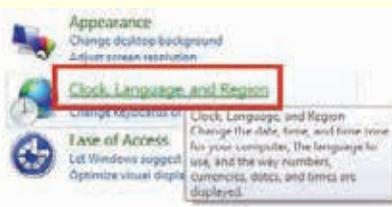
- 1 Type Control Panel in the Search box
- 2 Select Control Panel app from the menu. (Fig 6)

Fig 6



- 3 Select Date and Time from the Control panel. (Fig 7)

Fig 7



- 4 Click on Change date and time. (Fig 8)

Fig 8



- 5 Change the date and time. Press OK.
- 6 Close window
- 7 To change language, select Region from the Control panel.
- 8 Click on Language preferences as shown in Fig 9
- 9 Click on + Add a Language (Fig 10)
- 10 Type the name of the language you need the system to work/change. (Fig 11)
- 11 Click Install.
- 12 Close the Window.

Fig 9

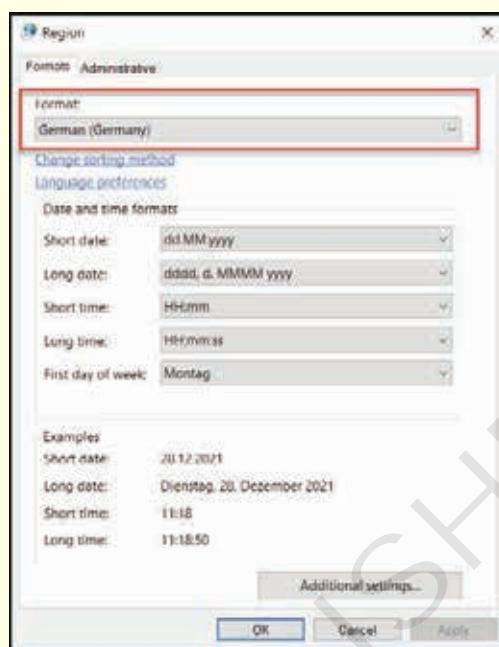


Fig 10

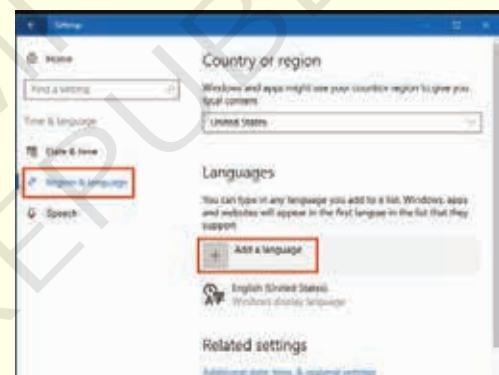
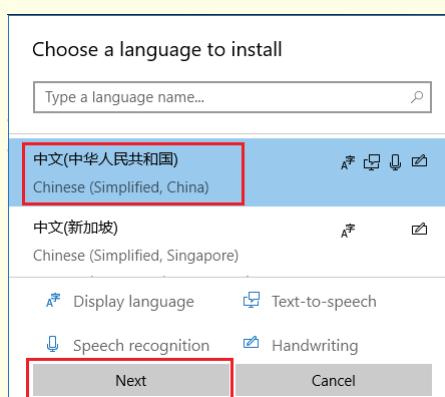


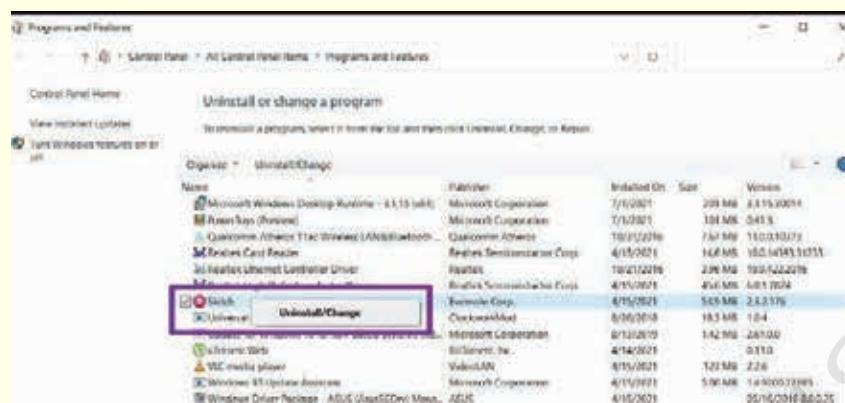
Fig 11



TASK 3: Repair, modify and uninstall the applications in control panel

- 1 Select **Programs and Features** from the Control panel
- 2 Select the program from the drop down menu.
- 3 Click on Uninstall / Change / Repair (Fig 12)
- 4 Click Yes to Uninstall / Change / Repair the application
- 5 Close the window.

Fig 12



COPA - Using Windows Operating System**Work with keyboard shortcut commands**

Objectives: At the end of this exercise you shall be able to

- **read and Observe the Windows Shortcut Keys in the table**
- **practice all the shortcut keys of windows 10 and write the description in below the table.**

Requirements	
Tools/Equipment/Machines	
• PC with Windows 10 OS	- 1 No.

PROCEDURE**TASK 1: Read and Observe the following Windows Shortcut Keys in the table**

Press This	To Do This
Windows Logo	Toggle the Start menu
Windows Logo+A	Open the Notifications pane
Windows Logo+B	Activate the notification area's Show Hidden Icons arrow (press Enter to display the hidden icons)
Windows Logo+C	Open Cortana for voice commands
Windows Logo+D	Minimize all open windows to display the desktop
Windows Logo+E	Run File Explorer
Windows Logo+F	Display the Start menu and activate the Search box
Windows Logo+H	Display the Share pane
Windows Logo+I	Run the Settings app
Windows Logo+K	Display the Devices pane
Windows Logo+L	Lock your computer
Windows Logo+M	Minimize all windows
Windows Logo+O	Turn the tablet orientation lock on and off
Windows Logo+P	Display the Project pane to configure a second display
Windows Logo+Q	Open Cortana for voice commands
Windows Logo+R	Open the Run dialog box
Windows Logo+S	Open Cortana for keyboard commands
Windows Logo+T	Activate the taskbar icons (use the arrow keys to navigate the icons)
Windows Logo+U	Open the Ease of Access Center
Windows Logo+W	Activate the Search box
Windows Logo+X	Display a menu of Windows tools and utilities
Windows Logo+=	Open Magnifier and zoom in
Windows Logo+-	Zoom out (if already zoomed in using Magnifier)
Windows Logo+	Temporarily display the desktop

Windows Logo+Enter	Open Narrator
Windows Logo+Left	Snap the current app to the left side of the screen
Windows Logo+Right	Snap the current app to the right side of the screen
Windows Logo+Up	Restore a minimized app; maximize a restored app
Windows Logo+Down	Restore a maximized app; minimize a restored app
Windows Logo+PgUp	Move the current app to the left monitor
Windows Logo+PgDn	Move the current app to the right monitor
Windows Logo+PrtSc	Capture the current screen and save it to the Pictures folder
Windows Logo+Ctrl+D	Create a virtual desktop
Windows Logo+Ctrl+Right	Switch to the next virtual desktop
Windows Logo+Ctrl+Left	Switch to the previous virtual desktop
Windows Logo+Ctrl+F4	Close the current virtual desktop
Windows Logo+Tab	Open Task View, which displays thumbnails for each running app as well as the available virtual desktops

TASK 2: Practice all the shortcut keys of windows 10 and write the description in below the table

Get it check by your instructor

COPA - Using Windows Operating System**Print and scan documents using different commands**

Objectives: At the end of this exercise you shall be able to

- scan and save the image
- print image or document.

Requirements**Tools/Equipment/Machines**

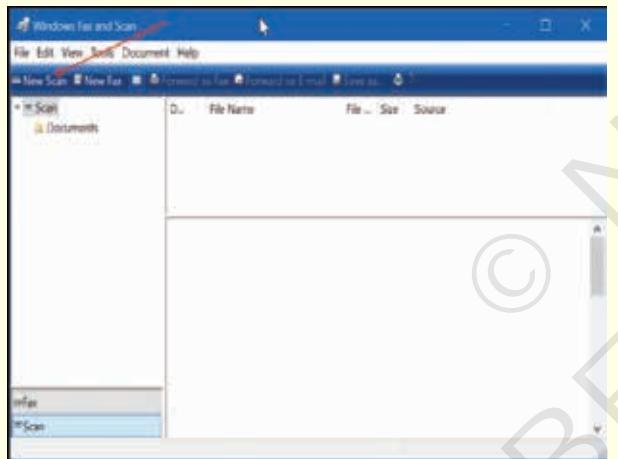
- PC with Windows 10 OS - 1 No.

PROCEDURE**TASK 1: Scan and save the image**

Save scanned files as PDF using Windows Fax & Scan

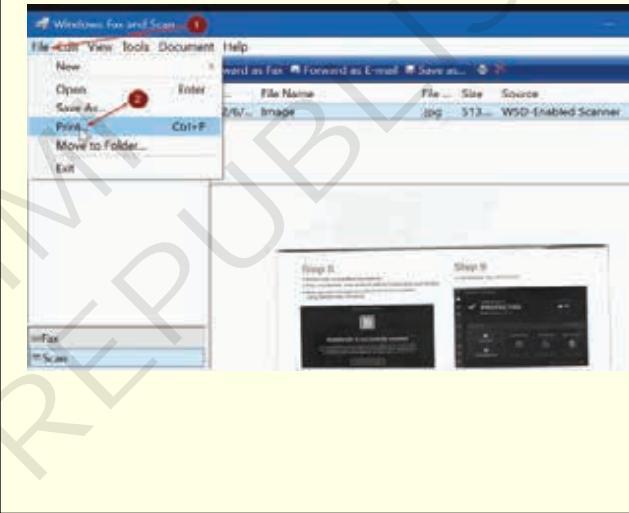
- 1 Open Windows “Printers and Scanners”.
- 2 Click New Scan button in the toolbar. (Fig 1)

Fig 1



- 3 View or select a different scanner by clicking Change button in the Scanner section. (Fig 2)

Fig 2



- 4 In the Profile section, select the type of the file that you are going to scan as either Photo or Documents.
- 5 Change other default settings, if you want.
- 6 Click the Scan button to begin scanning the hard copy in the scanner.

TASK 2: Print image or document.

- 1 Once the scanning is completed, click the File menu and then click Print option. Yes, we are going to save the file as PDF. (Fig 3)
- 2 Select Microsoft Print to PDF from the printer dropdown box, and then click Print button. (Fig 4)
- 3 At the Save Print Output As dialog, enter a name for your scanned file.
- 4 select a location to save the file. (Fig 5)
- 5 Click Save button to save it as PDF file.
- 6 Or choose the installed printer and then click Print.
- 7 Get it check with your instructor

Fig 3

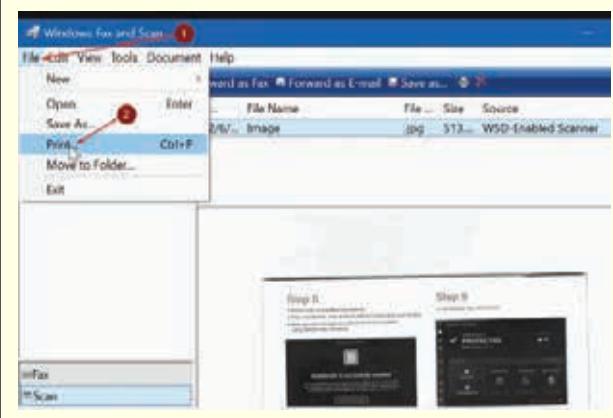


Fig 4

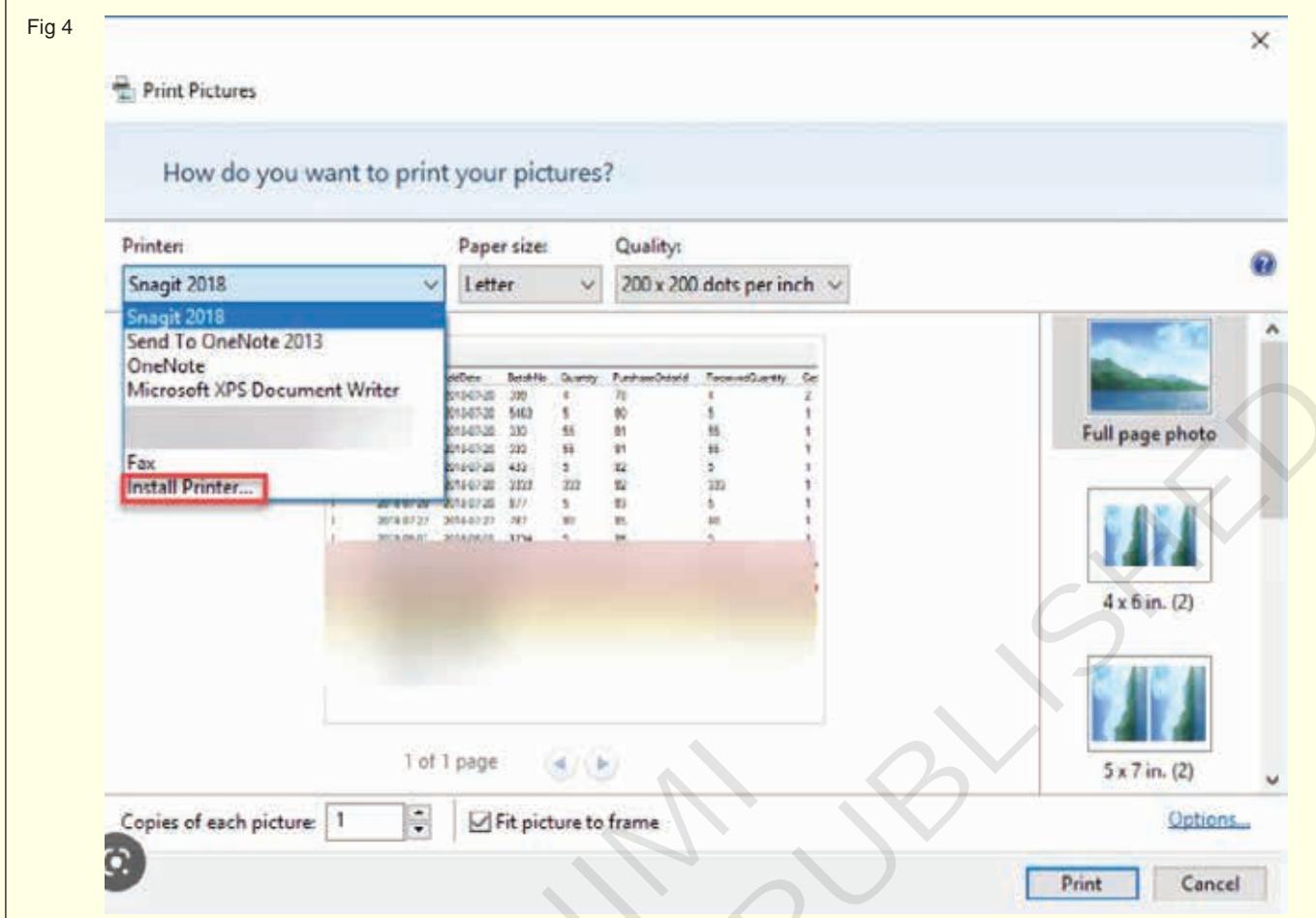
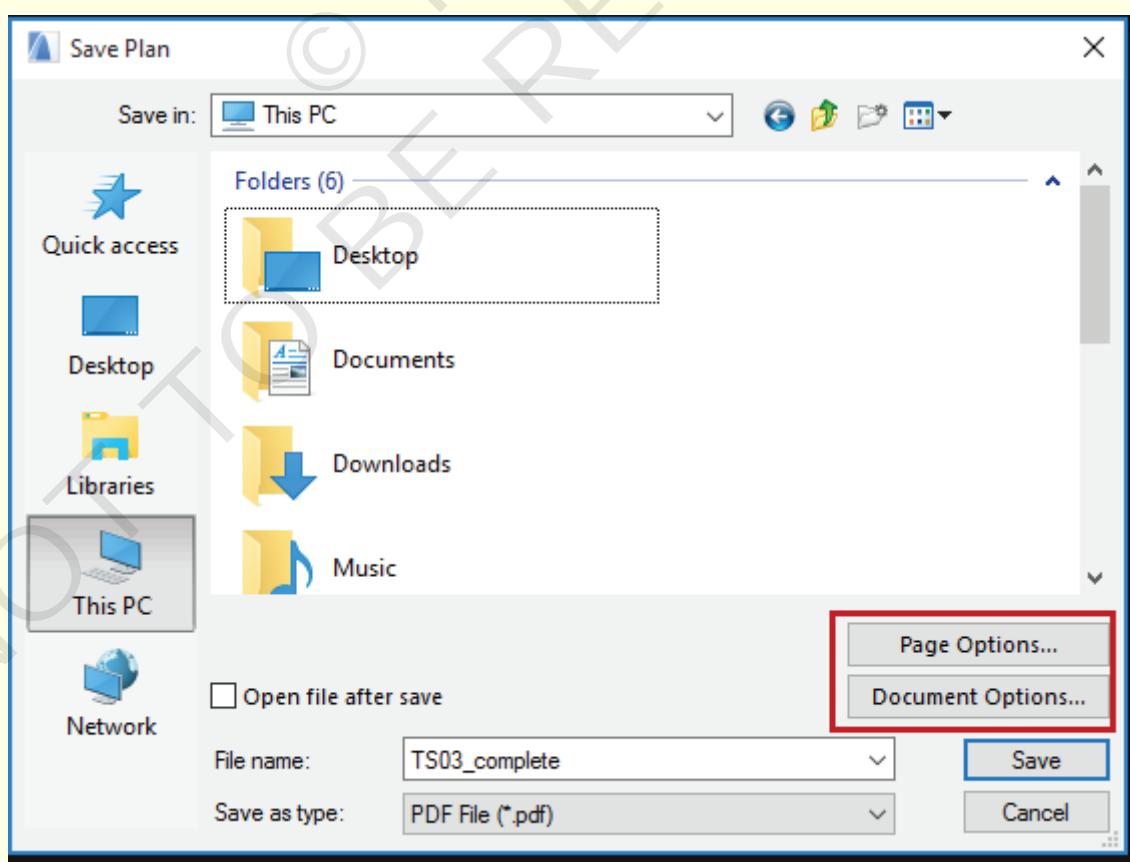


Fig 5



COPA - Computer Basics & Software Installation**View the BIOS settings and their modifications**

Objectives: At the end of this exercise you shall be able to

- enter into CMOS setup
- enter into standard CMOS setup and change the parameters
- enter into BIOS features setup and change the parameters
- set System password
- explain to change system boot order
- default setting load.

Requirements**Tools/Equipment/Machines**

- A working PC - 1 No.

PROCEDURE**TASK 1: Enter into CMOS setup**

- 1 Power on PC.
- 2 Press **** key immediately a few times to enter into CMOS setup utility menu.

Prompt message is displayed as follows.

"Press to enter setup or <ESC> to By-pass the "CMOS SETUP UTILITY" menu displayed on the memory.

In some computer, F2 or F10 or F12 can be used to enter BIOS

Based on manufacturer of computer it can be vary. So refer manual..

- 3 RECORD all the configuration menu options displayed on the screen in the record sheet.

Enter the password, if required.

- 4 Get the work checked by your instructor.
- 5 Move the highlight up and down (main menu) using arrow keys to select the desired utility.

Highlight is used to indicate the selection option in the menu. Do not press "ENTER" key.

- 6 Get the work checked by your instructor.

Fig 1

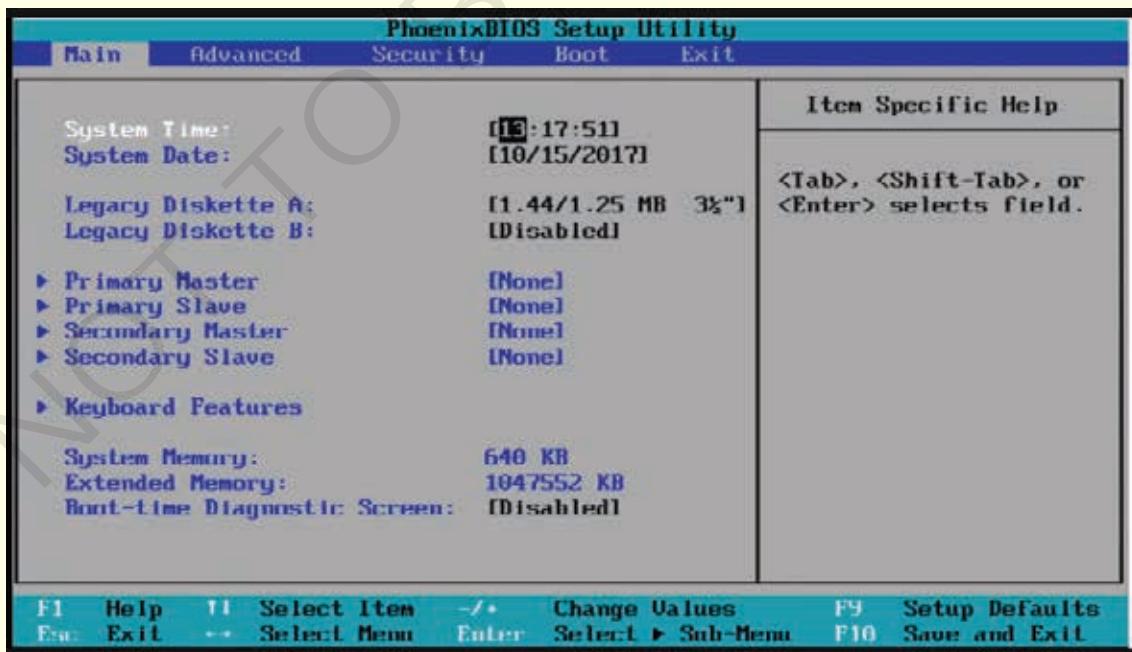
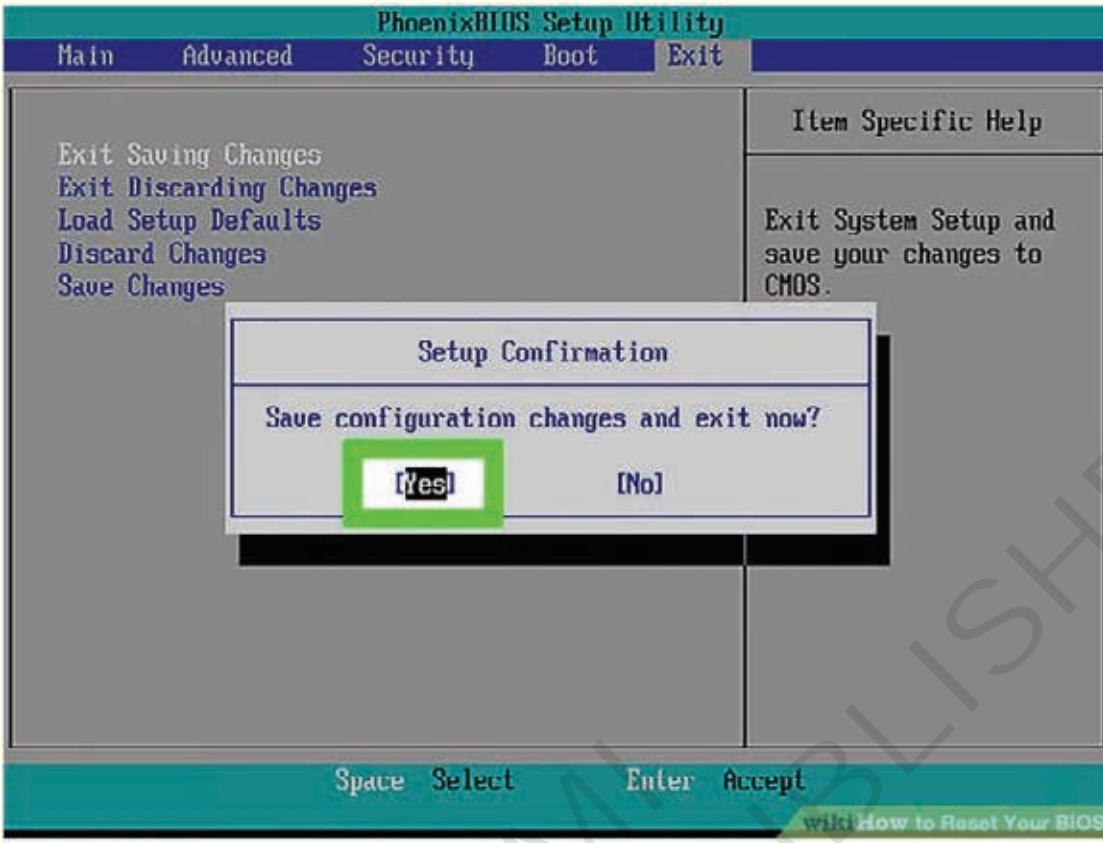


Fig 2



TASK 2: Enter into standard CMOS setup and change the Date & time

- 1 Move the highlight to standard CMOS setup and press <enter> key and record the parameters, referring to the screen in Table 1.
- Parameters displayed on screen can be changed using “Pageup and pagedown”.**
- 2 Select “Date” parameter and set the current date, month and year by using pageup/pagedown.
 - 3 Select “Time” parameter and set the current date, month and year by using pageup/pagedown.
 - 4 Set “Time” parameter and set the time.
 - 5 Press F10 to save a exit CMOS setup.
 - 6 Get the work checked by your instructor.

TASK 3: Set System passwords

- 1 Enter into CMOS setup utility following the steps in Task 1.
 - 2 Move the highlight to BIOS feature setup and press <enter> key.
 - 3 Move the highlight to security option and modify it to “System” using <pageup>/<pagedown> key.
 - 4 Press “Esc” to CMOS setup utility.
 - 5 Move the highlight user password and press <enter> key.
 - 6 Observe the menu displayed and enter the password (password should be 8 character length).
 - 7 Observe the menu displayed and reenter the same password to confirm.
 - 8 Press <Esc> to CMOS setup utility.
 - 9 Press function key F10 or select save and exit, press enter followed by option ‘Y’
- This process leads to Restart the system and enter password for further booting process.**

TASK 4: How to Change System Boot Order

Step 1: Enter your Computer's BIOS set up utility

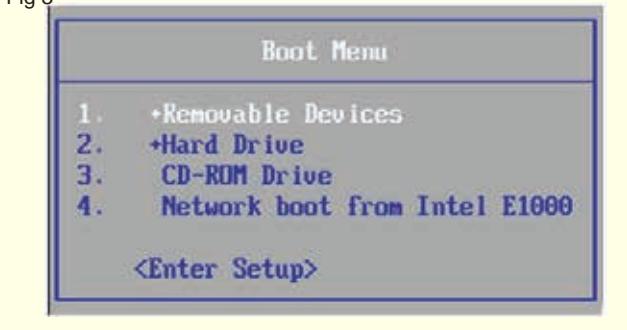
Step 2: Navigate to the boot order menu in BIOS

- Under a menu option called Boot, Boot Options, Boot Sequence, or even under an Advanced Options tab

Step 3: Change the Boot Order

- Once you've located the page for boot order options in BIOS, you'll see a list of options that your computer can load up from.
- Again, these options will vary slightly between computers but will typically include: Hard Drive, Optical (CD or DVD) Drive, Removable Devices (e.g. USB or Floppy), and Network.
- Change the list order so that USB Device or Removable Devices is listed first. (Fig 3)

Fig 3



Step 4: Save your Changes

- Make sure you save your changes before exiting BIOS for the changes to take effect
- Navigate to the Save and Exit or Exit menu and choose an option that says, "Save Changes" or F10 to "Exit with Changes Saved"

TASK 5: How to reset the BIOS from the BIOS interface

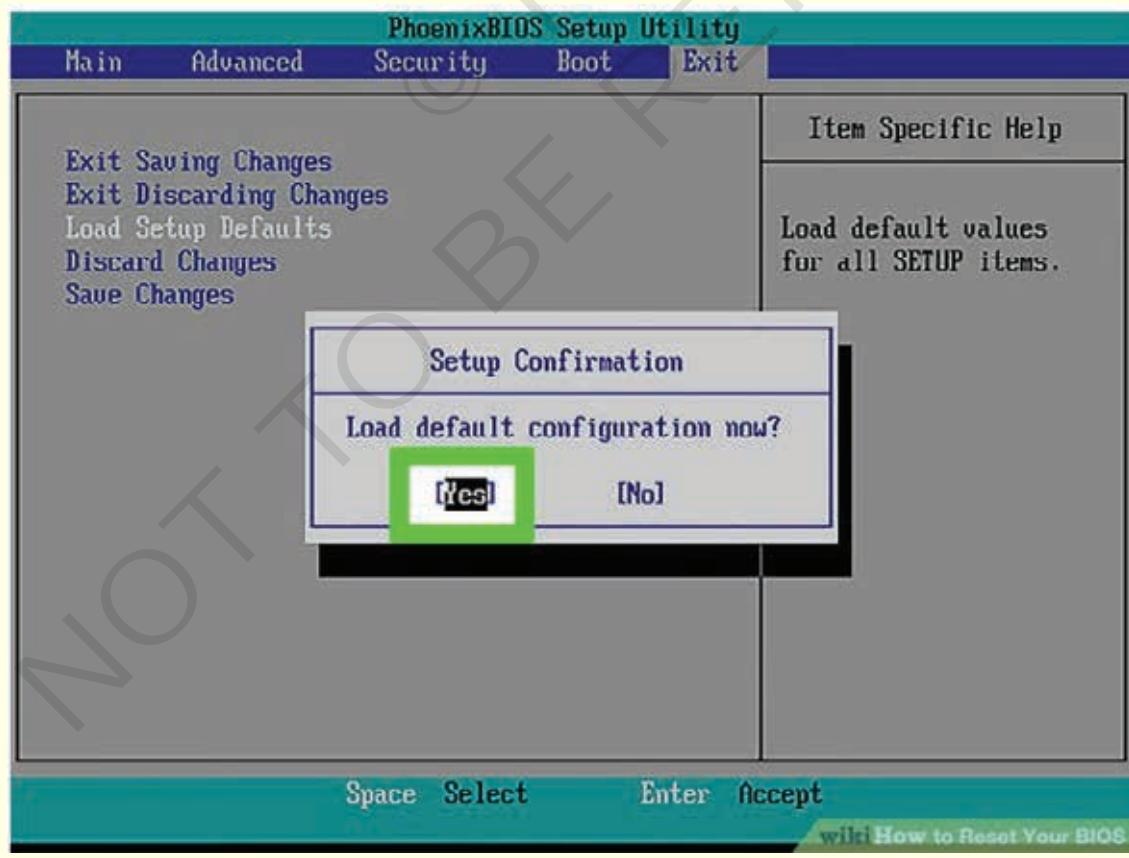
Step 1: Enter your Computer's BIOS set up utility

Step 2: Navigate to the Exit menu in BIOS and Find the "Setup Defaults" option

Step 3: Select the "Load Setup Defaults" option and press Enter.

Step 4: Press F10 or Save Key to save all changes and exit the BIOS setup screen. (Fig 4)

Fig 4



COPA - Computer Basics & Software Installation

Install Windows operating system

Objectives: At the end of this exercise you shall be able to

- install windows 10 operating system.

Requirements

Tools/Equipment/Machines

- A working PC with windows 10 OS - 1 No.

PROCEDURE

- 1 Prepare your bootable DVD or USB disk with Windows 10 ISO Image.
- 2 Keep your DVD or USB as First Boot Device in Boot Order Option of BIOS Setup.
- 3 Press F1 / F2 / F10 / Delete or Del / Esc to enter BIOS Setup into your computer when its powered ON and Display POST Code messages along with Manufacture logo.

Note: BIOS setup Entry option may very based on Computers manufactured, refer Manual.

Fig 1



- 4 After enter into BIOS Setup Utility Choose Boot Option ' Boot Device Priority Setting'
- 5 Select Removable Device for USB or CD Rom Drive for Optical Drives
- 6 Ensure Boot Mode option into UEFI / Legacy, Windows10 Recommended UEFI.

Note:

- **Legacy Boot** is the boot process used by BIOS firmware, Its uses Valid Master Boot Record (MBR).
- **UEFI boot** is the boot process used by UEFI firmware, Its uses valid GUID Partition Table (GPT)

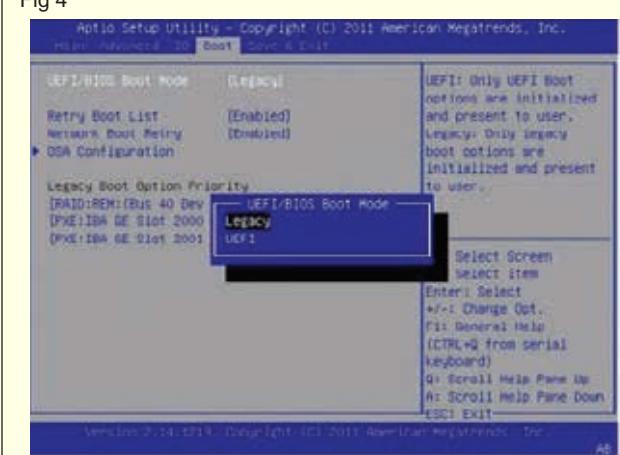
Fig 2



Fig 3



Fig 4



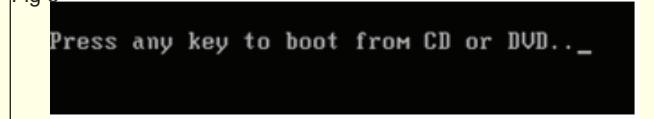
7 F10 to Save BIOS setup configuration and Exit.

Fig 5



8 Insert the Image DVD into optical Drive and reboot the PC then Press any key to boot the Installation from DVD.

Fig 6



9 Or Insert the USB Flash Drive into USB Port and reboot the PC then bootable Installation starts immediately.

Fig 7



10 Choose to Install now

11 Choose the language of the interface, the time and currency format, and the keyboard layout.

12 Enter the Windows 10 product key. You can skip this step if you want to activate Windows later on. Make sure you enter the correct code.

Fig 8

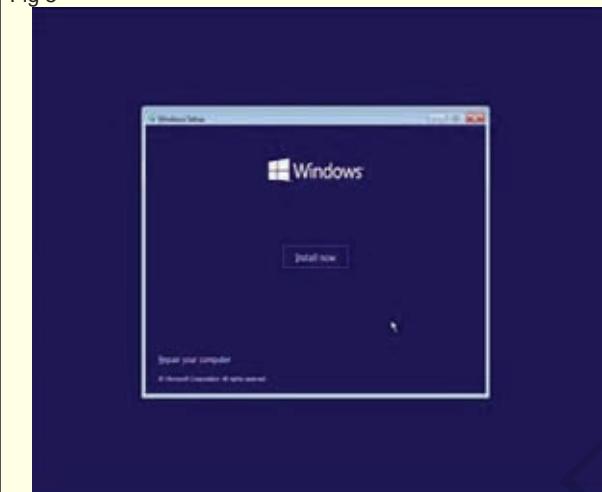
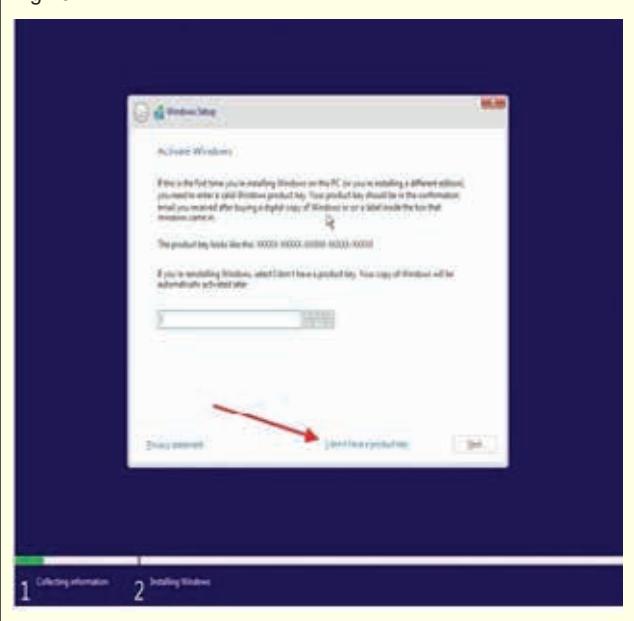


Fig 9



Fig 10



13 Select the Windows edition you want to install

Fig 11



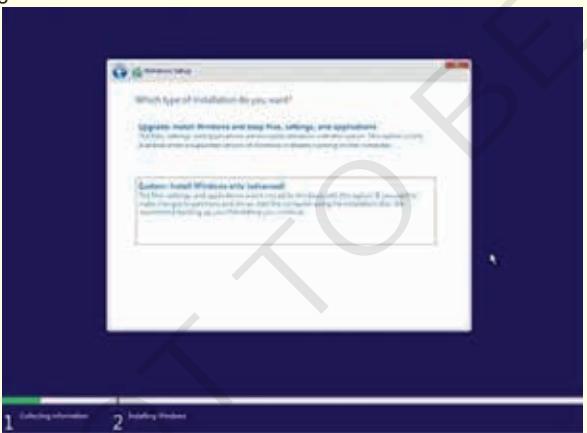
14 Agree to licensing terms (EULA).

Fig 12



15 Select the installation type: Upgrade an existing installation of Windows (version 7, 8, or 10) or Since it's a new computer choose Custom.

Fig 13



16 Choose the disk where Windows files will be copied. At this step, you can partition the existing disk, If you no need partition then choose unformatted disk just select it and hit Next.

17 The setup will now start to copy files from the install disk to their final destination.

18 Installation will do auto reboot the PC and load the Windows

19 Select the geographical region: India, and keyboard layout : English(India)

Fig 14

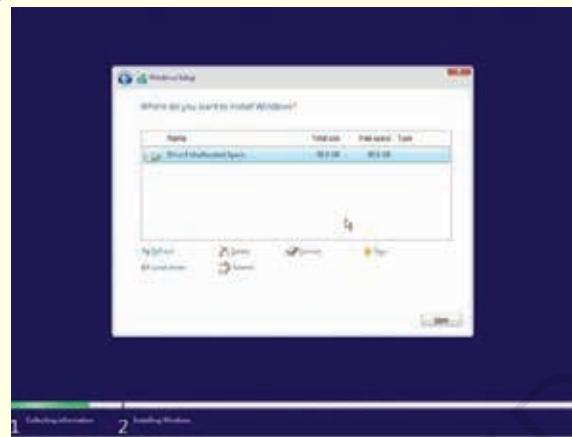


Fig 15

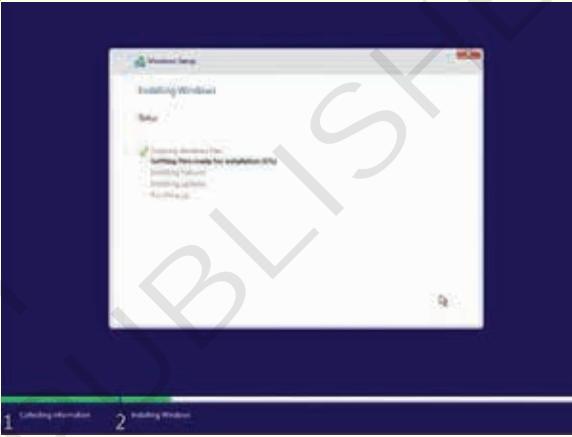


Fig 16



Fig 17

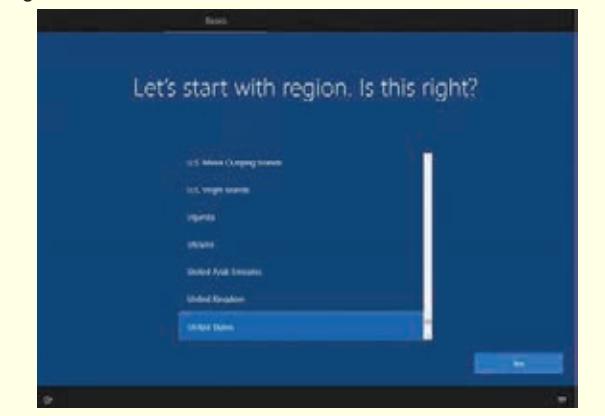
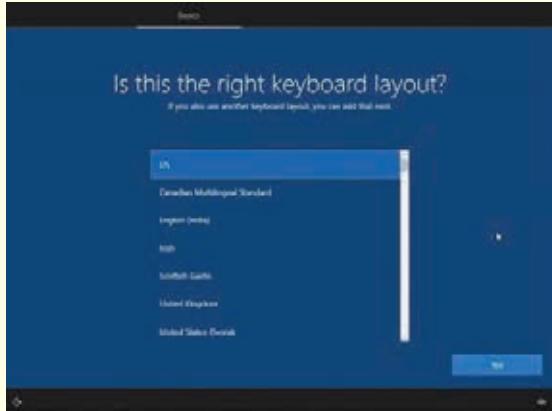
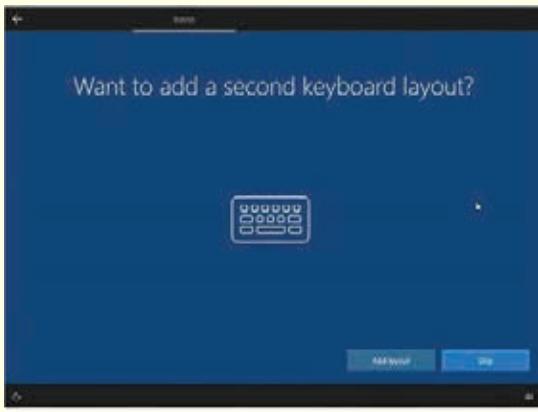


Fig 18



Skip Add Second Keyboard Option

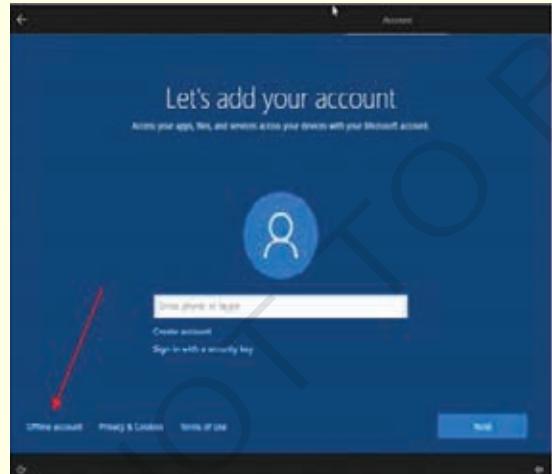
Fig 19



20 Now we'll create the first user account which will also act as the administrator for this computer.

Choose: Offline Account then Click Next

Fig 20



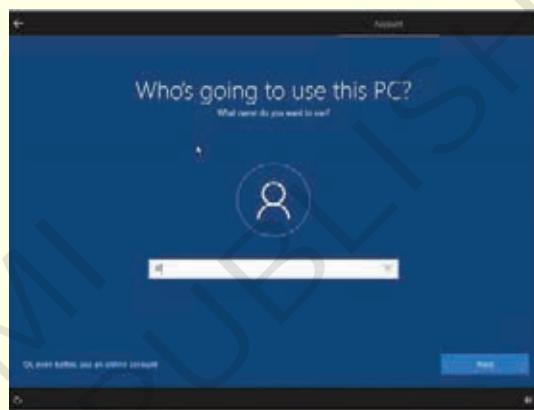
Microsoft App and Service : Limited Experience then Click Next

Fig 21



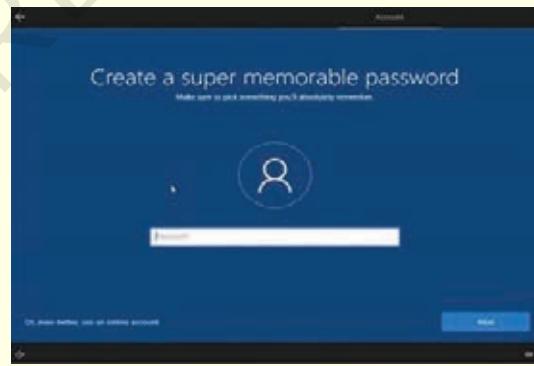
Type: UserName then Click Next

Fig 22



Confirm Password then Click Next

Fig 23



21 Create Security Question and Answer for newly created account, but it seems you have to select 3 security questions that will help you recover your account in case you forget the password.

22 Privacy settings Click Accept and Cortana Setting Click Not Now or Accept

Fig 24

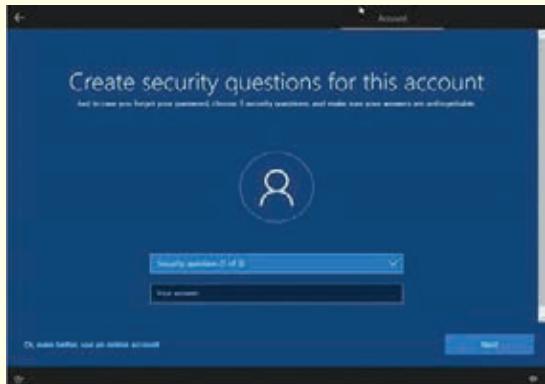


Fig 27

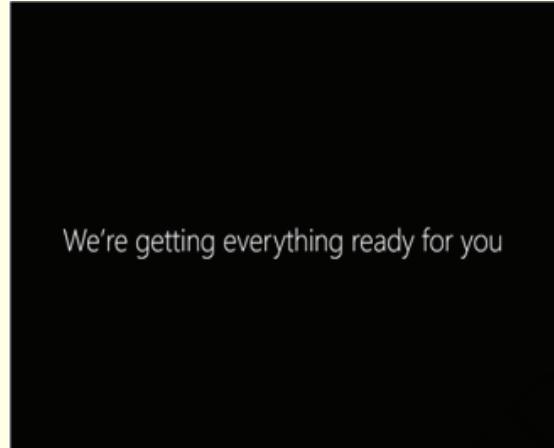


Fig 25



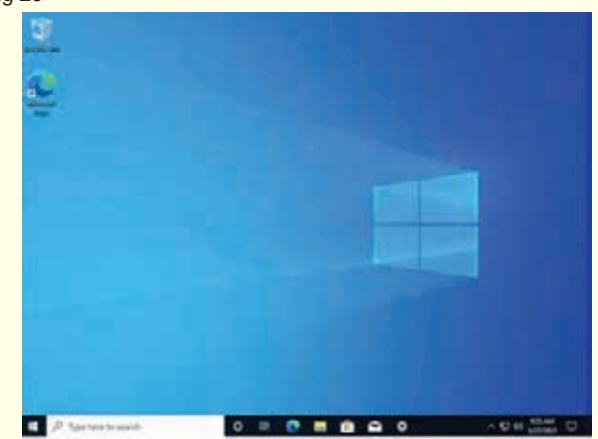
Fig 28



Fig 26



Fig 29



23 After a few moments and a couple of different screens you'll be greeted with the familiar Windows10 desktop for the first time

COPA - Computer Basics & Software Installation**Format hard disk and create partition****Objectives:** At the end of this exercise you shall be able to

- format Hard Drive in Windows 10 with Disk Management.

Requirements**Tools/Equipment/Machines**

- A working PC with windows 10 OS - 1 No.

PROCEDURE**TASK 1: Format HD Drive in Windows 10 with Disk Management**

Disk Management in Windows 10 is a built-in tool which enables to format, create, delete, extend, shrink partition without rebooting system. If you want to use this tool to format Windows 10 hard drive, you should open Disk Management by one of the following ways at first.

- 1 Click start menu and then type Disk Management to search
(or)
- 2 Click start menu and type cmd to open command line and then input compmgmt.msc and then click Enter
(or)
- 3 Press "Windows + R" to open the command line and then enter "diskmgmt.msc" to launch Disk Management
- 4 After open Disk Management, right click the Windows 10 hard drive partition you need to format (partition D) and then choose Format as shown in Fig 1.

- Allocation unit size: Default
 - Perform a quick format: Checked
 - Enable file and folder compression: unchecked
- 5 In the pop-up window, and set file system and cluster size and then click OK as shown in Fig 2&3
 - 6 Right click the un allocated space and create the new drive by clicking new simple value with required space and align drive letter . Then format the drive.

Fig 2

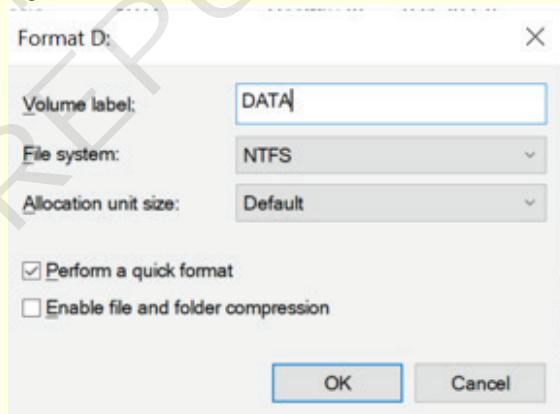


Fig 3

Disk Management

Volume	Layout	Type	File System	Status	Capacity	Free Sp.	% Free
Disk 1 partition 1	Simple	Basic	Healthy (E:)	150 MB	150 MB	100 MB	100 %
Disk 1 partition 4	Simple	Basic	Healthy (L:)	990 MB	990 MB	100 %	100 %
Disk 1 partition 5	Simple	Basic	Healthy (R:)	12.77 GB	12.77 GB	100 %	100 %
Disk 1 partition 6	Simple	Basic	Healthy (S:)	1.11 GB	1.11 GB	100 %	100 %
DATA (D:)	Simple	Basic	NTFS	921.29 GB	528.22 GB	57 %	
OS (C:)	Simple	Basic	NTFS	223.14 GB	14.32 GB	24 %	

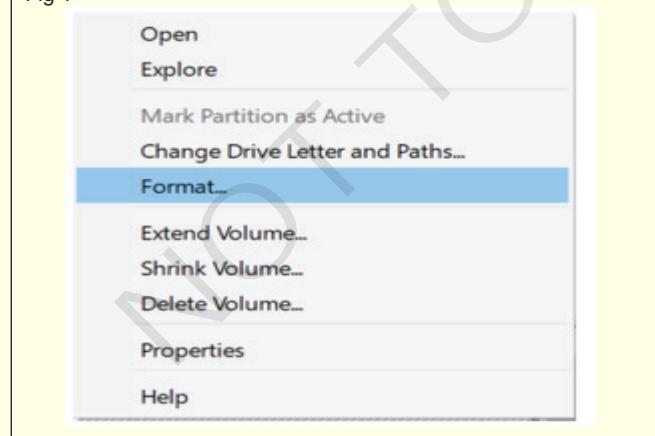
Disk 0

831.39 GB	DATA (D:)	831.39 GB NTFS	Healthy (Root Unit Partition)
-----------	-----------	----------------	-------------------------------

Disk 1

238.35 GB	OS (C:)	238.35 GB NTFS	Healthy (Boot, Page file, C:)
150 MB		150 MB	Healthy (Recovery)
12.77 GB		12.77 GB	Healthy (Recovery)
1.11 GB		1.11 GB	Healthy (Recovery)
16 kB		16 kB	Unallocated

Fig 1



As a reminder, here's what you should see:

- Volume label: [label of your choosing]
- File system: NTFS

COPA - Computer Basics & Software Installation**Identify and rectify common hardware and software issues during OS installation**

Objectives: At the end of this exercise you shall be able to

- write chart of issues found while installation of OS.

Requirements**Tools/Equipment/Machines**

- A working PC with windows 10 OS - 1 No.

PROCEDURE**TASK 1: Write chart of issues found while installation of OS**

Sl.No.	Problem Found	Name the problem
	SW HW	

COPA - Computer Basics & Software Installation

Install necessary application software for Windows

Objectives: At the end of this exercise you shall be able to

- install MS-Office 0365
- install Nero software in windows operating system
- install VLC Media player
- install Adobe PDF Reader
- download and Install Avira Free Antivirus software in windows operating system.

Requirements

Tools/Equipment/Machines

- | | | | |
|-----------------------------|---------|---------------------------------|---------|
| • PC with Windows 10 OS | - 1 No. | • VLC Media Player Software | - 1 No. |
| • MS – Office 2019 or 0365 | - 1 No. | • Adobe PDF Reader Software | - 1 No. |
| • Nero Software for Windows | - 1 No. | • Avira Free Antivirus Software | - 1 No. |

PROCEDURE

TASK 1: Subscribing to Microsoft 0365 and installing

1 Go to [- In late 2022, Microsoft Office became part of Microsoft 365. Subscribing to Microsoft 365 gives you access to the apps that were part of Microsoft Office \(e.g. Word, Excel, and PowerPoint\).
- There is also the option for a one-time purchase of Office Home & Student 2021, which includes 2021 versions of Word, Excel, and PowerPoint.](https://www.microsoft.com/>. Then, select Microsoft 365 in the top menu bar. This is the official product page for Microsoft 365.</p>
</div>
<div data-bbox=)

2 Click Buy now. This is located in the top menu bar.

3 Select a plan. Click Buy Now to start the purchasing process for a subscription plan. There are a few options:

- Pay yearly or monthly.
- Select the Family plan if you have multiple users, or the Personal plan if it's just for you.

4 Sign in to your Microsoft Account. Then, follow the instructions to complete your purchase.

Installing on Windows

1 Go to [2 Click Install Office. This is a button on the Office home page.](https://www.office.com/>. Click Sign in if you aren't already signed in.</p>
</div>
<div data-bbox=)

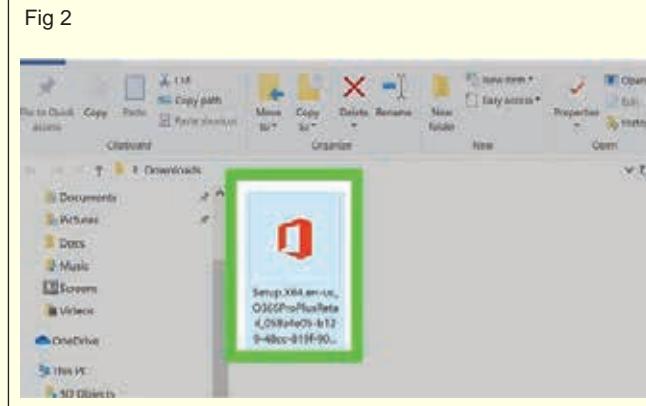
3 Click Install. It's a button in the Microsoft 365 subscription section. This might also be labeled Install Office >. The download for the Office setup file will start.

- For work and student accounts, click Office 365 apps or Microsoft 365 apps instead.

- Click Save File. Your Office setup file will begin downloading.
- You may have the options to select Run or Setup depending on your browser.



- Double-click the Office setup file. You'll find it in your computer's default download location.
- Skip this step if the installation has already started.



- Click Yes when prompted. You may see a prompt asking "Do you want to allow this app to make changes to your device?" Selecting Yes will run the setup file and begin installing Office on your computer.

Fig 3



- Wait for Microsoft Office to finish installing. This process may take several minutes.
- Click Close when prompted. Your Microsoft Office programs have now been installed on your computer. You can begin using these programs right away.

Fig 4



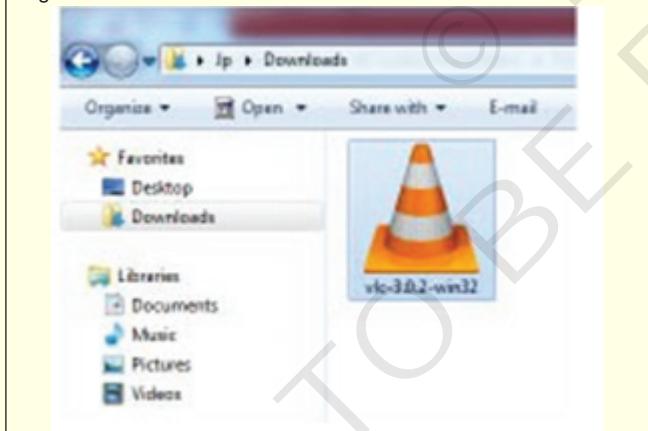
Fig 5



TASK 2: Installing VLC media player

- Double click on the Vlc-3.0.2-win32 exe file as on Fig 6.

Fig 6



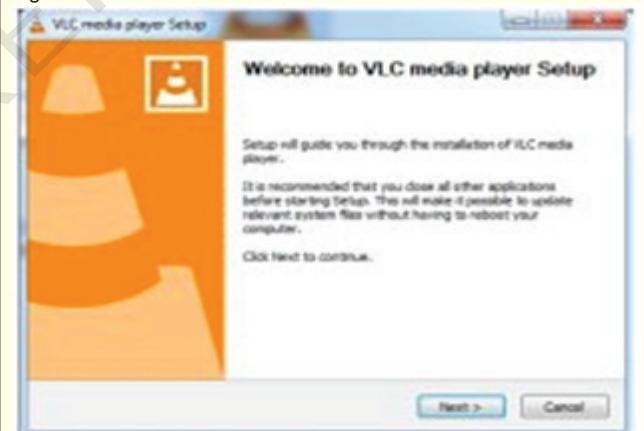
- Click Run button in the window
- Select the language and click ok button as shown in Fig 7.

Fig 7



- Click Next Button as shown in Fig 8.

Fig 8



- Click the Next Button On the License Agreement window as on Fig 9.

Fig 9



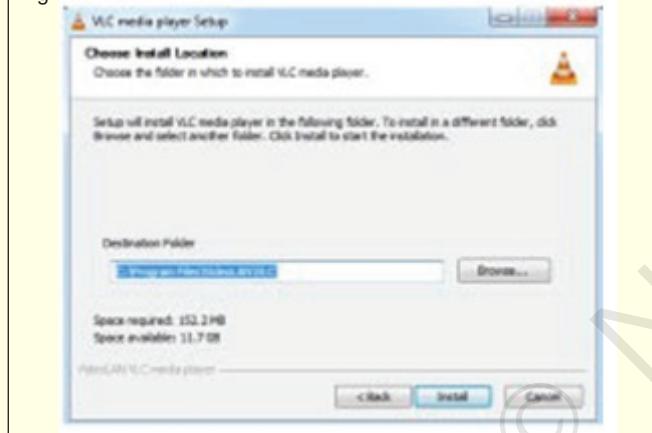
- 6 Select components of Media player and click Next Button as shown in Fig 10.

Fig 10

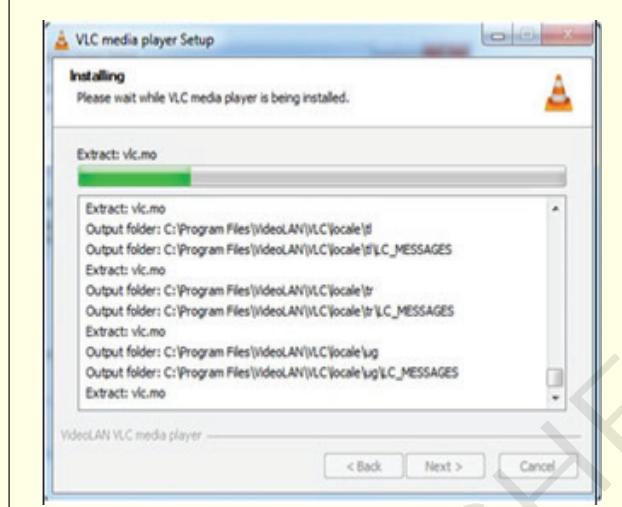


- 7 Click Install Button as on Fig 11.

Fig 11



The installation process window will display as on Fig 12.



- 8 Click Finish Button as on Fig 13.

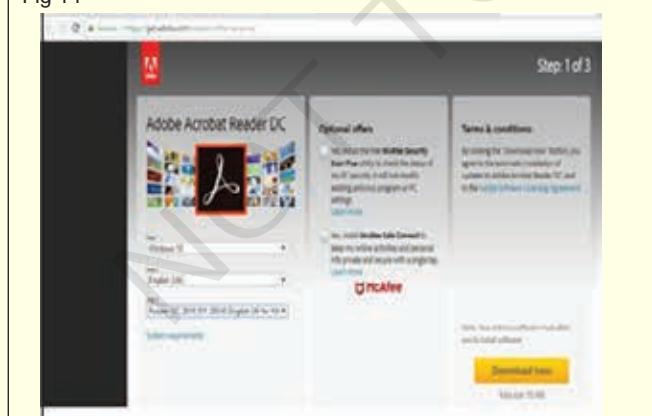
Fig 13



TASK 3: Download and install the adobe Acrobat Reader DC from the Internet

- 1 Open the browser
- 2 Select the corresponding website <https://get.adobe.com/reader/other-versions/> as shown in Fig 14.

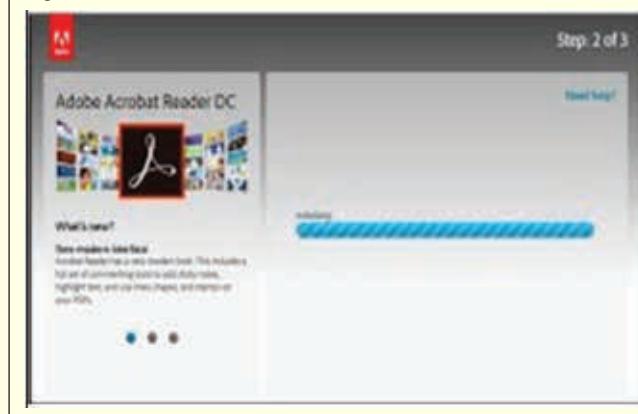
Fig 14



- 3 Select "windows version, Language and Reader version"

- 4 Click download button as shown in Fig 15.

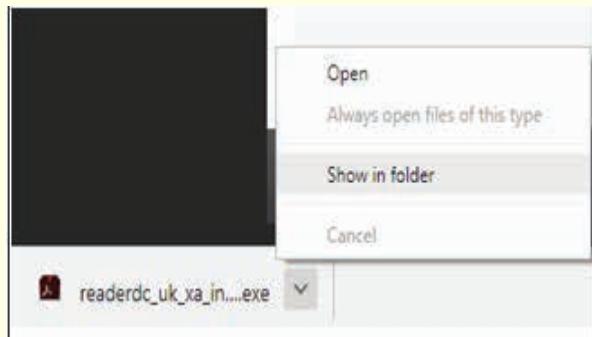
Fig 15



The down loading process will start and the EXE file will show bottom of the Browser

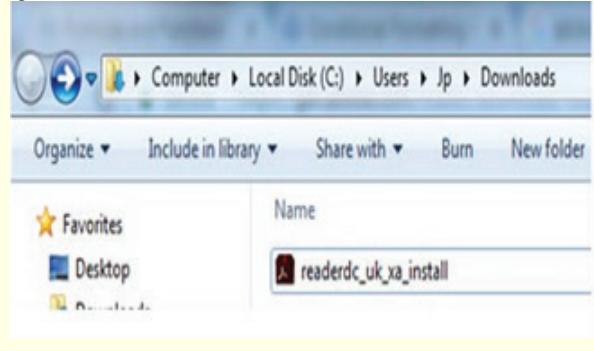
- 5 Click the up arrow and again click show in folder menu as shown in Fig 16.

Fig 16



6 Double click the file as shown in Fig 17.

Fig 17



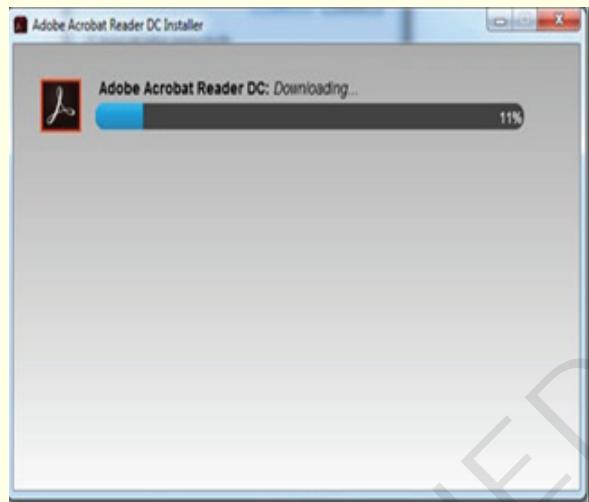
7 Click Run button as shown in Fig 18.

Fig 18



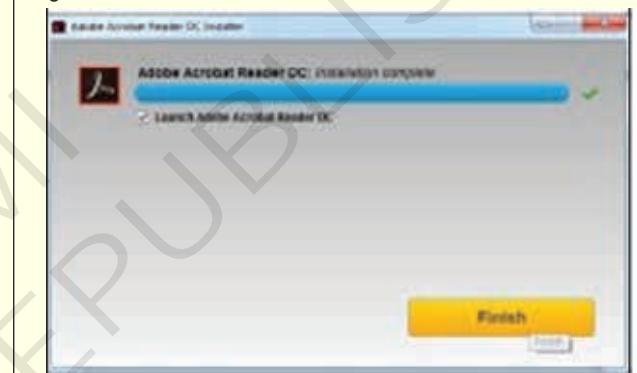
The down loading process window is shown in Fig 19.

Fig 19



8 After complete the installation click Finish Button as shown in Fig 20.

Fig 20



9 The welcome window is shown in Fig 21.

Fig 21

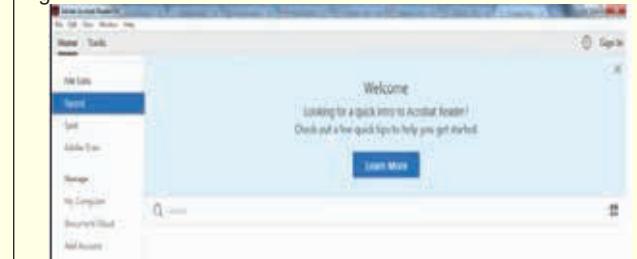


TASK 4: Installing Avira Free Antivirus software in windows operating system

- 1 Click "Google Chrome" icon in windows task Bar as shown in Fig 22.
- 2 Type the text "download avira antivirus for windows 10" in text box and click "Search" Button as shown in Fig 23.

Display the list of related links in the chrome web page.

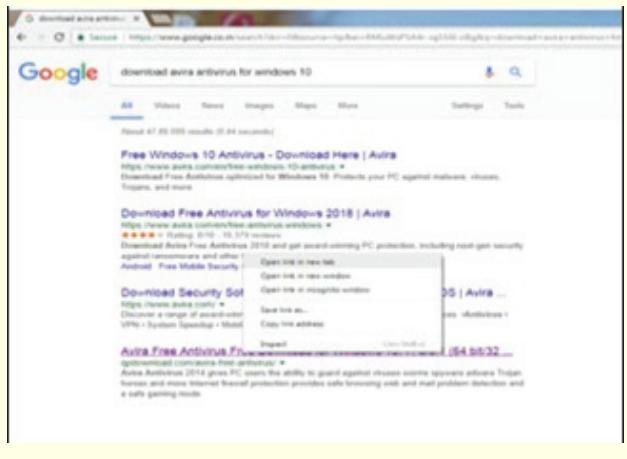
Fig 22



- 3 Right click on the related link and click “Open link in new tab” as shown in Fig 23.

The corresponding software exe file will download bottom of the web page

Fig 23



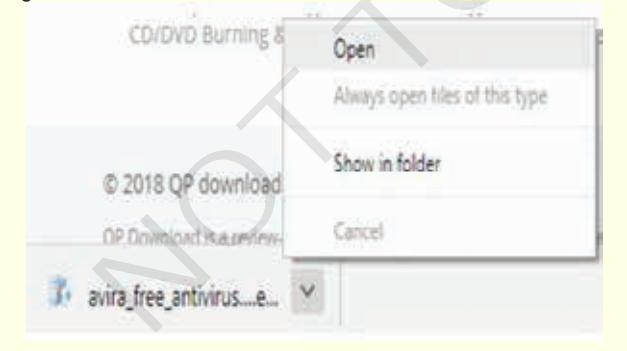
- 4 Click “START NOW” button in the web site as shown in Fig 24.

Fig 24



- 5 After download the file “click the ^ button” and click “open” menu as shown in Fig 25.

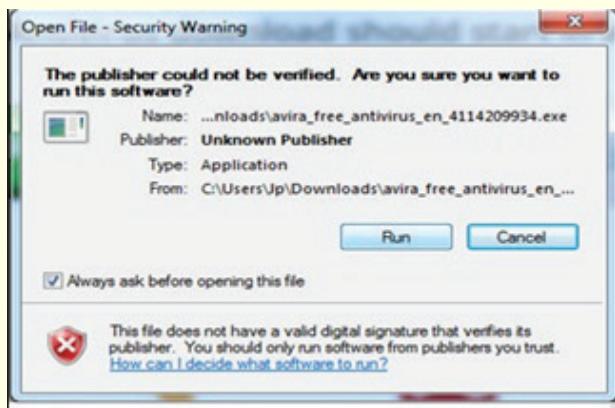
Fig 25



- 6 Click “Run” button in the below window as Shown in Fig 26.

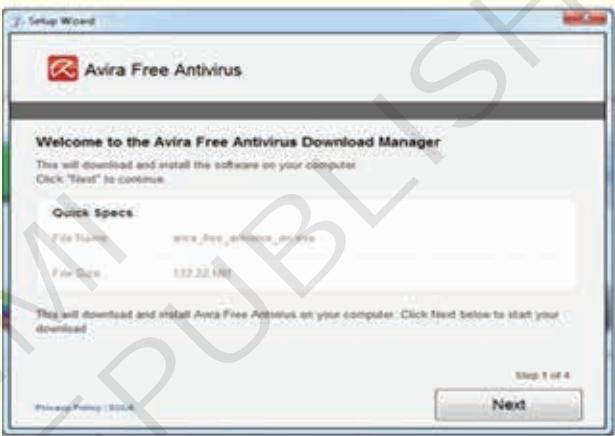
The bellowed screen shows “This will down load and install the software on your computer”

Fig 26



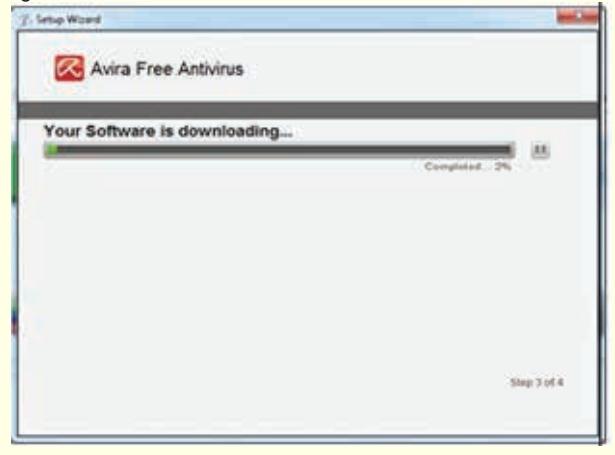
- 7 Click “Next” to continue the downloading process as on Fig 27.

Fig 27



The downloading progress bar will display the downloading status as shown in Fig 28.

Fig 28



- 8 Click “Finish” button after complete the 100% downloading progress as on Fig 29.
- 9 After complete the downloading process the window will appear as on Fig 30.
- 10 Click “install now” button in the bottom of the window.

The “preparing installation” process begins as on Fig 31.

Fig 29

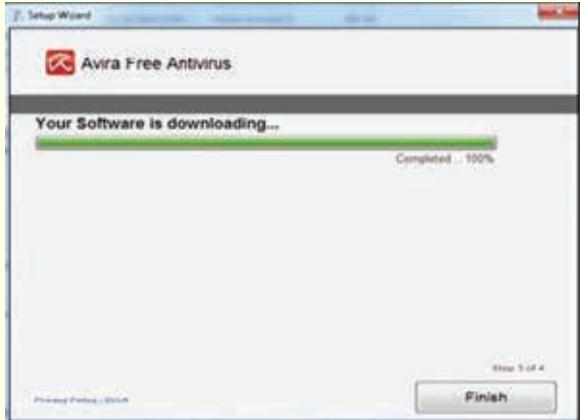


Fig 32

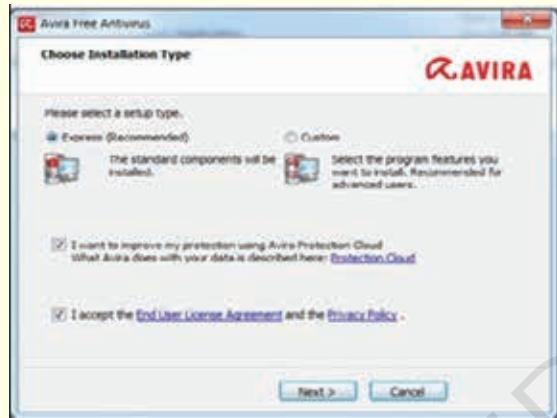


Fig 30



12 Click "Next" button

The Avira Antivirus application installation completed as shown in Fig 33 and 34.

Fig 33

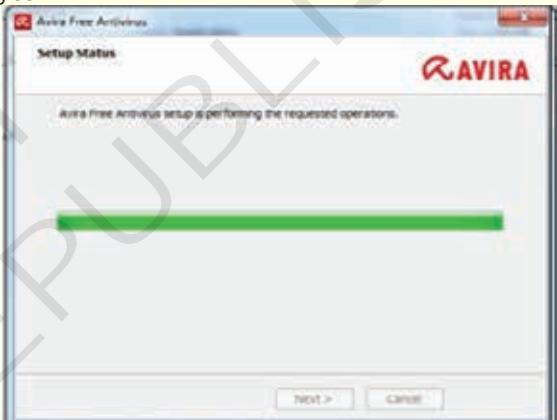
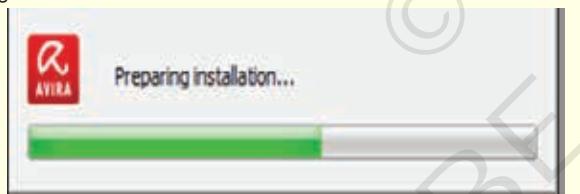


Fig 31



After complete the "preparing installation" process the " Choose Installation Type" window will appear

- 11 Select the "Express(Recommended)" setup type option and select the license agreement and privacy policy option in the bottom of the window as shown in Fig 32.

Fig 34



13 Get it checked with your instructor.

Configure bluetooth / Wi-Fi settings

Objectives: At the end of this exercise you shall be able to

- connecting Bluetooth devices to Windows 10
- create a WIFI connection for a PC.

Requirements

Tools/Equipment/Machines

- | | | | |
|--|---------|--|---------|
| • A working PC with Inbuilt Bluetooth and WiFi enabled | - 1 No. | • WiFi Dongle (if its not inbuilt with PC) | - 1 No. |
| • Windows 10 OS | - 1 No. | • Bluetooth Enabled Devices (Keyboard / Mouse / Speaker / Headset) | - 1 No. |
| • Bluetooth Dongle (if its not inbuilt with PC) | - 1 No. | | |

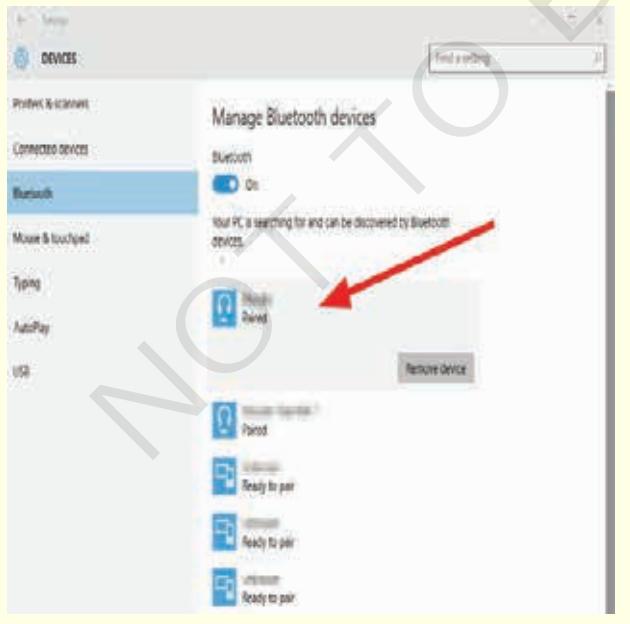
PROCEDURE

TASK 1: Connecting Bluetooth devices to Windows 10

Connecting Bluetooth devices to Windows 10

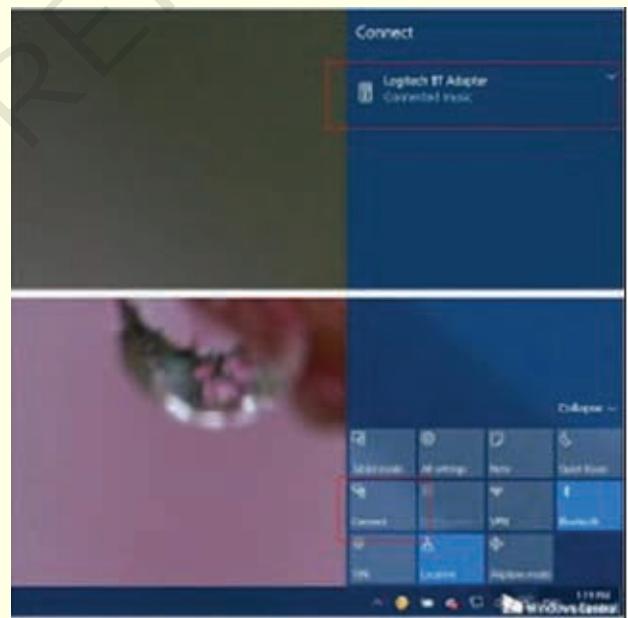
- 1 Use Windows key + I keyboard shortcut, open the Settings app.
- 2 Navigate to Devices and go to Bluetooth.
- 3 Make sure the Bluetooth switch is in the On position. (You'll know it is working because you'll notice the message reads "Your PC is searching for and can be discovered by Bluetooth devices.")
- 4 Select the device you want to connect and click Pair. Once you click Pair, you're all done. Windows 10 will take care of the rest. You'll notice the "Connected" label under the device name. (Fig 1)

Fig 1



- 5 From the Quick actions area, click the Connect button.
- 6 Then all the enabled devices will appear in the list, click on the device, and it should pair automatically. (Fig 2)

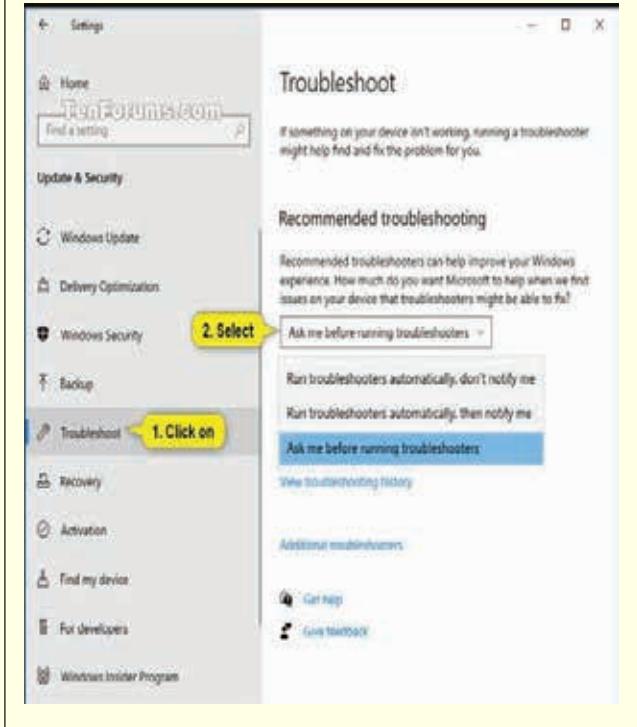
Fig 2



Quick troubleshooting tips

If you don't see the Bluetooth section on Devices, chances are that there are issues with Bluetooth driver. Go to Device Manager to verify the driver is present and installed correctly. Still not working you may want to download and reinstall the latest Bluetooth driver from your computer's manufacturer support website. (Fig 3)

Fig 3



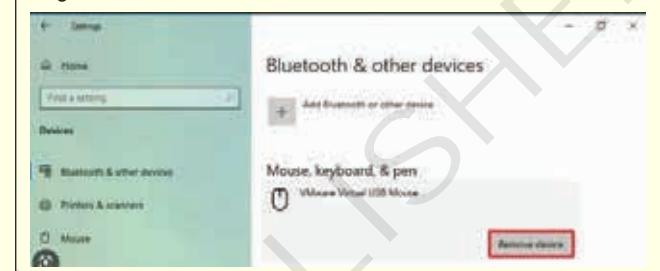
If the problem is with the speakers, headphones, mouse, or keyboard, make sure to turn the peripheral off, wait a few seconds, and turn it back on to try again.

Removing a Bluetooth peripheral from Windows 10

Disconnecting a wireless peripheral is as easy as connecting. Just follow the steps below:

- 1 Use the Windows + I keyboard shortcut to open the Settings app.
- 2 Navigate through Devices and go to Bluetooth.
- 3 Click on the peripheral you want to disconnect, and click the Remove button and then click Yes to confirm. (Fig 4)

Fig 4

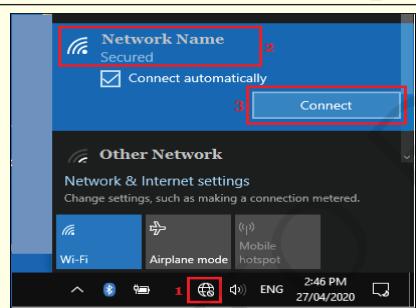


TASK 2: Create a WIFI connection for a PC

How to connect to a Wi-Fi network

- 1 Click the wireless icon in the notification area.
- 2 Select the network you want to connect.
- 3 Check the Connect automatically option.
- 4 Click the Connect button. (Fig 5)

Fig 5



- 5 Enter the network security key.

- 6 Click the Next button. (Fig 6)

Fig 6



How to disconnect from a Wi-Fi network

Removing your device from a wireless network is also a straightforward process that can be done in a few different ways.

Disconnecting using the flyout menu

The easiest way to disconnect is using the network flyout menu.

- 1 Click the wireless icon in the notification area.
- 2 Select the network you're currently connected.
- 3 Click the Disconnect button on the network connection. (Fig 7)

Fig 7



Disconnecting using the Settings app

Alternatively, you can enable or disable Wi-Fi using the Settings app.

- 1 Open **Settings**.
- 2 Click on **Network & Security**.
- 3 Click on **Wi-Fi**.
- 4 Turn off the toggle switch for the adapter you want to disconnect.
- 5 Use the drop-down menu to select an option to turn on the wireless adapter on schedule. (Fig 8)

Fig 8



How to view a Wi-Fi connection properties

- 1 Open Settings.
- 2 Click on Network & Security.
- 3 Click on Wi-Fi.
- 4 Under the wireless network, click the Hardware properties link. (Fig 9 & 10)

Fig 9

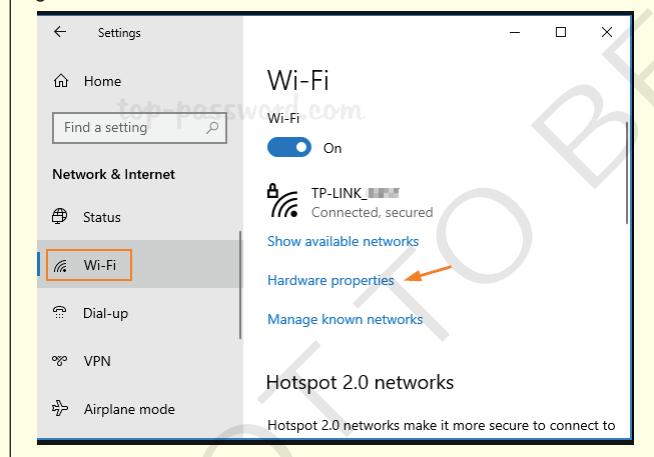


Fig 10



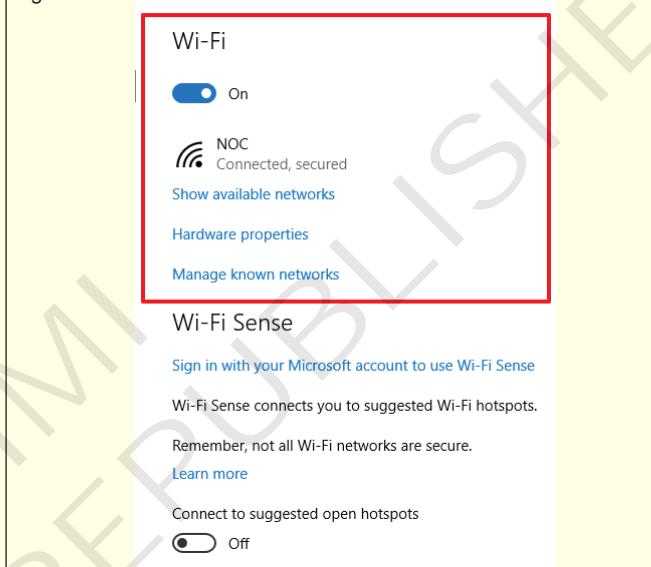
How to Manage Wi-Fi connections

Using the Settings app is also possible to add or remove a Wi-Fi network manually in those cases when you may need to connect to a network that doesn't broadcast its SSID (Service Set Identifier), or when you need to set up a wireless connection beforehand to save time.

Adding a Wi-Fi network

- 1 Open Settings.
- 2 Click on Network & Security.
- 3 Click on Wi-Fi.
- 4 Click the Manage known networks link. (Fig 11)

Fig 11



- 5 Click the Add a new network button. (Fig 12)

Fig 12



- 6 Enter the network name.
- 7 Using the drop-down menu, select the network security type.
- 8 Check the Connect automatically option.
- 9 Check the Connect even if the network is not broadcasting option.
- 10 Click Save. (Fig 13)

Once you've completed the steps, whenever your device is within range of the network, it'll connect automatically without any further steps.

Fig 13

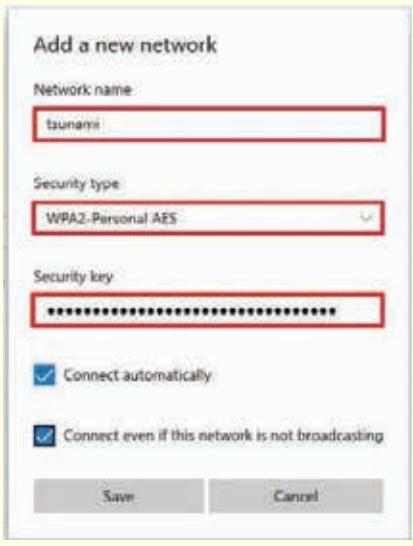


Fig 14



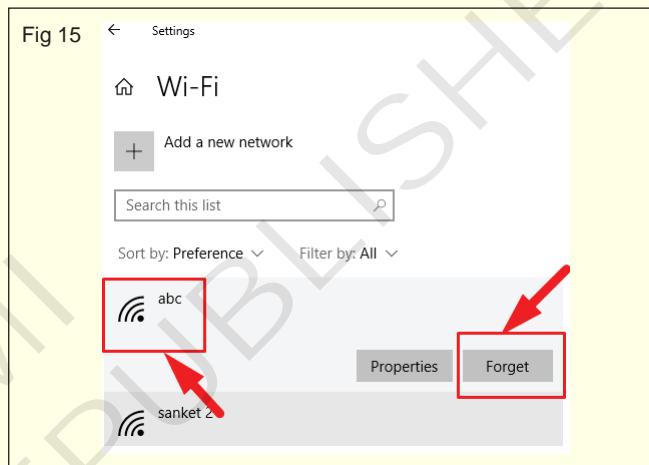
Removing a Wi-Fi network

If you must remove (forget) a Wi-Fi network, the Settings app makes it a very straightforward process.

- 1 Open Settings.
- 2 Click on Network & Security.
- 3 Click on Wi-Fi.
- 4 Click the Manage known networks link. (Fig 14)
- 5 Select the Wi-Fi connection you want to remove.
- 6 Click the Forget button (there is no confirmation dialog using this button, so make sure that you really want Windows 10 to forget this connection before clicking the button). (Fig 15)

After completing the steps, your device will no longer try to connect with the network you've removed.

Fig 15



COPA - Computer Basics & Software Installation

Install printer, scanner, Web camera & DVD drives

Objectives: At the end of this exercise you shall be able to

- add local printer in windows 10 operating system
- install a wireless printer, web camera and external DVD drive
- add a Scanner to Windows 10 PC.

Requirements

Tools/Equipment/Machines

- | | | | |
|-------------------------|---------|---|---------|
| • PC with windows 10 OS | - 1 No. | • Printer, scanner, web camera & DVD drive software | - 1 No. |
|-------------------------|---------|---|---------|

PROCEDURE

TASK 1: Add local printer in windows 10 operating system

The most common way to connect a printer to the PC is by USB cable, which makes it a local printer. And also install a wireless printer or add a printer connected to another computer on your network which makes it a Network Printer

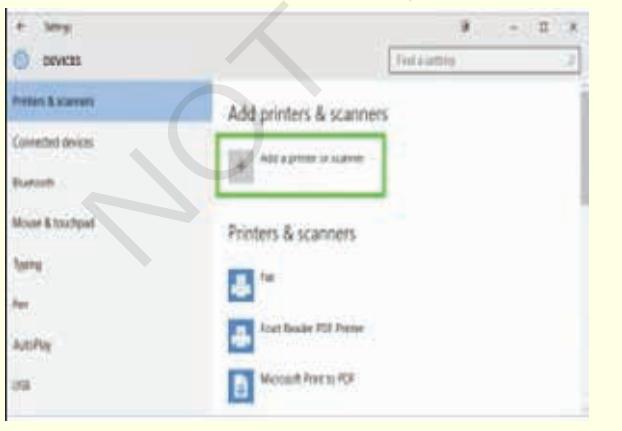
- 1 Connect the printer to your computer using the USB cable and turn it on.
- 2 Open the Settings app from the Start menu.
- 3 Click Devices as shown in Fig 1.

Fig 1



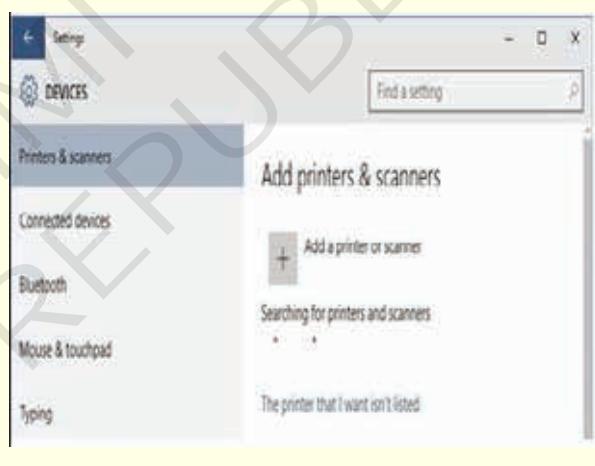
- 4 Click Add a printer or scanner as on Fig 2.

Fig 2



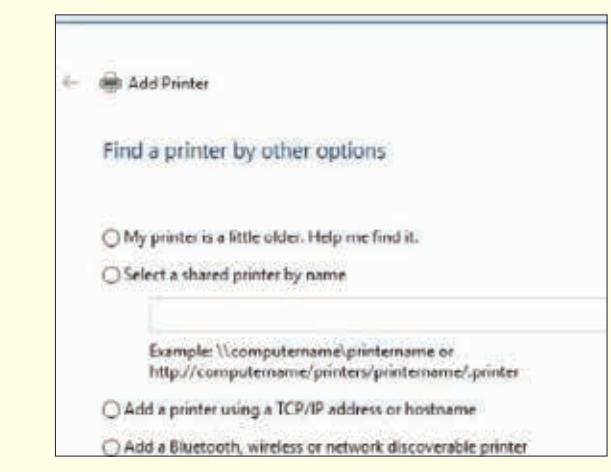
- 5 If Windows cannot detect the connected printer, click the printer that I want isn't listed link as shown in Fig 3

Fig 3



- 6 On the Find a printer with other options window, click to select the Add a local printer or network printer with manual settings radio button.
- 7 Click Next to continue as on Fig 4.

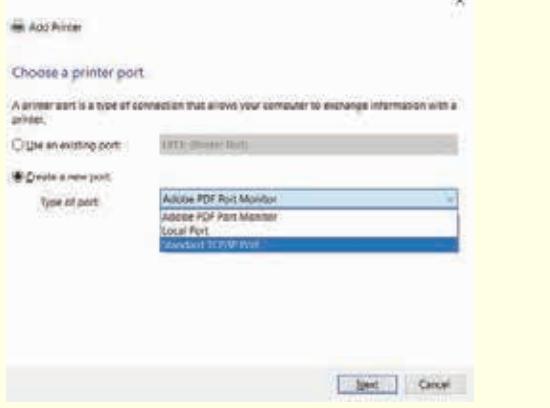
Fig 4



- 8 On the Choose a printer port window, leave the default options selected and click Next.

If you are an advanced user, you can also choose a different option from the Use an existing port drop-down list, or you can define your own port by selecting the Create a new port radio button and specifying your custom port in the enabled field as on Fig 5.

Fig 5



- 9 click Next.

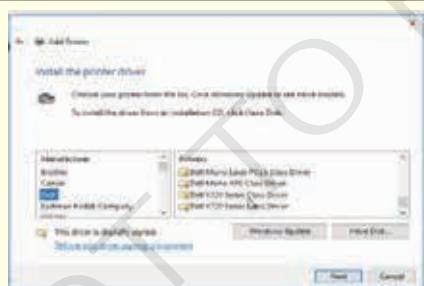
- 10 On the Install the printer driver window, from the displayed list of printer manufacturers in the left section, click to select the one to which the connected printer belongs.

- 11 From the right section, locate and click to select the specific model of the printer that is connected to the PC.

Note: At this point, you can also click the Have Disk button and browse and locate the driver for the connected printer if you have downloaded it manually from its official website or driver DVD linked by manufacturer.

- 12 Click Next to proceed to the next step as on Fig 6.

Fig 6



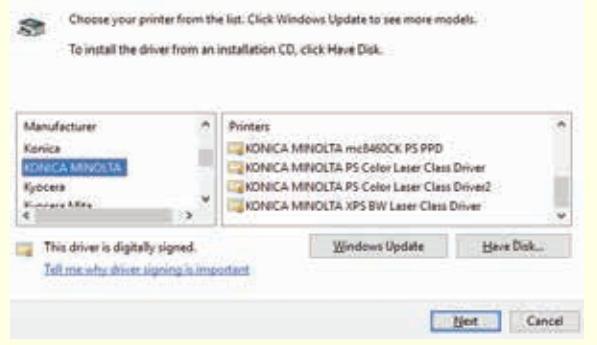
- 13 Type a printer name window, in the Printer name field, type an informative name for the printer as shown in Fig 7.

- 14 click Next.

TASK 2: Installing a wireless printer

- 1 Open Settings.
- 2 Click on Devices.
- 3 Click on Printers & scanners.

Fig 7



- 15 If you share the printer , select “Share this printer so that others on the network can find and use it” radio button.

Note: If you do not want to share the printer with the network users, you can select the Do not share this printer radio button.

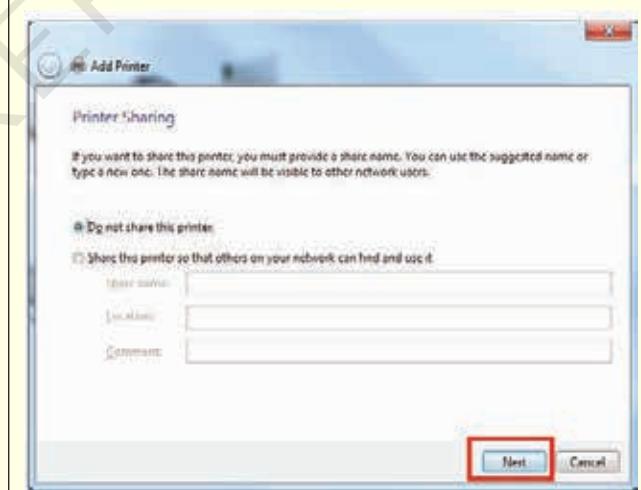
- 16 In the Share name field, type a short share name for the printer.

Note: The name you specify here will be displayed to the remote users when they search for this printer over the network.

- 17 Populate the Location and Comment fields with your preferred information.

- 18 Click Next to continue as on Fig 8.

Fig 8

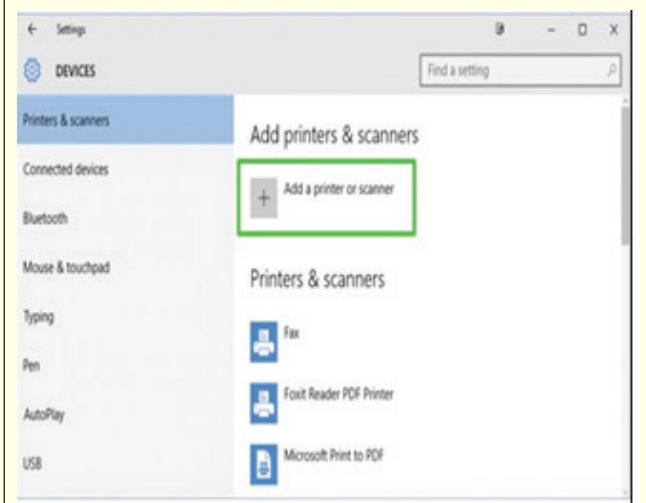


- 19 On the final page of the wizard, click the Print a test page button to check the connectivity and proper functioning of the printer.

- 20 Click Finish to complete the process.

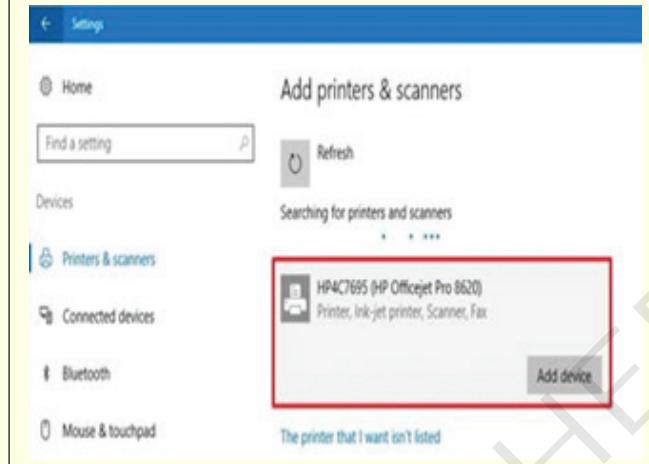
- 4 Click on the Add a printer or scanner button as on Fig 9.

Fig 9



- 5 Select the printer from the list and click Add device to install the wireless printer to Windows 10 as shown in Fig 10.

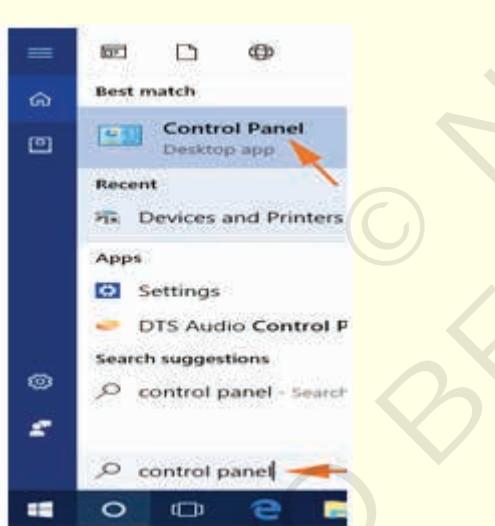
Fig 10



TASK 3: Adding a Scanner to Windows 10 PC

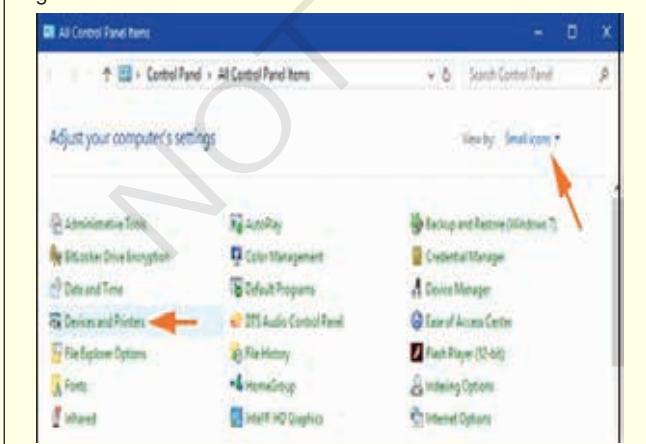
- 1 Go to the search box on the taskbar and type control panel. Cortana will also display the Control Panel and its icon as the Best Match, click on it as shown in Fig 11.

Fig 11



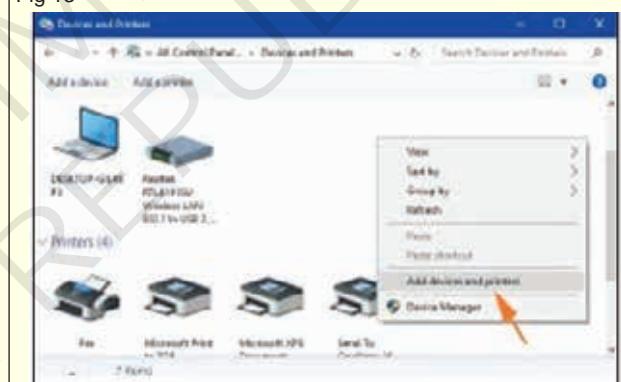
- 2 Locate and select Devices and Printers as on Fig 12.

Fig 12



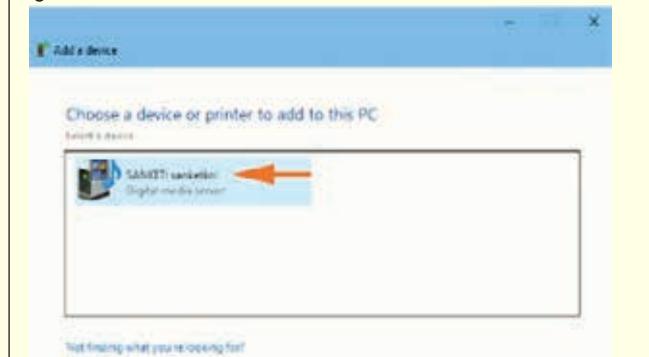
- 3 Inside Devices and Printers, find a blank space and perform a right-click there. Few options will appear, click Add devices and printers as on Fig 13.

Fig 13



- 4 A small box with a title Add a device will be visible on the screen and it will start finding the device.
- 5 After the scan gets over, the scanner name will be displayed on the box. So, select the scanner name and click Next as shown in Fig 14.

Fig 14



- 6 Finally, successfully added the scanner to Windows 10 PC.

TASK 4: Installing Web camera

- 1 Connect your Web camera to your computer.
 - 2 Wait for your computer to detect the Web camera. Because you have windows Vista or latest installed on your computer, your computer will automatically detect that a new hardware was connected to your USB port. A message will appear in the bottom right
- — — — —

corner of your screen that reads, “your devices are ready to use” or

- 3 Install the Software to operate the camera, your camera came with software to install on your computer. Simply insert the disk that came with your web camera and follow the instruction.

TASK 5: Installing External DVD writer

- 1 Connect your DVD writer to your computer.
 - 2 Wait for your computer to detect the DVD writer. Because you have windows Vista or latest installed on your computer, your computer will automatically detect that a new hardware was connected to your
- — — — —

USB port. A message will appear in the bottom right corner of your screen that reads, “your devices are ready to use”.

- 3 New external DVD writer are working plug and play options..
- — — — —

COPA - Computer Basics & Software Installation**Burn data, video and audio files on CD/DVD using application software**

Objectives: At the end of this exercise you shall be able to

- burn a data into CD or DVD.

Requirements**Tools/Equipment/Machines**

- | | | | |
|-------------------------|---------|-----------------|---------|
| • PC with windows 10 OS | - 1 No. | • Nero software | - 1 No. |
|-------------------------|---------|-----------------|---------|

PROCEDURE**TASK 1: Burn a Data into CD or DVD**

- 1 Put the CD in the CD/DVD writer
- 2 Go to Start > All programs > Nero, then NeroStart Smart
- 3 Scroll over the icons on the top right of the program window, to find the Data icon. (Fig 1) or audio video or others

Fig 1

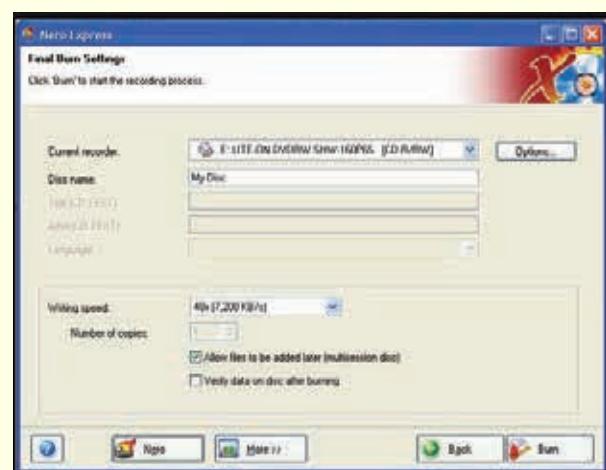


- 4 Choose Make Data CD. This will launch Nero Express as shown in Fig 2.
- 5 Click Add and browse the hard drive and select the files like included on the CD. When finished adding files click Finished.
- 6 Click Next and name the disk.
- 7 Check Verify data after burning if you want to make sure your burn happened correctly (this will take a little more time).
- 8 Click Burn and insert a blank CD as on Fig 3

Fig 2



Fig 3



COPA - DOS Command Line Interface

Basic DOS Commands

Objectives: At the end of this exercise you shall be able to

- enter to dos command prompt
- use basic dos commands
- list directory contents using DIR command
- view directory structure.

Requirements

Tools/Equipment/Machines

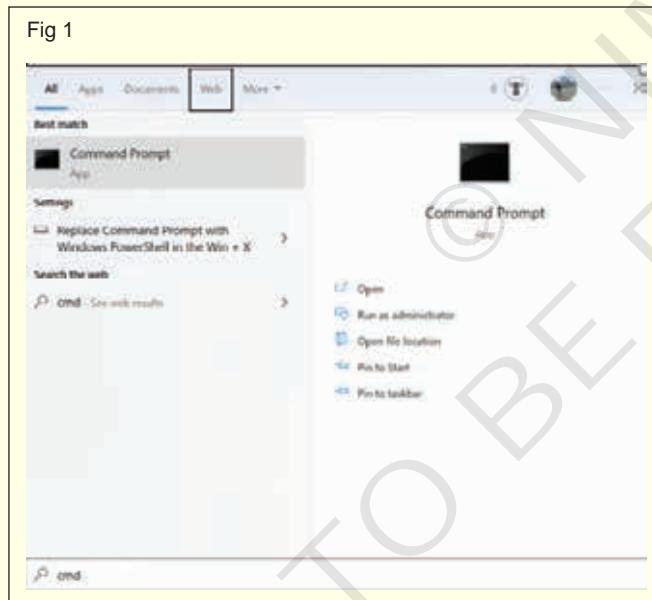
- PC with windows 10 OS - 1 No.

- DOS command prompt software - 1 No.

PROCEDURE

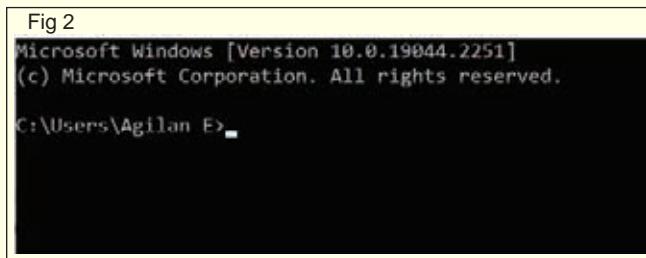
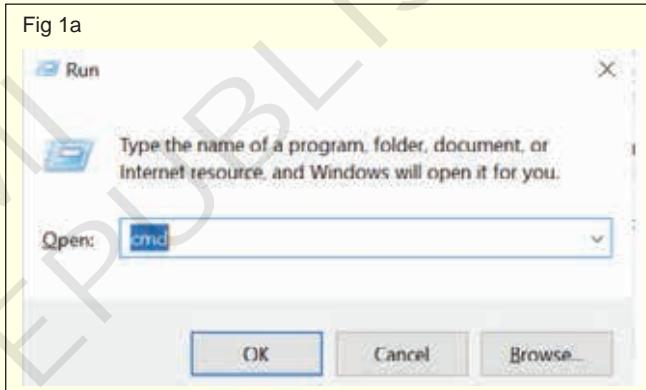
TASK 1: Enter in to DOS command prompt

- 1 In Windows 10, one of the fastest ways to launch Command Prompt is to use search. Inside the search field from your taskbar, enter command or cmd (Fig 1) Then, click or tap on the Command Prompt result.



Or Start RUN using WIN+R → Type CMD then Click Enter.

- 2 Command prompt window is displayed on the screen. (Fig 2)



NOTE: Command Prompt is not case sensitive, meaning that commands can be typed with capital letters, lowercase or any combination of them. The commands date or DATE will all work in the same way.

3 Record the output

j Exit DOS session

EXIT command is used to exit the DOS session.

1 Type the following command

D:\> EXIT

It exits the DOS session and return to Windows OS

TASK 3: List directory contents using DIR command.

DIR command displays a list of files and directories in a directory.

- 1 Change over to E drive by typing E: at DOS prompt.
- 2 Type the following command.

E:\> DIR

- 3 It displays a list of files and directories of E drive as shown below. (Fig 8)

Fig 8

```

E:\>dir
Volume in drive E has no label.
Volume Serial Number is 5E2A-6334

Directory of E:\

21-02-2017 12:02               28,912 1.pdf
21-02-2017 10:55              12,173 core basic.docx
19-01-2016 16:13                33,288 CONTRACT WORKS.doc
10-01-2016 16:02                97,958 DEI ORDER BANU_10.1.2016.xlsx
15-04-2018 11:18             234,932 Dog notes
21-09-2016 17:31             234,932 ELECTRICIAN
30-11-2017 12:29             234,932 Hindi
27-01-2017 16:45             234,932 HTMLNIMI
24-04-2018 14:36             234,932 KompoZer 0.7.18
21-03-2018 14:35             234,932 Mathew1
21-03-2018 14:35             234,932 Multiple CHOICE QUESTIONS
24-03-2017 18:00             234,932 Multiple CHOICE QUESTIONS
24-03-2017 18:05             234,932 MULTIJAM.P-Mar-17.docx
10-11-2016 12:35             234,932 OLD
3-04-2018 14:35             234,932 QUESTION BANK
30-03-2018 17:19             234,932 QUESTIONS 5.2.16
27-09-2016 16:46             234,932 QUESTIONS 5.2.16
2 File(s) 474,726 bytes
11 Dir(s) 247,254,568,768 bytes free
E:\>

```

- 4 Type the following command

E:\> DIR htmlnimi

- 5 Displays a list of files and directories of HTMLNIMI directory of E drive as shown below. Record the output. (Fig 9)

Fig 9

```

E:\>dir
Volume in drive E has no label.
Volume Serial Number is 5E2A-6334

Directory of E:\htmlnimi

14-01-2018 14:26             <DIR> .
14-01-2018 14:26             <DIR> .
12-03-2018 15:27             476 checklist.html
11-04-2018 12:16             <DIR> CSS-APRIL
12-03-2018 16:03             464 difflist.html
10-04-2018 12:26             1,325,132 ex-1.docx
13-03-2018 16:57             201,954 EX-10.docx
12-03-2018 14:14             1,325,132 EX-2.docx
12-03-2018 14:14             9,477 EX-3.docx
12-03-2018 14:14             9,477 EX-4.docx
12-03-2018 14:15             9,477 EX-5.docx
12-03-2018 14:15             746,779 EX-6.docx
12-03-2018 16:05             265,676 EX-7.docx
13-03-2018 10:55             231,722 EX-8.docx
12-03-2018 13:19             1,325,132 EX-9.docx
12-03-2018 14:54             1,854,384 EX2.docx
13-03-2018 11:19             124 FLASH.HTML
13-03-2018 11:21             52,295 FLOWER.SWF
11-04-2018 14:24             22,000 Formulas Ordered by Category.docx
10-04-2018 12:26             115 h1.html
10-04-2018 12:26             198 p0.html
10-04-2018 12:26             497 p1.html
10-04-2018 12:26             497 p2.html
12-03-2018 12:15             297 redlight.html
12-03-2018 12:15             323 redlightn.html
12-03-2018 10:12             223 reset.html
12-03-2018 10:12             1,325,132 Reset.html
12-03-2018 14:28             19,323 11 EX-10 HTML TAGS -.docx
12-03-2018 14:41             271,371 11 EX-2-10 HTML tags with example.docx
11-04-2018 15:42             2,291 update.html
4 Dir(s) 247,254,831,184 bytes free
E:\>

```

- 6 Type the following command

Note : /AD is a switch or option used with DIR command to display only the directories of specified drive or directory.

- 7 It displays only the directories of E drive as shown below. Record the output. (Fig 10)

Fig 10

```

E:\>dir /ad
Volume in drive E has no label.
Volume Serial Number is 5E2A-6334

Directory of E:\

15-04-2018 11:57             <DIR> DOS notes
21-09-2016 17:31             <DIR> ELECTRICIAN
27-01-2017 16:45             <DIR> Hindi
14-04-2018 14:36             <DIR> HTMLNIMI
14-04-2018 14:35             <DIR> KompoZer 0.7.18
01-06-2016 14:54             <DIR> Rathnavi
31-03-2016 14:49             <DIR> MULTIPLE CHOICE QUESTIONS
20-11-2016 12:35             <DIR> OLD
14-04-2018 14:35             <DIR> poornam
31-03-2016 14:49             <DIR> QUESTION BANK
24-03-2017 16:46             <DIR> QUESTIONS 5.2.16
30-07-2014 05:24             <DIR> System Volume Information
B File(s) 0 bytes
12 Dir(s) 247,254,568,768 bytes free
E:\>

```

- 8 Type the following command.

E:\> DIR H*.*

- 9 It lists all files and folders begin with letter H and have any extension as shown below. (Fig 11)

Fig 11

```

E:\>dir h*.*
Volume in drive E has no label.
Volume Serial Number is 5E2A-6334

Directory of E:\

15-04-2018 13:39             <DIR> HTMLNIMI
Hindi
B File(s) 0 bytes
2 Dir(s) 246,934,499,840 bytes free
E:\>

```

- 10 Type the following command.

E:\> DIR ??????

- 11 It lists all files and folders which are 5 characters long without any extension as shown below.

Note:Wildcards are typically either an asterisk (*), which represents one or more characters or question mark(?), which represents a single character.

COPA - DOS Command Line Interface

Managing files and folders using dos commands

Objectives: At the end of this exercise you shall be able to

- manage files using DOS commands
- manage directories using DOS commands.

Requirements

Tools/Equipment/Machines

- | | | | |
|-------------------------|---------|-------------------------------|---------|
| • PC with windows 10 OS | - 1 No. | • DOS command prompt software | - 1 No. |
|-------------------------|---------|-------------------------------|---------|

PROCEDURE

TASK 1: Manage files using DOS commands

Practice the following DOS commands in Command Prompt, record the output and get it checked by the instructor:

Note :File name should not be greater than 11 characters out of which 8 characters are for the name and 3 characters are for the extension.

1 COPYCON lesson1.txt

- It creates the text file lesson1.txt as shown in Fig 1

Fig 1

```
E:\>COPYCON lesson1.txt
Command file - COM
Batch file - BAT
Executable file - EXE
Text file - TXT
System file - SYS
^Z
    1 file(s) copied.

E:\>_
```

- ^Z (Ctrl Z) or F6 is used to save the text file.

2 TYPE lesson1.txt

- It displays the content of the text file lesson1.txt as shown in Fig 2.

Fig 2

```
E:\>TYPE lesson1.txt
Command file - COM
Batch file - BAT
Executable file - EXE
Text file - TXT
System file - SYS
^Z

E:\>_
```

3 COPY lesson1.txt ex1.txt

- It copies lesson1.txt to ex1.txt as shown in Fig 3.
- Use DIR command to check that the file ex1.txt is in the list.

Fig 3

```
E:\>COPY lesson1.txt ex1.txt
1 file(s) copied.

E:\>_
```

4 REN ex1.txt notes.txt

- It renames the file ex1.txt as notes.txt as shown in Fig.4
- Use DIR command to check that the file ex1.txt is renamed as notes.txt (Fig 4)

Fig 4

```
E:\>REN ex1.txt notes.txt
E:\>dir notes.txt
Volume in drive E has no label.
Volume Serial Number is 5E2A-6334

Directory of E:\

15-04-2018 15:24           99 notes.txt
                           99 bytes
                           0 Dir(s)  246,793,950,976 bytes free

E:\>dir ex1.txt
Volume in drive E has no label.
Volume Serial Number is 5E2A-6334

Directory of E:\

File Not Found

E:\>_
```

5 DEL notes.txt

- It deletes the file notes.txt as shown in Fig 5
- Use DIR command to check that the file notes.txt is available in the list.

Fig 5

```
E:\>DEL notes.txt
E:\>dir notes.txt
Volume in drive E has no label.
Volume Serial Number is 5E2A-6334
Directory of E:\

File Not Found

E:\>
```

6 SORT lesson1.txt

- It sorts the content of the file lesson1.txt as shown in Fig 6.

Fig 6

```
E:\>Command Prompt
E:\>SORT lesson1.txt
Batch file - BAT
Command file - COM
Executable file - EXE
System file - SYS
Text file - TXT

E:\>_
```

7 FIND “SYS” lesson1.txt

- It searches for a text string “SYS” in the text file lesson1.txt and displays a line having the text string “SYS” as shown in Fig 7

FIND/n “SYS” lesson1.txt

Fig 7

```
E:\>Command Prompt
E:\>FIND "SYS" lesson1.txt
----- LESSON1.TXT
System file - SYS

E:\>FIND/n "SYS" lesson1.txt
----- LESSON1.TXT
[5]System file - SYS

E:\>_
```

8 Copy and Move files from one directory to another directory.

COPY command used to Copies one or more files from location to another location. Here we have copied Book.txt file from C:\COPA to D:\CHNM. so Book.txt file is available while listing the files in CHNM folder on Drive. (Fig 8)

COPY C:\COPA\BOOK.TXT D:\CHNM

Fig 8

```
D:\>Select C:\WINDOWS\system32\cmd.exe
D:\>COPY C:\COPA\BOOK.TXT D:\CHNM
1 file(s) copied.

D:\>CD CHNM

D:\CHNM>DIR
Volume in drive D is DATA
Volume Serial Number is 6E1F-42C4

Directory of D:\CHNM

11/28/2022 11:34 PM <DIR> .
11/28/2022 11:34 PM <DIR> ..
11/28/2022 11:32 PM 186 BOOK.TXT
11/28/2022 11:31 PM 186 LOG.TXT
2 File(s) 372 bytes
2 Dir(s) 567,174,303,744 bytes free

D:\CHNM>
```

MOVE command used to Moves one or more files from one directory to another directory.

MOVE D:\CHNM\LOG.TXT C:\COPA

Here we have moved LOG.txt file from D:\CHNM to C:\COPA. so LOG.txt file is not available while listing the files in CHNM folder on Drive. (Fig 9)

Fig 9

```
D:\CHNM>MOVE D:\CHNM\LOG.TXT C:\COPA
1 file(s) moved.

D:\CHNM>DIR
Volume in drive D is DATA
Volume Serial Number is 6E1F-42C4

Directory of D:\CHNM

11/28/2022 11:37 PM <DIR> .
11/28/2022 11:37 PM <DIR> ..
11/28/2022 11:32 PM 186 BOOK.TXT
1 File(s) 186 bytes
2 Dir(s) 567,174,303,744 bytes free

D:\CHNM>
```

TASK 2: Manage directories (folders) using DOS commands

Practice the following DOS commands in Command Prompt, record the output and get it checked by the instructor:

1 MD training

- It creates the new directory “training” as shown in Fig 10
- Use DIR command to check the directory “training” is in the list. (Fig 10)

Fig 10

```
DOS Command Prompt  
E:\>MD training  
  
E:\>dir training  
Volume in drive E has no label.  
Volume Serial Number is 5E2A-6334  
  
Directory of E:\training  
15-04-2018 16:27 <DIR> .  
15-04-2018 16:27 <DIR> ..  
 0 File(s) 0 bytes  
 2 Dir(s) 246,733,385,228 bytes free  
  
E:\>
```

2 CD training

- It changes the current directory to training and it can be seen in the DOS prompt as shown in Fig 11

Fig 11

```
DOS Command Prompt  
E:\>cd training  
E:\training>
```

• MD Theory

It creates a new subdirectory Theory in the main directory training

• MD Practical

It creates a new subdirectory Practical in the main directory training

- Use DIR command to check that the new subdirectories Theory and Practical are listed in the main directory training as shown in Fig 12

• CD Practical

- It changes the current working directory to Practical as shown in Fig 13

Fig 12

```
E:\>cd training  
E:\training>MD Theory  
E:\training>MD Practical  
E:\training>DIR  
Volume in drive E has no label.  
Volume Serial Number is 5E2A-6334  
  
Directory of E:\training  
15-04-2018 16:48 <DIR> .  
15-04-2018 16:48 <DIR> ..  
15-04-2018 16:48 <DIR> Practical  
15-04-2018 16:47 <DIR> Theory  
 0 File(s) 0 bytes  
 2 Dir(s) 246,733,164,544 bytes free  
  
E:\training>
```

Fig 13

```
DOS Command Prompt  
E:\>cd Practical  
E:\training\Practical>
```

• CD.

- It exits current working subdirectory Practical and goes to the main directory training as shown in Fig 14.

Fig 14

```
DOS Command Prompt  
E:\training>cd Practical  
E:\training\Practical>cd..  
E:\training>
```

• CD Theory

It changes the current working directory to Theory as shown in Fig 15

Fig 15

```
DOS Command Prompt  
E:\>CD Theory  
E:\training\Theory>cd\  
E:\>
```

- **CD**

It exits all directories Theory and training and goes to the root directory E:\ as shown in Fig 15

4 RD training

- RD command removes the empty directory only. So first thing is to remove all files and directories inside the directory training.

• CD training

It changes the current working directory into training (Fig 16)

• RD Theory

It removes the empty subdirectory Theory (Fig 16)

• RD Practical

It removes the empty subdirectory Practical(Fig 16)

• CD.

It exits the current working directory training and goes to E:\> (Fig 16)

- Use DIR command to check the availability of the directory training (Fig 16)

Fig 16

```
E:\>RD training
The directory is not empty.

E:\>CD training
E:\training>RD Theory
E:\training>RD Practical
E:\training>CD..
E:\>RD training
E:\>dir training
Volume in drive E has no label.
Volume Serial Number is 5E2A-6334

Directory of E:\

File Not Found
E:\>_
```

TASK 3: Create the given Directory Structure (Fig 17)

```
E:\>MAINDIR1
    <Subdir1>
    <Subdir2>
        File1
    |<Subdir3>
```

- Use TREE command to view the directory structure of the directory MAINDIR1(Fig 17)

Fig 17

```
E:\>TREE/F Maindir
Folder PATH listing
Volume serial number is 00000002 5E2A:6334
E:\MAINDIR1
└── Subdir1
    └── Subdir2
        └── File1
    └── Subdir3
E:\>_
```

Command sequence to create the given directory structure and it is shown in Fig 18.

Fig 18

```
E:\>MD Maindir
E:\>CD Maindir
E:\Maindir>MD Subdir1
E:\Maindir>MD Subdir2
E:\Maindir>CD Subdir2
E:\Maindir\Subdir2>COPY CON File1
Internal Commands
External Commands
^Z
    1 file(s) copied.
E:\Maindir\Subdir2>MD Subdir3
E:\Maindir\Subdir2>cd\

E:\>_
```

MD MAINDIR1	- Creates MAINDIR1
CD MAINDIR1	- Enters into directory MAINDIR1
MD Subdir1	- Creates Subdir1
MD Subdir2	- Creates Subdir2
CD Subdir2	- Enters into Subdir2
COPY CON File1	- Creates the file File1
^Z	- Saves the file File1
MD Subdir3	- Creates Subdir3
CD\	- Exits all subdirectory and goes to root directory E:

Installation of ubuntu linux operating system

Objectives: At the end of this exercise you shall be able to

- install ubuntu Linux operating system.

Requirements

Tools/Equipment/Machines

- A Working PC - 1 No.
- Ubuntu 22.04.1 / Latest Linux OS - 1 No.

PROCEDURE

TASK 1: Installing ubuntu Linux operating system

1 Download Ubuntu 22.04.1 ubuntu-22.04.1-desktop-amd64.iso from <https://ubuntu.com/> burn into DVD and Insert the DVD on the DVD ROM drive, change the boot sequence accordingly, so that DVD ROM can boot first.

OR

Load Ubuntu ISO into USB flash, change the boot sequence according to the USB mass storage to boot first.

2 Select the Language and press Enter as on Fig 1.

Fig 1



3 Select install ubuntu as on Fig 2.

This is starting screen as on Fig 3, it will be disappeared in a minute.

Fig 2



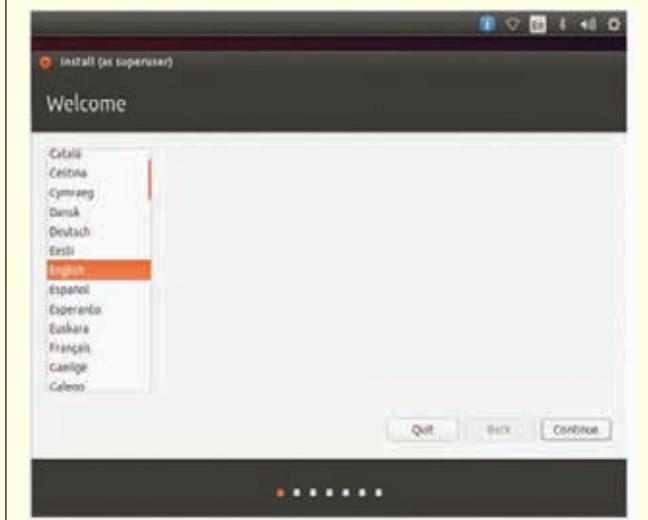
Fig 3



After few seconds the following screen will appear as on Fig 4.

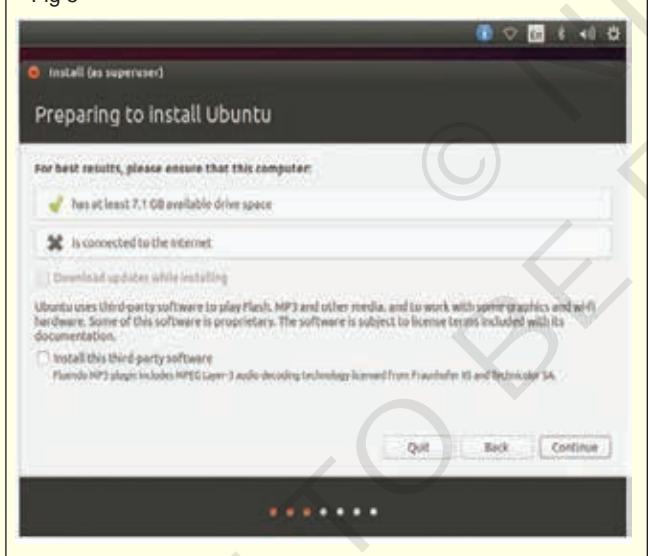
- 4 Select language and click continue as on Fig 4.

Fig 4



- 5 Click forward on preparing to install Ubuntu screen.
- 6 Erase disk and install Ubuntu (i.e. it will format the entire drive and install the OS). If you don't have any idea about the partitioning scheme simply click continue as on Fig 5.

Fig 5



- 7 Once clicked on continue, you would be asked to confirm the auto partitioning. Click on continue to proceed as on Fig 6.

Once clicked, you would get the following page where installer lists available hard disk. In this case i have one harddisk size of 20GB, to create a partition; click on New Partition Table to create empty partition since this is a new harddisk. Pop up will ask you to confirm, click on continue as on Fig 7.

Fig 6

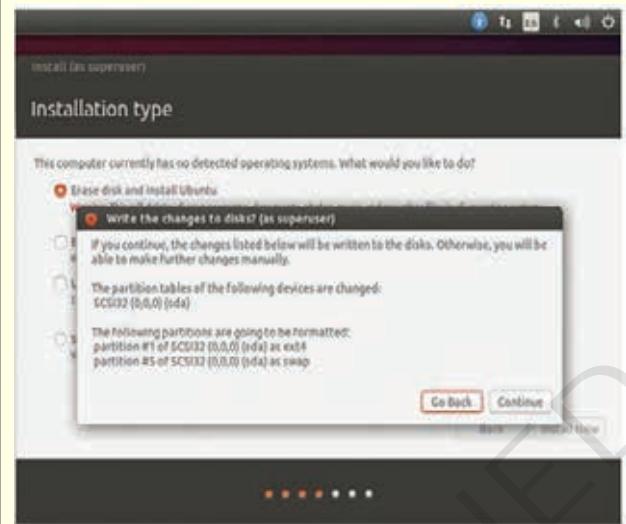
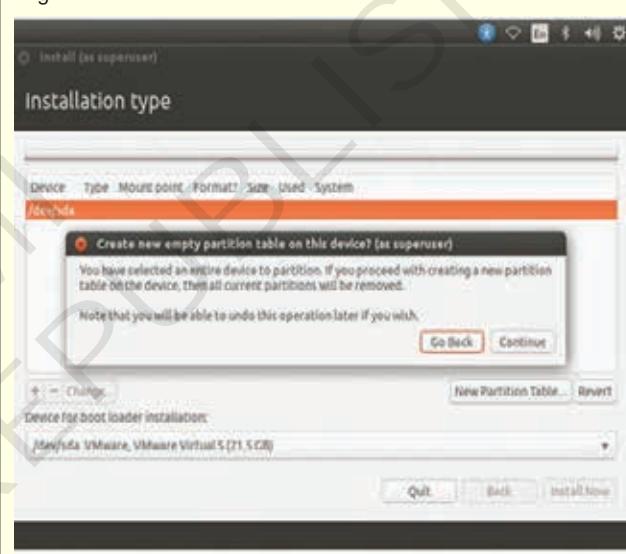


Fig 7

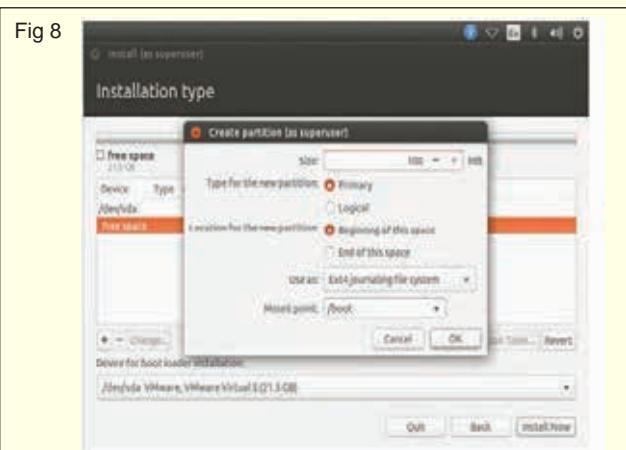


Partition scheme will be like below:

/boot - 100MB
swap - 2048MB (2 x RAM size)
/ - Remaining (19GB)

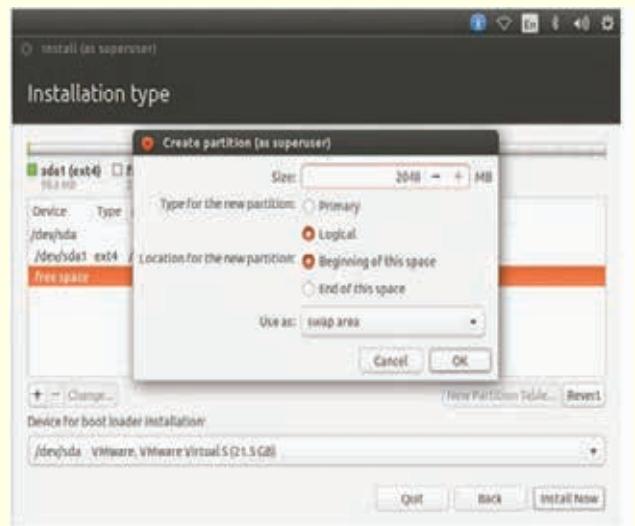
- 8 Select free space and click on + sign at the bottom to create partitions. Following shows for /boot partition as on Fig 8.

Fig 8



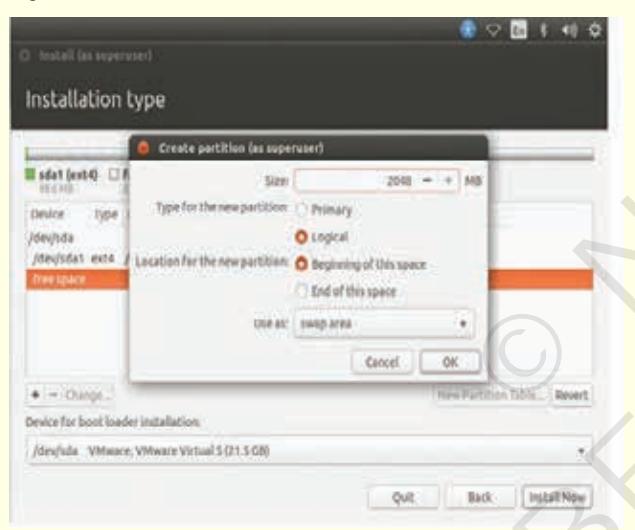
9 Following for swap partition, make sure you selected use as swap area and click ok as on Fig 9.

Fig 9



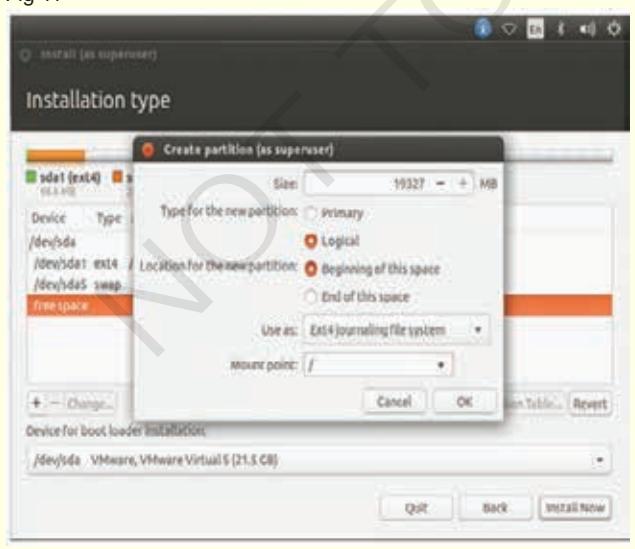
10 Follow for / (root) partition as on Fig 10.

Fig 10



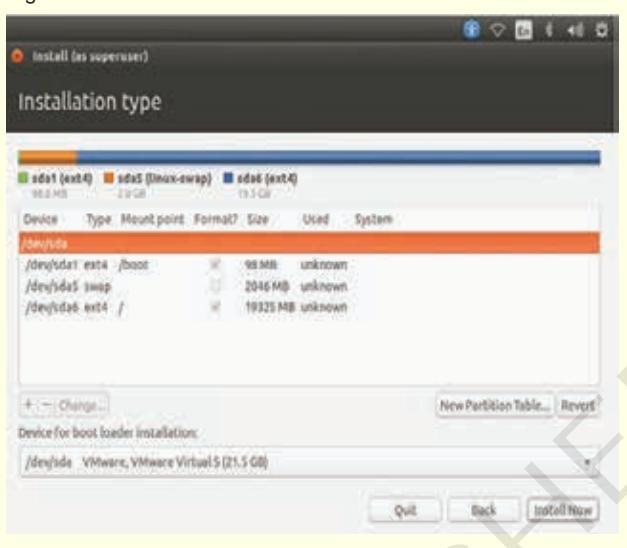
11 Review the partitions and click on install now as on Fig 11.

Fig 11



12 Confirm the partition scheme as on Fig 12.

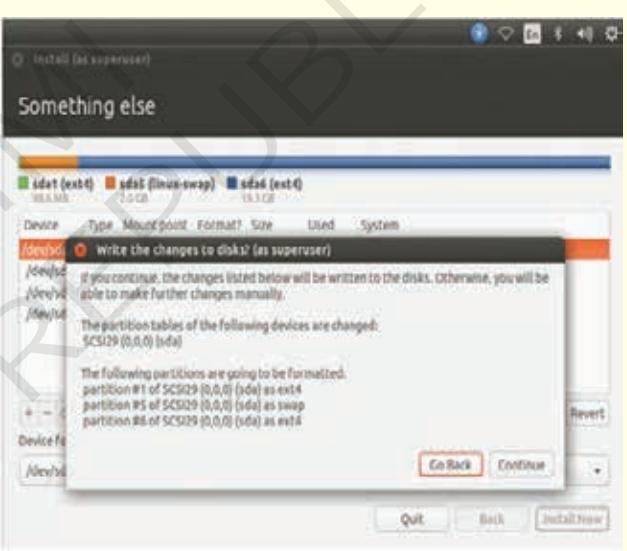
Fig 12



13 Select the location.

14 Select the keyboard layout as on Fig 13.

Fig 13



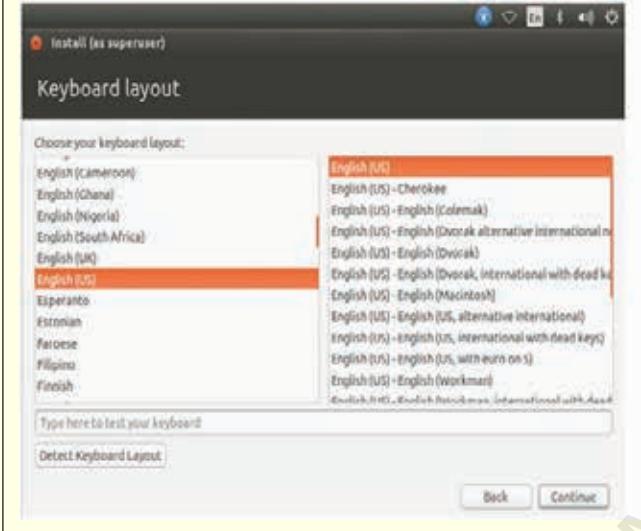
In case you are not sure, use the 'Detect Keyboard Layout' option and you can also test your selection by typing in the test text box.

In the final screen you will be prompted to enter information about the first user that is going to be created on the system. Enter your information in this screen as on Fig 14.

Here is one thing you should remember - if select 'Log in automatically', it will never ask you your password for authentication while try to log in to the Ubuntu System. Its best if you give a very secure password for the installation. Ubuntu will inform whether the password is secure or not.

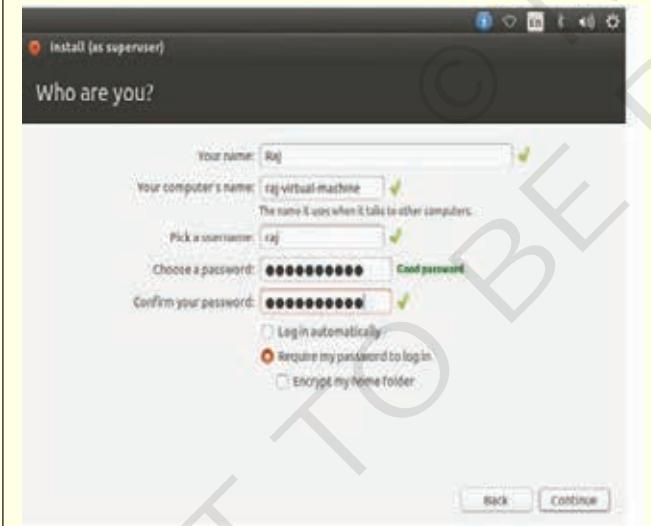
If you select 'Encrypt my home folder' it will make all the files and folders in your home folder more secure from unauthorized viewing if you have multiple users using your computer. When you log in to your computer your files are seamlessly decrypted for just your session. If you are not sure, leave this box unchecked.

Fig 14



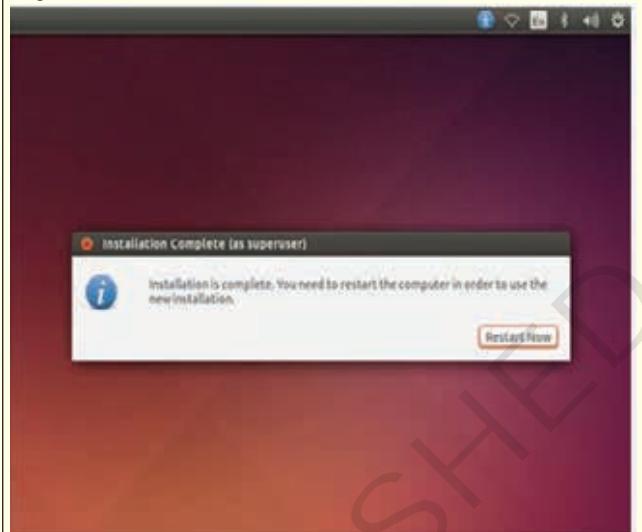
15 Once the installation is over, click on the restart now as on Fig 15.

Fig 15



16 Once the Machine restarted, login window login window will as on Fig 16. Type the password on the below of the user name and Press Enter.

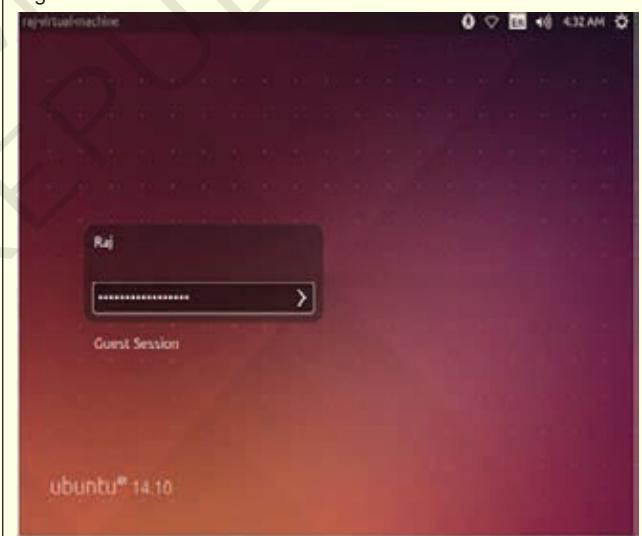
Fig 16



The Desktop of the Ubuntu 14.10 will be like below as on Fig 17.

17 Get it checked with your instructor.

Fig 17



COPA - Install Ubuntu Linux operating system and execute basic Linux commands

Install necessary application software in Linux

Objectives: At the end of this exercise you shall be able to

- install Adobe reader in linux OS
- install VLC media player in linux OS
- install libreoffice in linux OS.

Requirements

Tools/Equipment/Machines

- | | | | |
|------------------------------------|---------|------------------------------------|--------|
| • A Working PC | - 1 No. | • VLS Media Player Linux Supported | - 1 No |
| • Ubuntu 22.04.1 / Latest Linux OS | - 1 No. | • Libreoffice Linux Supported | - 1 No |
| • Adobe Reader Linux Supported | - 1 No. | | |

PROCEDURE

TASK 1: Install Adobe reader in linux OS

- 1 Open up terminal by pressing Ctrl+Alt+T on keyboard.
 - 2 Execute the command sudo add-apt-repository "deb http://archive.canonical.com/ precise partner"
 - 3 Type the user password when it asks.
 - Note: That there's no visual feed back when you typing a password.**
 - 4 Update package lists by running the command sudo apt-get update
 - 5 Install acroread package by running the command sudo apt-get install acroread
 - 6 Remove the Canonical Partners repository by running the command sudo add-apt-repository -r "deb http:// archive.canonical.com/ precise partner"
 - 7 Execute the command sudo apt-get update
 - 8 Execute the command sudo gedit /etc/gnome/defaults.list to Set Adobe Reader as default PDF reader
 - 9 Find out and change the line application/ pdf=evince.desktop into application/ pdf=acroread.desktop
- And add below line into the end
- ```
application/fdf=acroread.desktop
application/xdp=acroread.desktop
application/xfdf=acroread.desktop
application/pdx=acroread.desktop
```
- 10 Save the file and restart nautilus by the command nautilus -q in terminal to apply changes.

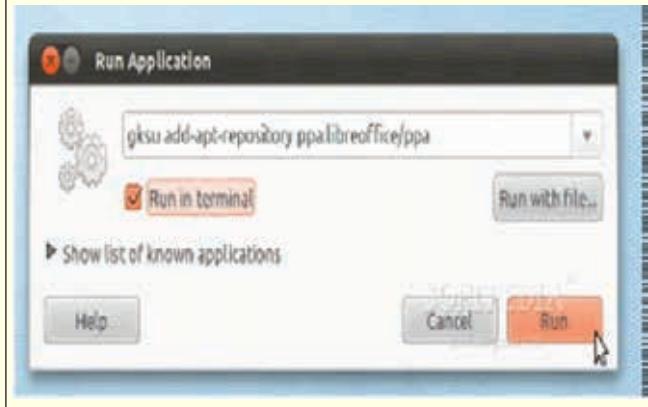
#### TASK 2: Install VLC media player in linux OS

- 1 Open up terminal by pressing Ctrl+Alt+T on keyboard.
- 2 Run the command sudo apt-get update to refresh the software repository catalogue
- 3 Run the command sudo apt-get install vlc to install VLC Media Player
- 4 When prompted with the 'Do you want to continue' press 'Y' on keyboard.
- 5 Install acroread package by running the command sudo apt-get install acroread
- 6 Remove the Canonical Partners repository by running the command sudo add-apt-repository -r "deb http:// archive.canonical.com/ precise partner"
- 7 Execute the command sudo apt-get update.

### TASK 3 : Install libreoffice in linux OS

- 1 Open up Run Application dialog by pressing Alt+F2 on keyboard.
- 2 Execute gksu add-apt-repository ppa:libreoffice/ppa in Run Application dialog (Fig 1)

Fig 1



- 3 Enter the password when asked and hit the OK button
- 4 Hit the ALT+F2 key combination again and run the command gksu apt-get update in the "Run Application" dialog. (Fig 2)

Fig 2



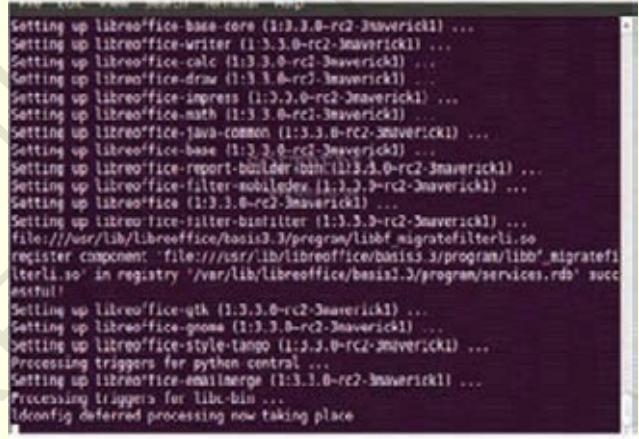
- 5 Enter the password when asked and hit the OK button
- 6 Hit the ALT+F2 key combination again and run the command sudo apt-get install libreoffice libreoffice-gnome language-support-en in the "Run Application" dialog. (Fig 3)
- 7 Enter the password when terminal window will appear and asked.

Fig 3



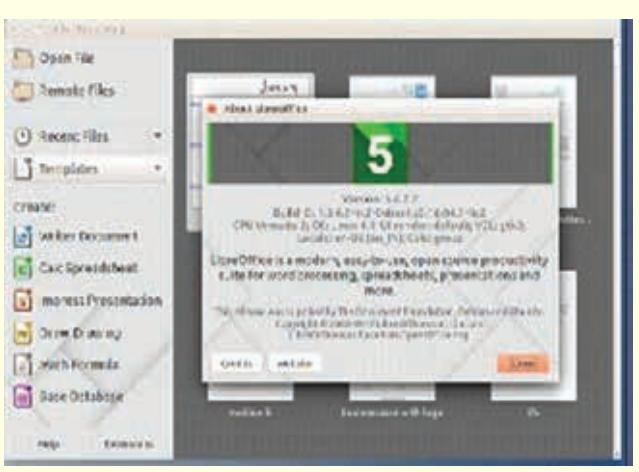
- 8 Type Y and hit Enter, When will be asked if you want to install the LibreOffice packages. (Fig 4)

Fig 4



- 9 Libre Office is now completely installed and ready to use. (Fig 5)

Fig 5



## COPA - Install Ubuntu Linux operating system and execute basic Linux commands

### Use basic Linux commands for directory listing File, Folder management, Password etc.,

**Objectives:** At the end of this exercise you shall be able to

- list directories with the ls command
- list and combine files with the cat command
- move to directories with cd command
- find files with the find, where and locate command
- manage files and directories using various commands
- handle user level commands and changing the permissions.

#### Requirements

##### Tools/Equipment/Machines

- A Working PC - 1 No.
- Ubuntu 22.04.1 / Latest Linux OS - 1 No.

#### PROCEDURE

##### TASK 1: Listing directories with the ls command

- 1 Open the console window.
- 2 Type ls and press enter.
- 3 Observe the output on the screen. The output will be as shown in Fig 1.

Fig 1

```
ubuntu@ubuntu:~$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos
ubuntu@ubuntu:~$
```

- 4 To list the files as well as directories those are kept in the particular working directory type ls -l. The output will display as on Fig 2.

Fig 2

```
ubuntu@ubuntu:~$ ls -l
total 0
drwxr-xr-x 2 ubuntu ubuntu 80 Aug 29 10:25 Desktop
drwxr-xr-x 2 ubuntu ubuntu 40 Aug 29 10:25 Documents
drwxr-xr-x 2 ubuntu ubuntu 40 Aug 29 10:25 Downloads
drwxr-xr-x 2 ubuntu ubuntu 40 Aug 29 10:25 Music
drwxr-xr-x 2 ubuntu ubuntu 40 Aug 29 10:25 Pictures
drwxr-xr-x 2 ubuntu ubuntu 40 Aug 29 10:25 Public
drwxr-xr-x 2 ubuntu ubuntu 40 Aug 29 10:25 Templates
drwxr-xr-x 2 ubuntu ubuntu 40 Aug 29 10:25 Videos
ubuntu@ubuntu:~$
```

- 5 Type the following command in console window.

\$ ls -la

The output window will display as on Fig 3.

Fig 3

```
ubuntu@ubuntu:~$ ls -la
total 48
drwxr-xr-x 19 ubuntu ubuntu 560 Aug 29 10:28 .
drwxr-xr-x 1 root root 60 Aug 29 10:23 ..
-rw-r--r-- 1 ubuntu ubuntu 320 Aug 29 10:23 .bash_logout
-rw-r--r-- 1 ubuntu ubuntu 3437 Aug 29 10:23 .bashrc
drwxr-xr-x 10 ubuntu ubuntu 400 Aug 29 10:40 .cache
drwxr-xr-x 13 ubuntu ubuntu 320 Aug 29 10:43 .config
drwxr-xr-x 3 ubuntu ubuntu 60 Aug 29 10:23 .dbus
drwxr-xr-x 2 ubuntu ubuntu 25 Aug 29 10:25 .Desktop
drwxr-xr-x 2 ubuntu ubuntu 40 Aug 29 10:25 .Documents
drwxr-xr-x 2 ubuntu ubuntu 40 Aug 29 10:25 .Downloads
drwxr-xr-x 4 ubuntu ubuntu 80 Aug 29 10:25 .gconf
drwxr-xr-x 3 ubuntu ubuntu 60 Aug 29 10:25 .gnome2
drwxrwxr-x 1 ubuntu ubuntu 142 Aug 29 10:25 .gtk-bookmarks
dr-x----- 2 ubuntu ubuntu 8 Aug 29 10:25 .gvfs
drwxr-xr-x 1 ubuntu ubuntu 322 Aug 29 10:25 .ICEauthority
drwxr-xr-x 3 ubuntu ubuntu 60 Aug 29 10:24 .local
drwxr-xr-x 2 ubuntu ubuntu 60 Aug 29 10:25 .mission-control
drwxr-xr-x 2 ubuntu ubuntu 60 Aug 29 10:25 .Music
```

- 6 Type the command ls -li in console window and observe the output. The output window will display as on Fig 4.

Fig 4

```
ubuntu@ubuntu:~$ ls -li
total 0
68158 drwxr-xr-x 2 ubuntu ubuntu 80 Aug 29 10:25 Desktop
39034 drwxr-xr-x 2 ubuntu ubuntu 40 Aug 29 10:25 Documents
39028 drwxr-xr-x 2 ubuntu ubuntu 40 Aug 29 10:25 Downloads
39036 drwxr-xr-x 2 ubuntu ubuntu 40 Aug 29 10:25 Music
39038 drwxr-xr-x 2 ubuntu ubuntu 40 Aug 29 10:25 Pictures
67996 drwxr-xr-x 2 ubuntu ubuntu 40 Aug 29 10:25 Public
74190 drwxr-xr-x 2 ubuntu ubuntu 40 Aug 29 10:25 Templates
39040 drwxr-xr-x 2 ubuntu ubuntu 40 Aug 29 10:25 Videos
ubuntu@ubuntu:~$
```

- 7 In console window type ls -m. The output window will display as on Fig 5.

Fig 5

```
ubuntu@ubuntu:~$ ls -m
bin boot cdrom dev etc home initrd.img initrd.img.old lib
media mnt opt proc rofs root run sbin selinux
srv sys tmp usr var vmlinuz vmlinuz.old
ubuntu@ubuntu:~$
```

- 8 Type the command ls -x in the console window. The output window will appear as on Fig 6.

Fig 6

```
ubuntu@ubuntu:~$ ls -x
bin boot cdrom dev etc home initrd.img initrd.img.old lib
media mnt opt proc rofs root run sbin selinux
srv sys tmp usr var vmlinuz vmlinuz.old
ubuntu@ubuntu:~$
```

Try the following commands in console window, write the description and observe the output screen in record sheet with the help of Instructor.

| Commands      | Description |
|---------------|-------------|
| ls /usr       |             |
| ls -R /       |             |
| ls -Rd /*/*/* |             |
| dir           |             |
| Vdir          |             |

## TASK 2 : Listing and combining files with the cat command and redirection

- 1 Type the following command in console window and type the text under the command for creating new text file as shown in Fig 7.

\$ cat > samplefile1.txt

welcome to ubuntu linux

this is sample file using cat command

enjoy the ICTSM subject

The output window will appear as on Fig 7.

Fig 7

```
ubuntu@ubuntu:~$ cat > samplefile1.txt
welcome to ubuntu linux
this is sample file using cat command
enjoy the ICTSM subject
^Z
[2]+ Stopped cat > samplefile1.txt
ubuntu@ubuntu:~$
```

- 2 Type the cat command followed by filename for displaying content of the file.

\$ cat samplefile1.txt

welcome to ubuntu linux

this is sample file using cat command

enjoy the ICTSM subject

The output window will appear as on Fig 8.

Fig 8

```
ubuntu@ubuntu:~$ cat -n samplefile1.txt
 1 welcome to ubuntu linux
 2 this is sample file using cat command
 3 enjoy the ICTSM subject
ubuntu@ubuntu:~$
```

- 3 In console window type the cat -n command followed by file name for display line numbers in the file content. The output window will appear as on Fig 9.

Fig 9

```
ubuntu@ubuntu:~$ cd /usr/bin
ubuntu@ubuntu:/usr/bin$
```

\$ cat -n samplefile1.txt

Try the following commands in console window, write the description and observe the output screen in record sheet with the help of Instructor.

| Commands                               | Description |
|----------------------------------------|-------------|
| cat -n samplefile1 samplefile2<br>(or) |             |
| cat -n samplef*                        |             |
| \$cat sample* > samplefile3.txt        |             |
| \$cat samplefile1.txt>>samplefile2.txt |             |
| \$ wc samplefile1.txt                  |             |

### TASK 3 : Moving to directories with cd command

- 1 Type the command cd /usr/bin in command window for moving the cursor /usr/bin directory. The output window will appear as on Fig 10.

Fig 10

```
ubuntu@ubuntu:/usr/bin$ cd /usr/bin
ubuntu@ubuntu:/usr/bin$
```

- 2 In console window type cd .. command for move up one stage to the previous directory. Observe the output screen. The output window will appear as on Fig 11.

Fig 11

```
ubuntu@ubuntu:/usr$ cd ..
ubuntu@ubuntu:/usr$
```

- 3 Type the command cd ../../ in console window to move root directory. The output window will display as on Fig 12.

Fig 12

```
ubuntu@ubuntu:/
ubuntu@ubuntu:/usr/bin$ cd ../../
ubuntu@ubuntu:/
```

- 4 Type the command cd ~ (or) cd in console. For go back the blinking cursor to home directory. The output window will appear as on Fig 13.
- 5 Type the command pwd in console window for print working directory. And observe the output window. And verify it with your instructor.

Fig 13

```
ubuntu@ubuntu:~$ cd ~
ubuntu@ubuntu:~/
```

### TASK 4 : Find files with the find, where and locate command

#### Grep command

- 1 Create a file using cat command as show below

```
F i g
14Eben
ubuntu@ubuntu:~$ find samp*
samplefile1.txt
samplefile2.txt
samplefile3.txt
ubuntu@ubuntu:~$
```

\$ cat example.txt

UNIX operating system

UNIX and Linux operating system

Linux operation system

- 2 Type the grep command for searching particular word as shown in below.

\$ grep UNIX example.txt

The output will display as below.

UNIX operating system

UNIX and Linux operating system

- 3 Type another grep command with option -v to exclude matching word as shown in below grep command for example.

\$ grep UNIX example.txt

**The output will display as below.**

UNIX operating system

- 4 Try the grep command with some attributes and check the output with the help of instructor.
- 5 Type the following example in the console and record the output with the help of your instructor.

```
$ cat testfile.txt
```

a  
b  
c  
d

```
$ grep -v -e "a" -e "b" -e "c" testfile.txt
```

- 6 Write the output with description in the below box.

| Commands                 | Description |
|--------------------------|-------------|
| grep -c UNIX example.txt |             |
| grep -v -c testfile.txt  |             |
| grep -l "hai" testfile*  |             |

- 7 Type whereis command followed by another command. It will shows that the command where it is located. The output window will appear as on Fig 15

Fig 15

```
ubuntu@ubuntu:~$ whereis find
find: /usr/bin/find /usr/bin/X11/find /usr/share/man/man1/find.1.gz
ubuntu@ubuntu:~$
```

- 8 Type the command locate in console window. The output window will appear as on Fig 16.

Fig 16

```
ubuntu@ubuntu:~$ locate *.txt |more
/boot/grub/gfxblacklist.txt
/etc/X11/rgb.txt
/etc/brltty/brl-ba-all.txt
/etc/brltty/brl-bd-all.txt
/etc/brltty/brl-bl-18.txt
/etc/brltty/brl-bl-40_m20_m40.txt
/etc/brltty/brl-bn-commands.txt
/etc/brltty/brl-bn-keys.txt
/etc/brltty/brl-ec-all.txt
/etc/brltty/brl-ec-spanish.txt
/etc/brltty/brl-eu-all.txt
/etc/brltty/brl-il-all.txt
/etc/brltty/brl-lb-all.txt
/etc/brltty/brl-lt-all.txt
/etc/brltty/brl-mb-all.txt
/etc/brltty/brl-md-all.txt
/etc/brltty/brl-mm-all.txt
/etc/brltty/brl-tn-all.txt
/etc/brltty/brl-ts-nav20_nav40.txt
/etc/brltty/brl-ts-nav80.txt
/etc/brltty/brl-ts-pb40.txt
/etc/brltty/brl-ts-pb65_pb81.txt
/etc/brltty/brl-tt-all.txt
```

- 9 To get the summary of particular command, type whatis in the console window the output window will display as on Fig 17.

Fig 17

```
ubuntu@ubuntu:~$ whatis mkdir
mkdir (1) - make directories
mkdir (2) - create a directory
ubuntu@ubuntu:~$
```

## TASK 5 : Manage files and directories using various commands

- 1 Open the console window.
- 2 Type the touch command in console.
- 3 Observe the output. The output window as on Fig 18.

Fig 18

```
ubuntu@ubuntu:~$ touch newfile1.txt
ubuntu@ubuntu:~$ ls -l
total 0
drwxr-xr-x 2 ubuntu ubuntu 80 Sep 1 04:59 Desktop
drwxr-xr-x 2 ubuntu ubuntu 40 Sep 1 04:59 Documents
drwxr-xr-x 2 ubuntu ubuntu 40 Sep 1 04:59 Downloads
drwxr-xr-x 2 ubuntu ubuntu 40 Sep 1 04:59 Music
-rw-rw-r-- 1 ubuntu ubuntu 0 Sep 1 05:02 newfile1.txt
drwxr-xr-x 2 ubuntu ubuntu 40 Sep 1 04:59 Pictures
drwxr-xr-x 2 ubuntu ubuntu 40 Sep 1 04:59 Public
drwxr-xr-x 2 ubuntu ubuntu 40 Sep 1 04:59 Templates
drwxr-xr-x 2 ubuntu ubuntu 40 Sep 1 04:59 Videos
ubuntu@ubuntu:~$
```

- 4 Type the rm command in console window for using remove a file for example.

```
$ rm testfile1.txt
```

- 5 Try the rm command in console window with additional attributes and record the outputs with screenshots.

- 6 Type the command mkdir followed by directory name in console window for make a new directory for example:-

```
$ mkdir computer
```

- 7 Try the mkdir command followed by different attributes with directory name.

| Command                          | Description |
|----------------------------------|-------------|
| mkdir memos letters email        |             |
| mkdir -p /home/joe/customer/babu |             |

- 8 In console window type rmdir followed by directory name for used to remove a empty directory for example.

```
$ rmdir dirname
```

| Command                             | Description |
|-------------------------------------|-------------|
| rmdir -p dir1/dir2/dir3             |             |
| rmdir dir1/dir2/dir3 dir1/dir2 dir1 |             |
| rm -rf dirname                      |             |

- 9 Type the command mv in console window for moving one file or directory from one place to another place, it is also used for renaming a directory or file for Example.

```
$ mv oldfilename newfilename (to change the file name)
```

- 10 Try the mv command with some attributes

| Command                                     | Description |
|---------------------------------------------|-------------|
| mv foo /tmp                                 |             |
| mv foo /tmp/joe mv /tmp/foo . mv /tmp/foo ~ |             |
| mv /tmp/foo ~/dir1                          |             |
| mv foo1 foo2 foo3 dir1                      |             |
| mv foo[123] dir1                            |             |
| mv foo* dir1                                |             |
| mv dir1 dir2                                |             |

## TASK 6 : Handle user level commands and changing the permissions

### User add -to create a new user

- 1 Type the command useradd in console window and record the output for example.

```
$ useradd username
```

- 2 In console window type the userdel followed by user name to remove a user from linux for example

```
$userdel tarun
```

- 3 Type the command groupadd in console window to add a new group for Example

```
$ groupadd fruits
```

- 4 In console window type the groupdel command to de- lte a group for Example

```
$ groupdel fruits
```

- 5 Type the command chown in the console window to change the ownership of a file or directory for example

```
$ ls -l
```

```
drwxrw-rw- 2 root root 4096 Mar 11 12:03 abcd
(permission) (owner) (group own) (size) (name)
```

- 6 And typethe following in console window

```
$ chown tarun /abcd
```

- 11 In console window type the command cp for copy the file to the destination directory for example.

```
$ cp /home/fruits/mango.txt /root/abcd
```

- 12 Try the cp command with some attributes and check with instructor

| Command                   | Description |
|---------------------------|-------------|
| cp chapter1 /tmp          |             |
| cp chapter1...            |             |
| cp file1 file2 file3 /tmp |             |
| cp -r foo /tmp            |             |
| cp /tmp/foo ~/dir1        |             |
| cp foo1 foo2 foo3 dir1    |             |
| cp foo[123] dir1          |             |
| cp foo* dir1              |             |
| cp -r dir1 dir2           |             |

- 3 Type the command groupadd in console window to add a new group for Example  
\$ groupadd fruits
- 4 In console window type the groupdel command to delete a group for Example  
\$ groupdel fruits
- 5 Type the command chown in the console window to change the ownership of a file or directory for example  
\$ ls -l  
drwxrw-rw- 2 root root 4096 Mar 11 12:03 abcd  
(permission) (owner) (group own) (size) (name)
- 6 And type the following in console window  
\$ chown tarun /abcd  
\$ ls -l  
drwxrw-rw- 2 tarun root 4096 Mar 11 12:03 abcd
- 7 In console window type chgrp to change the group ownership of a file or directory for example  
\$ ls -l  
drwxrw-rw- 2 tarun root 4096 Mar 11 12:03 abcd  
\$ chgrp tarun /abcd  
\$ ls -l  
drwxrw-rw- 2 tarun root 4096 Mar 11 12:03 abcd

Try the following commands in the console window, write the output and verify it with the help of instructor

- 1 Add single permission to a file/directory Example  
\$ chmod u+x filename Output:-
- 2 Add multiple permission to a file/directory Example  
\$ chmod u+x, g+x filename Output:-
- 3 Remove permission from a file/directory Example  
\$ chmod u-rx filename Output:-
- 4 Change permission for all roles on a file/directory Example  
\$ chmod a+x filename Output:-
- 5 Make permission for a file same as another file (using reference)  
Example  
\$ chmod --reference= file1 file2 Output:-
- 6 Apply the permission to all the files under a directory recursively  
Example  
\$ chmod -R 755 directory-name/ Output:-
- 7 Change execute permission only on the directories (files are not affected)  
Example  
\$ chmod u+X \* Output:-

### TASK 7 : Handling additional commands

- 1 Clear -it will clear the screen (shortcut **ctrl+l**) for example.  
\$ clear
- 2 Exit -to end a current session as well current terminal logging for example.  
\$ exit
- 3 Man -to view the manual page of commands for example.  
\$ man mkdir
- 4 --help -to view the help documents of a command example.  
\$ ls --help
- 5 Who -This command is used to display user name and their ip addresses who have logged in on your server example.  
\$ who
- 6 whoami -this command shows the current logged in terminal user name for example  
\$ whoami

- 8 su -username to switch from one user to another users home directory for example.  
\$su mango
- 9 type the date in console window for displaying current system date for example.  
\$ date  
Wed Aug 18 16:24:44 EDT 2015

- 10 Type the Cal command in console window to display the calendar of the current month for example.  
\$ cal

August 2007

| Su | Mo | Tu | We | Th | Fr | Sa |
|----|----|----|----|----|----|----|
|    |    |    | 1  | 2  | 3  | 4  |
| 5  | 6  | 7  | 8  | 9  | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 |    |

11 In console window type the ncal command for changing the output format for example

```
$ ncal
```

August 2007

|    |   |    |    |    |    |
|----|---|----|----|----|----|
| Mo | 6 | 13 | 20 | 27 |    |
| Tu | 7 | 14 | 21 | 28 |    |
| We | 1 | 8  | 15 | 22 | 29 |
| Th | 2 | 9  | 16 | 23 | 30 |
| Fr | 3 | 10 | 17 | 24 | 31 |
| Sa | 4 | 11 | 18 | 25 |    |
| Su | 5 | 12 | 19 | 26 |    |

12 Try the cal command with various attributes and observe the output screen with the help of instructor

| Command | Description |
|---------|-------------|
|---------|-------------|

|            |
|------------|
| cal 1 2007 |
|------------|

|                                                         |
|---------------------------------------------------------|
| cal -3 cal -J cal -e cal -m cal -j cal -p cal -w cal -y |
|---------------------------------------------------------|

13 Type the passwd command in console window to change the password for the current user for example

```
$ passwd dhinesh
```

Enter new UNIX password:

Retype new UNIX password:

```
passwd: password updated successfully
```

```
$ chage --list dhinesh
```

Last password change : Apr 23, 2009

Password expires : never

Password inactive : never

Account expires : never Minimum number of days

between password change : 0

Maximum number of days

between password change : 99999

Number of days of warning before password expires 7

— — — — —

## COPA - Install Ubuntu Linux operating system and execute basic Linux commands

**Use the Linux graphical user interface for file and folder management, exploring the system etc**

**Objectives:** At the end of this exercise you shall be able to

- accessing computer explorer in ubuntu
- adding emblems to files and folders
- changing file and folder permissions
- renaming and deleting files and folders.

### Requirements

#### Tools/Equipment/Machines

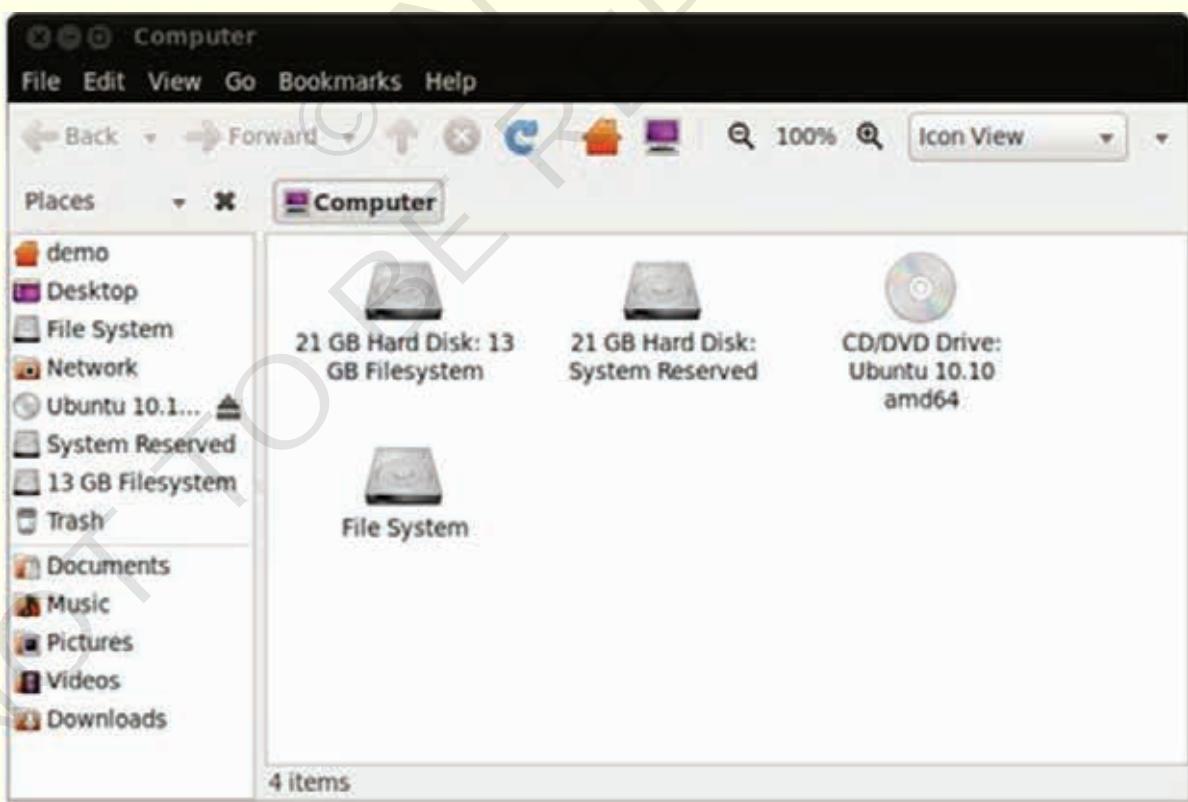
- A Working PC - 1 No.
- Ubuntu 22.04.1 / Latest Linux OS - 1 No.

## PROCEDURE

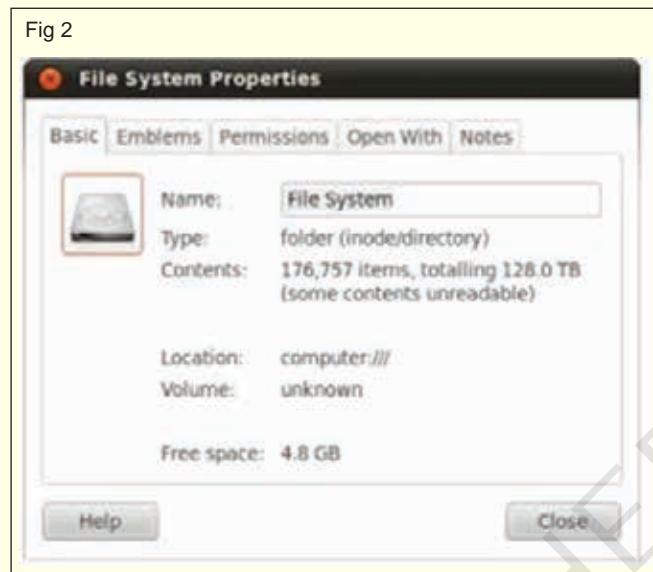
### TASK 1: Access computer explorer in ubuntu

- 1 Selecting places -> computer will invoke Nautilus with a list of devices and locations available for browsing. (Fig 1)
- 2 In the above fig the primary devices on the system are listed. Double clicking on any of these icons will open a new window containing the files and folders located on that device.

Fig 1



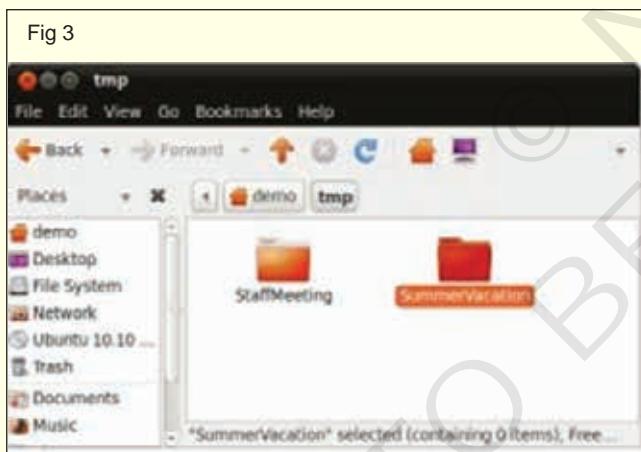
- 3 The properties of any icon (such as file system type and disk usage) can be displayed by clicking with the right mouse button over an icon and selecting Properties from the resulting dialog as in Fig 2. The following figure shows the properties dialog for a hard disk drive based file system:



#### TASK 2 : Adding emblems to files and folders

Recent versions of nautilus provide a useful feature that allows descriptive emblems to be placed next to file or folder icons. For example, you might want to a photos emblem next to a folder in which you store digital pictures, or a presentation emblem next to a file containing a presentation. The addition of emblems is achieved using the nautilus properties panel. As an example, we will add emblems next to the following summerVacation and staff meeting folders.

- 1 Select the “summer vacation” folder and right click with the mouse. (Fig 3).



- 2 From the popup menu, select properties and in the properties dialog click on the emblems tab. (Fig 4)
- 3 Scroll down the list of emblems until you find the photos emblem and select the checkbox to add the emblem.
- 4 Note that you can add more than one emblem to each file or folder. Repeat these steps to add a documents emblem to the StaffMeeting folder and close the properties dialog. The end result should appear as follows. (Fig 5)

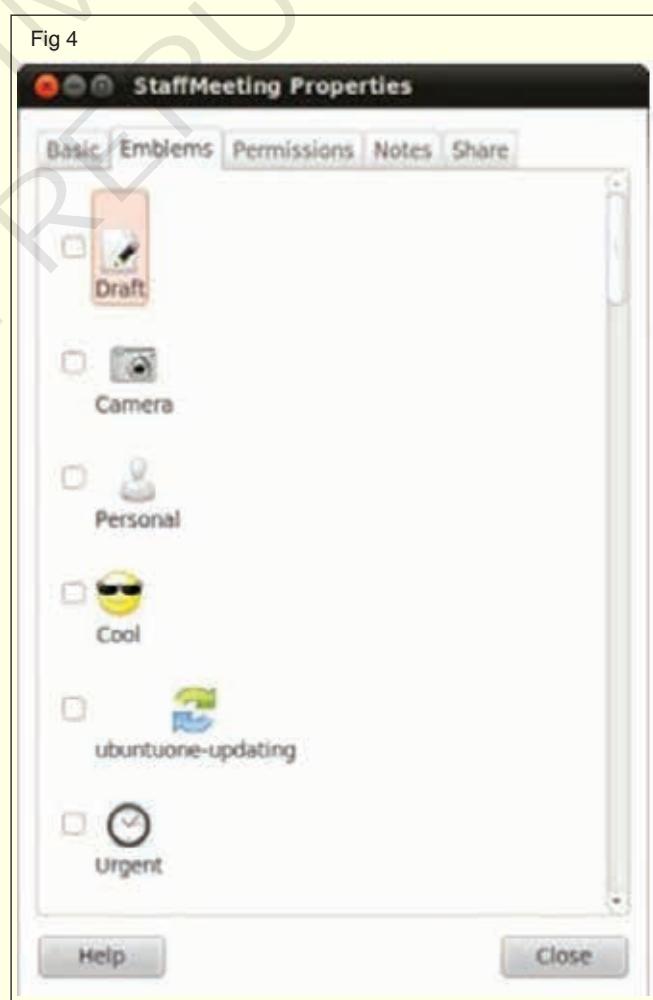
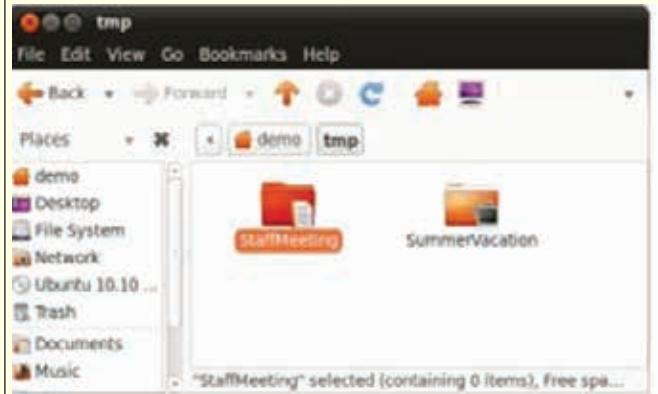


Fig 5



### TASK 3 : Changing file and folder permissions

- 1 Click with the right mouse button over the file or folder to be changed and select Properties from the popup menu.
- 2 In the resulting properties dialog select the Permissions tab to display the current settings for the file or folder. (Fig 6)

Fig 6



### TASK 4 : Renaming and deleting files and folders

- 1 Files and folders can be renamed by right clicking on the icon and selecting Rename from the popup menu. Files can be moved to the Trash in a number of ways.
- 2 One option is to simply select the icon and press the Delete key on the keyboard. Another is to click on the icon and drag and drop into the trash can in bottom right corner of the desktop.

- 3 Yet another option is to right click on the icon and select move to trash.

Now that we have looked at some of the features of Nautilus we will now look at configuring the Ubuntu File Manager.

## Customize desktop settings and manage user accounts in Linux

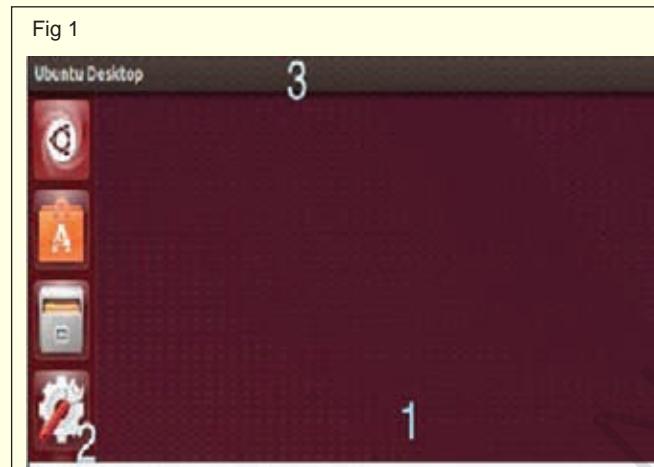
**Objectives:** At the end of this exercise you shall be able to

- set desktop options in Linux
- manage user accounts to Linux.

### PROCEDURE

#### TASK 1: Set desktop options in Linux

- 1 Select Unity launcher (2) option in Ubuntu desktop as in Fig 1.



- 2 Click on User menu at the top right corner, to access Appearance a Settings in Ubuntu, on the top Menu bar and select System Settings in Fig 2.



- 3 Select the Appearance icon.
- 4 Click on any wallpaper thumbnail icon to set the wallpaper of desktop in Fig 3.
- 5 Select a theme from themes, to set a working theme as in Fig 4.

Fig 3



Fig 4



- 6 Set the icon level of display to get resized of the icons. (Fig 5)

- 7 Select behavior tab to set launcher settings to show/hide icons. (Fig 6)

- 8 Reveal again using On button if required. (Fig 7)

**Note :** Never set the reveal sensitivity at the lowest level because it will make it hard to get the launcher back.

- 9 To tet back options use tools as in (Fig 8)

- 10 Click on tick marks as in above figure to show the menus for a window.

- 11 Click Restore Behavior Settings at the bottom, to get the default settings of the Linux interface.

Fig 5



Fig 7



Fig 6



Fig 8



## TASK 2 : Manage user accounts to Linux

### Add a new user account

You can add multiple user accounts to your computer. Give one account to each person in your household or company. Every user has their own home folder, documents, and settings.

You need administrator privileges to add user accounts.

- 1 Open the Activities overview and start typing Users.
- 2 Click on Users to open the panel.
- 3 Press Unlock in the top right corner and type in your password when prompted.
- 4 Press the + button, below the list of accounts on the left, to add a new user account.
- 5 If you want the new user to have administrative access to the computer, select Administrator for the account type.

**Administrators can do things like add and delete users, install software and drivers, and change the date and time.**

- 6 Enter the new user's full name. The username will be filled in automatically based on the full name. If

you do not like the proposed username, you can change it.

- 7 You can choose to set a password for the new user, or let them set it themselves on their first login.

If you choose to set the password now, you can press the icon to automatically generate a random password.

- 8 Click Add.

### Delete a user account

You can add multiple user accounts to your computer. If somebody is no longer using your computer, you can delete that user's account.

You need administrator privileges to delete user accounts.

- 1 Open the Activities overview and start typing Users.
- 2 Click Users to open the panel.
- 3 Press Unlock in the top right corner and type in your password when prompted.
- 4 Select the user that you want to delete and press the - button, below the list of accounts on the left, to delete that user account.

- 5 Each user has their own home folder for their files and settings. You can choose to keep or delete the user's home folder. Click Delete Files if you are sure they will not be used anymore and you need to free up disk space. These files are permanently deleted. They cannot be recovered. You may want to back up the files to an external storage device before deleting them.

### Change your login screen photo

When you log in or switch users, you will see a list of users with their login photos. You can change your photo to a stock image or an image of your own. You can even take a new login photo with your webcam.

You need administrator privileges to edit user accounts other than your own.

- 1 Open the Activities overview and start typing Users.
- 2 Click Users to open the panel.
- 3 If you want to edit a user other than yourself, press Unlock in the top right corner and type in your password when prompted.
- 4 Click the picture next to your name. A drop-down gallery will be shown with some stock login photos. If you like one of them, click it to use it for yourself.
  - If you would rather use a picture you already have on your computer, click Browse for more pictures....
  - If you have a webcam, you can take a new login photo right now by clicking Take a photo.... Take your picture, then move and resize the square outline to crop out the parts you do not want. If you do not like the picture you took, click Take Another Picture to try again, or Cancel to give up.

### Log in automatically

You can change your settings so that you are automatically logged in to your account when you start up your computer:

- 1 Open the Activities overview and start typing Users.
- 2 Click Users to open the panel.
- 3 Select the user account that you want to log in to automatically at startup.

- 4 Press Unlock and enter your password.
- 5 Toggle the Automatic Login switch to ON.

### Change your password

It is a good idea to change your password from time to time, especially if you think someone else knows your password.

You need administrator privileges to edit user accounts other than your own.

- 1 Open the Activities overview and start typing Users.
- 2 Click Users to open the panel.
- 3 Click the label ..... next to Password. If you are changing the password for a different user, you will first need to Unlock the panel.
- 4 Enter your current password, then a new password. Enter your new password again in the Verify New Password field.

You can press the icon to automatically generate a random password.

- 5 Click Change.

### Change who has administrative privileges

Administrative privileges are a way of deciding who can make changes to important parts of the system. You can change which users have administrative privileges and which ones do not. They are a good way of keeping your system secure and preventing potentially damaging unauthorized changes.

You need administrator privileges to change account types.

- 1 Open the Activities overview and start typing Users.
- 2 Click Users to open the panel.
- 3 Press Unlock in the top right corner and type in your password when prompted.
- 4 Select the user whose privileges you want to change.
- 5 Click the label Standard next to Account Type and select Administrator.
- 6 The user's privileges will be changed when they next log in.

— — — — —

# COPA - Install Ubuntu Linux operating system and execute basic Linux commands

## View system properties and manage system setting in Linux

**Objectives:** At the end of this exercise you shall be able to

- open system properties.

### Requirements

#### Tools/Equipment/Machines

- A Working PC - 1 No.
- Ubuntu 22.04.1 / Latest Linux OS - 1 No.

### PROCEDURE

#### TASK 1: Open System Properties

- 1 Go to Settings, and under System, click on Details for basic information: (Fig 1)

Fig 1

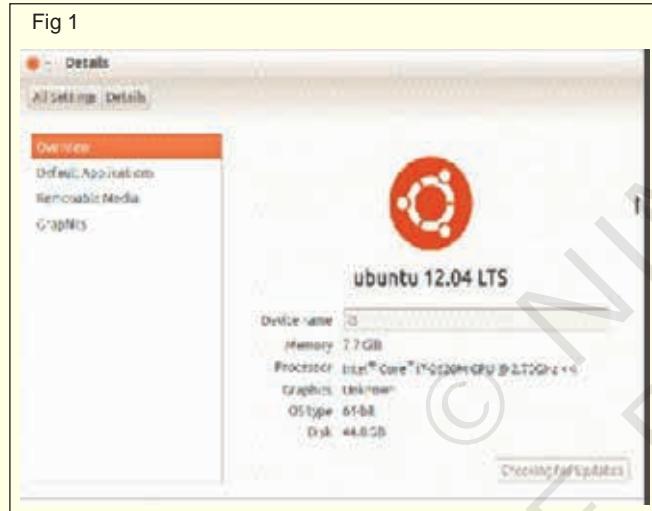


Fig 2



hardware that can be expanded further by category. (Fig 3)

**Note:** Following are examples for CPU and Memory information in Ubuntu Linux.

- 2 Search for "system" in Software Center, and install System Profiler and Benchmark. (Fig 2)
- 3 Run it from the Launcher (type "system" if it isn't there already) and will display a detailed list of

Fig 3

| System Information   |                                                          |
|----------------------|----------------------------------------------------------|
| File Edit View Help  |                                                          |
| System Summary       |                                                          |
| Hardware Resources   | Item Value                                               |
| Components           | OS Name Microsoft Windows 7 Ultimate                     |
| Software Environment | Version 6.1.7600 Build 7600                              |
|                      | Other OS Description Not Available                       |
|                      | OS Manufacturer Microsoft Corporation                    |
|                      | System Name KUMAR-PC                                     |
|                      | System Manufacturer Hewlett-Packard                      |
|                      | System Model HP Compaq 8200 Elite USDT PC                |
|                      | System Type X86-based PC                                 |
|                      | Processor Intel(R) Core(TM) i5-2500S CPU @ 2.70GHz, 2701 |
|                      | BIOS Version/Date Hewlett-Packard J01 v02.15, 10/11/11   |
|                      | SM BIOS Version 2.7                                      |
|                      | Windows Directory C:\Windows                             |
|                      | System Directory C:\Windows\system32                     |
|                      | Boot Device \Device\HarddiskVolume1                      |
|                      | Locale United States                                     |

**COPA - Word Processing Software****Navigate within documents**

**Objectives:** At the end of this exercise you shall be able to

- open MS Word and create a new document
- save a document.

**Requirements****Tools/Equipment/Machines**

- |                                   |         |                           |         |
|-----------------------------------|---------|---------------------------|---------|
| • A Working PC with Windows 10 OS | - 1 No. | • MS Office 2019 / Latest | - 1 No. |
|-----------------------------------|---------|---------------------------|---------|

**PROCEDURE****TASK 1: Open MS Word and create a new document**

1 Click the 'start' button

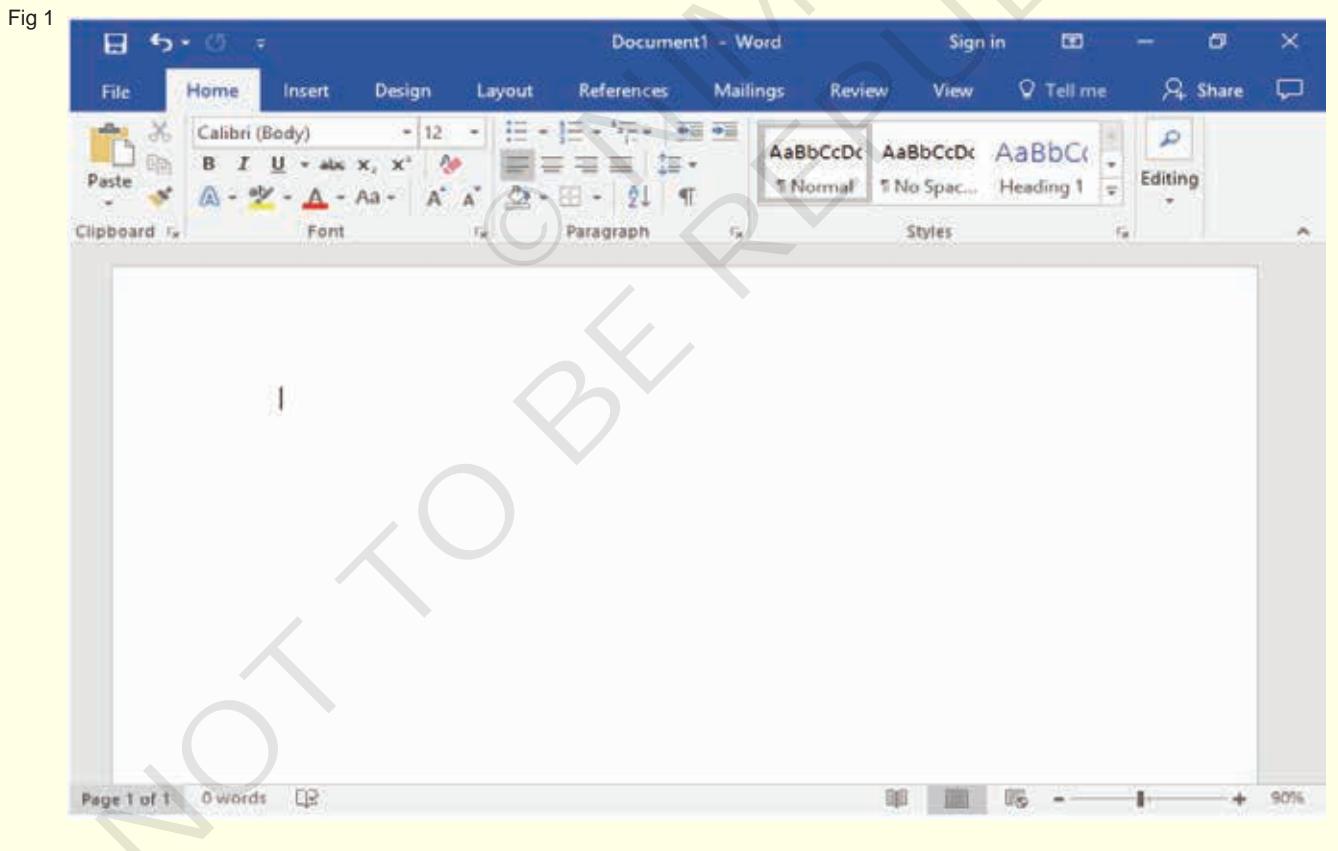
2 Open Word.

3 Select Blank document.

Or, if Word is already open, select File > New > Blank document.

Or, to create a document using a template

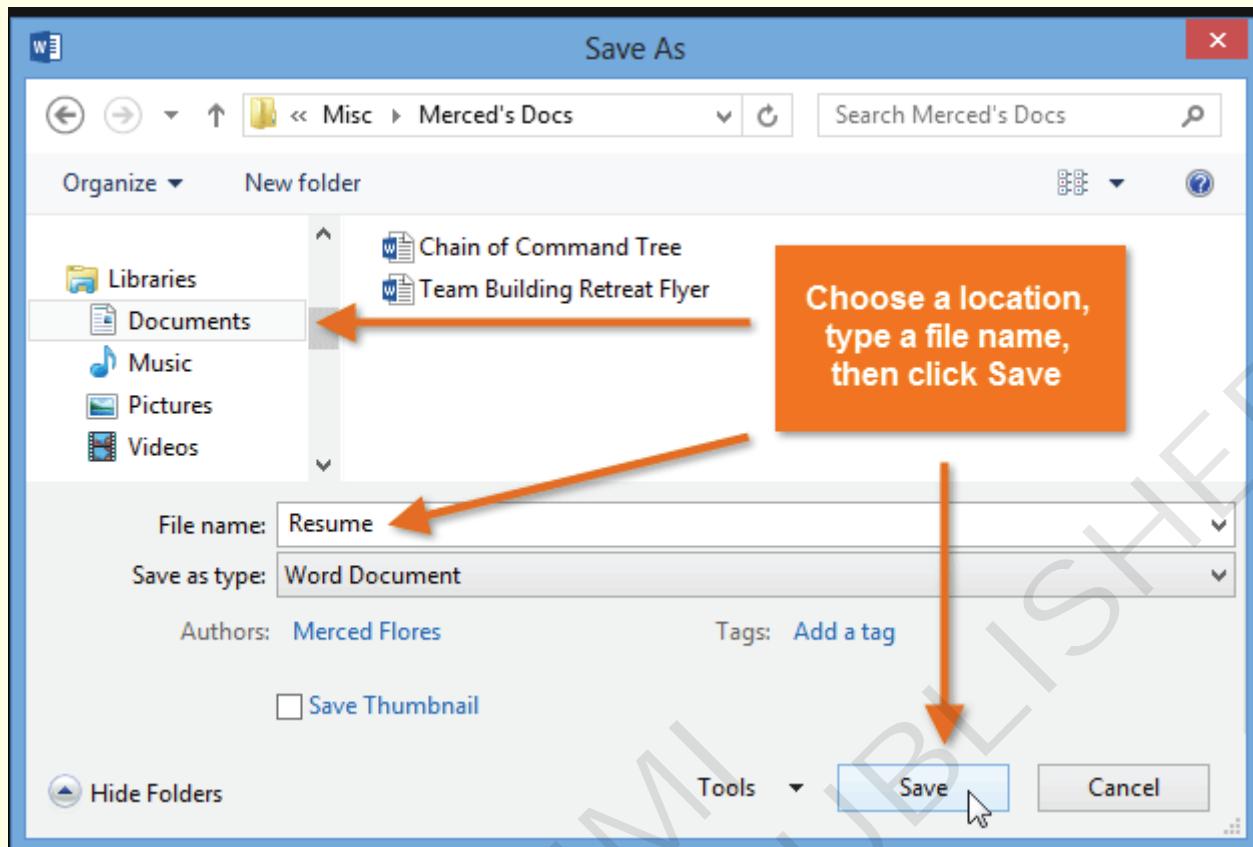
- Open Word. Or, if Word is already open, select File > New
  - Double-click a template to open it.
- 4 After Blank Page opened then start to type as you wish to create the document. (Fig 1)

**TASK 2: Save a document**

- 1 Click the File → Save or Click → save  button on Quick Access.
- 2 Click 'save' as shown in Fig
- 3 Choose Browse to locate the Location where do you

- wants to save the documents (Desktop/Documents/Downloads/Local Drivers.)
- 4 Type sample1 as the new file name, in the filename box. Save as type word Document(\*.docx) as in Fig 2.

Fig 2



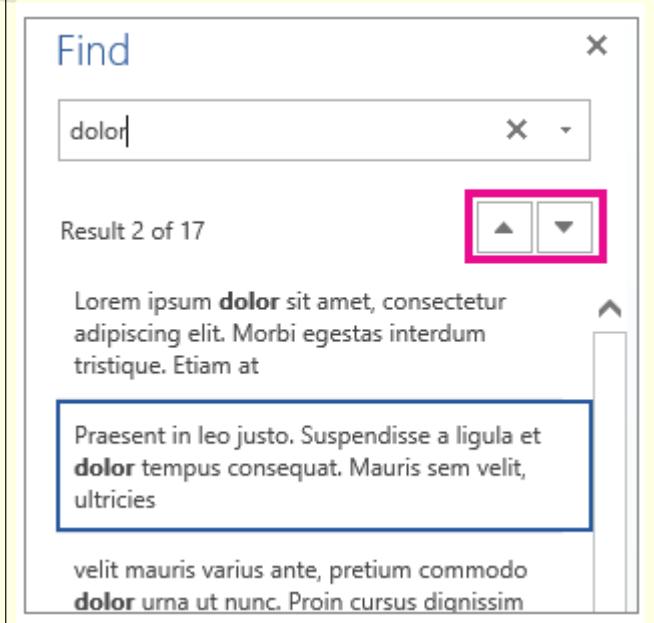
### TASK 3: Search for text

- 1 To open the Find pane from the Edit View, press **Ctrl+F**, or click **Home > Find**. (Fig 3)



- 2 Find text by typing it in the Search the document for... box. Word Web App starts searching as soon as you start typing. To further narrow the search results, click the magnifying glass and select one or both of the search options.
- 3 When you type in your document or make a change, Word Web App pauses the search and clears the Find pane. To see the results again, click the Next Search Result or Previous Search Result arrow. (Fig 4)
- 4 When you're done searching, click the X at the end of the Search box.

Fig 4



## TASK 4: Link to locations within documents

After you've marked the destination, you're ready to add the link.

- 1 Select the text or object you want to use as a hyperlink.

- 2 Right-click and then click Hyperlink 
- 3 Under Link to, click Place in This Document.
- 4 In the list, select the heading or bookmark that you want to link to.

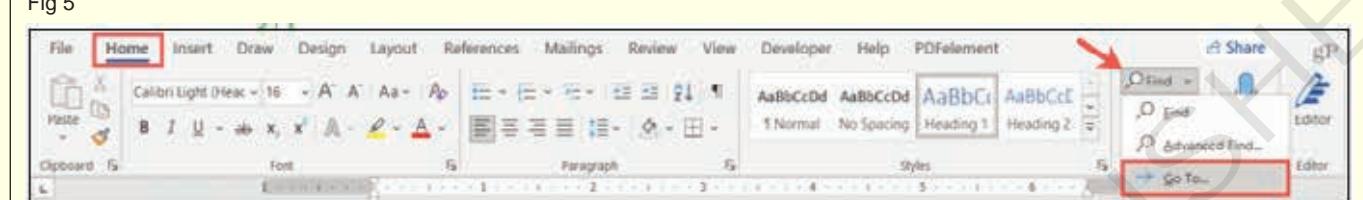
## TASK 5: Move to specific locations and objects in documents

### Open the Go To Tool in Microsoft Word

- 1 You can open the Go To tool using the menu or a keyboard shortcut in Word on Windows.

- On Windows, go to the Home tab, click the drop-down arrow next to Find, and select Go To. Alternatively, press Ctrl + G (Fig 5)

Fig 5

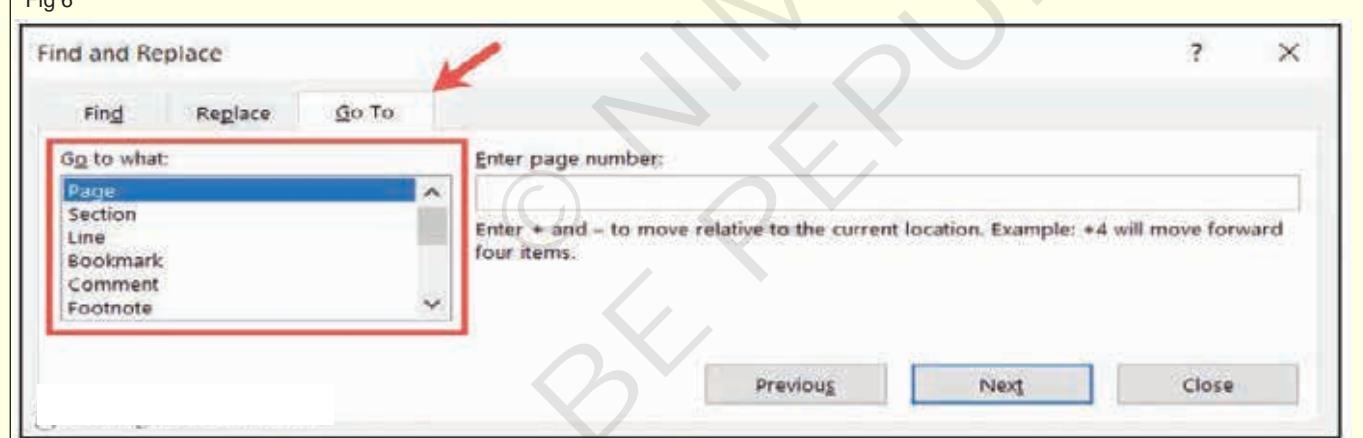


### 2 Go to the Next or Previous Item in Word

- Once you open the Go To tool, you should be on the Go To tab. If not, select it at the top.

- On the left, choose where you'd like to go from the list. You can pick a page, section, line, bookmark, comment, and more. (Fig 6)

Fig 6

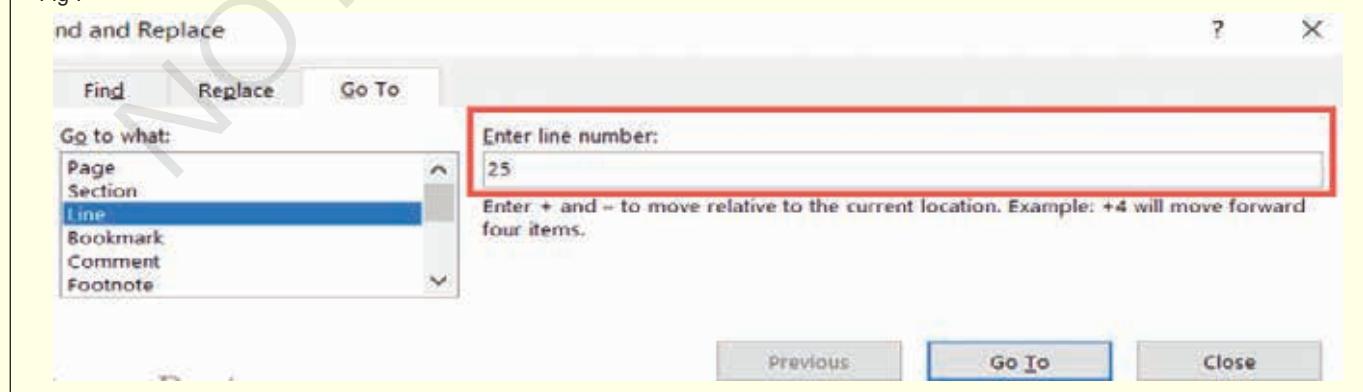


### 3 Go to an Item Number or Name

- If you want to go to a particular spot in your document, then you can use the box on the right to enter a number or choose a name for the item. Here are a couple of examples.

- To jump to a particular page, section, line, footnote or endnote, table, graphic, equation, or heading, enter the number in the box. For instance, you may want to jump to line 25 in your document. So you would select Line from the list, enter "25" in the box, and click Go To. (Fig 7)

Fig 7

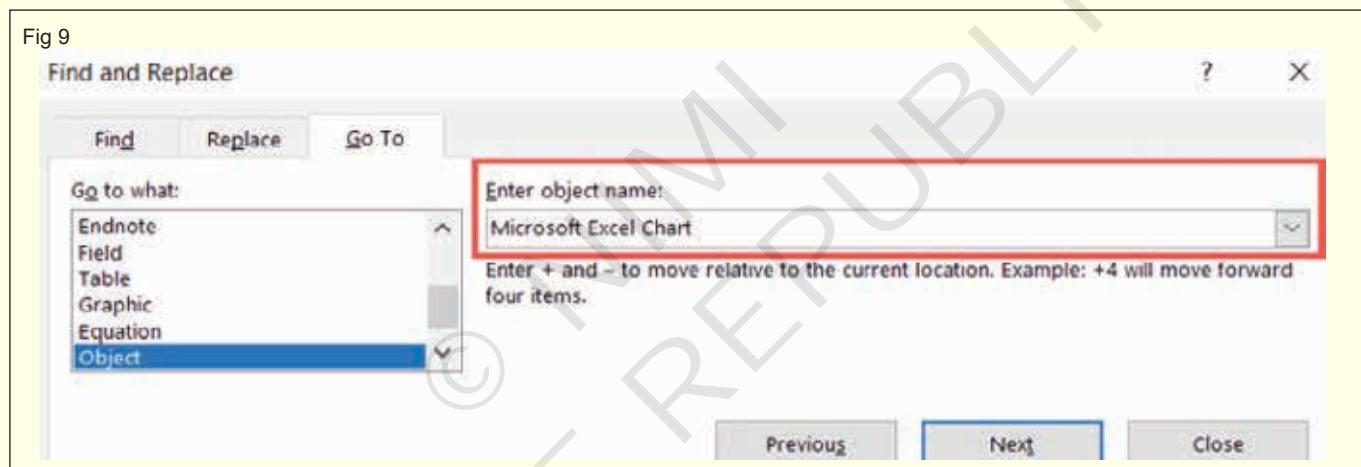


- 4 Select a name from the drop-down box for a specific **bookmark, comment, field, or object**.

- For example, if you want to go to a comment you added, choose Comment, select your name in the drop-down box, and click Next. (Fig 8)



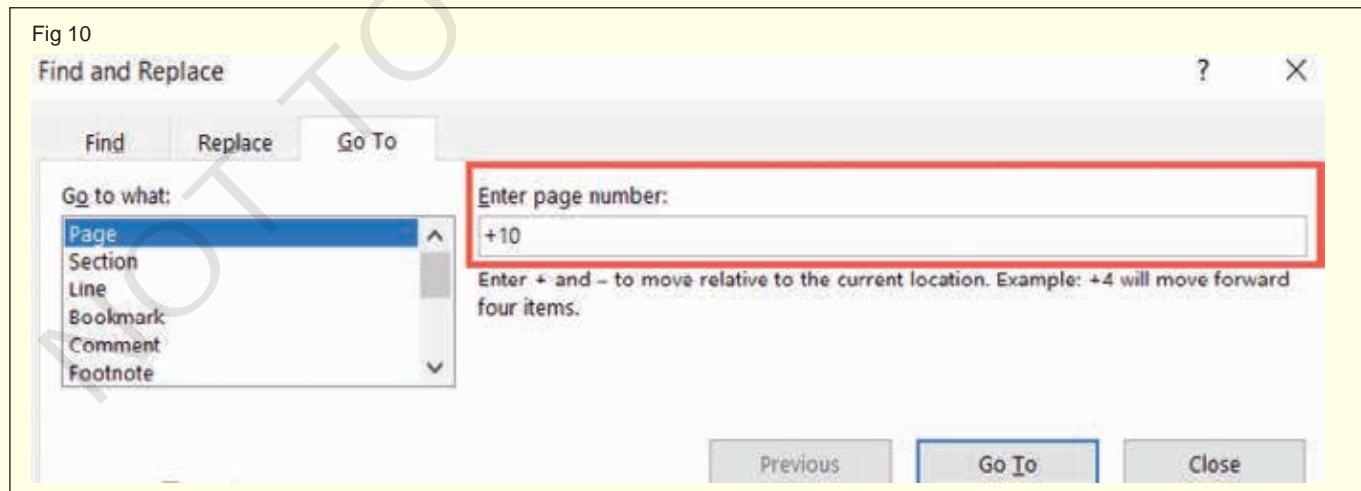
- 5 If you want to go to an Excel chart you inserted, select Object, choose Microsoft Excel Chart in the drop-down box and click Next. (Fig 9)



## 6 Move Relative to Your Current Spot

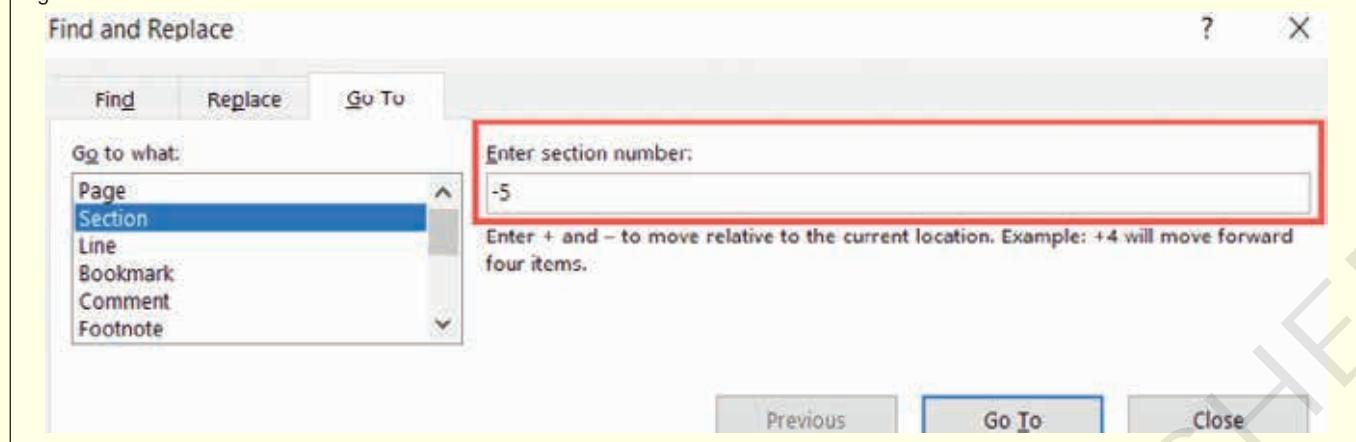
- Another handy way to use the Go To tool is to jump ahead or behind your current location in the document. Here are a couple of examples.

- Maybe you want to jump ten pages forward from the current page. Select Page, enter "+10" in the box, and then click Go To. You will then move ahead by ten pages. (Fig 10)



8 You can also go back from your current spot. Say you want to move back five sections—select section, enter “-5” in the box, and then click Go To to do this. (Fig 11)

Fig 11

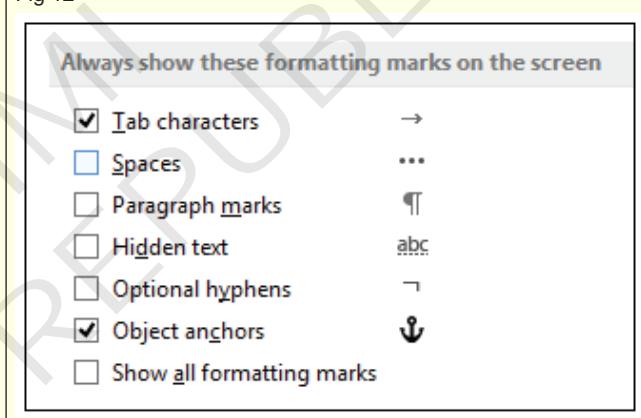


#### TASK 6: Show and hide formatting symbols and hidden text

- 1 Go to File > Options > Display.
- 2 Under Always show these formatting marks on the screen, select the check box for each formatting mark that you always want to display regardless if the Show/ Hide button is turned on or off. Clear any check boxes for ones you don't want always displayed. (Fig 12)

9 Remember to use a plus sign (+) to go forward and a minus sign (-) to go backward. These symbols only work for those items that allow for a number to be entered in the box, as described earlier.

Fig 12



## COPA - Word Processing Software

### Format documents

**Objectives:** At the end of this exercise you shall be able to

- open MS Word and create a new document
- save a document.

### Requirements

#### Tools/Equipment/Machines

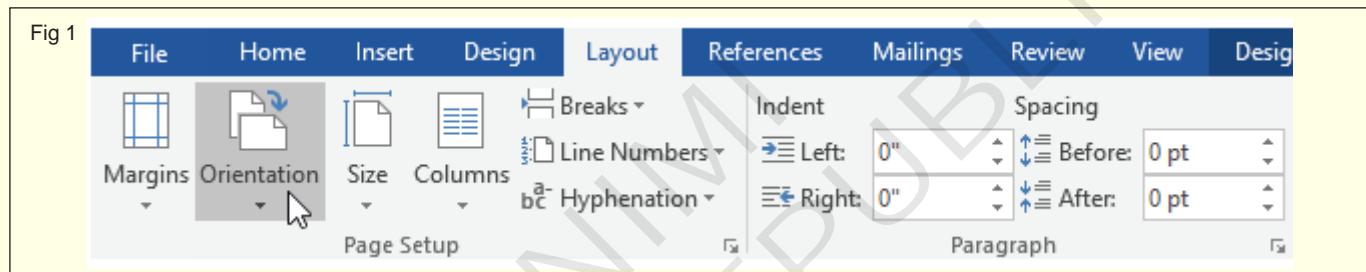
- A Working PC with Windows 10 OS – 1 No.
- MS Office 2019 / Latest – 1 No.

### PROCEDURE

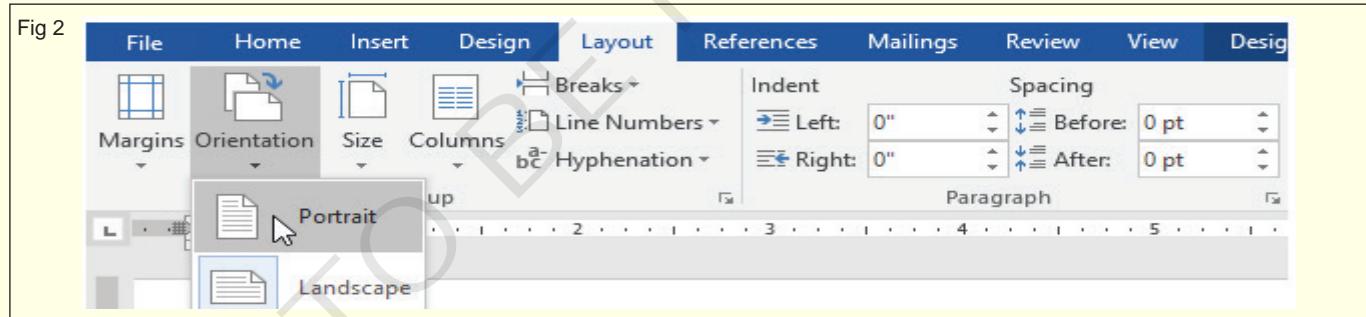
#### TASK 1: Set up document pages

##### To change page orientation

- 1 Select the **Layout tab**.



- 3 A drop-down menu will appear. Click either **Portrait** or **Landscape** to change the page orientation. (Fig 2)



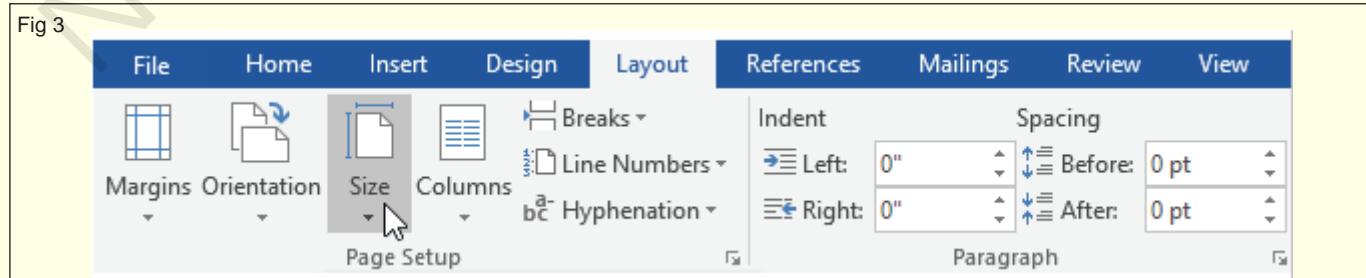
**Page size :** By default, the page size of a new document is 8.5 inches by 11 inches. Depending on your project, you may need to adjust your document's page size. It's important to note that before modifying the default page size, you should check to see which page sizes your printer can accommodate.

- 2 Click the **Orientation** command in the Page Setup group. (Fig 1)

- 4 The page orientation of the document will be changed.

**To change the page size:** Word has a variety of predefined page sizes to choose from.

- 1 Select the **Layout tab**, then click the **Size** command. (Fig 3)



- 2 A drop-down menu will appear. The current page size is highlighted. Click the desired **predefined page size**. (Fig 4)
- 3 The page size of the document will be changed.

Fig 4

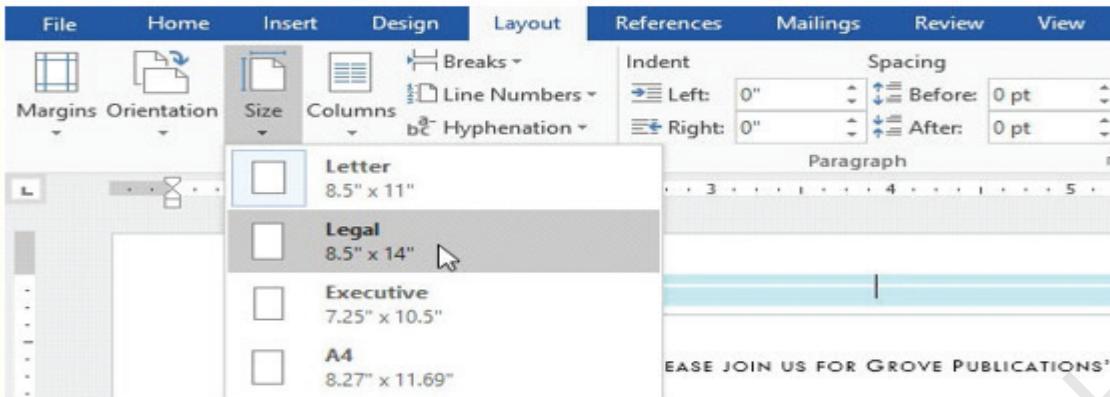
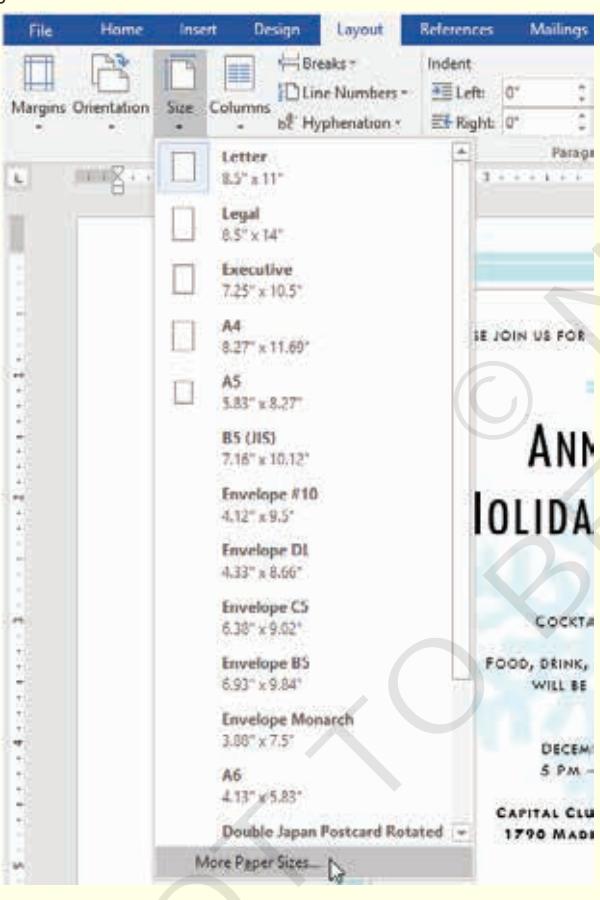


Fig 5



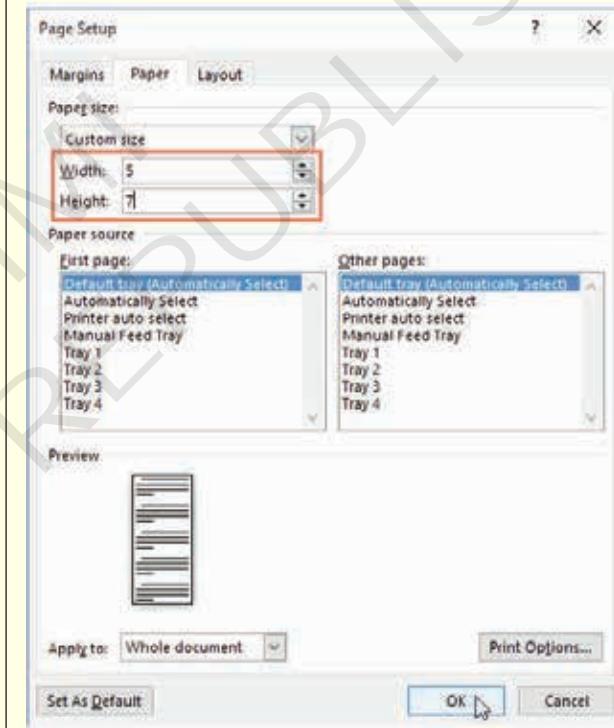
- 2 The Page Setup dialog box will appear.
- 3 Adjust the values for Width and Height, then click OK (Fig 6).
- 4 The page size of the document will be changed.

**Page margins** : A margin is the space between the text and the edge of your document. By default, a new document's margins are set to Normal, which means it has a one-inch space between the text and each edge. Depending on your needs, Word allows you to change your document's margin size.

**To use a custom page size** : Word also allows you to customize the page size in the **Page Setup** dialog box.

- 1 From the **Layout tab**, click Size. Select **More Paper Sizes** from the drop-down menu. (Fig 5)

Fig 6



**To format page margins** : Word has a variety of predefined margin sizes to choose from.

- 1 Select the Layout tab, then click the Margins command. (Fig 7)
- 2 A drop-down menu will appear. Click the predefined margin size you want. (Fig 8)
- 3 The margins of the document will be changed.

**To use custom margins** : Word also allows you to customize the size of your margins in the Page Setup dialog box.

- 1 From the Layout tab, click Margins. Select Custom Margins from the drop-down menu. (Fig 9)
- 2 The Page Setup dialog box will appear.

Fig 7

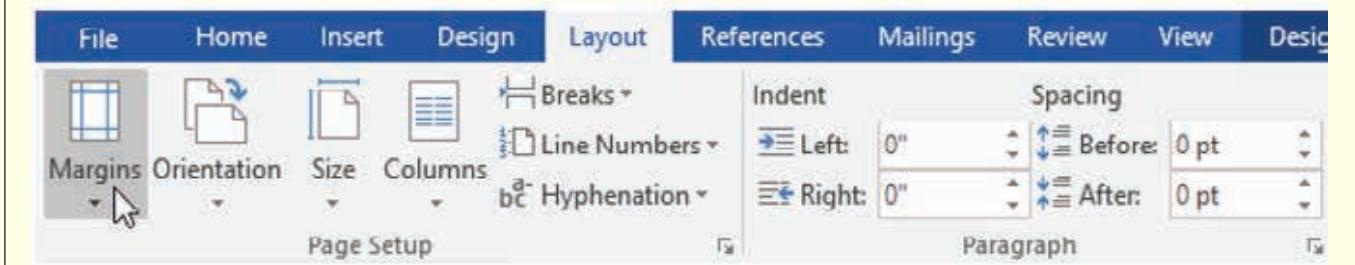
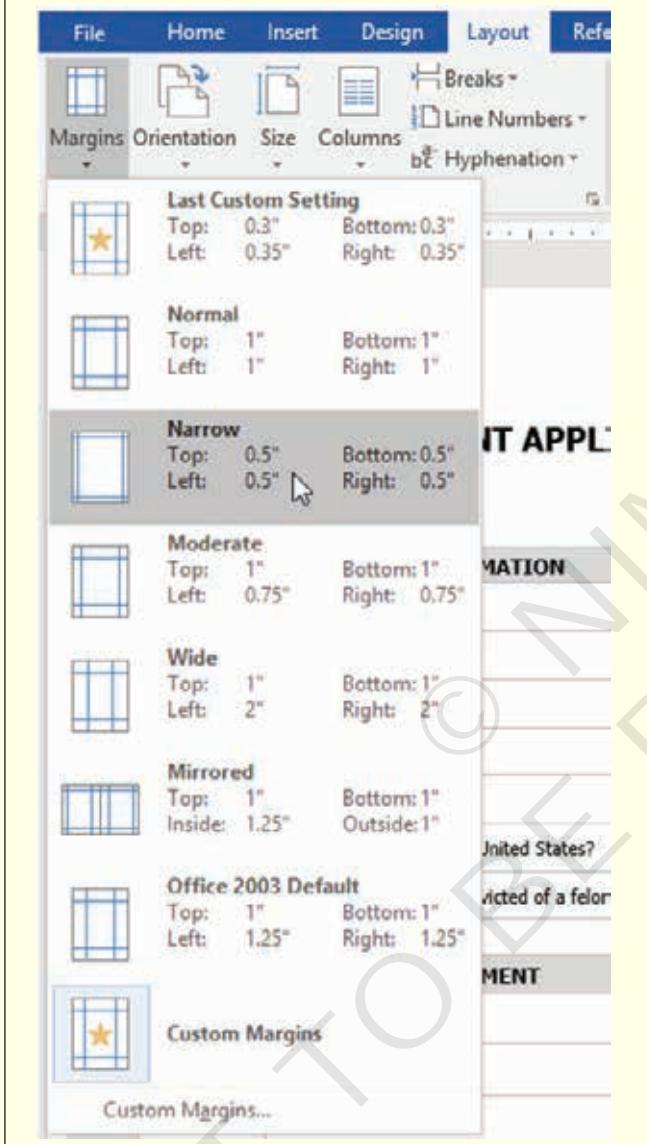
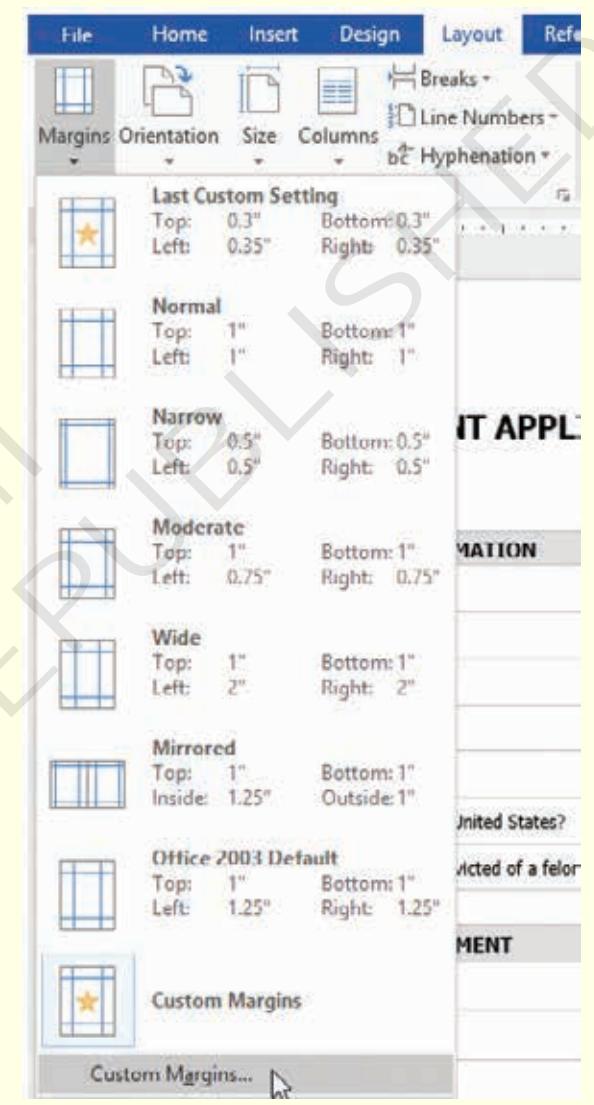


Fig 8



- 3 Adjust the values for each margin, then click OK.
  - 4 The margins of the document will be changed. (Fig 10)
- You can also open the Page Setup dialog box by navigating to the Layout tab and clicking the small arrow in the bottom-right corner of the Page Setup group. (Fig 11)

Fig 9



arrow in the bottom-right corner of the Page Setup group. (Fig 11)

You can use Word's convenient Set as Default feature to save all of the formatting changes you've made and automatically apply them to new documents.

Fig 10

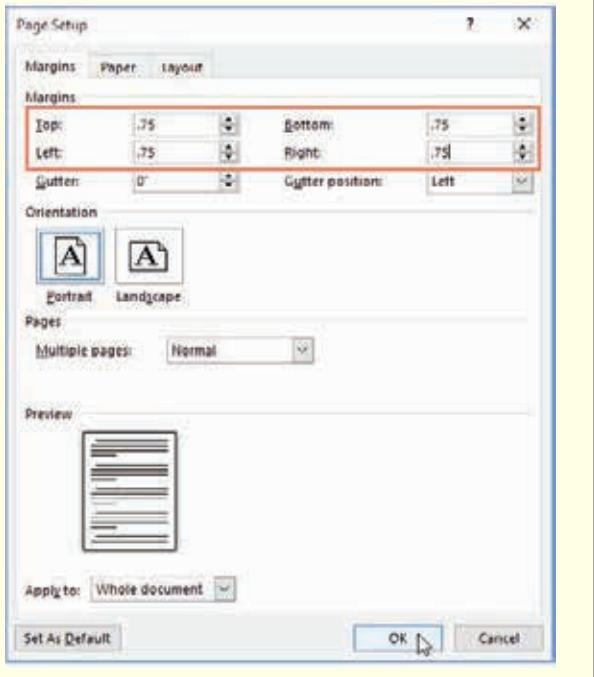


Fig 11



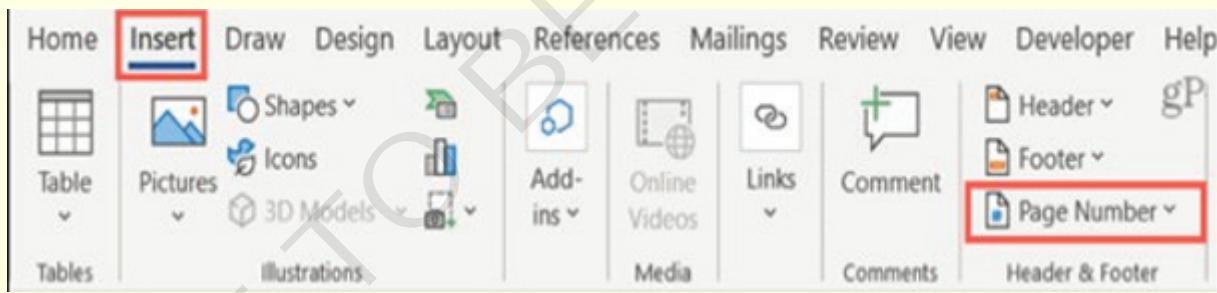
## TASK 2: Insert and modify headers and Footers

**Use the Built-In Headers and Footers in Word :** If you want a quickly add a header or footer to a Word document, you can use one of the preset options. These let you pick a layout for your header or footer. For example, you may wish to use a header or footer with three columns, apply a style that uses color, or format it to include specific details.

### To add a preset header or footer in Word

- 1 Go to the Header & Footer section of the Insert tab on the ribbon bar.
- 2 Click Header or Footer, then review the options in the drop-down box.
  - If you want a page number, click that drop-down arrow and pick a location. (Fig 12)

Fig 12



- 3 Select the header or footer style you want, and it will appear in your document. (Fig 13)
  - If the option you select is waiting for additional details, go to the designated area in the header or footer to add them. For example, you may need to add a custom document title. (Fig 14)

**Customize the Header or Footer :** You can type whatever you like in the header or footer section once it is open for editing. While this is convenient, you can also insert other details automatically using the Header & Footer tab on the ribbon bar.

On the left side of the ribbon, you have the same built-in header, footer, and page number options as above. This allows you to apply a preset style or add page numbers afterward. (Fig 15)

To the right, you'll see the Insert section of the ribbon. This lets you pop in the details you want to use, such as the date and time, document title, and more. (Fig 16)

- 1 **Date & Time:** To include the date and time, click the Date & Time button. Choose the format you want to use in the window that appears and click OK. (Fig 17)

Fig 13

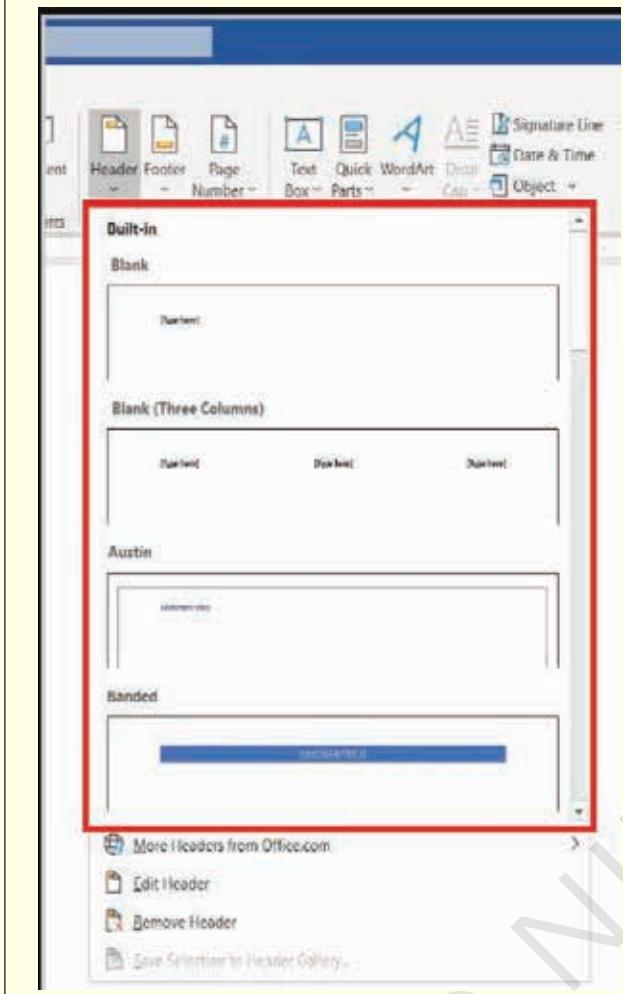


Fig 14



Fig 15

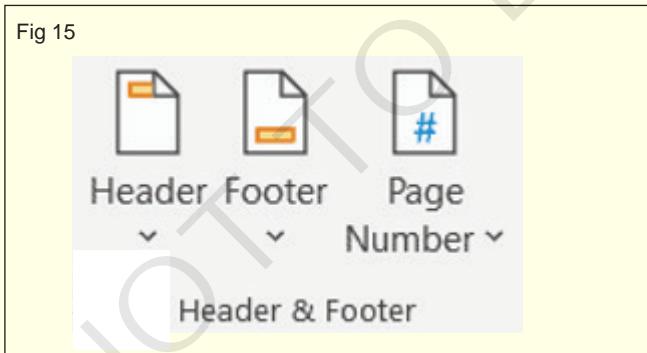


Fig 16

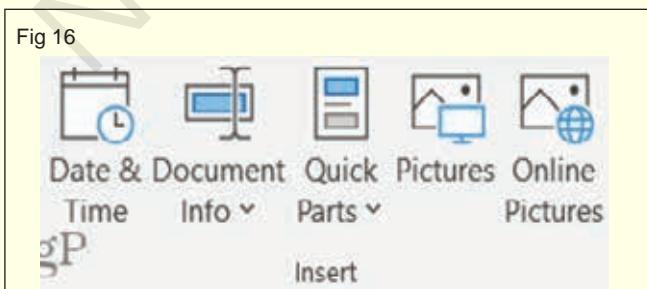
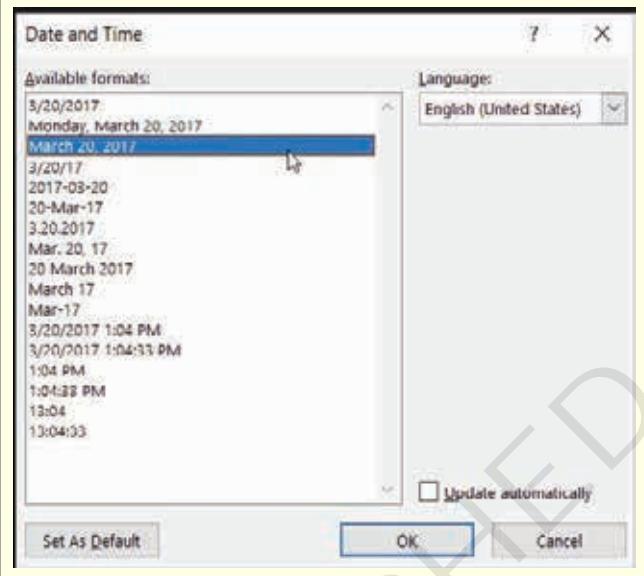
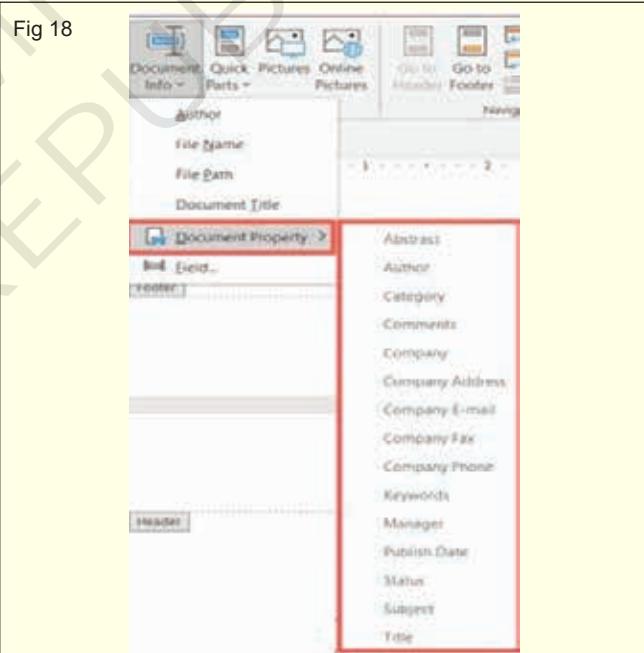


Fig 17



- 2 **Document Info:** In this drop-down box, you'll see options like Author, File Name, and Document Title. You can also pick a different Document Property in the same pop-out menu for things like Category, Company, and Manager. (Fig 18)

Fig 18



- 3 In addition, you choose from a slew of Field options. This includes things like a hyperlink, citation, section, or symbol. Select Field, review the available options, then choose the option you want. Click OK to insert it. (Fig 19)
- 4 Quick Parts: If you have AutoText set up, such as a signature, use the Quick Parts drop-down options. You can also select Document Properties or a Field option from the same drop-down menu. (Fig 20)
- 5 Pictures and Online Pictures: If you want to include an image, such as a company logo, use the Pictures and Online Pictures buttons to choose and insert the image. (Fig 21)

Fig 19

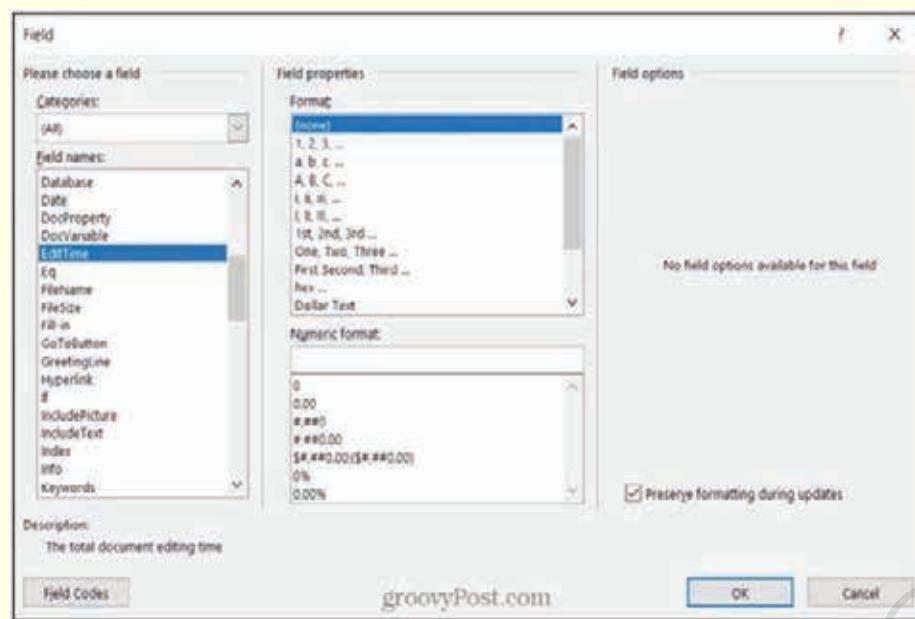


Fig 20

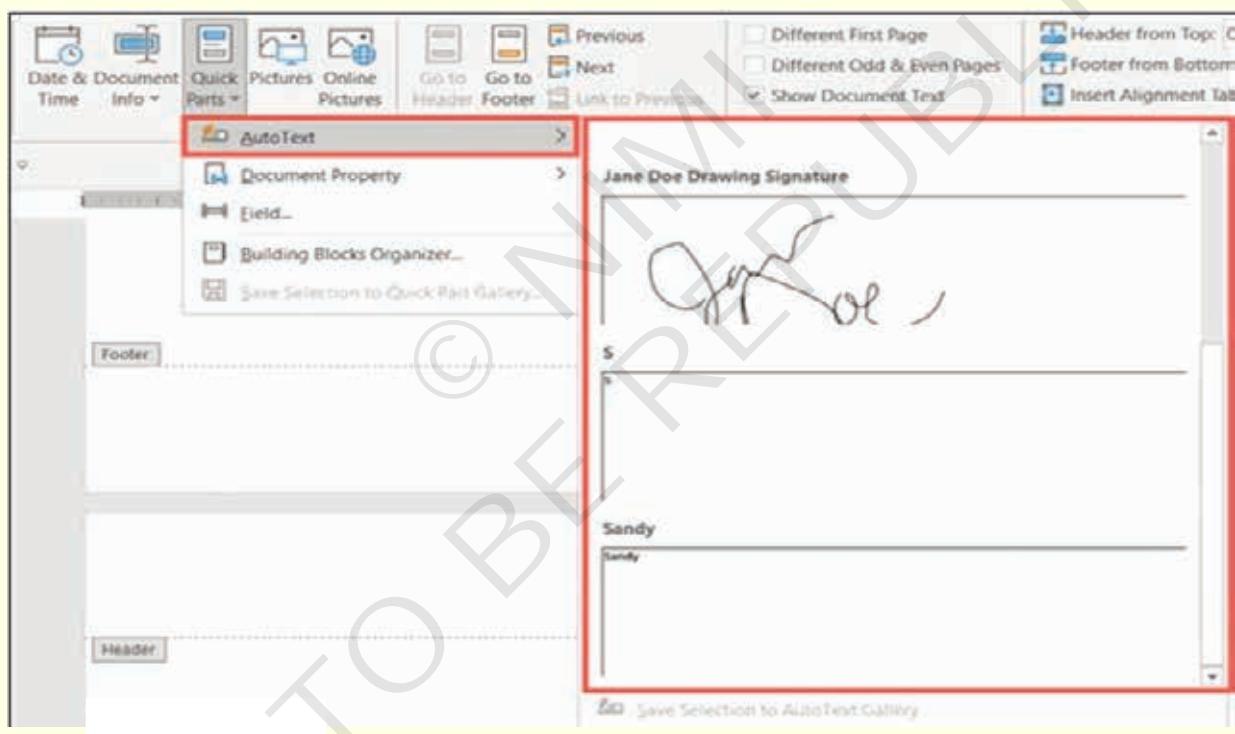
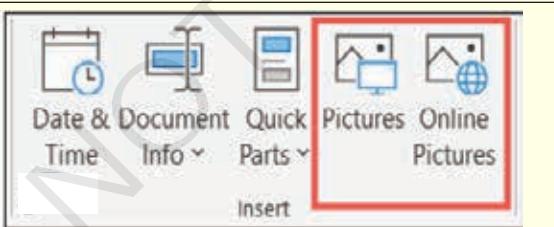
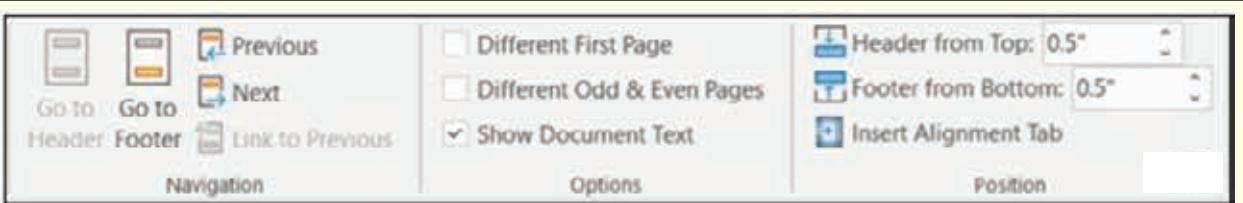


Fig 21



The remaining options on the Header & Footer tab allow you to jump between the header and footer sections easily, use different headers and footers on odd and even pages, and adjust the spacing between the section and the margin. (Fig 22)

Fig 22



- 6 You can use the Font formatting options on the Home tab to apply bold or italic formatting or choose a font style and color just like your document text. (Fig 23)

Fig 23

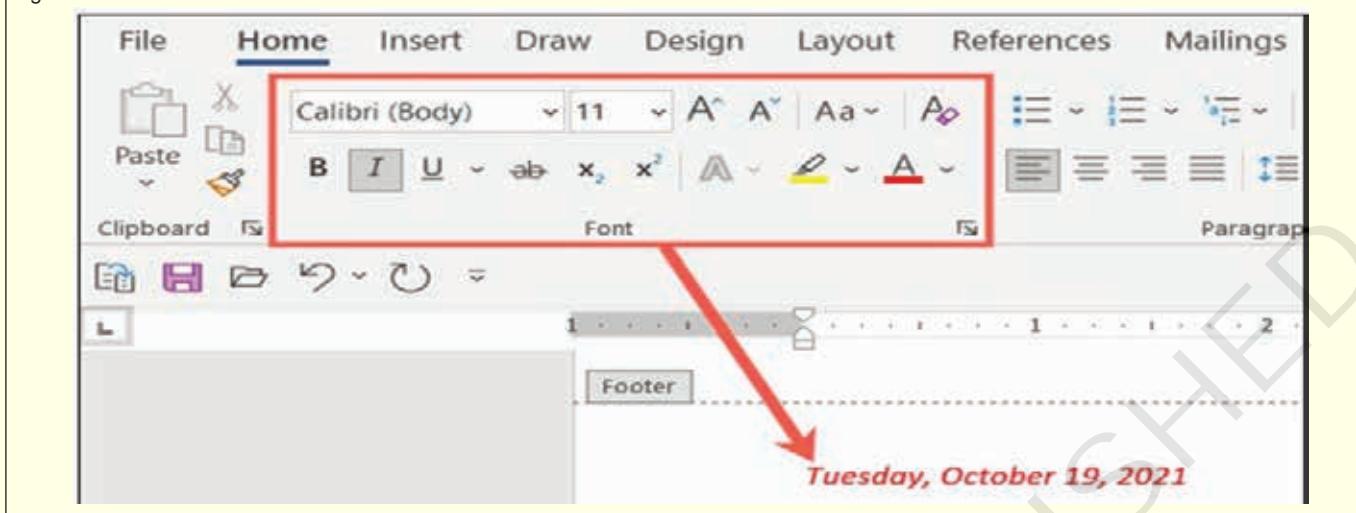
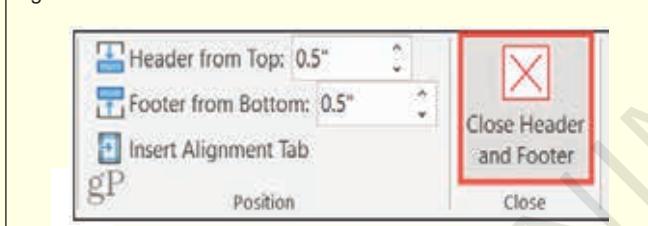


Fig 24

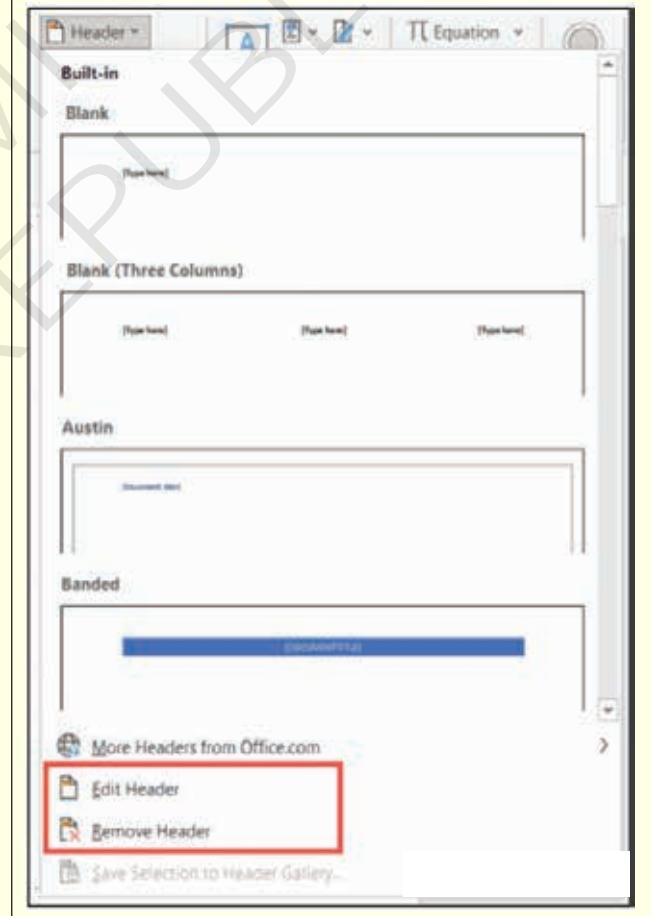


**Edit or Remove a Header or Footer :** You can change or remove a header or footer in Word at any time after you insert it.

- To do this, go to the Insert tab, click either Header or Footer, and choose Edit Header or Edit Footer from the drop-down list. This will open the section ready for you to make your changes.
- To remove them, choose Remove Header or Remove Footer in the drop-down list. (Fig 25)

- 7 To finish editing the header or footer, click Close Header and Footer on the right side of the ribbon. Alternatively, double-click a spot outside of those areas in your document. (Fig 24)

Fig 25



#### TASK 4: Configure page background elements

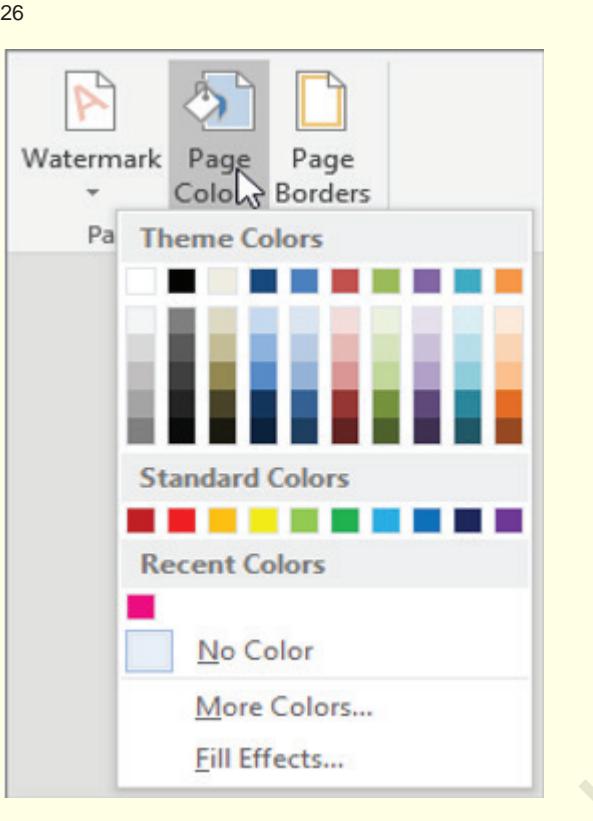
##### Add or change the background color

- Go to Design > Page Color.
- Choose the color you want under Theme Colors or Standard Colors.

- If you don't see the color you want, select More Colors, and then choose a color from the Colors box.
- To add a gradient, texture, pattern, or picture, select Fill Effects, and then go to Gradient, Texture, Pattern, or Picture and select an option.

Patterns and textures are repeated (or “tiled”) to fill the entire page. If you save your document as a webpage, the textures are saved as JPEG files, and the patterns and gradients are saved as PNG files. (Fig 26)

Fig 26



#### Remove the background color

1 Go to Design > Page Color.

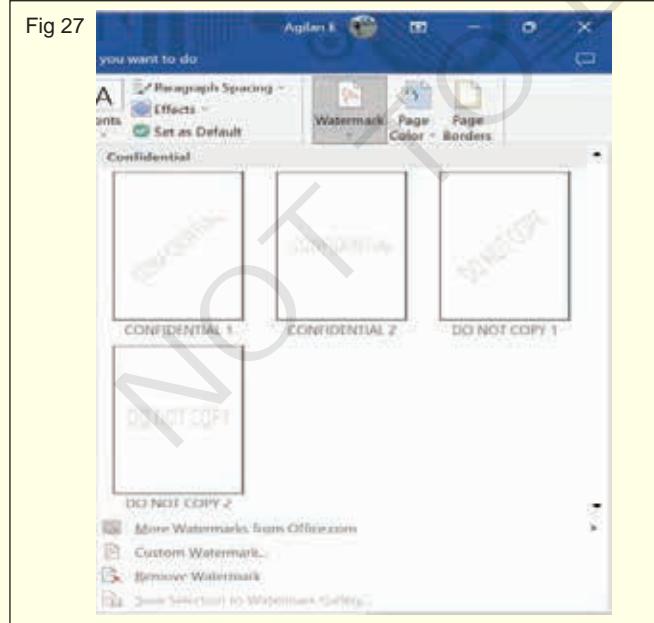
2 Select No Color

#### Add or change the background Watermark

1 Go to Design > Watermark.

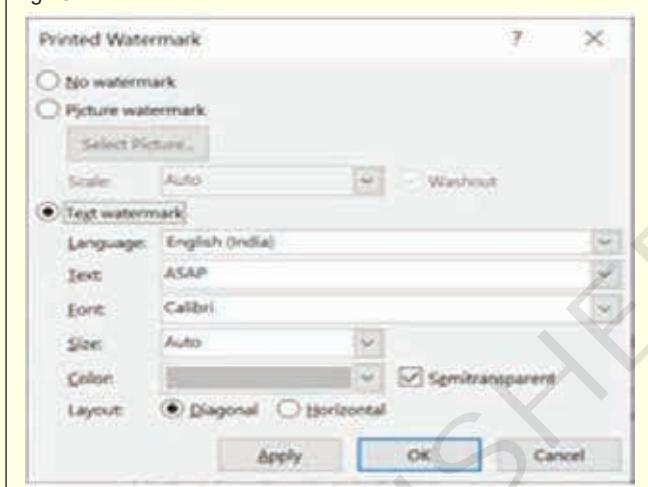
2 Choose the watermark you want under Confidential or Disclaimer or Urgent (Fig 27)

Fig 27



- If you don't see the watermark you want, select More Watermarks from Office.com or choose Custom Watermark - Picture Watermark or Text Watermark (format the text as you need). (Fig 28)

Fig 28



#### Remove the background Watermark

3 Go to Design > Watermark.

4 Select Remove Watermark.

#### Add or change the background Page Borders

1 Go to Design > Page Boarders.

2 Choose the Page Boarder you want under Page Boarder Tab. (Fig 29)

3 Applying Setting as None or Box or Shadow or 3-D or Custom.

4 Applying Style of border Line and Color and Width size and Art. (Fig 30)

Fig 30

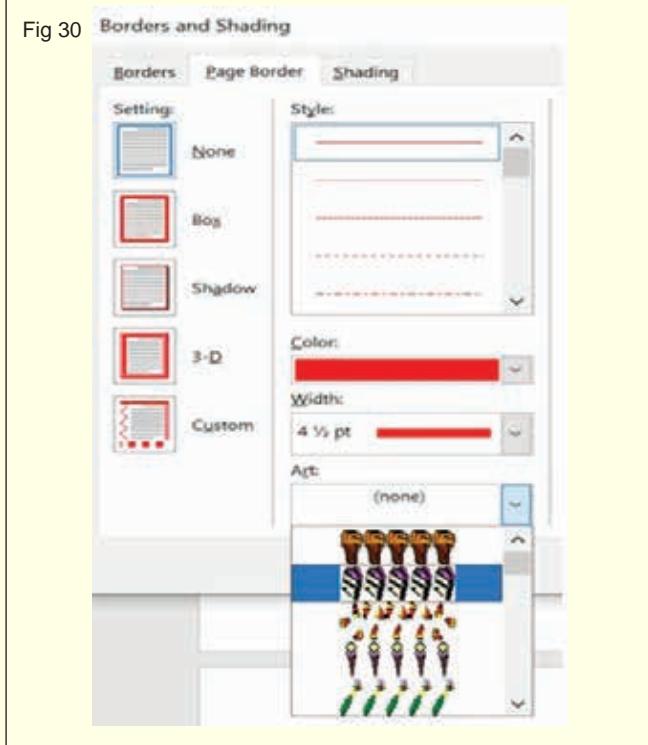
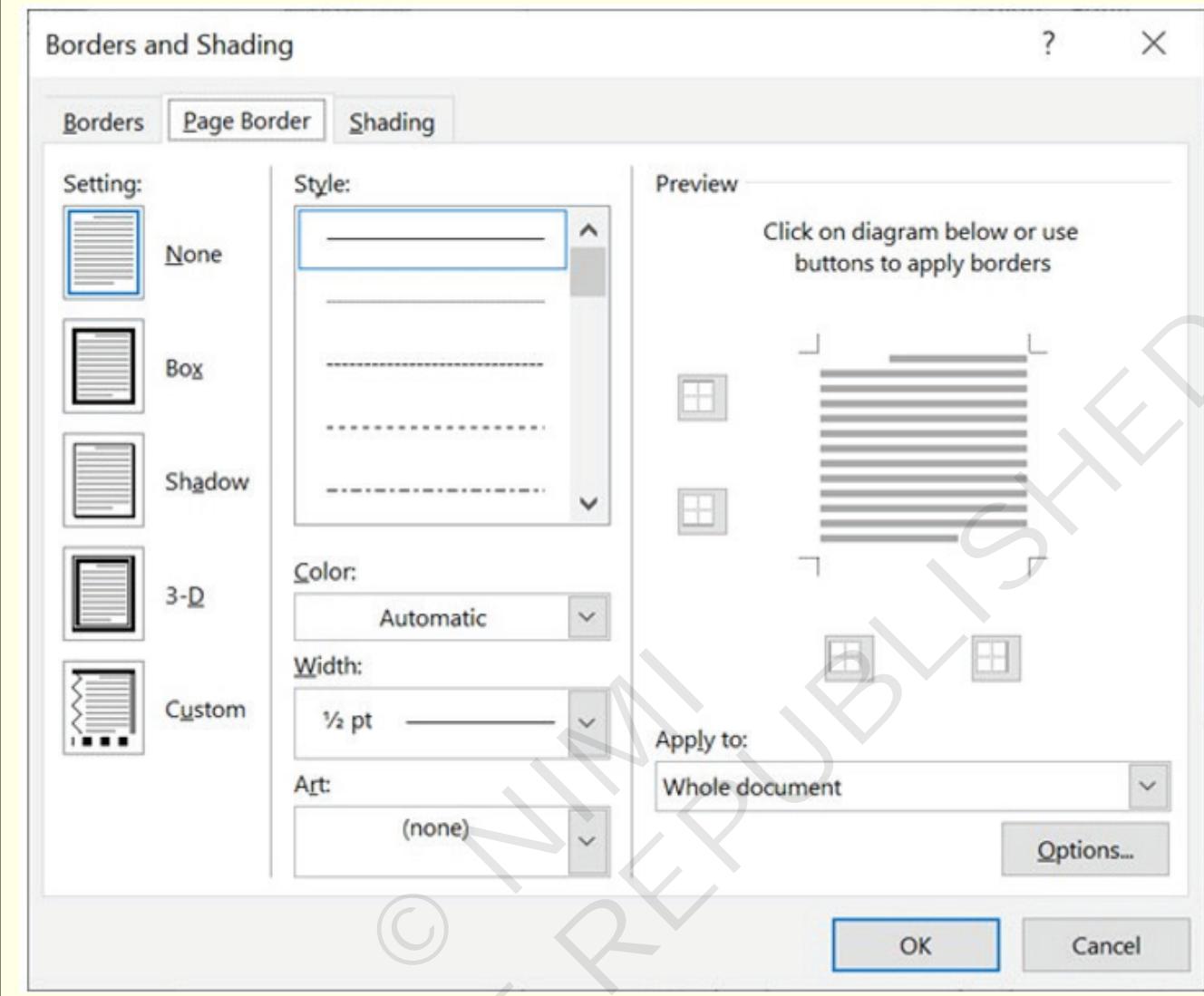


Fig 29



5 After applying all these we can preview the Page Border and also this setting can be applied to any of the following pages.

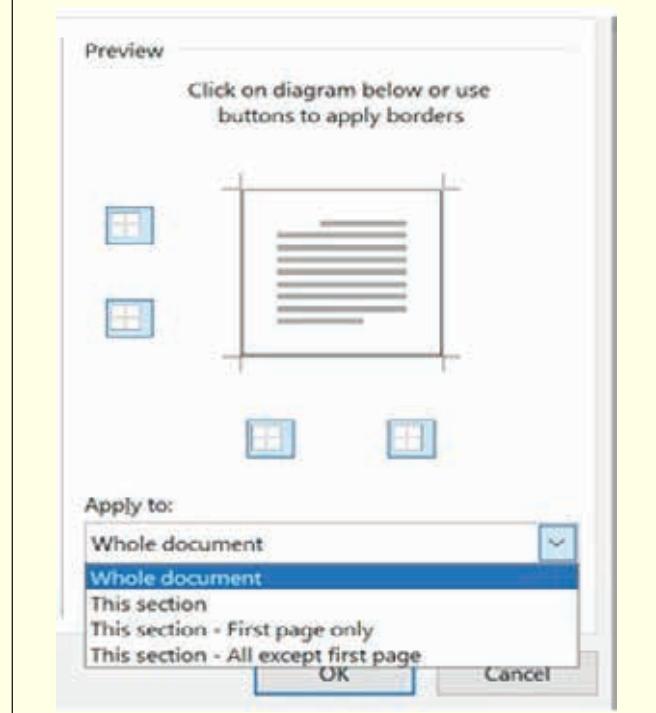
- Whole documents
- This Section
- This Section - First Page only (Fig 31)
- This Section - All except first page

6 Then Click OK to Finish

#### Remove the background Page Borders

- 1 Go to Design > Page Borders.
- 2 Select None in setting and Click OK.

Fig 31



## COPA - Word Processing Software

### Save and share documents

**Objectives:** At the end of this exercise you shall be able to

- save documents in alternative file formats.

#### Requirements

##### Tools/Equipment/Machines

- |                                   |         |                           |         |
|-----------------------------------|---------|---------------------------|---------|
| • A Working PC with Windows 10 OS | – 1 No. | • MS Office 2019 / Latest | - 1 No. |
|-----------------------------------|---------|---------------------------|---------|

### PROCEDURE

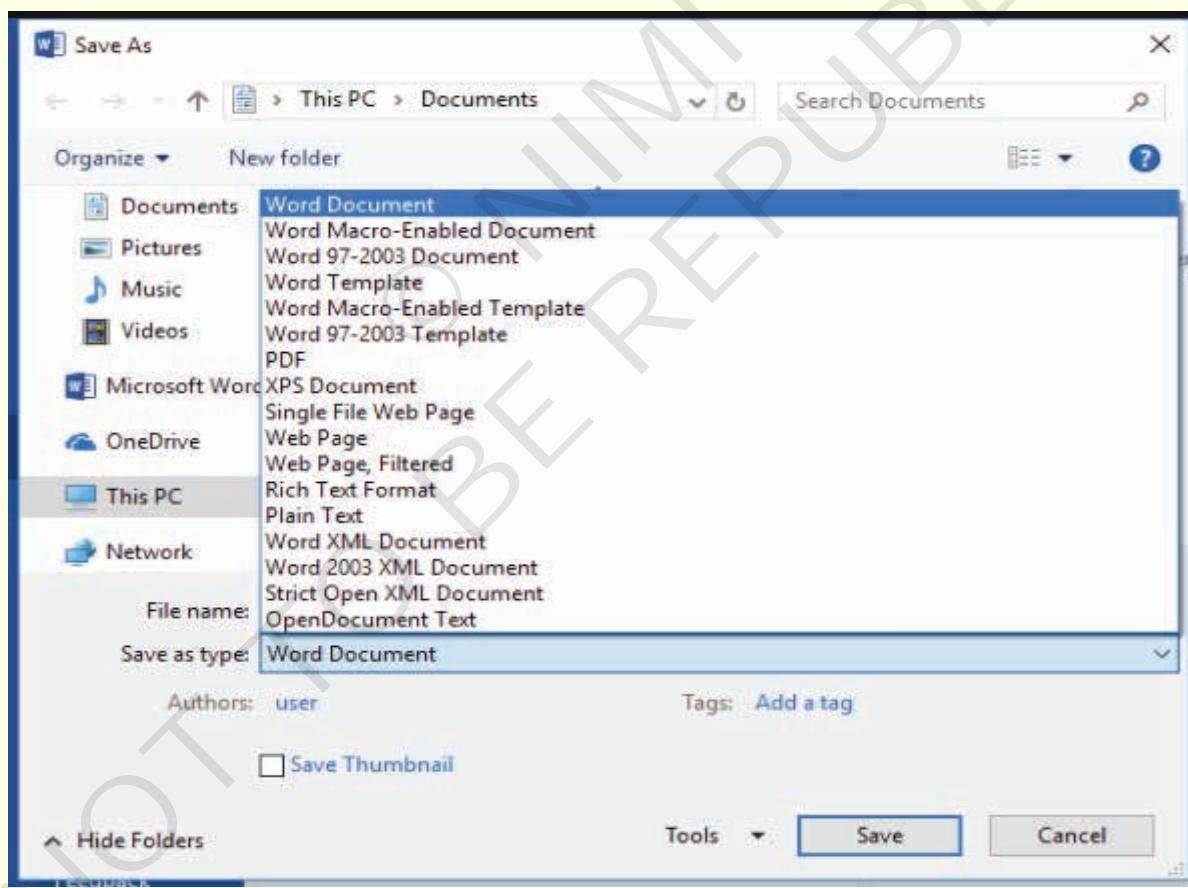
#### TASK 1: Save documents in alternative file formats

##### To change page orientation

- 1 Select File > Save As.
- 2 Select a place to save the file, or select Browse and go to the location where you want to save the file.

- 3 Enter a name for the document.
- 4 Select Save as type and choose the file format you want to use.
- 5 Select Save. (Fig 1)

Fig 1



#### TASK 2: Modify basic document properties

- 1 Click the File tab.
- 2 Click Info then View the Details of Properties. (Fig 2)

- 3 Click Properties at the top of the page, and then select Advanced Properties.
- 4 Here you can edit Summary Details about the Documents.

Fig 2



Fig 3



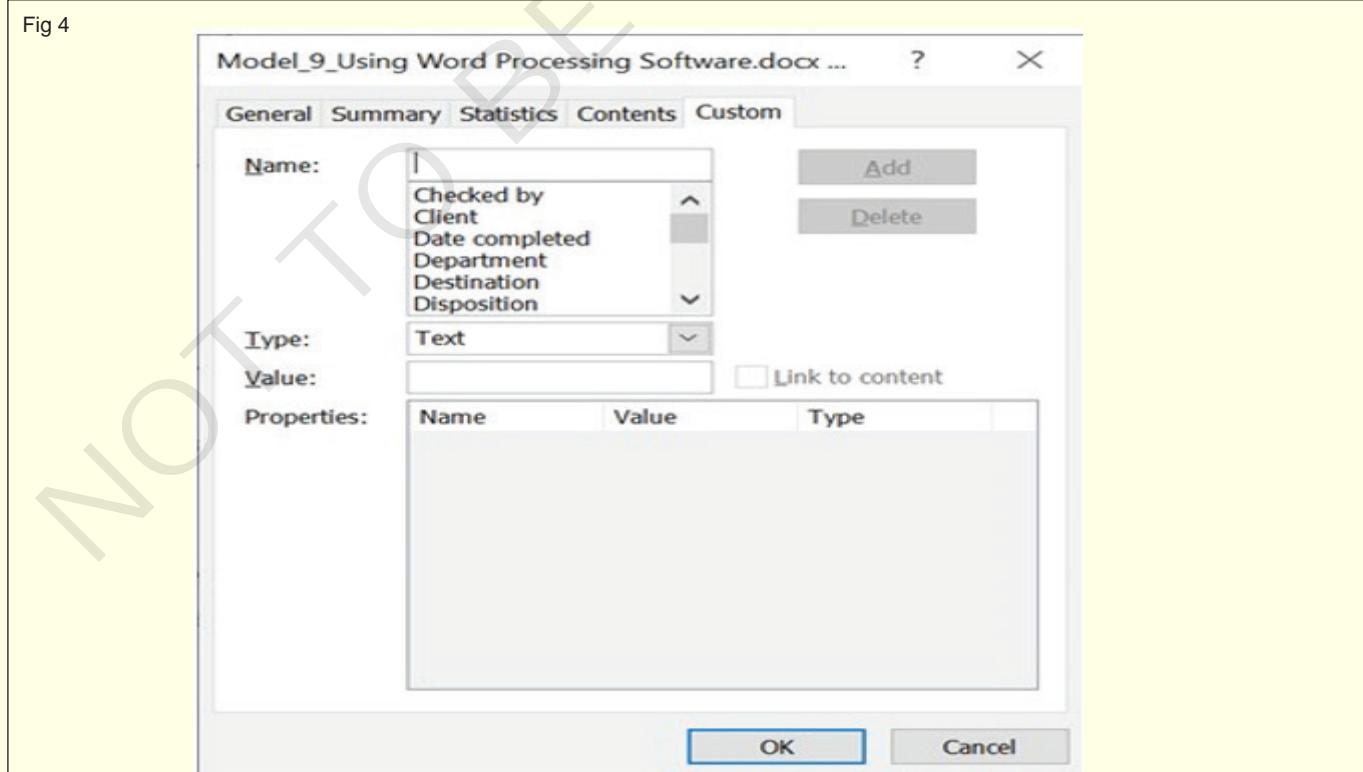
5 Click the Custom tab. (Fig 3)

- In the Name box, type a name for the custom property, or select a name from the list.

- In the Type list, select the data type for the property that you want to add.
- In the Value box, type a value for the property. The value that you type must match the selection in the Type list. For example, if you select Number in the Type list, you must type a number in the Value box. Values that don't match the property type are stored as text.

6 Click OK (Fig 4)

Fig 4



### TASK 3: Modify print settings

- 1 Select File > Print.
- 2 To preview each page, select the forward and backward arrows at the bottom of the page. (Fig 5)

Fig 5



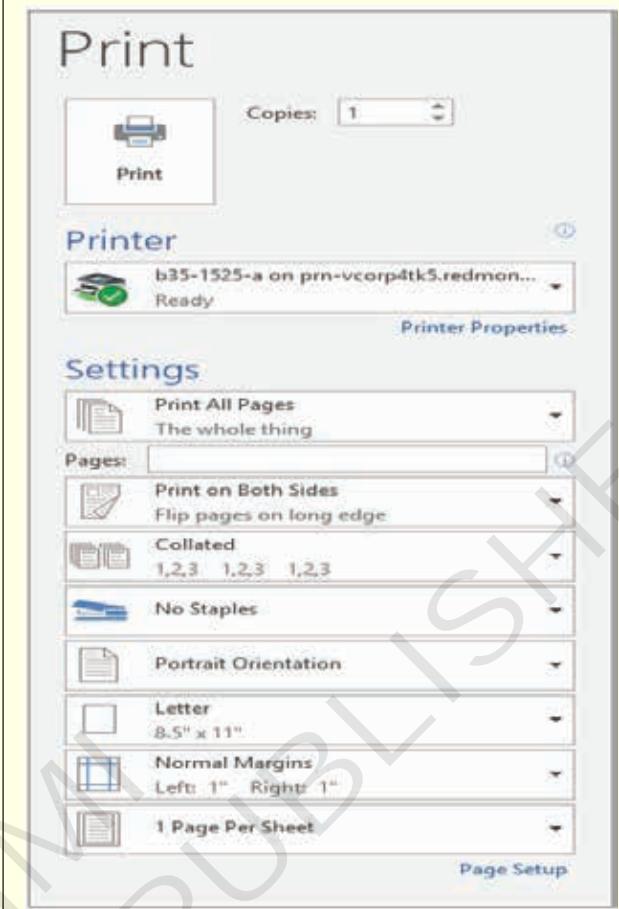
If the text is too small to read, use the zoom slider at the bottom of the page to enlarge it. (Fig 6)

Fig 6



- 3 Choose the number of copies, and any other options you want, and select the Print button. (Fig 7)

Fig 7



### TASK 4: Share documents electronically

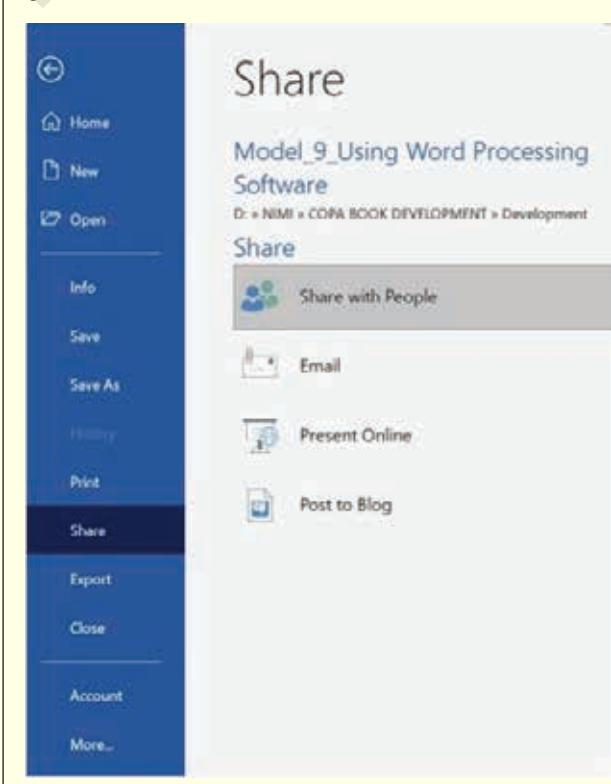
- 1 Click File > Share.
- 2 You Can share the document by Share with people or Email or Present Online or Post Blog. (Fig 8)
- 3 If you want to choose the option of Share with People then Save your document in OneDrive Cloud, if it's not already there.
- 4 The Share window displays if your document is not currently saved in OneDrive. Select the OneDrive option, then name your document and select OK.

**Note: Before Sharing, please ensure that Sender and receiver must have Microsoft Outlook Email Account or Microsoft O365 subscribed organization email account.**

- 5 Enter email addresses of the people you want to share with and make choices for permission you want to allow.
- 6 Type a message if you want, and select Send.

The people you're sharing with will get mail from you, with a link to your document.

Fig 8



## COPA - Word Processing Software

### Inspect documents for issues

**Objectives:** At the end of this exercise you shall be able to

- locate and remove hidden properties and personal information.

#### Requirements

##### Tools/Equipment/Machines

- |                                   |         |                           |         |
|-----------------------------------|---------|---------------------------|---------|
| • A Working PC with Windows 10 OS | - 1 No. | • MS Office 2019 / Latest | - 1 No. |
|-----------------------------------|---------|---------------------------|---------|

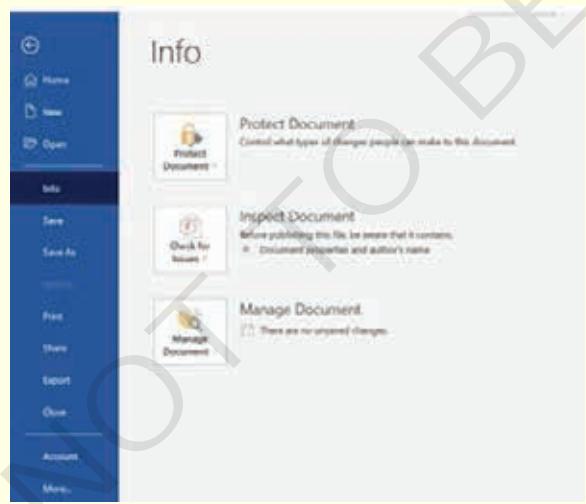
#### PROCEDURE

##### TASK 1: Locate and remove hidden properties and personal information

You can use the Document Inspector to find and remove hidden data and personal information in Word documents. It is a good idea to use the Document Inspector before you share an electronic copy of your Word document, such as in an e-mail attachment.

- 1 Open the Word document that you want to inspect for hidden data and personal information.
- 2 Click the File tab, click Save As, and then type a name in the File name box to save a copy of your original document.
- 3 In the copy of your original document, click the File tab, and then click Info.
- 4 Click Check for Issues, and then click Inspect Document. (Fig 1)

Fig 1

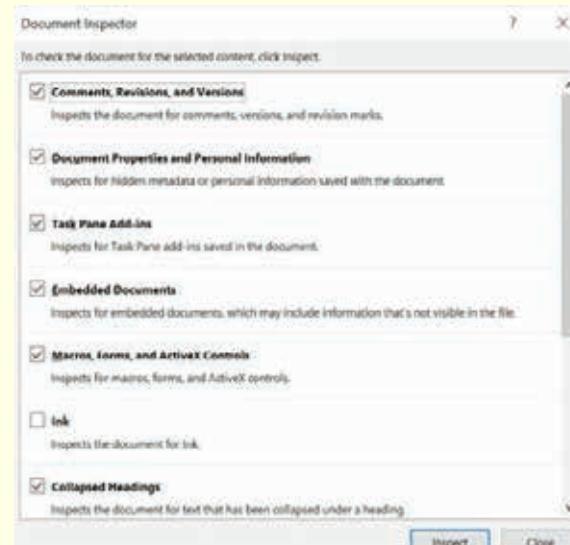


- 5 In the Document Inspector dialog box, select the check boxes to choose the types of hidden content that you want to be inspected. (Fig 2)
- 6 Click Inspect. (Fig 3)

Fig 2



Fig 3



- 7 Review the results of the inspection in the Document Inspector dialog box. (Fig 4)
- 8 Click Remove All next to the inspection results for the types of hidden content that you want to remove from your document. (Fig 5)

Fig 4

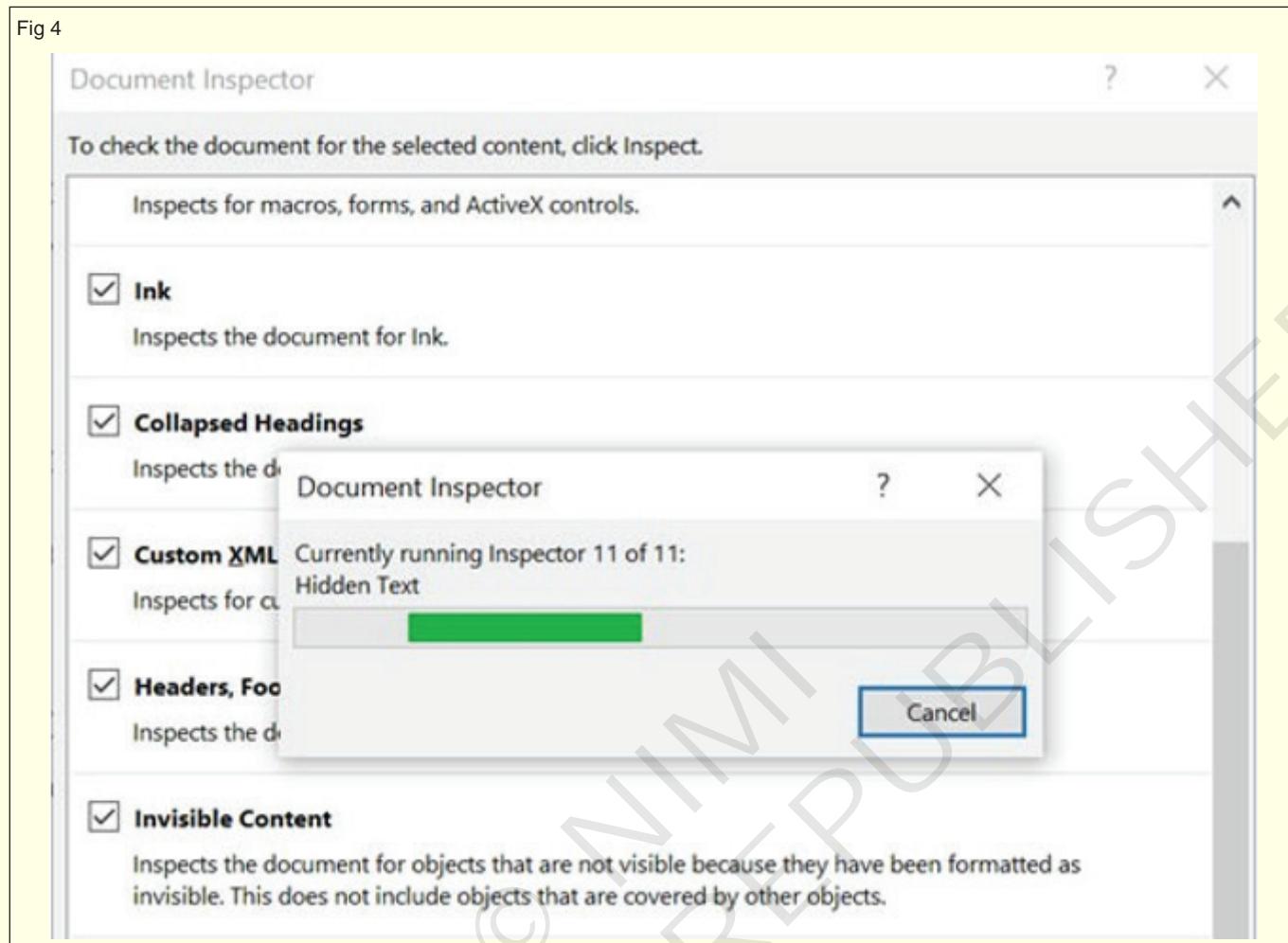
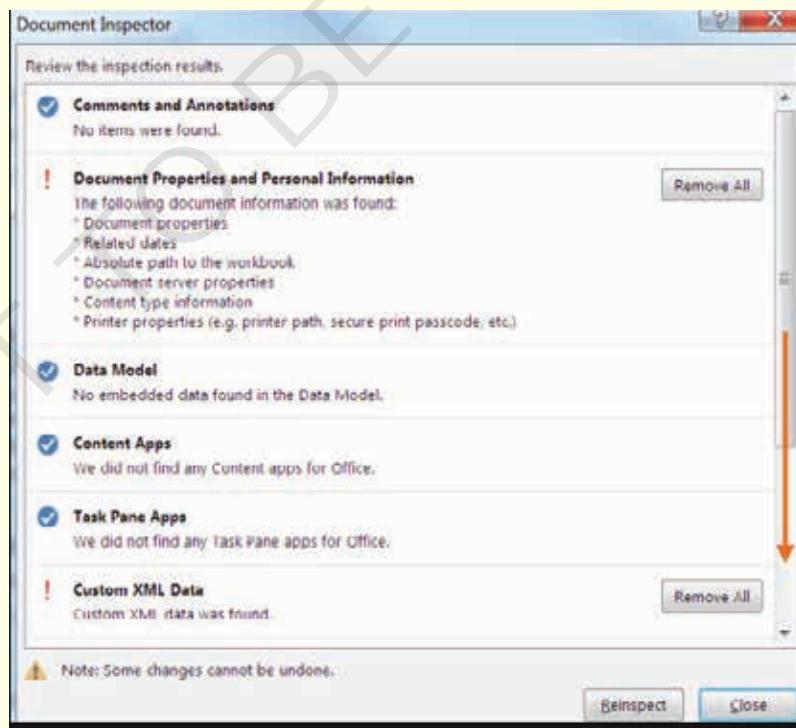


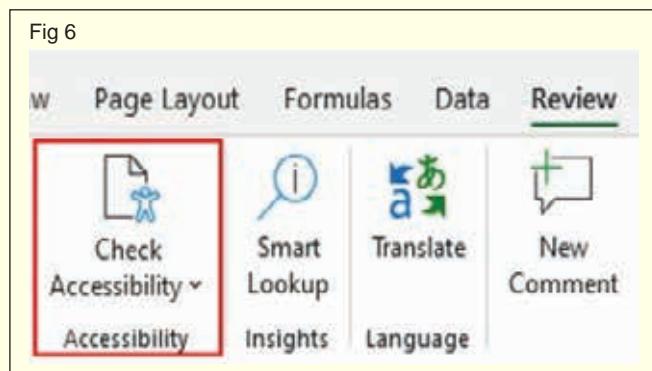
Fig 5



## TASK 2: Locate and correct accessibility issues Use the Accessibility Checker

- 1 On the ribbon of the Microsoft Office app, select the Review tab. If you're using Outlook, you'll only see the Review tab when writing or replying to messages.
- 2 Select the upper part of the Check Accessibility split button. The Accessibility pane opens to the right of the screen. The Accessibility ribbon activates at the top of the screen.

**Tip:** To see more options, select the lower part of the Check Accessibility button. (Fig 6)



- 3 In the Accessibility pane, review and address the findings as instructed in Apply recommended actions.

**Apply recommended actions :** In the Accessibility pane, you'll see a list of errors, warnings, and tips with how-to-fix recommendations for each. To quickly fix the issues, apply one of the recommended actions. For more information on how the findings are categorized, go to Rules for the Accessibility Checker.

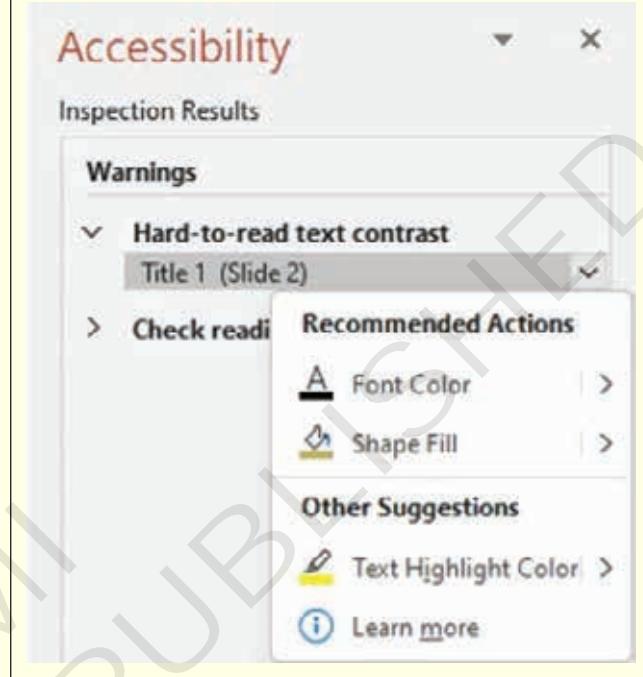
- 1 In the Accessibility pane, select an issue under Warnings or Errors. The list expands and shows the items and objects affected by the issue.

**Tip:** To view the exact location of the affected item or object, select the item or object.

- 2 To address the issue, select the down arrow button next to it. The Recommended Actions list opens. (Fig 7)

- 3 To apply a one-click fix, select an action from the Recommended Actions list. To view more options, select the right arrow button next to an action (if available).

Fig 7



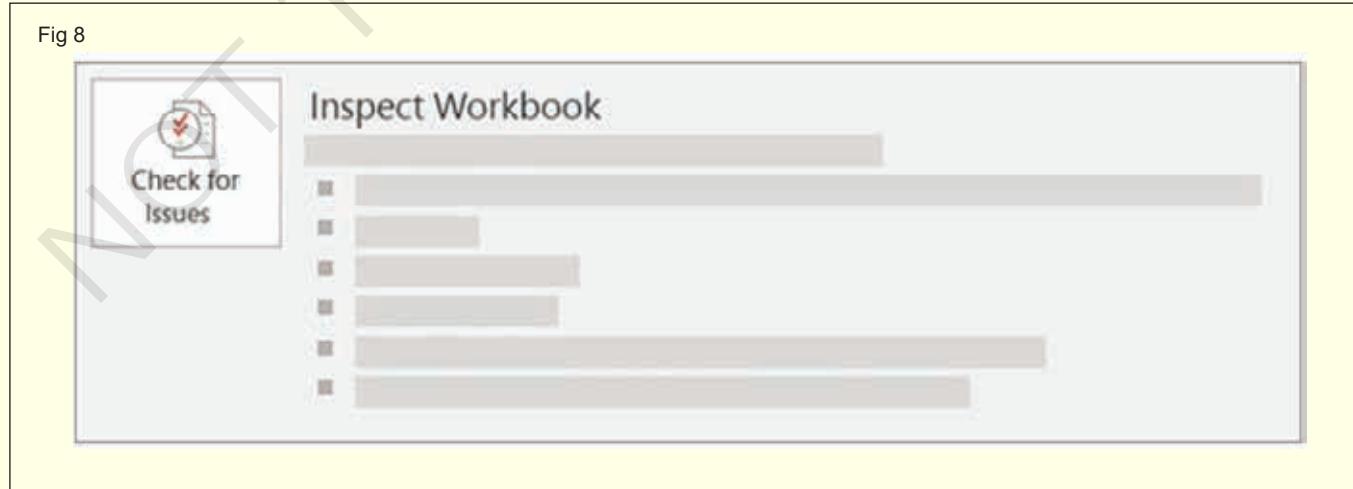
- 4 Go through and resolve each issue under Warnings and Errors.

**Don't see the Accessibility Checker? :** If you don't see the Check Accessibility button on the Review tab, you might have an older version of the app. Follow these steps to open the Accessibility Checker in an older app version:

- 1 Select File > Info.

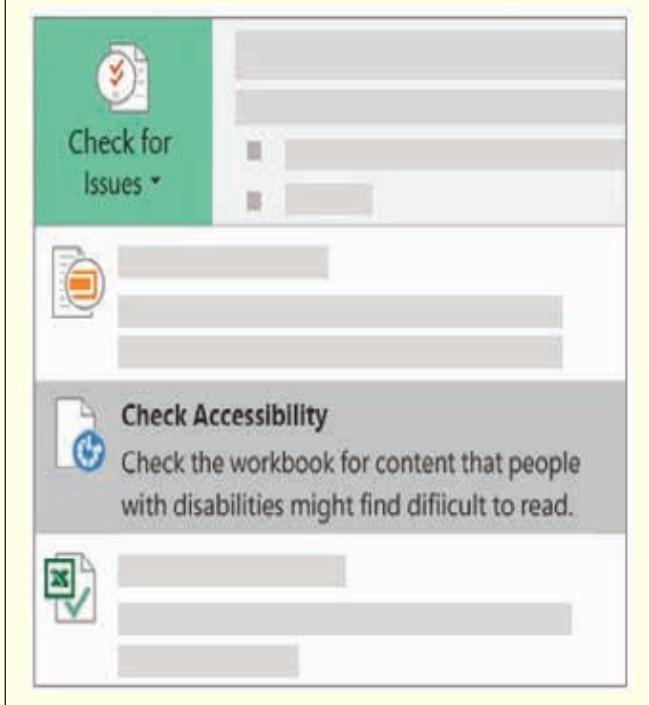
- 2 Select the Check for Issues button. (Fig 8)

**Tip:** To the right of the Check Accessibility button, under the Inspect heading, is a list of any potential issues.



- 3 In the Check for Issues drop-down menu, select Check Accessibility. (Fig 9)

Fig 9



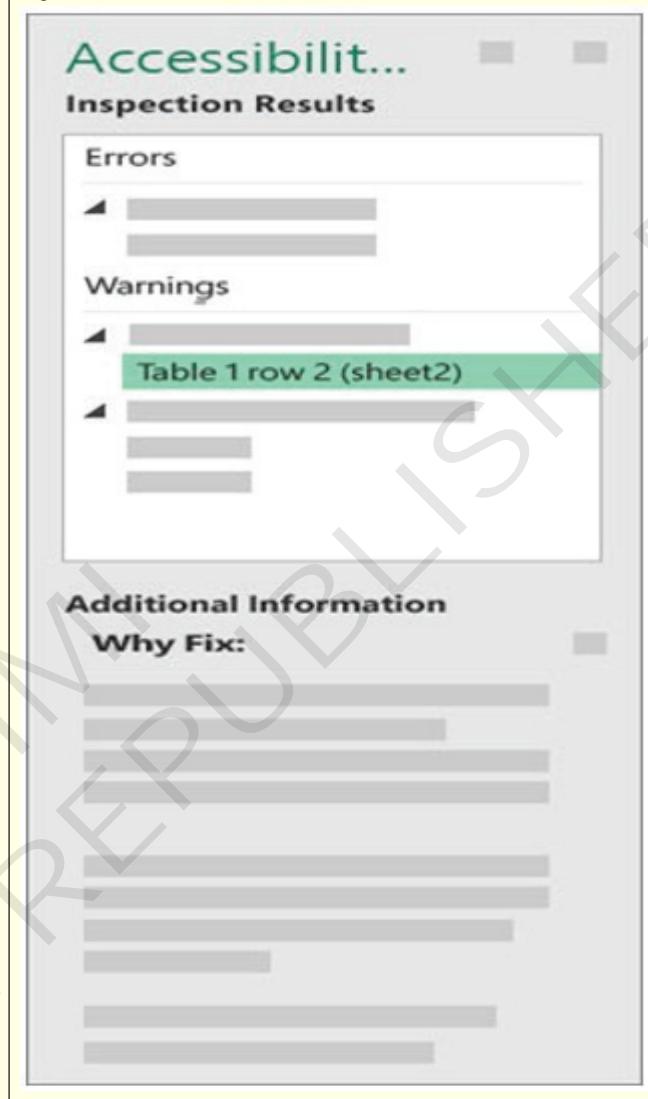
- 4 The Accessibility Checker task pane appears next to your content and shows the inspection results. (Fig 10)

Fig 10



- 5 To see information on why and how to fix an issue, under Inspection Results, select an issue. Results appear under Additional Information, and you're directed to the inaccessible content in your file. (Fig 11)

Fig 11



### TASK 3: Locate and correct compatibility issues

Check file compatibility with earlier versions

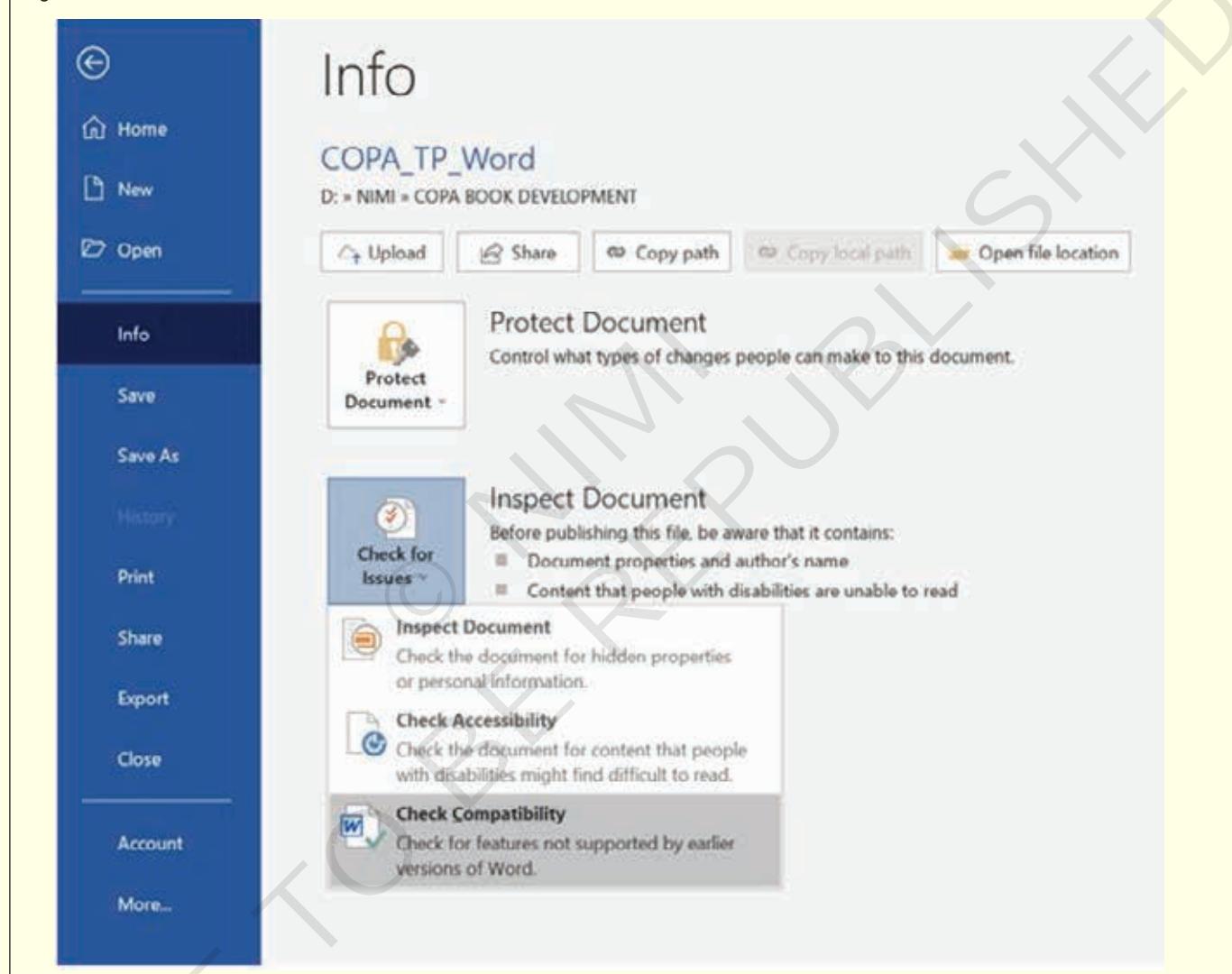
You can check compatibility between versions of your Microsoft Office files to see if features in a file are supported by older versions of Office by using Compatibility Checker.

#### To check compatibility with an older version of Office

1 Click the File tab, and then click Info.

- 2 Click Check for Issues, and then click Check Compatibility.
- 3 Any issues between the versions are listed under Summary in the Compatibility Checker window. (Fig 12)

Fig 12



## COPA - Format documents

### Insert text and paragraphs

**Objectives:** At the end of this exercise you shall be able to

- find and replace text
- insert symbols and special characters.

#### Requirements

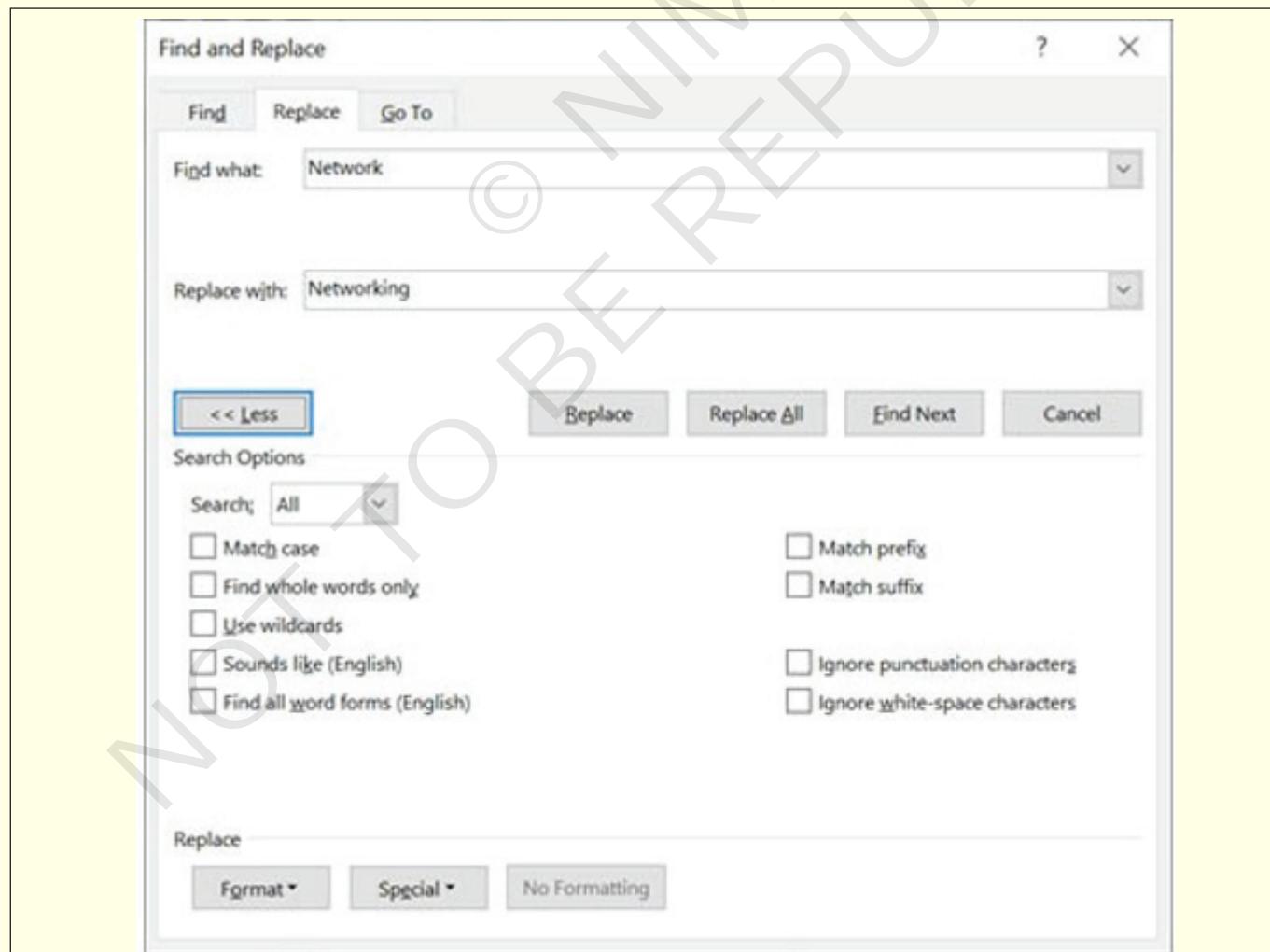
##### Tools/Equipment/Machines

- |                                   |         |                           |         |
|-----------------------------------|---------|---------------------------|---------|
| • A Working PC with Windows 10 OS | - 1 No. | • MS Office 2019 / Latest | - 1 No. |
|-----------------------------------|---------|---------------------------|---------|

### PROCEDURE

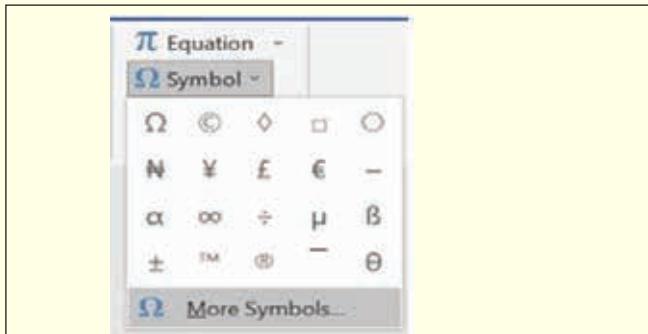
#### TASK 1: Find and replace text

- 1 Go to Home > Replace or Ctrl + H
- 2 Enter the word or phrase you want to replace in Find what.
- 3 Enter your new text in Replace with.
- 4 Choose Replace All to change all occurrences of the word or phrase. Or, select Find Next until you find the one you want to update, and then choose Replace.
- 5 To specify only uppercase or lowercase in your search, select More > Match case. There are several other ways to search in this menu.



## TASK 2: Insert symbols and special characters

1 Go to Insert > Symbol.

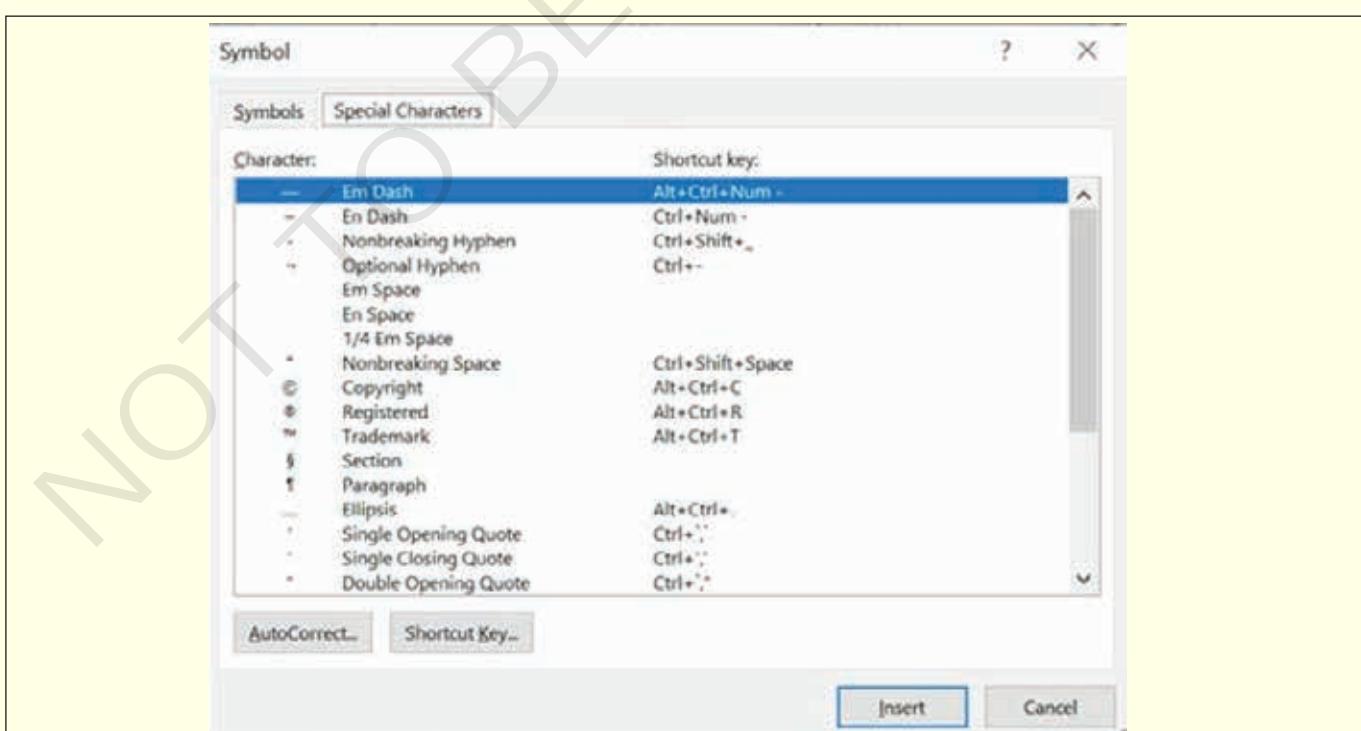
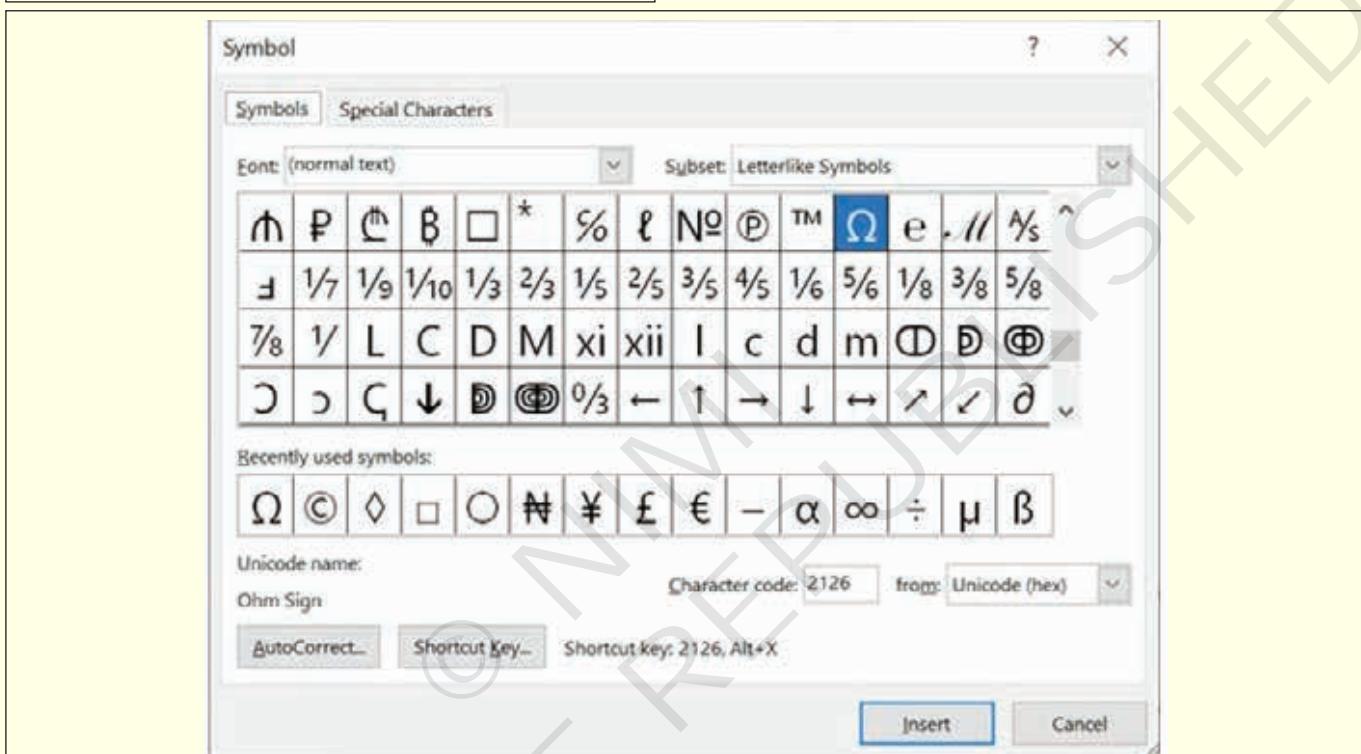


2 Pick a symbol, or choose More Symbols.

3 Choose the Symbol or Special Character tab and Scroll up or down to find what you want to insert.

4 When you find the symbol or special character you want, double-click it. The symbol will be inserted in your file.

5 Select Close.



**COPA - Format documents****Format text and paragraphs**

**Objectives:** At the end of this exercise you shall be able to

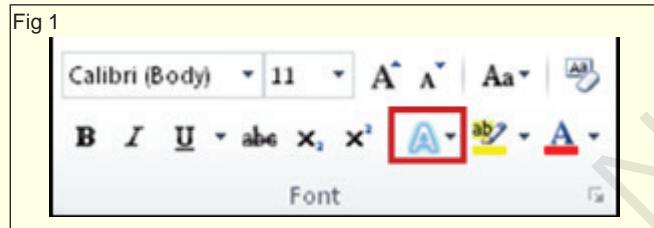
- apply text effects
- apply formatting by using Format Painter
- set line and paragraph spacing and indentation.

**Requirements****Tools/Equipment/Machines**

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

**PROCEDURE****TASK 1: Apply text effects****Add an effects text effects**

- 1 Select the text that you want to add an effect to.
- 2 On the Home tab, in the Font group, click Text Effect. (Fig 1)



- 3 Click the effect that you want. For more choices, point to Outline, Shadow, Reflection, or Glow, and then click the effect that you want to add. (Fig 2)

**Remove an effect from text**

- 1 Select the text that you want to remove an effect from.
- 2 On the Home tab, in the Font group, click Clear Formatting. (Fig 3)

**TASK 2: Apply formatting by using Format Painter**

- 1 Select the text or graphic that has the formatting that you want to copy.

**Note:** If you want to copy text formatting, select a portion of a paragraph. If you want to copy text and paragraph formatting, select an entire paragraph, including the paragraph mark.

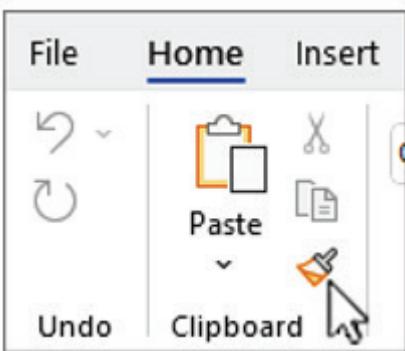
Fig 2



- 2 To choose Format Painter:

On the Home tab, select Format Painter in the Clipboard group. (Fig 4)

Fig 4



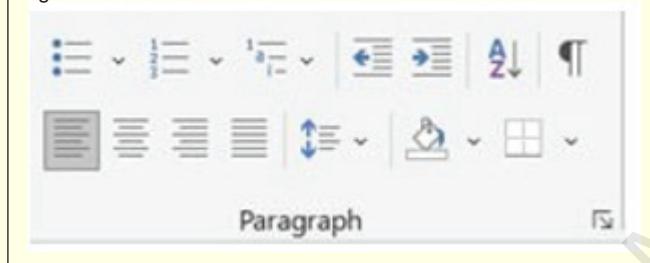
- 3 The cursor changes to a paintbrush icon.
- 4 Use the brush to paint over a selection of text or graphics to apply the formatting. This only works once. To change the format of multiple selections in your document, you must first double-click Format Painter.
- 5 To stop formatting, press ESC

### TASK 3: Set line and paragraph spacing and indentation

#### Change paragraph indents and spacing

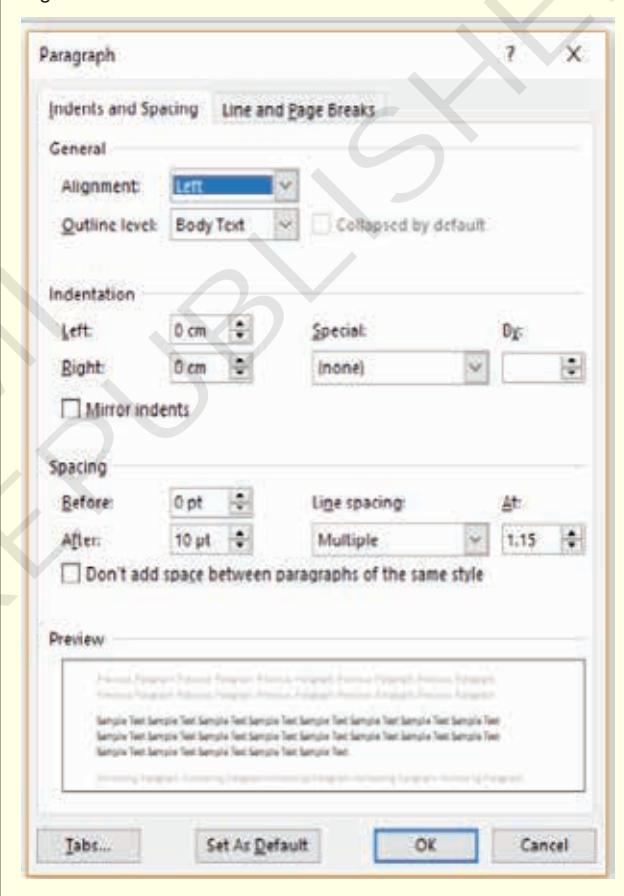
- 1 Select one or more paragraphs that you want to adjust. (Fig 5)

Fig 5



- 2 Go to Home and then select the Paragraph dialog box launcher. (Fig 6)
- 3 Choose the Indents and Spacing tab.

Fig 6



#### General

Alignment



Choose Left to align text to the left with a ragged right edge (or use the keyboard shortcut, **Ctrl+L**).

Choose Center to center text with a ragged left and right edge (**Ctrl+E**).

Choose Right to align text to the right with a ragged left edge (**Ctrl+R**).

Choose Justify to align text both left and right, adding space between words (**Ctrl+J**).

Outline level

The level at which the paragraph appears in Outline view.

Choose Collapsed by default if you want the document to open with headings collapsed by default.

#### Indentation

Left



Indents the paragraph on the left by the amount you choose.

|                |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Right          |  | Indents the paragraph on the right by the amount you choose.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Special        |  | Choose First line > By to indent the first line of a paragraph.<br>Choose Hanging > By to create a hanging indent.                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Mirror indents |  | When you choose this, Left and Right become Inside and Outside. This is for book style printing.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Spacing</b> |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Before         |  | Adjusts the amount of space before a paragraph.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| After          |  | Adjusts the amount of space after a paragraph.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Line spacing   |  | Choose Single to single-space text.<br>Choose 1.5 lines to space text one-and-one-half times that of single spacing.<br>Choose Double to double-space text.<br>Choose At least > At to set the minimum amount of spacing needed to fit the largest font or graphic on the line.<br>Choose Exactly > At to set fixed line spacing, expressed in points.<br>Choose Multiple > At to set line spacing as a multiple expressed in numbers greater than 1.<br>Choose Don't add space between paragraphs when you don't want extra space between paragraphs. |

If you want to save the settings you chose as your default, select Set as Default.

#### 4 Choose the Line and Page Breaks tab

#### Keep lines of a paragraph together on a page or in a column

- 1 Select the paragraphs that contain lines you want to keep together.
- 2 On the Home tab in Word, select the Paragraph Dialog Box launcher
- 3 Select the Line and Page Breaks tab.
- 4 Under Pagination, select Keep lines together.
- 5 Select OK.

#### Keep paragraphs together on a page or in a column

- 1 Select Home tab ' Paragraph Dialog Box launcher
- 2 Select the Line and Page Breaks tab.
- 3 Under Pagination, select Keep with next.
- 4 Select OK.

#### Always force a page break before a paragraph

- 1 Select Home tab ' Paragraph Dialog Box launcher
- 2 Select the Line and Page Breaks tab.
- 3 Under Pagination, select Page break before.
- 4 Select OK.

#### Control widow and orphan lines

- 1 Select Home tab → Paragraph Dialog Box launcher
- 2 Select the Line and Page Breaks tab.
- 3 Under Pagination, select Widow/Orphan control.
- 4 Select OK.

**Note:** This option is turned on by default.

#### SUPPRESS LINE NUMBERS FROM A PARAGRAPH OR PARAGRAPHS

- 1 Select Home tab → Paragraph Dialog Box launcher.
- 2 Select the Line and Page Breaks tab.
- 3 Under Formatting, select Suppress line numbers.
- 4 Select OK.

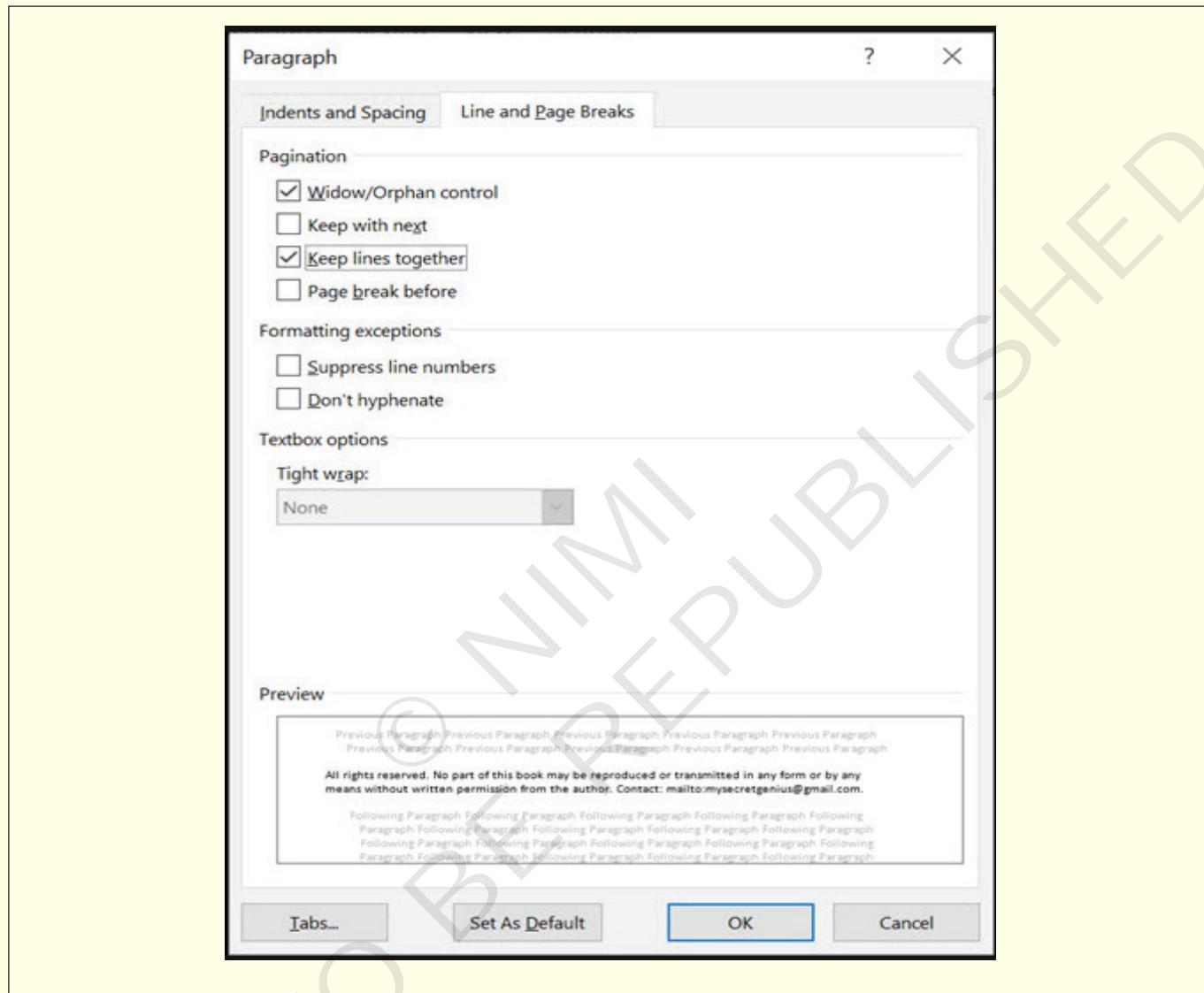
#### REMOVE HYPHENS FROM A PARAGRAPH OR PARAGRAPHS

- 1 Select Home tab ' Paragraph Dialog Box launcher
- 2 Select the Line and Page Breaks tab.
- 3 Under Formatting, select Don't hyphenate.
- 4 Select OK.

#### TEXT BOX OPTIONS

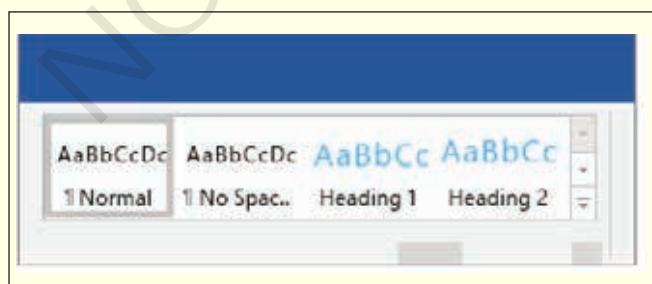
You can use the text box options to more tightly wrap the text that surrounds the text box. To use these options, the text box border must be transparent (no line and no fill), and the Wrap Text must be set at Tight or Through.

- 1 Select Home tab → Paragraph Dialog Box launcher.
  - 2 Select the Line and Page Breaks tab.
  - 3 Under Textbox options, in the Tight wrap list, select one of the following:
    - All
    - First and Last Lines
  - First Line Only
  - Last Line Only
- Note:** To undo changes, select None.
- 4 Select OK.
  - 5 Choose your settings, and then select OK



#### TASK 4: Apply built-in styles to text

- 1 Select the text you want to format.
- 2 On the Home tab, point to a style to preview it.



If you don't see a style you want, click the More button to expand the gallery.

- 3 Select a style.

Using Headings allows you to move parts of the document around by using View > Navigation Pane and then moving the listed headings up or down in the doc. Headings also can be used in creation of a table of contents.



## TASK 5: Clear formatting

### Undo formatting

Select Undo to undo the last formatting change.

### Clear All Formatting

1 Select the text with the formatting you want to clear.

2 Select Home > Clear All Formatting or press Ctrl + Spacebar



## COPA - Format documents

### Create and configure document sections

**Objectives:** At the end of this exercise you shall be able to

- format text in multiple columns
- insert page, section, and column breaks.

#### Requirements

##### Tools/Equipment/Machines

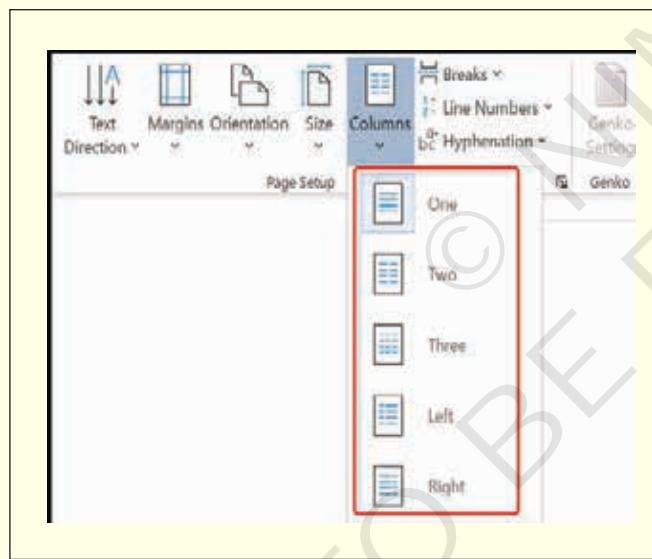
- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

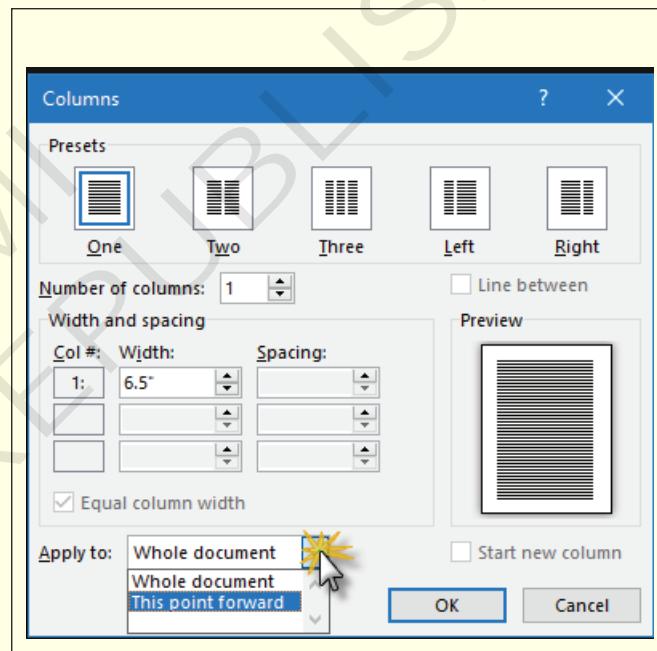
#### TASK 1: Format text in multiple columns

You can format your document in a newspaper-style column layout by adding columns. On the Layout tab, click Columns, then click the layout you want.

- 1 To apply columns to only part of your document, with your cursor, select the text that you want to format.
- 2 On the Layout tab, click Columns, then click More Columns.



- 3 Click Selected text from the Apply to box then Click OK.

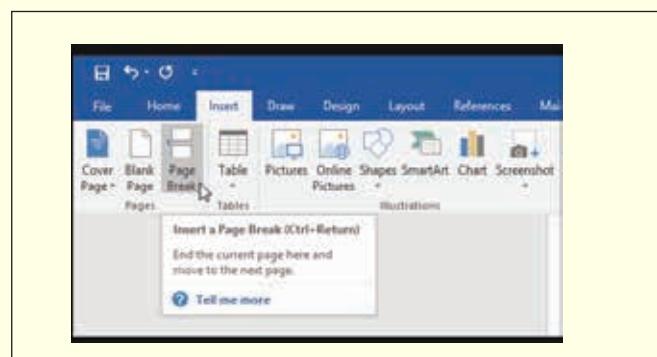
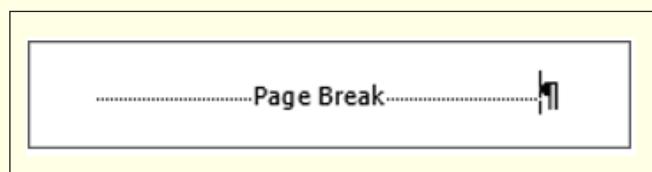


#### TASK 2: Insert page, section, and column breaks

##### Insert Page Breaks

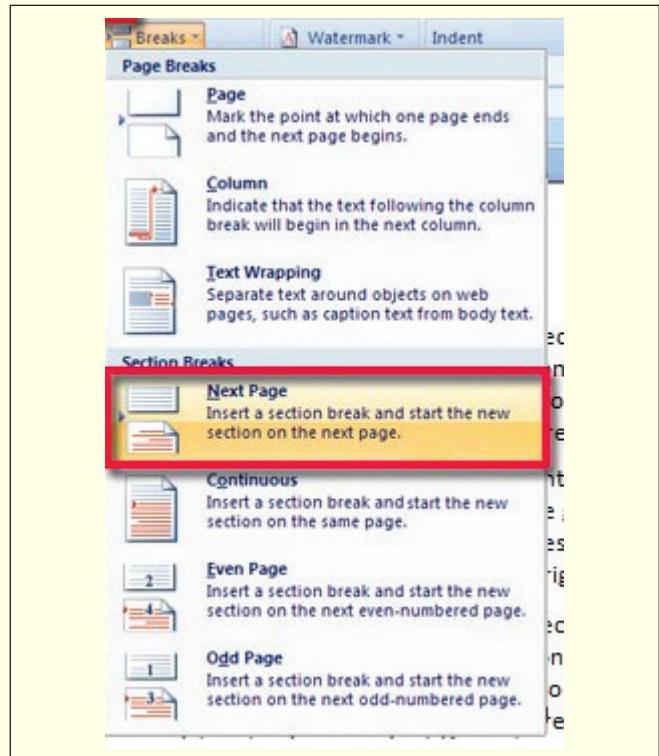
- 1 Put your cursor where you want one page to end and the next to begin.
- 2 Go to Insert > Page Break .

**Tip:** If Word puts a new page in your document unexpectedly, it might be because of a page break. To view page breaks so that you can select and delete them, go to Home > Show/Hide



## Insert Section Breaks

- 1 Select where you want a new section to begin.
- 2 Go to Layout > Breaks.



Choose the type of section break you want:

- **Next Page** Section break starts the new section on the following page.



- **Continuous** Section break starts the new section on the same page. This type of section break is often used to change the number of columns without starting a new page.



- **Even Page** Section break starts a new section on the next even-numbered page.



- **Odd Page** Section break starts a new section on the next odd-numbered page.

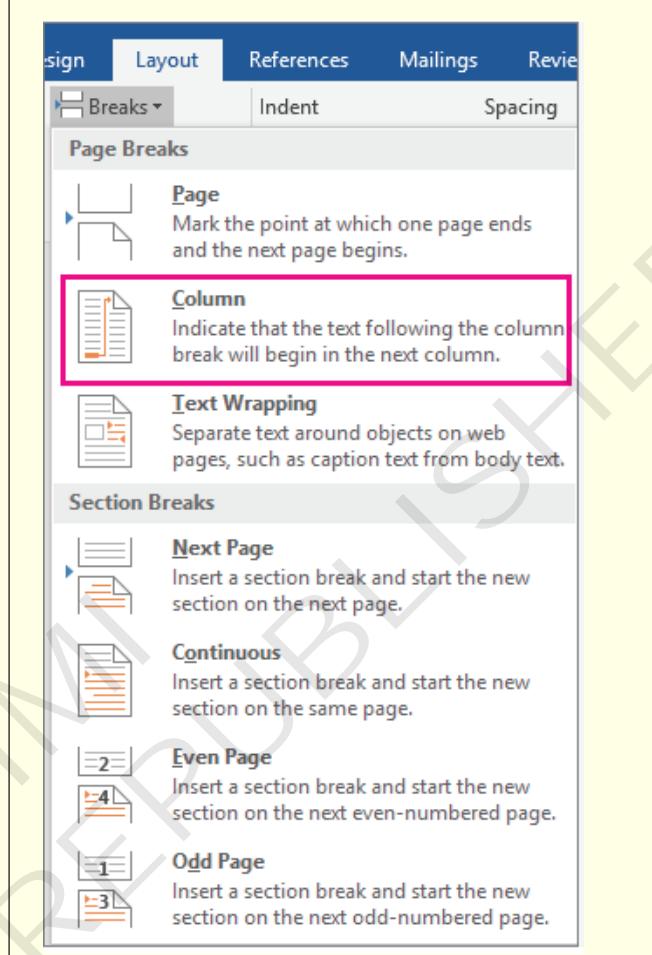


## Insert column breaks

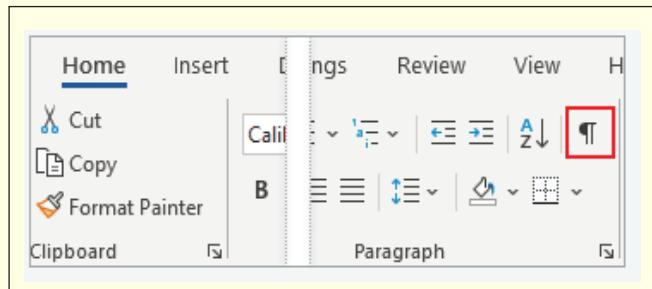
If you format a document with columns (as in some newsletter layouts), the text will automatically flow from one column to the other. You can insert your own column

breaks for more control over the document format.

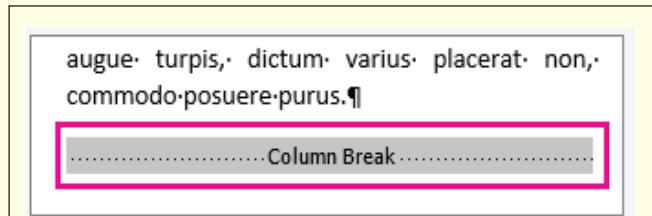
- 1 Place your cursor where you want the column to break.
- 2 Click Layout > Breaks.



- 3 A menu with options will appear. Click Column.
- 4 A column break is inserted. Click Home > Show/Hide to see it.

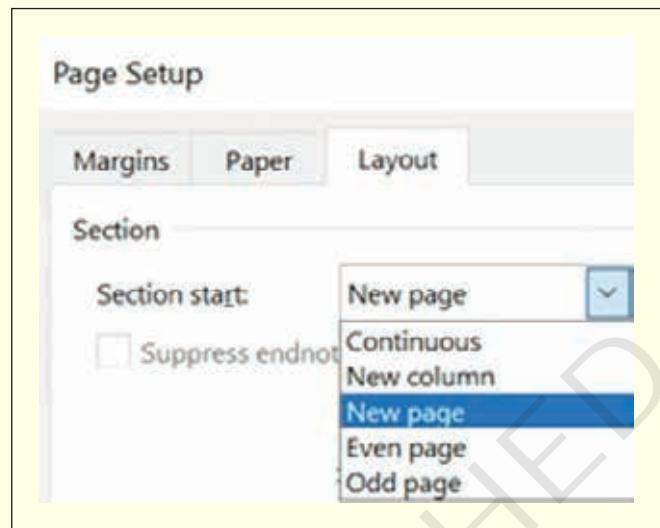


**Tip:** The keyboard shortcut Ctrl+Shift+Enter also inserts a column break where you've placed your cursor.



### TASK 3: Change page setup options for a section

- 1 On the Layout tab in Word, select the Page Setup launcher .
- 2 Choose Layout option ‘ Section ‘ Section Start
- 3 Choose Page setup as you want.
- 4 Then click OK to complete.



## COPA - Manage tables and lists

### Create tables

**Objectives:** At the end of this exercise you shall be able to

- convert text to tables
- convert tables to text
- create tables by specifying rows and columns.

### Requirements

#### Tools/Equipment/Machines

- |                                   |         |                           |         |
|-----------------------------------|---------|---------------------------|---------|
| • A Working PC with Windows 10 OS | - 1 No. | • MS Office 2019 / Latest | - 1 No. |
|-----------------------------------|---------|---------------------------|---------|

### PROCEDURE

#### TASK 1: Convert text to tables

To convert text to a table or a table to text, start by clicking the Show/Hide paragraph mark on the Home tab so you can see how text is separated in your document. (Fig 1)

Fig 1



#### Convert text to a table

- 1 Insert separator characters-such as commas or tabs- to indicate where to divide the text into table columns.

**Note: If you have commas in your text, use tabs for your separator characters.**

- 2 Use paragraph marks to indicate where you want to begin a new table row.

In this example, the tabs and paragraph marks will produce a table with 3 columns and 2 rows: (Fig 2)

Fig 2

```
Red, yellow → blue, green → orange, purple
Red, yellow → blue, green → orange, purple
```

- 3 Select the text that you want to convert, and then click Insert > Table > Convert Text to Table. (Fig 3)
- 4 In the Convert Text to Table box, choose the options you want. (Fig 4)

Under Table size, make sure the numbers match the numbers of columns and rows you want.

Under AutoFit behavior, choose how you want your table to look. Word automatically chooses a width for the table columns. If you want a different column width, choose one of these options:

Fig 3

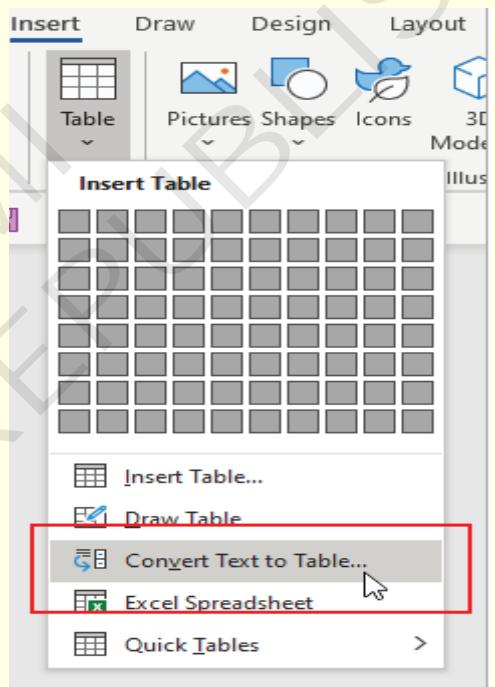
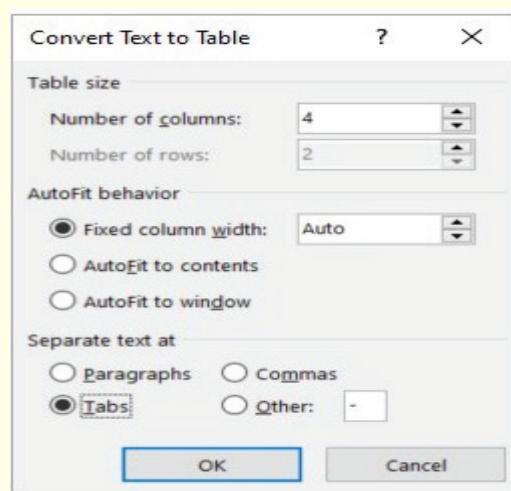


Fig 4



| To do this                                                                                                                         | Choose this option                                     |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Specify a width for all the columns                                                                                                | In the Fixed column width box, type or select a value. |
| Resize the columns to fit the width of the text in each column                                                                     | AutoFit to contents                                    |
| Resize the table automatically in case the width of the available space changes (for example, web layout or landscape orientation) | AutoFit to window                                      |

Under Separate text at, choose the separator character you used in the text.

- Click OK. The text converted to a table should look something like this: (Fig 5)

Fig 5

|             |             |                |
|-------------|-------------|----------------|
| Red, yellow | blue, green | orange, purple |
| Red, yellow | blue, green | orange, purple |

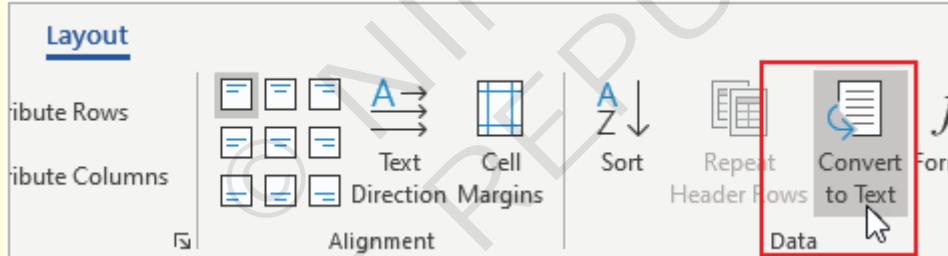
## TASK 2: Convert tables to text Convert a table to text

- Select the rows or table you want to convert to text.
- On the Layout tab, in the Data section, click Convert to Text.
- In the Convert to Text box, under Separate text with, click the separator character you want to use in place

of the column boundaries. Rows will be separated by paragraph marks.

- Click OK. (Fig 6)

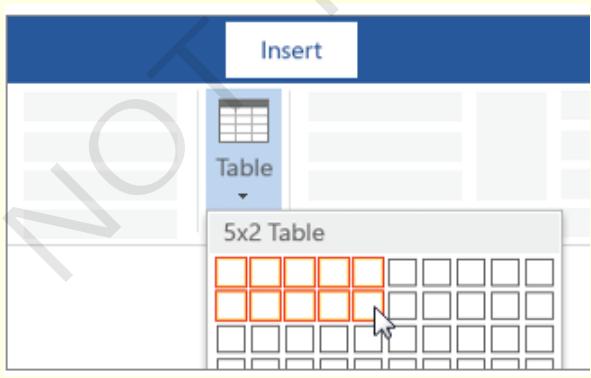
Fig 6



## TASK 3: Create tables by specifying rows and columns

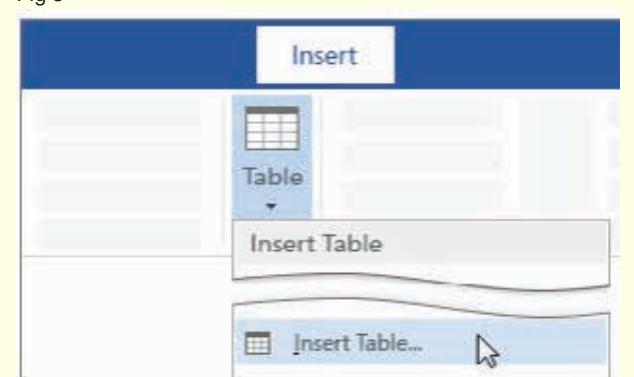
- For a basic table, click Insert > Table and move the cursor over the grid until you highlight the number of columns and rows you want. (Fig 7)

Fig 7



- For a larger table, or to customize a table, select Insert > Table > Insert Table. (Fig 8)

Fig 8



### Tips

- If you already have text separated by tabs, you can quickly convert it to a table. Select Insert > Table, and then select Convert Text to Table.
- To draw your own table, select Insert > Table > Draw Table.

**COPA - Manage tables and lists****Modify tables**

**Objectives:** At the end of this exercise you shall be able to

- sort table data
- configure cell margins and spacing
- merge and split cells
- resize tables, rows, and columns
- split tables
- configure a repeating row header.

**Requirements****Tools/Equipment/Machines**

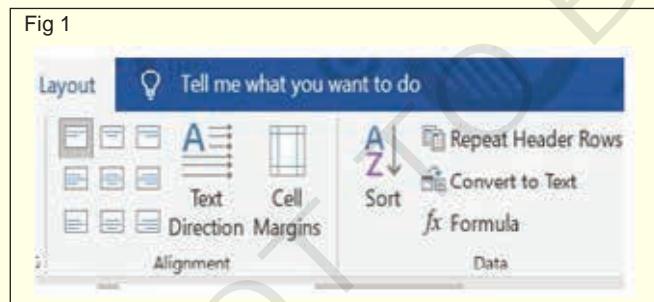
- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

**PROCEDURE****TASK 1: Sort table data****Sort a table in Word**

- 1 Select any Column where do you want to sort in the table.

| Name     | Trade       |
|----------|-------------|
| RamKumar | CHNM        |
| Amar     | Electrician |
| Sekar    | Welder      |
| Vikram   | RACT        |
| Karthick | MTTW        |

- 2 Select Table Tools Layout > Data Group > Sort. (Fig 1).

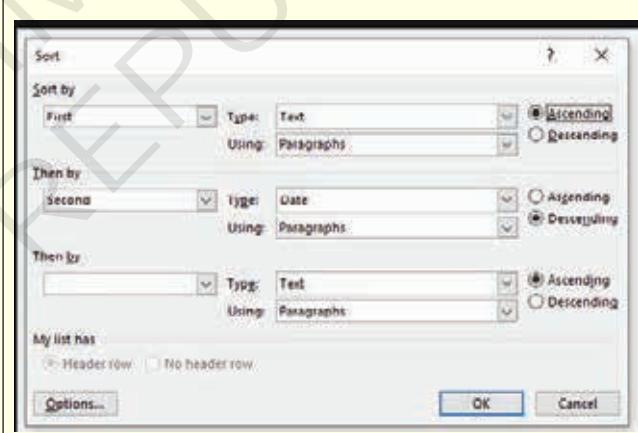


- 3 Choose your sort criteria:

- Select the column you want to Sort by.
- To sort on a second column, select Then by and select another column.
- Select Ascending or Descending.

- To keep the header row at the top of the table, select Header row. (Fig 2)

Fig 2



- 4 Select OK.

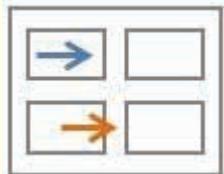
| Name     | Trade       |
|----------|-------------|
| Amar     | Electrician |
| Karthick | MTTW        |
| RamKumar | CHNM        |
| Sekar    | Welder      |
| Vikram   | RACT        |

## TASK 2: Configure cell margins and spacing

### Add or change the space inside the table

To add space inside your table, you can adjust cell margins or cell spacing. (Fig 3)

Fig 3



Cell margins are inside the table cell, like the blue arrow on the top of the graphic. Cell spacing is between the cells, like the orange arrow on the bottom.

- 1 Click the table.

- 2 On the Layout tab, in the Alignment group, click Cell Margins, and then in the Table Options dialog box

- 3 Do one of the following:

- Under Default cell margins, enter the measurement you want to adjust the Top, Bottom, Left, or Right margins.
- Under Default cell spacing, select the Allow spacing between cells check box, and then enter the measurement you want.

**Note:** The settings that you choose are available only in the active table. Any new tables that you create will use the original default setting.

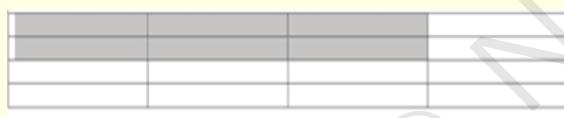
## TASK 3: Merge and split cells

### Merge and split cells

You can combine two or more table cells located in the same row or column into a single cell.

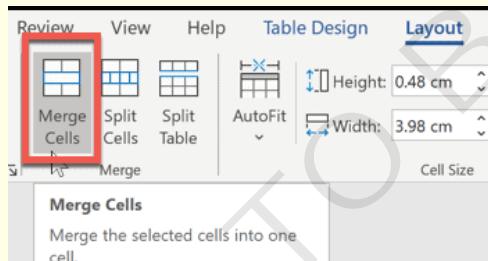
- 1 Select the cells that you want to merge. (Fig 4)

Fig 4



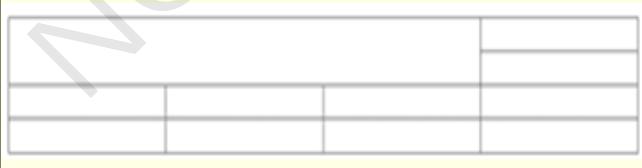
- 2 Under Table Tools, on the Layout tab, in the Merge group, click Merge Cells. (Fig 5)

Fig 5



- 3 The cells you selected will now be merged together. (Fig 6)

Fig 6



### Split cells

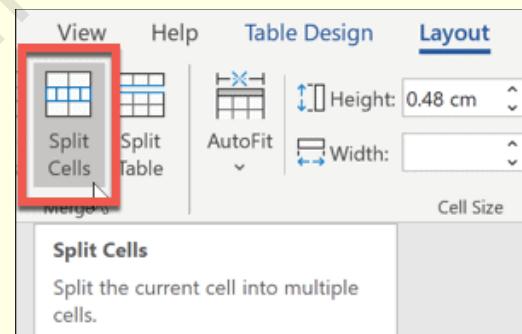
- 1 Click in a cell, or select multiple cells that you want to split. (Fig 7)

Fig 7



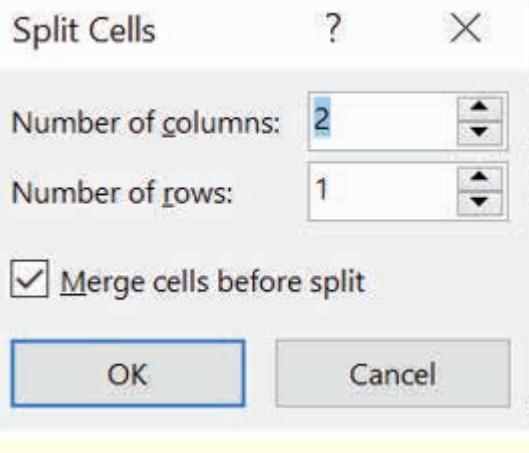
- 2 Under Table Tools, on the Layout tab, in the Merge group, click Split Cells. (Fig 8)

Fig 8



- 3 Enter the number of columns or rows that you want to split the selected cells into. (Fig 9)

Fig 9



- Click OK to confirm your choice. (Fig 10)
- Your cells will now be split using the values you selected in the Split Cells dialog box.

Fig 10

|  |  |  |  |  |
|--|--|--|--|--|
|  |  |  |  |  |
|  |  |  |  |  |

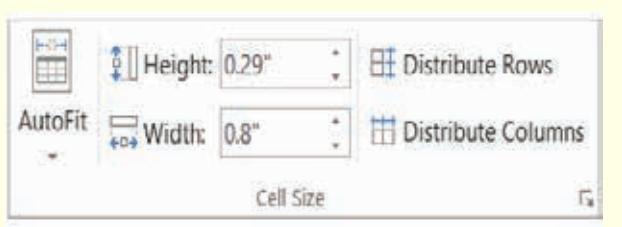
#### TASK 4: Resize tables, rows, and columns

##### Resize a column or table automatically with AutoFit

Automatically adjust your table or columns to fit the size of your content by using the AutoFit button.

- Select your table.
- On the Layout tab, in the Cell Size group, click AutoFit. (Fig 11)

Fig 11



- Do one of the following.

- To adjust column width automatically, click AutoFit Contents.
- To adjust table width automatically, click AutoFit Window.

**Note:** Row height automatically adjusts to the size of the content until you manually change it.

#### TASK 5: Split tables

Once you have a table in Word, you might decide to split that table into two or more tables. This way, you can create smaller tables, or add text in between two tables.

- Put your cursor on the row that you want as the first row of your second table. In the example table, it's on the third row. (Fig 13)

Fig 13

|   |   |
|---|---|
| 1 | A |
| 2 | B |
| 3 | C |
| 4 | D |

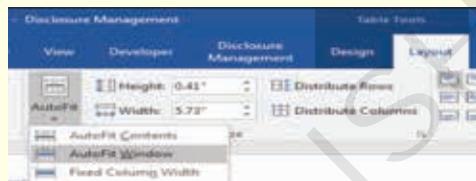
When you click inside the table, two new Table tools tabs appear on the ribbon: DESIGN and LAYOUT. These tools are visible only when you are in the table, for example, when you add content to the cells.

##### Turn off AutoFit

If you don't want AutoFit to automatically adjust your table or column width, you can turn it off.

- Select your table. (Fig 12)

Fig 12



- On the Layout tab, in the Cell Size group, click AutoFit.
- Click Fixed Column Width.

##### Resize an entire table manually

- Rest the cursor on the table until the table resize handle appears at the lower-right corner of the table.
- Rest the cursor on the table resize handle until it becomes a double-headed arrow.
- Drag the table boundary until the table is the size you want.

- On the LAYOUT tab, in the Merge group, click Split Table. (Fig 14)

Fig 14



The table splits into two tables.

You can split the table further, as long as there are multiple rows. (Fig 15)

Fig 15

|   |   |
|---|---|
| 1 | A |
| 2 | B |
|   |   |
| 3 | C |
| 4 | D |

## TASK 6: Configure a repeating row header

When you work with a very long table, it will run across multiple pages. You can set up the table so that the table header row or rows appear on each page automatically.

You can choose from two ways to set up your table so that its header row or rows repeat.

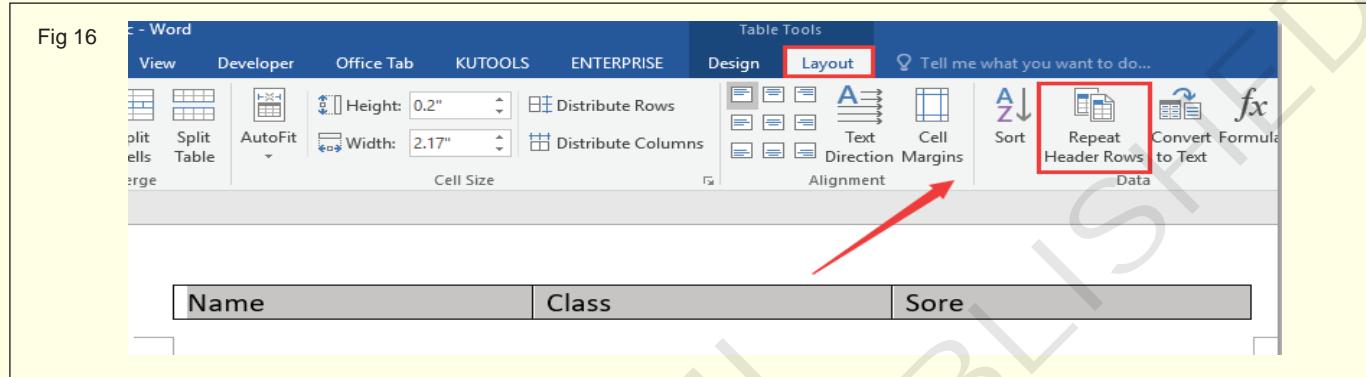
You can do the following:

- 1 Select the header row or rows that you want to repeat on each page. The selection must include the first row of the table.

- 2 Under Table Tools, on the Layout tab, in the Data group, click Repeat Header Rows. (Fig 16)

Or, you can use this approach:

- 1 In the table, right-click in the row that you want to repeat, and then click Table Properties.
- 2 In the Table Properties dialog box, on the Row tab, select the Repeat as header row at the top of each page check box.
- 3 Select OK.



## COPA - Manage tables and lists

### Create and modify lists

**Objectives:** At the end of this exercise you shall be able to

- format paragraphs as numbered and bulleted lists
- change bullet characters and number formats
- define custom bullet characters and number formats
- increase and decrease list Levels
- restart and continue list numbering
- set starting number values.

#### Requirements

##### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

#### TASK 1: Format paragraphs as numbered and bulleted lists

##### Create a list

To start a numbered list, type 1, a period (.), a space, and some text. Word will automatically start a numbered list for you.

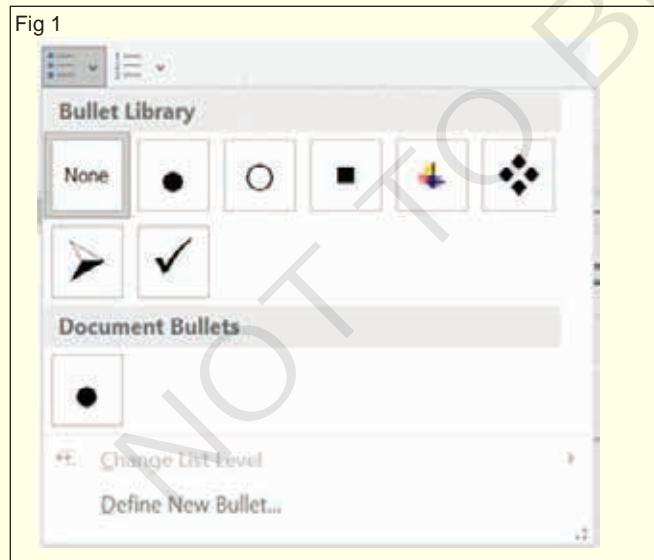
Type\* and a space before your text, and Word will make a bulleted list.

To complete your list, press Enter until the bullets or numbering switch off.

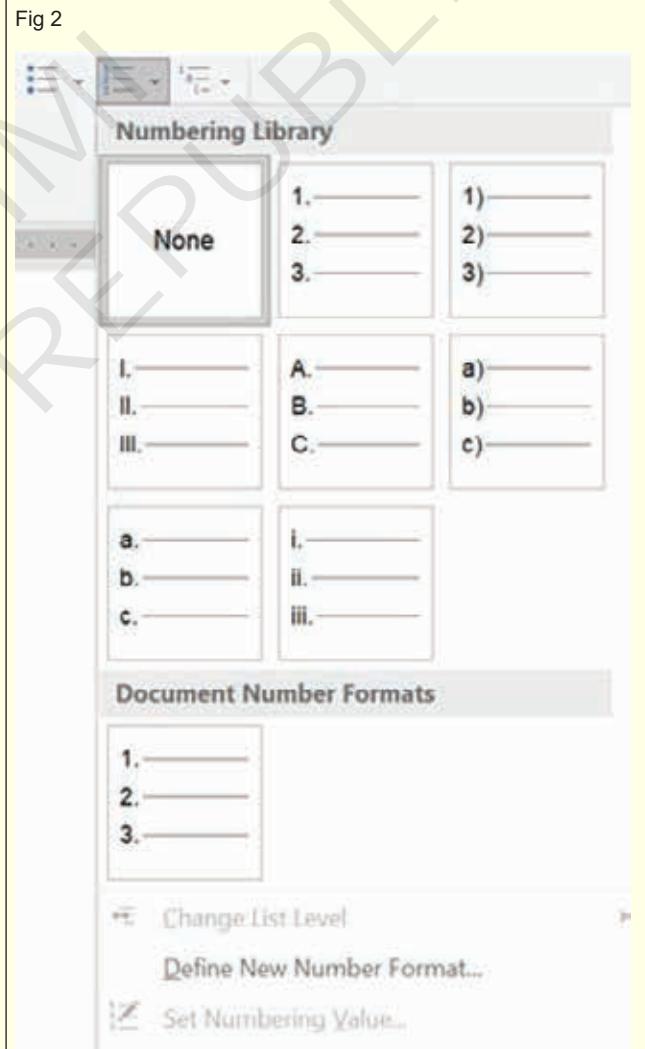
##### Create a list from existing text

- 1 Select the text you want to change into a list.
- 2 Go to Home> Bullets or Home> Numbering.

##### Bullet Library (Fig 1)



##### Numbering Library (Fig 2)



**Note:** Find different bullet styles and numbering formats by clicking the down arrow next to Bullets or Numbering.

## TASK 2: Change bullet characters and number formats

- 1 Select the text or bulleted list you want to change.  
(Fig 3)

Fig 3

- 
1. Numbered list  
2. Numbered list  
3. Numbered list  
4. Numbered list  
5. Numbered list

- 2 Click a bullet or number in the list that you want to change.

By clicking a bullet or number in an automatically recognized bulleted or numbered list, you select the entire list.

- 3 On the Home tab, in the Paragraph group, click Bullets or Numbering.

To change the list back, click either Bullets or Numbering (Fig 4)

Fig 4



## TASK 3: Define custom bullet characters and number formats

### Change the bullet to a symbol / Picture / Font

- 1 Select the text or bulleted list you want to change.  
(Fig 5)

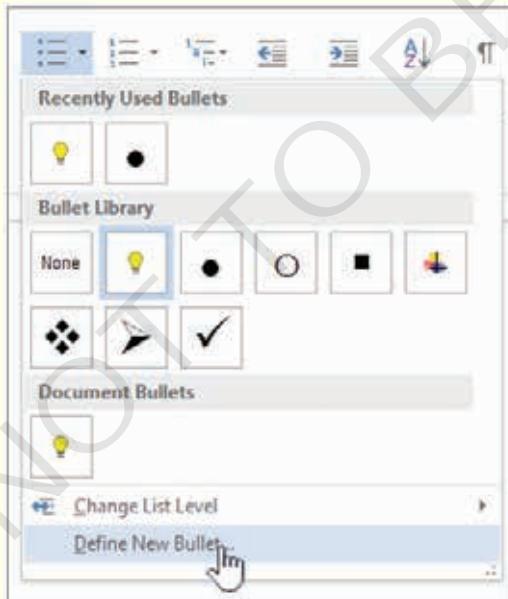
Fig 5

- 
1. Numbered list  
2. Numbered list  
3. Numbered list  
4. Numbered list  
5. Numbered list

- 2 On the Home tab, in the Paragraph group, click the arrow next to Bulleted List (Fig 6).



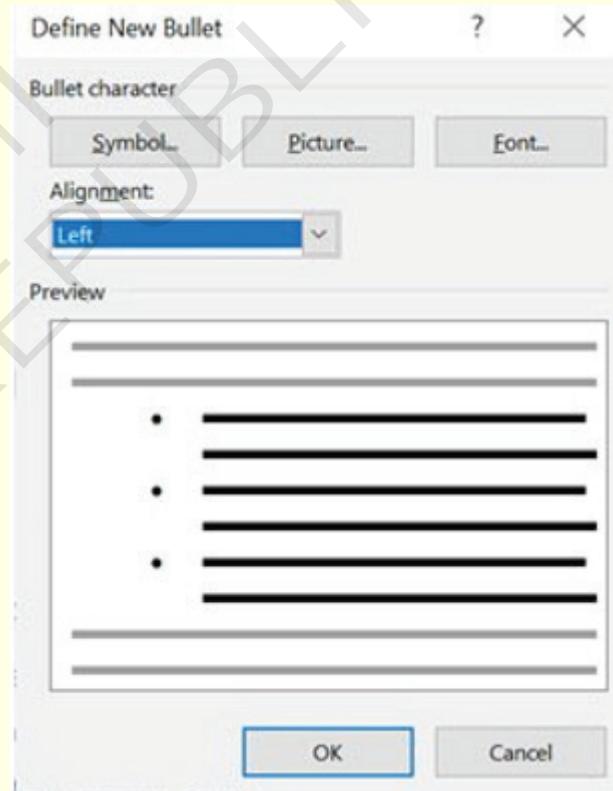
Fig 6



- 3 Then click Define New Bullet (Fig 7)

- Click Symbol and then click the symbol you want to use.

Fig 7

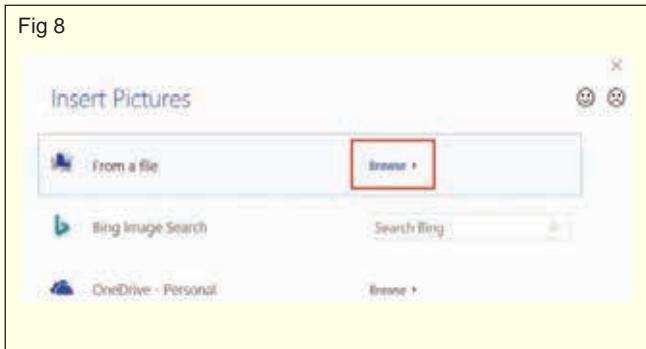


- Click OK.

### Change the bullet to a Picture

- Click Picture and then browse for your picture from a file or Bing Image Search. (Fig 8)
- Click Insert.
- Review what the picture bullets will look like and click OK to add it or change the picture by repeating steps 3-5.

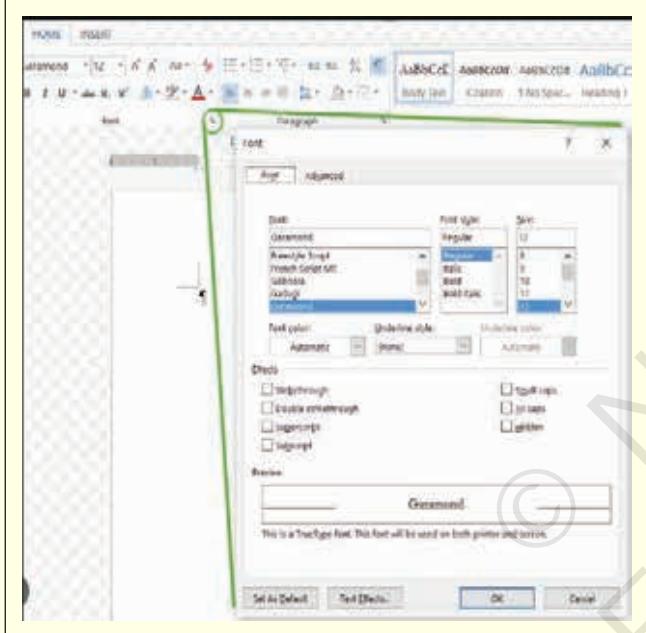
Fig 8



### Change the bullet to a Font

- Click Font and then change the font properties to be used for the bullet. You can choose settings on the Font tab or Advanced tab: (Fig 9)

Fig 9



| Tab          | Description                                                                               |
|--------------|-------------------------------------------------------------------------------------------|
| Font tab     | Change the bullet font, style, size, color, underline style, underline color, and effects |
| Advanced tab | Change the bullet font character spacing and OpenType features.                           |

### Change the bullet alignment

- Under alignment, choose Left, Centered, or Right. (Fig 10)
- Click OK.

### Define a new number format

- Select the text or numbered list you want to change. (Fig 11)

Fig 10

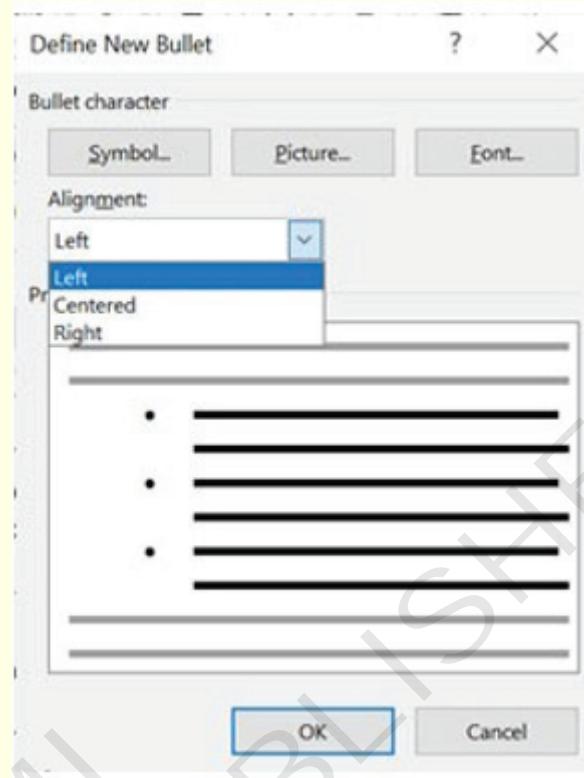


Fig 11



- On the Home tab, in the Paragraph group, click the arrow next to Numbered List, and then click Define New Number Format.
- To change the style, click the down arrow next to Number style and choose numbers, letters, or another chronological format.
- To change the font size, style, and color, click Font and choose a setting on the Font tab or Advanced tab.: (Fig 12 & 13)

| Tab          | Description                                                                                |
|--------------|--------------------------------------------------------------------------------------------|
| Font tab     | Change the bullet font, style, size, color, underline style, underline color, and effects. |
| Advanced tab | Change the bullet font character spacing and OpenType features.                            |

- To append the numbering with a dash, parentheses, or another value, enter it in the Number format field.

Fig 12

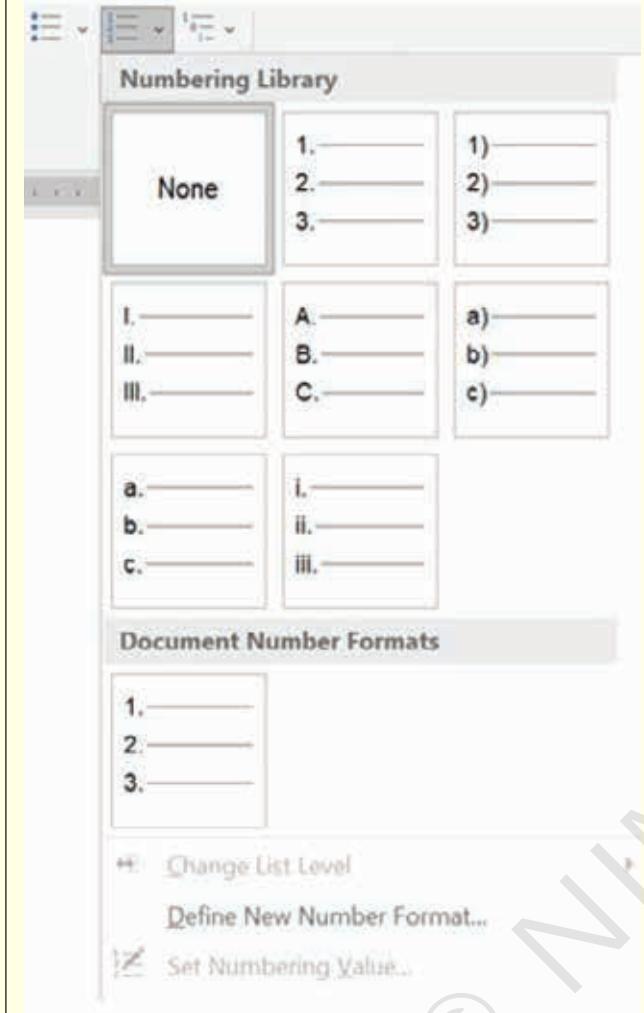
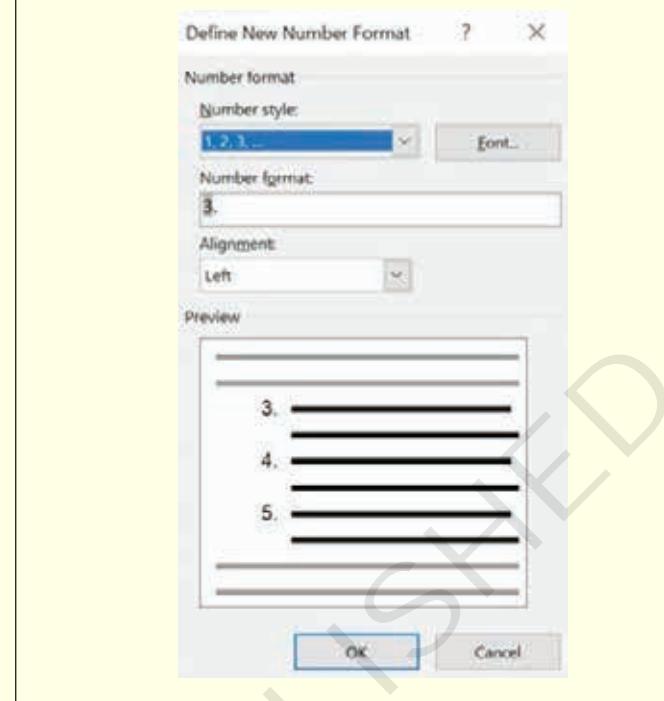


Fig 13



- 6 To change the number alignment, choose Left, Centered, or Right under Alignment.
  - 7 Click OK.

## TASK 4: Increase and decrease list Levels

You can easily change the level of a list item.

- 1 Click the bullet or number that has moved out of position.
  - 2 On the Home tab, under Paragraph, click the arrow next to Bullets or Numbering. (Fig 14)
  - 3 Point to Change List Level, and then click the level that you want. (Fig 15)

Fig 14

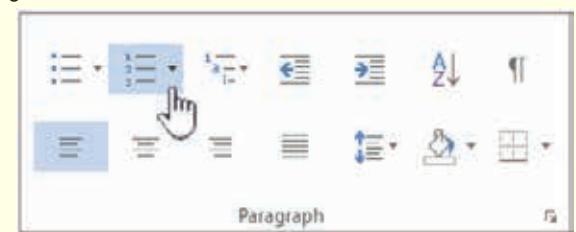
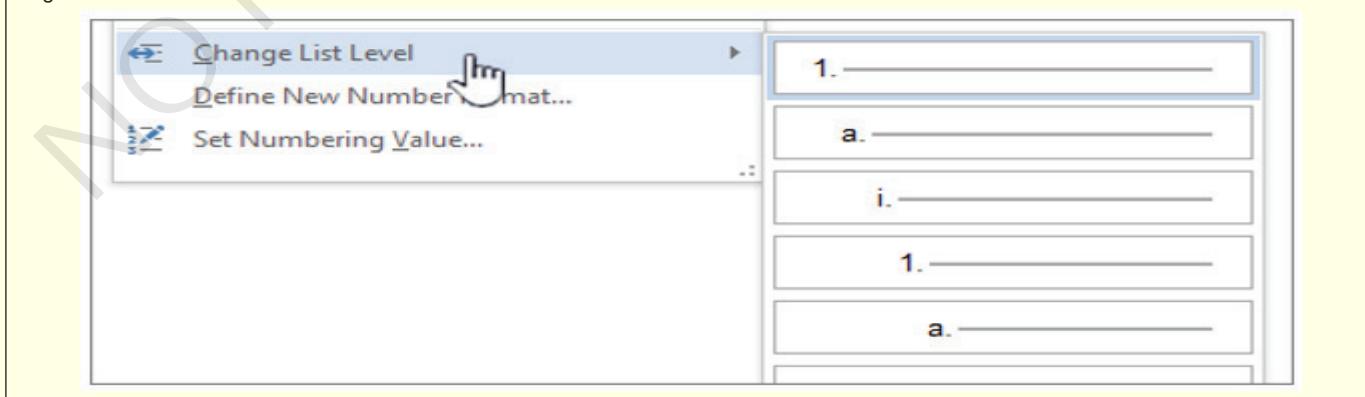


Fig 15



## TASK 5: Restart and continue list numbering

### Restart numbering at 1

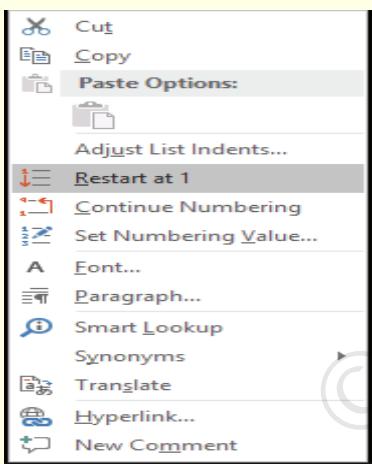
- 1 Click the item that you want to be the first item in the new list. (Fig 16)

Fig 16

1. Number List
2. Number List
3. Number List
  
4. Number List
5. Number List

- 2 Ctrl+click or right-click the item, and then click Restart numbering. (Fig 17)

Fig 17



- 3 Then Bulleting Number list start by 1 (Fig 18)

Fig 18

1. Number List
2. Number List
3. Number List
  
1. Number List
2. Number List

### Continue Numbering

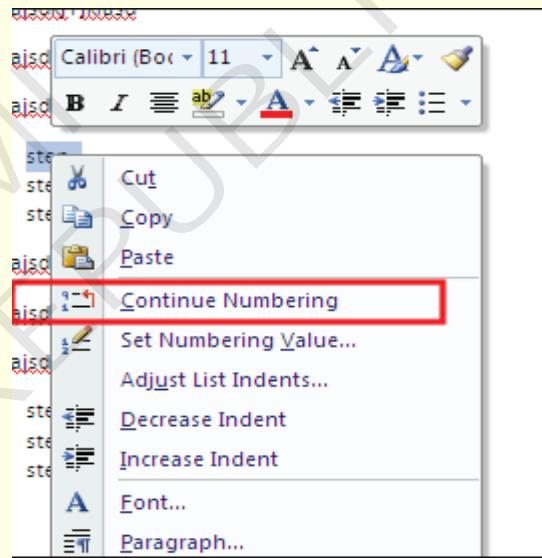
- 1 Click the item that you want to be the first item in the new list. (Fig 19)

Fig 19

1. Number List
2. Number List
3. Number List
  
9. Number List
10. Number List

- 2 Ctrl+click or right-click the item, and then click Continue numbering. (Fig 20)

Fig 20



- 3 Then Bulleting Number List will continue to start from as above. (Fig 21)

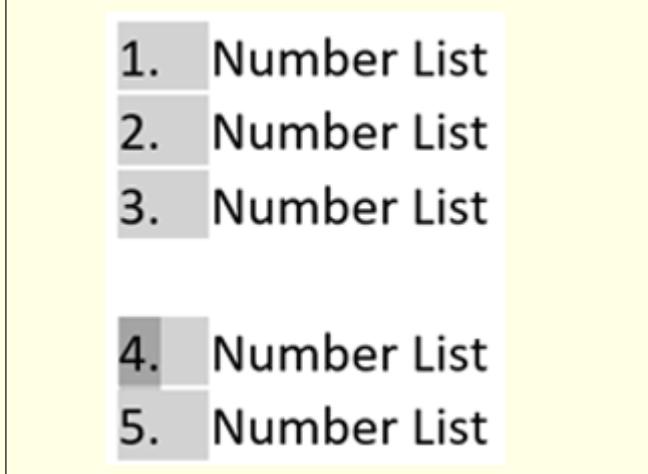
Fig 21

1. Number List
2. Number List
3. Number List
  
4. Number List
5. Number List

## TASK 6: Set starting number values

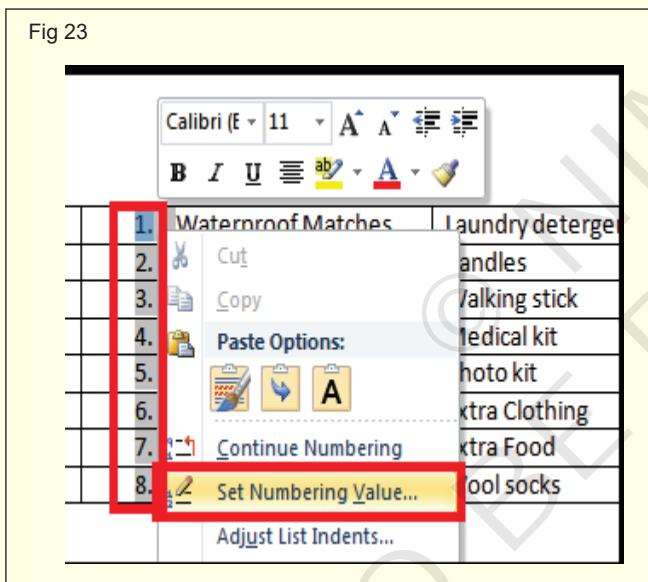
- 1 Double-click the numbers in the list. The text won't appear selected. (Fig 22)

Fig 22



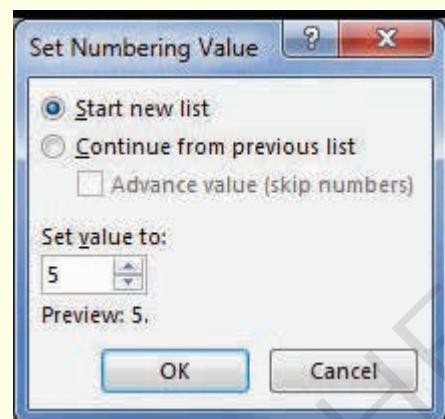
- 2 Right-click the number you want to change.

- 3 Click Set Numbering Value. (Fig 23)



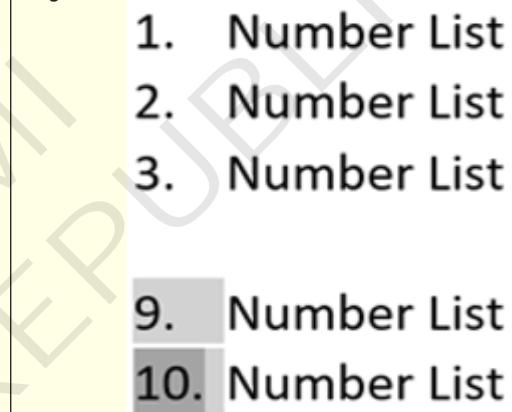
- 4 In the Set value to: box, use the arrows to change the value to the number you want. For Example Set Value by 9 then click OK. (Fig 24)

Fig 24



- 5 Then the result will be followed list by 9. (Fig 25)

Fig 25



## COPA - Create and Manage References

### Create and manage reference elements

**Objectives:** At the end of this exercise you shall be able to

- insert footnotes and endnotes
- modify footnote and endnote properties
- create and modify bibliography citation sources
- insert citations for bibliographies.

### Requirements

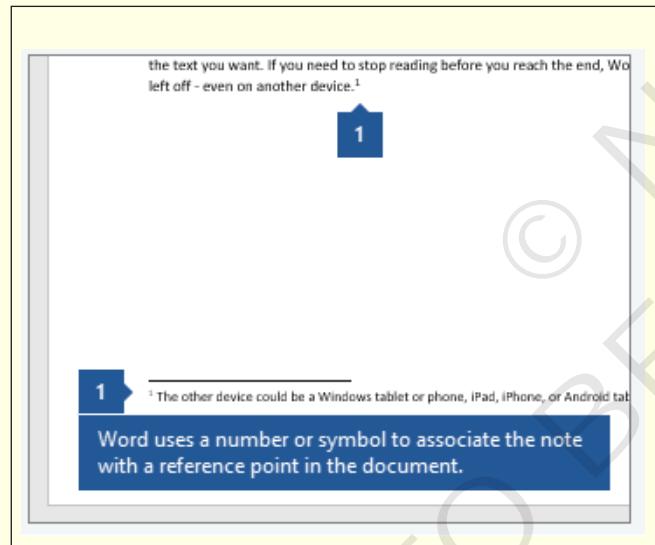
#### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

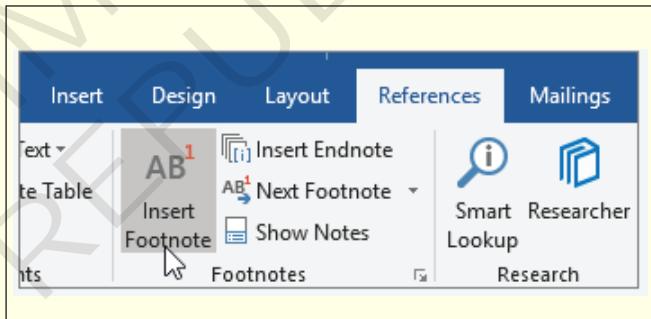
### PROCEDURE

#### TASK 1: Insert footnotes and endnotes

Footnotes appear at the bottom of the page and endnotes come at the end of the document. A number or symbol on the footnote or endnote matches up with a reference mark in the document.



- 1 Click where you want to reference to the footnote or endnote.
- 2 On the References tab, select Insert Footnote or Insert Endnote.



- 3 Enter what you want in the footnote or endnote.
- 4 Return to your place in the document by double-clicking the number or symbol at the beginning of the note

#### TASK 2: Modify footnote and endnote properties

Footnote font, footnote font size, footnote superscript, and footnote spacing - this video will explain how to change these attributes.

##### Change the footnote font size, and formatting

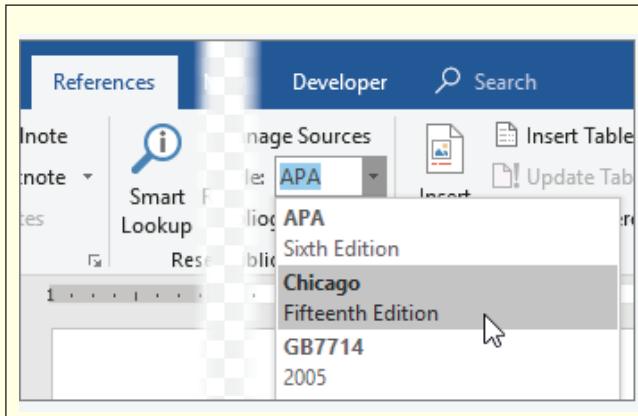
To change the font, size and formatting of footnotes:

- 1 Click the HOME tab, and then in the Styles group, click the arrow for more options. Or, press ALT+CTRL+SHIFT+S.
- 2 At the bottom of the Styles pane, click the Manage Styles button.
- 3 For Sort order, choose Alphabetical.

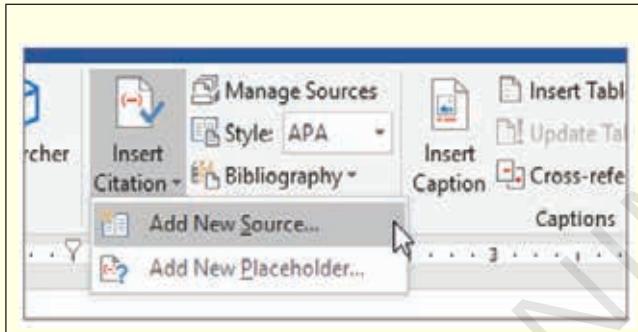
- 4 Do one of the following:
  - To change the formatting of the footnote numbers, select the Footnotes Reference Style.
  - If you want to change the formatting of the footnote text at the bottom of the page, select the Footnote Text Style.
- 5 Click Modify, and then change the formatting options (font, size, and so on). For even more formatting options, click the Format button in the lower-left corner.

### TASK 3: Create and modify bibliography citation sources

- 1 Put your cursor at the end of the text you want to cite.
- 2 Go to References > Style, and choose a citation style.



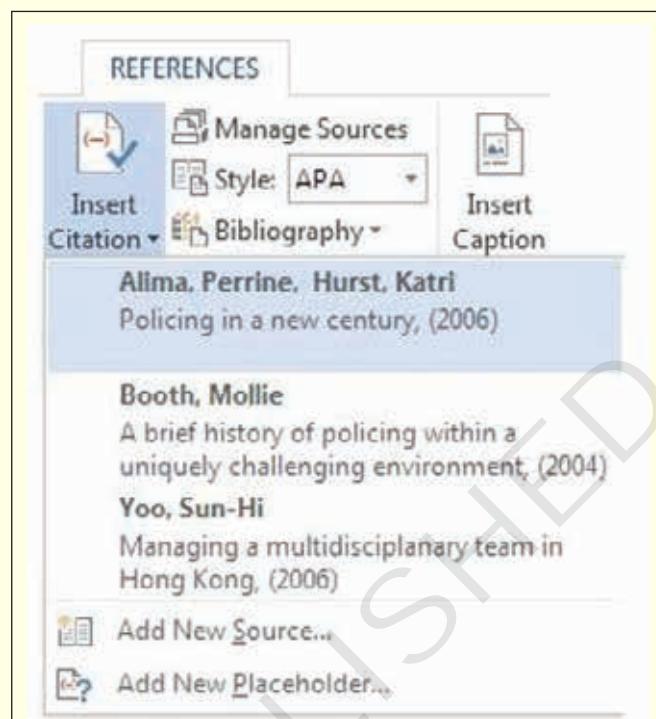
- 3 Select Insert Citation.



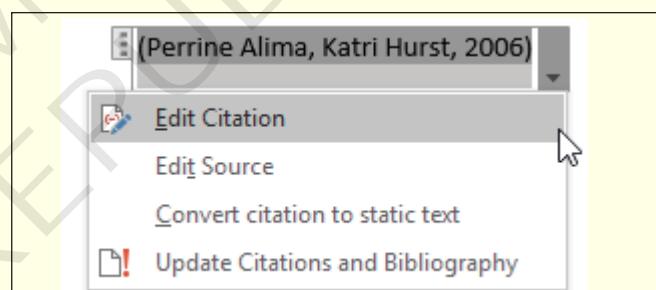
- 4 Choose Add New Source and fill out the information about your source.

Once you've added a source to your list, you can cite it again:

- 1 Put your cursor at the end of the text you want to cite.
- 2 Go to References > Insert Citation, and choose the source you are citing.



- 5 To add details, like page numbers if you're citing a book, select Citation Options, and then Edit Citation.



#### Create a bibliography

With cited sources in your document, you're ready to create a bibliography.

- 1 Put your cursor where you want the bibliography.
- 2 Go to References > Bibliography, and choose a format.

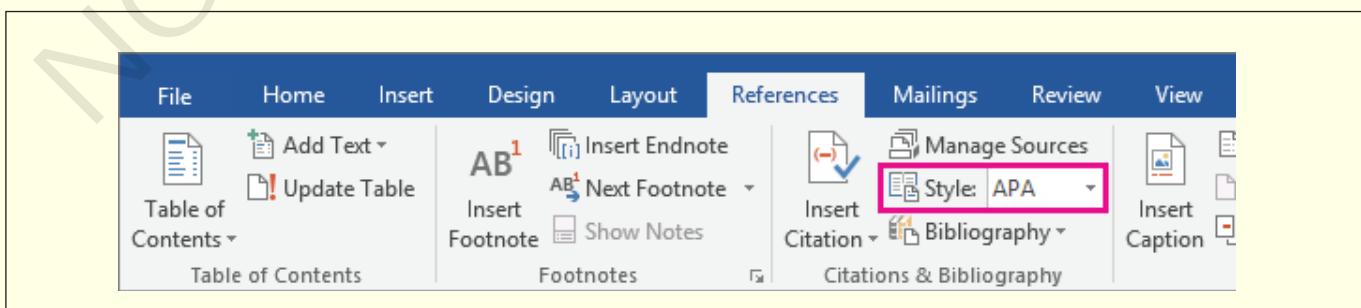
### TASK 4: Insert citations for bibliographies

#### Add a new citation and source to a document

- 1 On the References tab, in the Citations & Bibliography group, click the arrow next to Style and click the style that you want to use for the citation and source. For

example, social sciences documents usually use the MLA or APA styles for citations and sources.

- 2 Click at the end of the sentence or phrase that you want to cite.



3 On the Reference tab, click Insert Citation and then do one of the following:

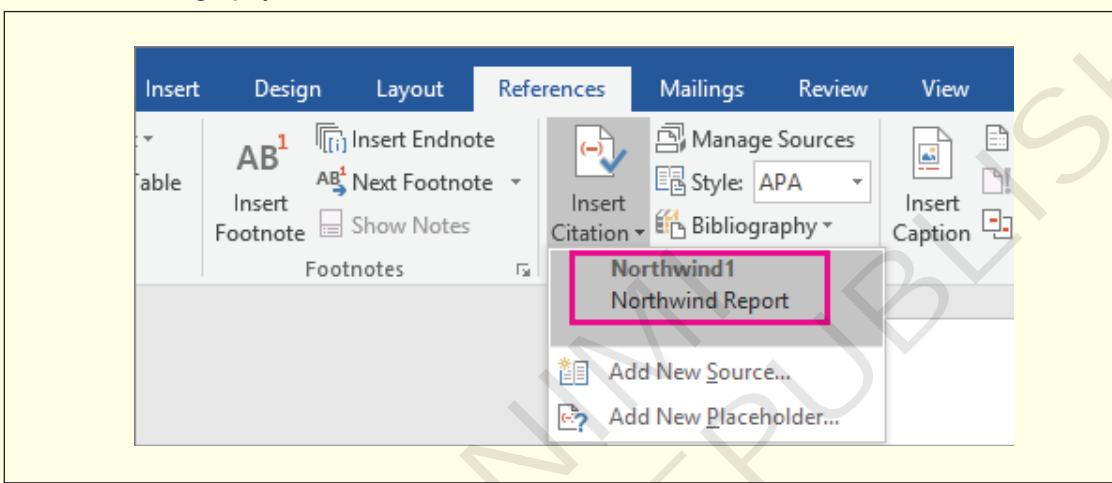
- To add the source information, click Add New Source, and then, in the Create Source dialog box, click the arrow next to Type of Source, and select the type of source you want to use (for example, a book section or a website).
  - To add a placeholder, so that you can create a citation and fill in the source information later, click Add New Placeholder. A question mark appears next to placeholder sources in Source Manager.
- 4 If you chose to add a source, enter the details for the source. To add more information about a source, click the Show All Bibliography Fields check box.

5 Click OK when finished. The source is added as a citation at the place you selected in your document.

When you've completed these steps, the citation is added to the list of available citations. The next time you quote this reference, you don't have to type it all out again. You just add the citation to your document. After you've added a source, you may find you need to make changes to it at a later time.

#### Add citations to your document

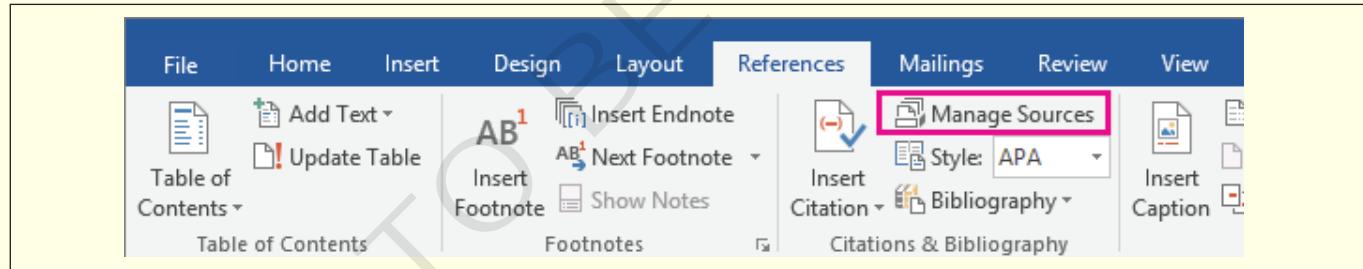
- 1 Click at the end of the sentence or phrase that you want to cite, and then on the References tab, in the Citations & Bibliography group, click Insert Citations.
- 2 From the list of citations under Insert Citation, select the citation you want to use.



#### Find a source

The list of sources that you use can become quite long. At times, you might need to search for a source that you cited in another document.

- 1 On the References tab, in the Citations & Bibliography group, click Manage Sources.



If you open a new document that does not yet contain citations, all of the sources that you used in previous documents appear under Master List.

If you open a document that includes citations, the sources for those citations appear under Current List. All the sources that you have cited, either in previous documents or in the current document, appear under Master List.

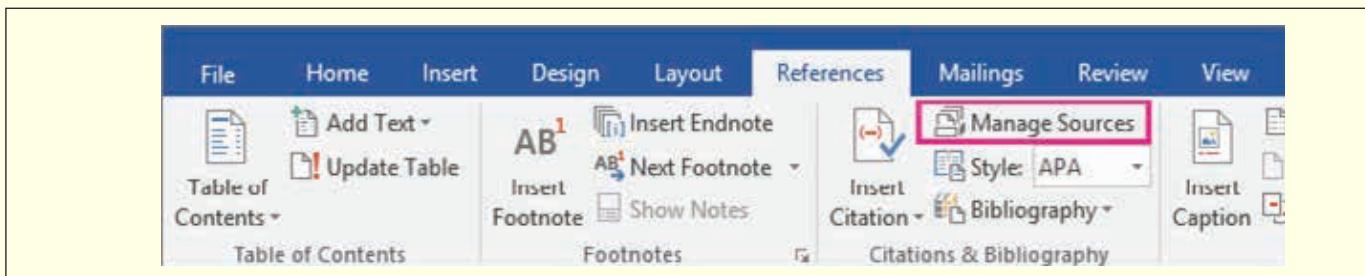
2 To find a specific source, do one of the following:

- In the sorting box, sort by author, title, citation tag name, or year, and then look for the source that you want in the resulting list.

- In the Search box, type the title or author for the source that you want to find. The list dynamically narrows to match your search term.

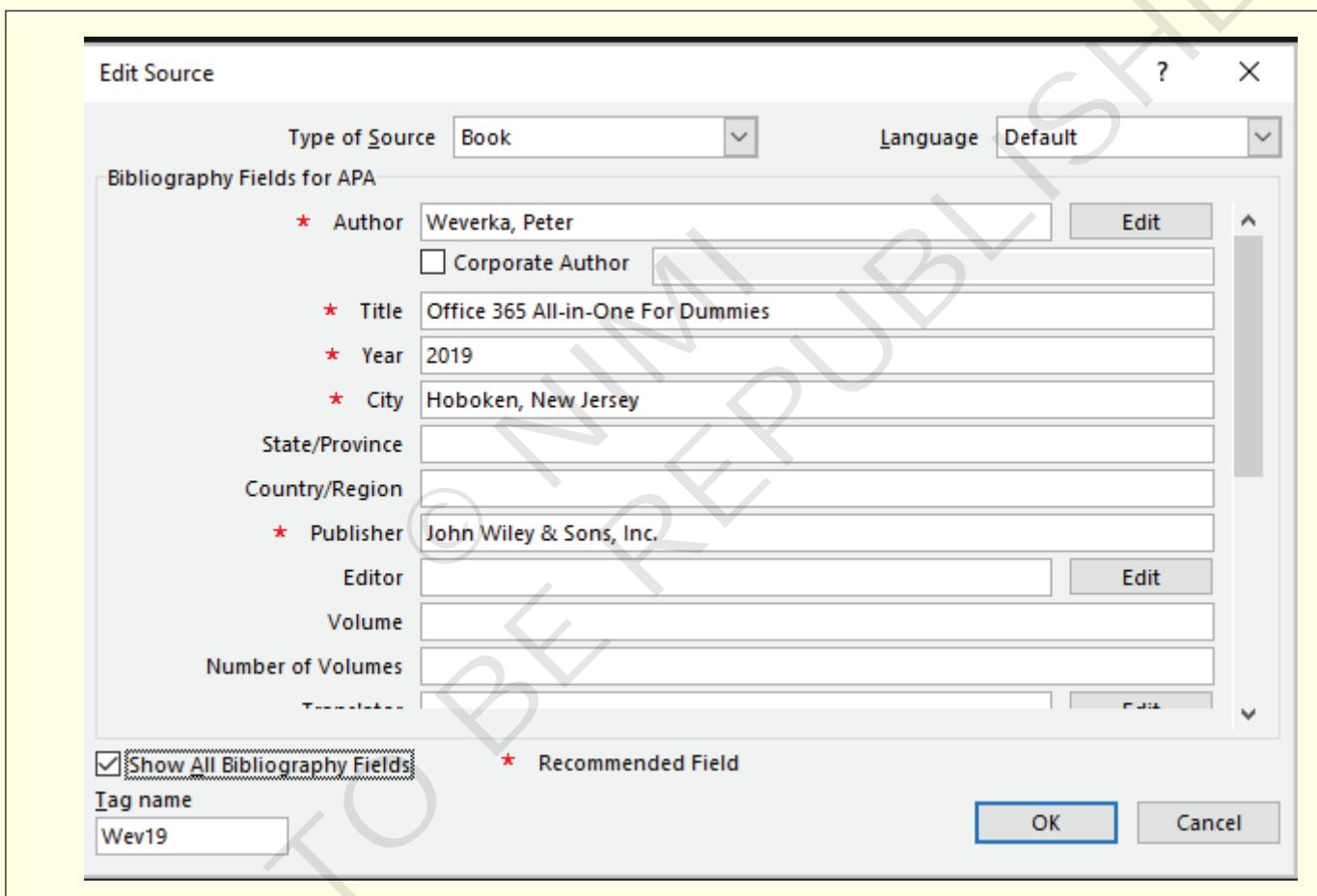
#### Edit a source

- 1 On the References tab, in the Citations & Bibliography group, click Manage Sources.



- 2 In the Source Manager dialog box, under Master List or Current List, select the source you want to edit, and then click Edit.
- 3 In the Edit Source dialog box, make the changes you want and click OK.

**Note:** To edit a placeholder to add citation information, select the placeholder from Current List and click Edit.



## COPA - Create and Manage References

### Create and manage reference tables

**Objectives:** At the end of this exercise you shall be able to

- insert tables of contents
- customize tables of contents
- insert bibliographies.

#### Requirements

##### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

#### TASK 1: Insert tables of contents

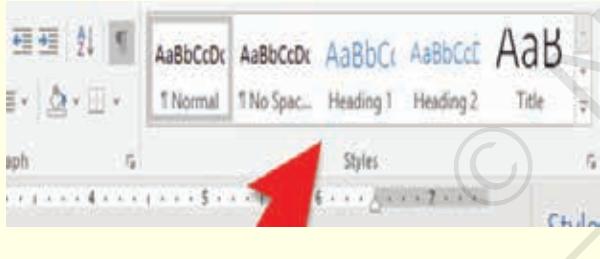
##### Create the table of contents

**Note:** Before Creating Table of contents, keep your Documents Heading using formatted by Styles group by Heading1, Heading2, Heading3 and Etc.

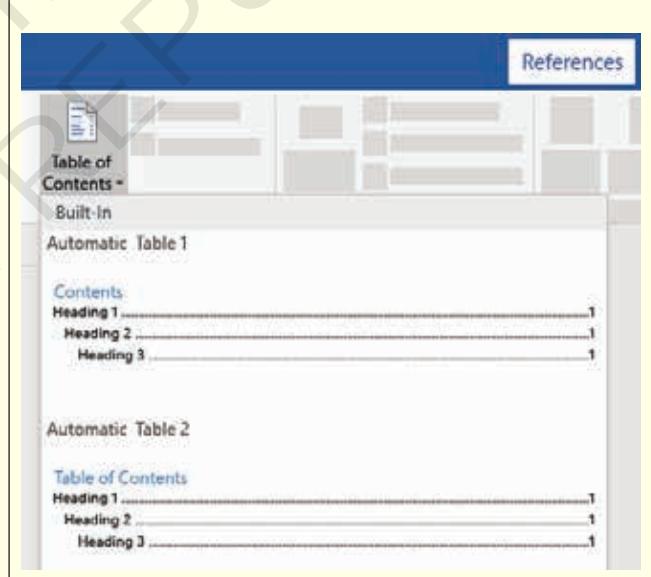
- 1 Then Put your cursor where you want to add the table of contents.

**Note:** Preparable First Page will be used to table of contents as Index of Book.

- 2 Go to References > Table of Contents. and choose an automatic style.

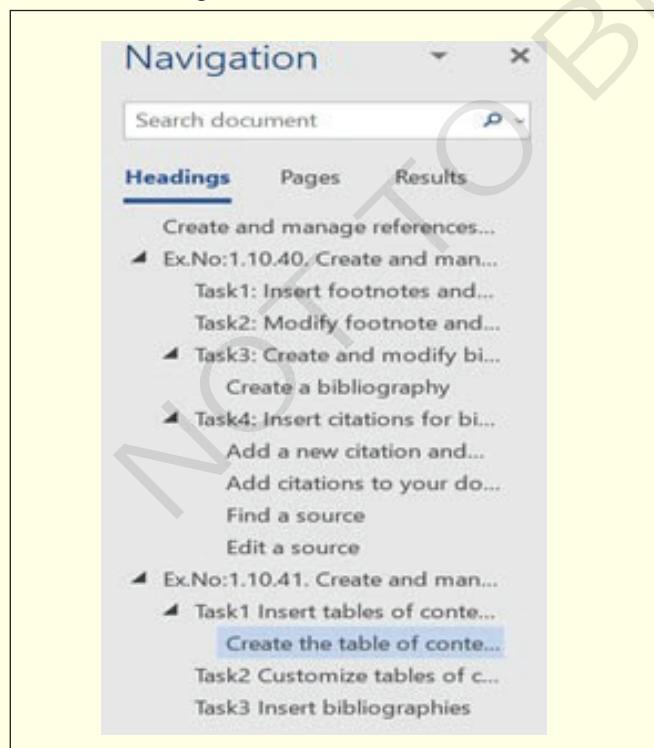


To View Headings **Ctrl + F**



- 3 If you make changes to your document that affect the table of contents, update the table of contents by right-clicking the table of contents and choosing Update Field.

Example : Result

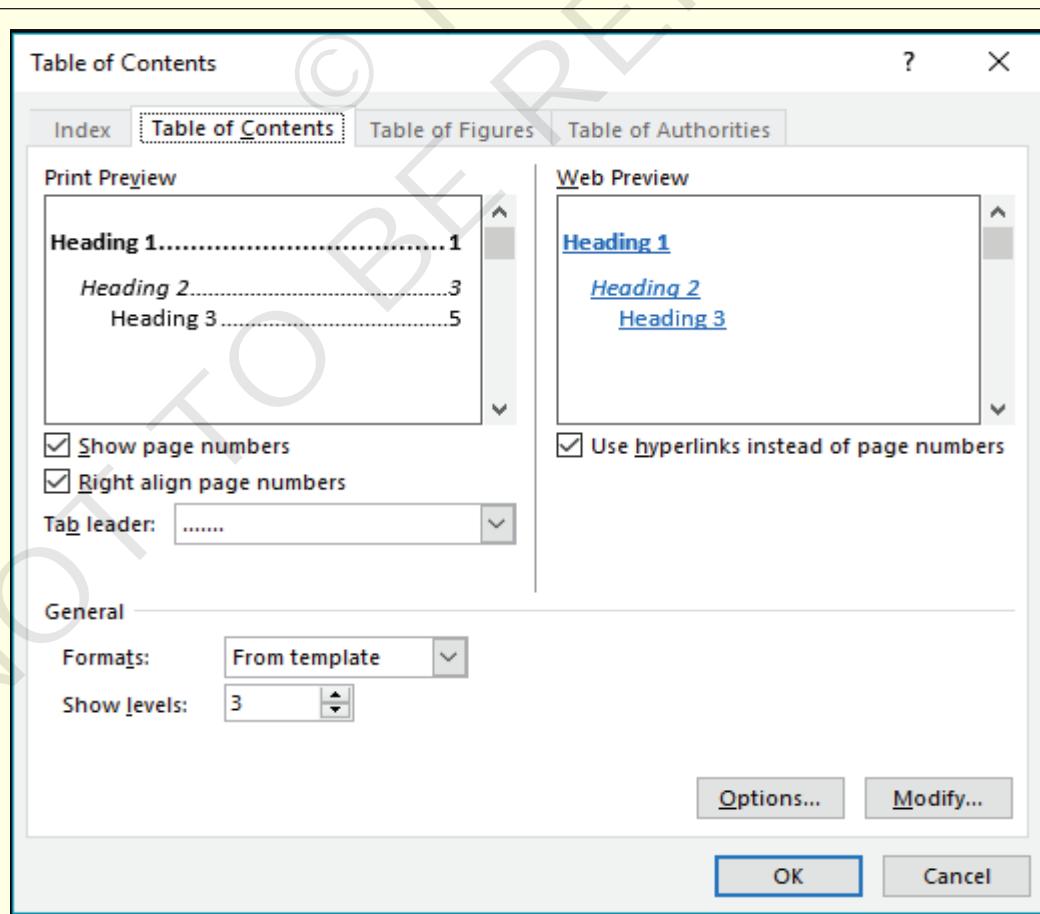


## Table of Contents

|                                                                     |   |
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| Create and manage references (3Hrs.).....                           | 1 |
| Ex.No:1.10.40. Create and manage reference elements (1.4 Hrs) ..... | 1 |
| Task1: Insert footnotes and endnotes.....                           | 1 |
| Task2: Modify footnote and endnote properties .....                 | 1 |
| Task3: Create and modify bibliography citation sources .....        | 2 |
| Create a bibliography .....                                         | 3 |
| Task4: Insert citations for bibliographies .....                    | 3 |
| Add a new citation and source to a document .....                   | 3 |
| Add citations to your document .....                                | 4 |
| Find a source .....                                                 | 5 |
| Edit a source .....                                                 | 5 |
| Ex.No:1.10.41. Create and manage reference tables (1.6 Hrs) .....   | 6 |
| Task1 Insert tables of contents .....                               | 6 |
| Create the table of contents .....                                  | 6 |
| Task2 Customize tables of contents .....                            | 8 |
| Task3 Insert bibliographies .....                                   | 8 |

## TASK 2: Customize tables of contents

- 1 Go to References > Table of Contents.
- 2 Select Custom table of contents.



3 Use the settings to show, hide, and align page numbers, add or change the tab leader, set formats, and specify how many levels of headings to show.

- **Print Preview** displays an example of how your table of contents looks in a document with the settings that you have chosen.
- **Web Preview** shows how your table of contents looks on the web. By default, headings use hyperlinks rather than numbers. When you click an entry in the table of contents, it takes you to that heading. If you clear the Use hyperlinks instead of page numbers box, you see standard numbers with tab leaders.
- **Show page numbers** toggles the page numbers and tab leader on or off.
- **Right align page numbers** puts your page numbers along the right margin of the page. Clear the box to put the page numbers next to the headings.
- Tab leader gives you a drop down to select different styles of leaders, such as dots (default), dashes, or a solid line. Select (none) to turn tab leaders off.

- Formats lets you preselect different table of contents styles.
- Show level adjusts the number of heading levels (provided your document has multiple levels) you see in the table of contents.
- Options lets you choose the styles to use to build your table of contents, such as multiple headings, headers, footers, comment text, etc.

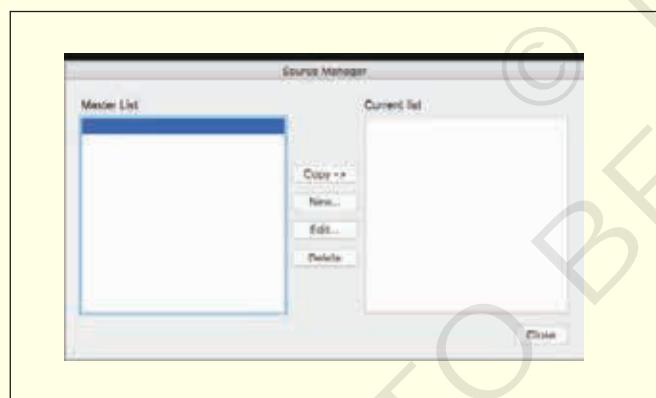
**Note:** Heading choices are reflected back and forth with the Show level setting. For example, if you set 3 levels to show, headings 1, 2, and 3 will be checked under Available styles:

- Modify sets the indentation and style used on the table of contents entries. Use Modify in the Style dialog to make finer changes.
- OK saves your changes and returns to the document.
- Cancel discards your changes and returns to the document.

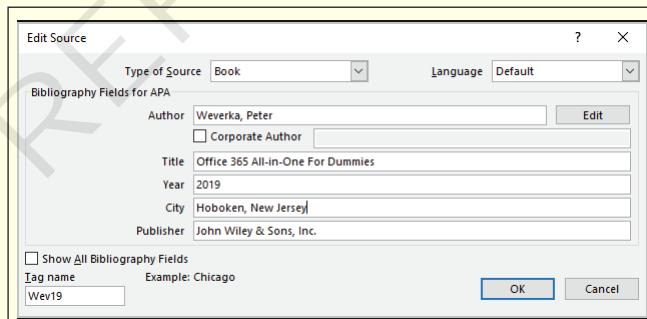
### TASK 3: Insert bibliographies

#### Create a bibliography

1 Before Inserting Bibliography Update the details in Go to References > Manager Sources.



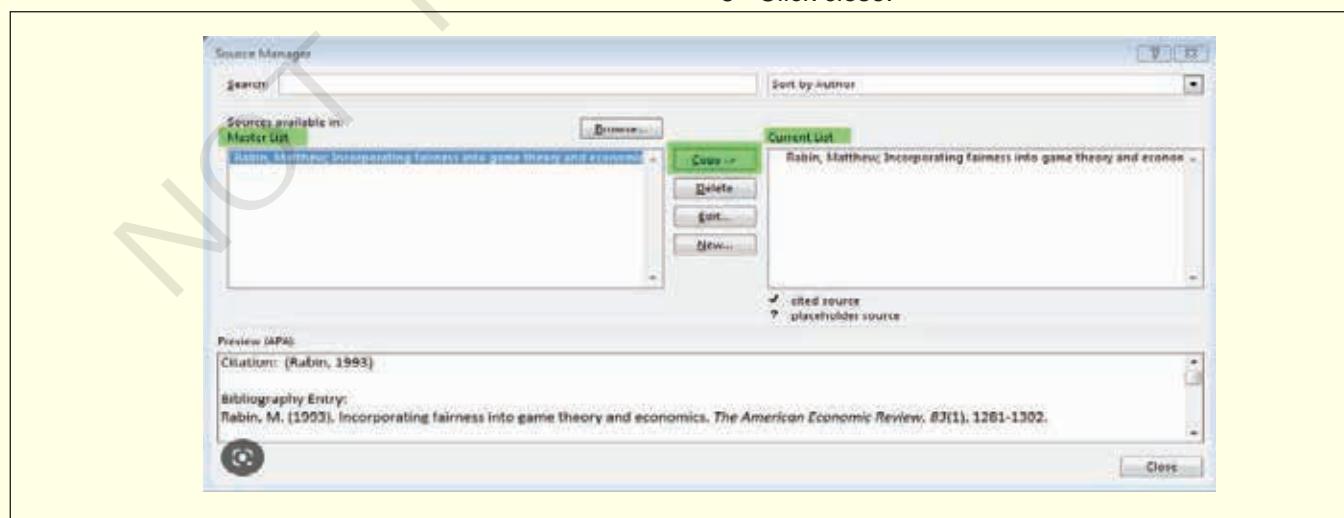
2 Select New to Create the Master List about the Author of the Book, Title, Year, City and Publisher.



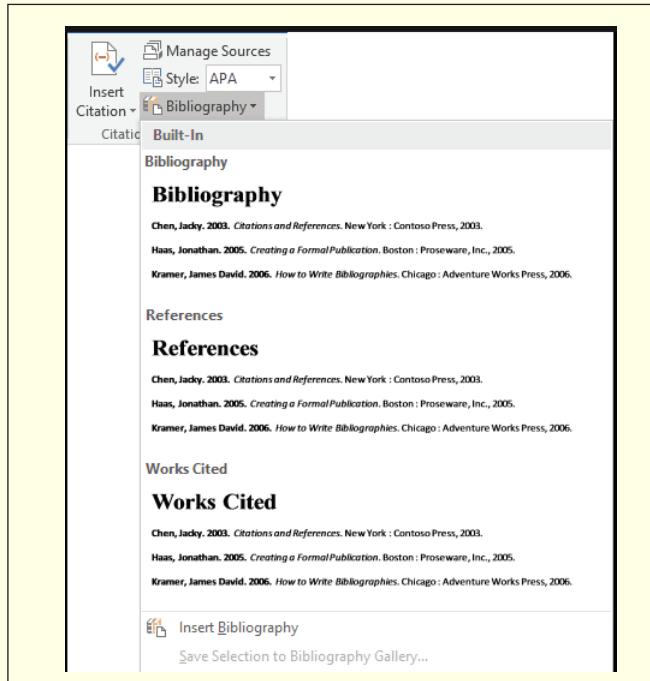
3 Click OK

4 After Master List Created we can view

5 Click close.



With cited sources in your document, you're ready to create a bibliography.



Chen, Jacky. 2003. *Citations and References*. New York : Contoso Press, 2003.  
Haas, Jonathan. 2005. *Creating a Formal Publication*. Boston : Proseware, Inc., 2005.  
Kramer, James David. 2006. *How to Write Bibliographies*. Chicago : Adventure Works Press, 2006.

#### References

#### References

Chen, Jacky. 2003. *Citations and References*. New York : Contoso Press, 2003.  
Haas, Jonathan. 2005. *Creating a Formal Publication*. Boston : Proseware, Inc., 2005.  
Kramer, James David. 2006. *How to Write Bibliographies*. Chicago : Adventure Works Press, 2006.

#### Works Cited

#### Works Cited

Chen, Jacky. 2003. *Citations and References*. New York : Contoso Press, 2003.  
Haas, Jonathan. 2005. *Creating a Formal Publication*. Boston : Proseware, Inc., 2005.  
Kramer, James David. 2006. *How to Write Bibliographies*. Chicago : Adventure Works Press, 2006.

Insert Bibliography

Save Selection to Bibliography Gallery...

- 1 Put your cursor where you want the bibliography.
- 2 Go to References > Bibliography, and choose a format.
- 3 After Inserted Bibliography / References / Works Cited

### Bibliography

E, A. (2022). Computer Operator and Programming Assistant. Chennai: NIMI, Chennai.

### References

E, A. (2022). Computer Operator and Programming Assistant. Chennai: NIMI, Chennai.

### Works Cited

E, A. (2022). Computer Operator and Programming Assistant. Chennai: NIMI, Chennai.

## COPA - Manage graphic elements

### Insert illustrations and text boxes

**Objectives:** At the end of this exercise you shall be able to

- insert shapes, pictures, 3D models, smart art graphics, screenshots and screen clippings.

#### Requirements

##### Tools/Equipment/Machines

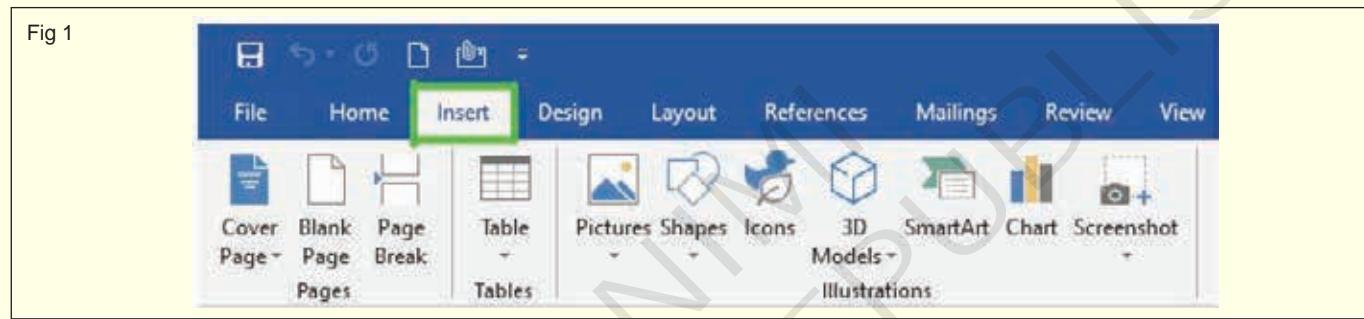
- |                                   |         |                           |         |
|-----------------------------------|---------|---------------------------|---------|
| • A Working PC with Windows 10 OS | - 1 No. | • MS Office 2019 / Latest | - 1 No. |
|-----------------------------------|---------|---------------------------|---------|

#### PROCEDURE

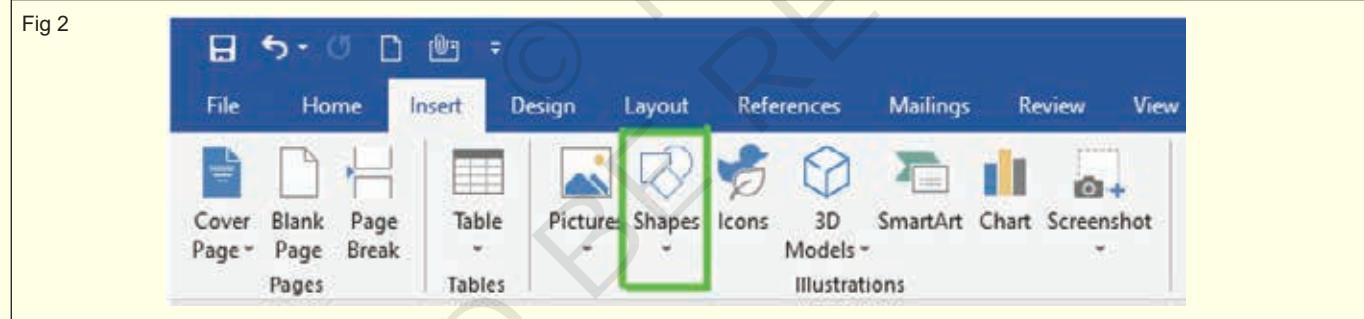
##### TASK 1: Insert shapes

###### Steps to Add Shapes in MS Word

**Step 1:** On the navigation menu click on the insert option. (Fig 1)



**Step 2:** In the illustration section select the shapes option as shown in the figure: (Fig 2)



**Step 3:** A list of shapes will pop up on the screen where you can select different types of shapes. (Fig 3)

There are total of 8 sections in shapes

- |                     |                |
|---------------------|----------------|
| 1 Lines             | 2 Rectangles   |
| 3 Basic Shapes      | 4 Block Arrows |
| 5 Equation Shapes   | 6 Flowcharts   |
| 7 Stars and Banners | 8 Callouts     |

**Step 4:** Now select a shape as per your need. (Fig 4)

**Step 5:** Next drag the cursor on your current page to draw the shape.

**Step 6:** Finally shape is added on the current page of the document as shown in the figure (Fig 5)

**Step 7:** Now click on the drag button to set the size of the shape as shown in the figure (Fig 6)

After you add one or more shapes, you can add text, bullets, and numbering to them, and you can change their fill, outline, and other effects on the Format tab.

**Step 8:** On the navigation menu click on the format option to give color, layout, style to the shape. (Fig 7)

**Step 9:** Under the shape style section click on the drop-down arrow to open the style panel. (Fig 8)

**Step 10:** A theme style color panel will open where you can select different types of color styles for the shape as shown in the figure: (Fig 9)

**Step 11:** Select the color of your choice.(Fig 10)

**Step 12:** You can also choose a different color pattern from other theme fills options as shown in the figure: (Fig 11)

**Step 13:** You can also select a different color from the shape fill option.(Fig 12)

Fig 3



Fig 4

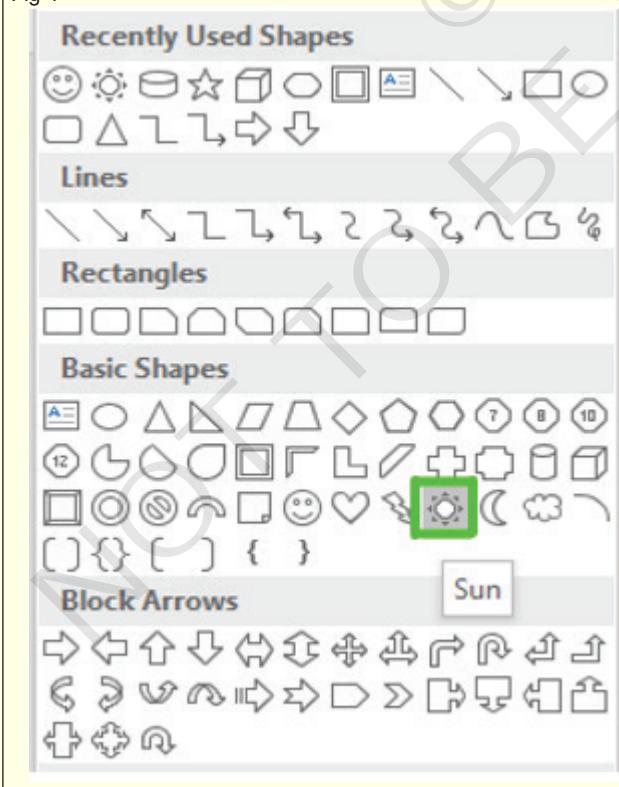


Fig 5

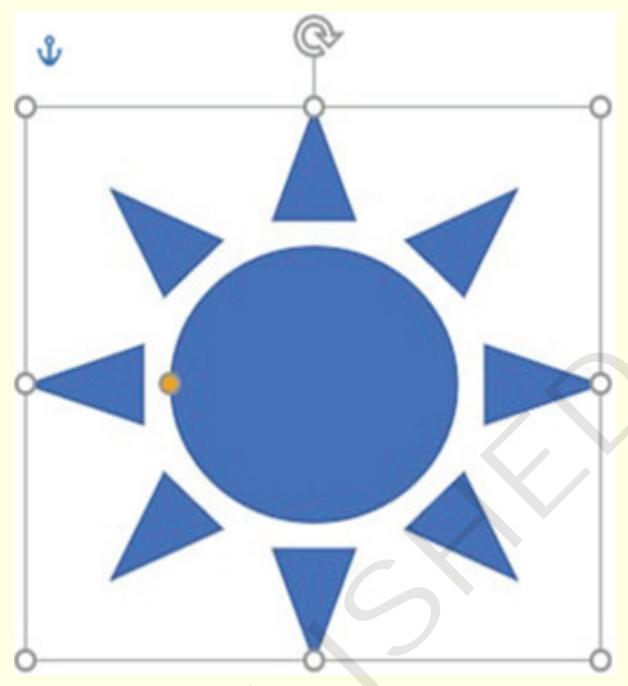
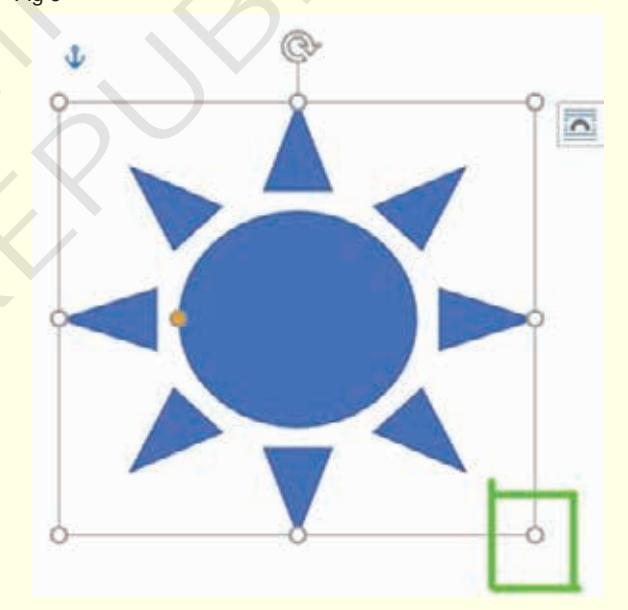


Fig 6



**Step 14:** Next click on the shape outline option to give an outline to the shape. (Fig 13)

**Step 15:** Select the color from the theme colors panel as shown in the figure: (Fig 14)

**Step 16:** Next click on the shape effects option. (Fig 15)

**Step 17:** Now select the option from the menu as per your requirement. (Figs 16&17)

Finally, the shape is inserted in your document. (Fig 18)

Fig 7

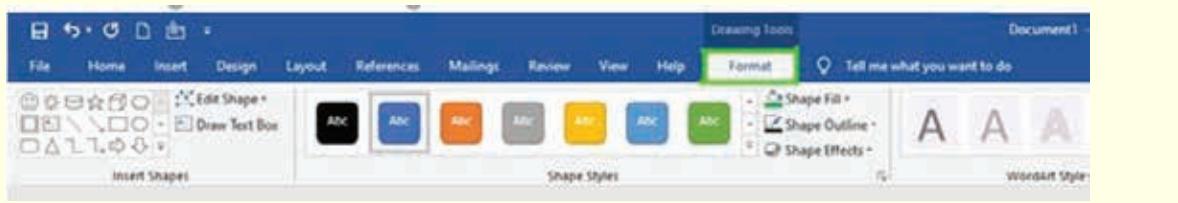


Fig 8

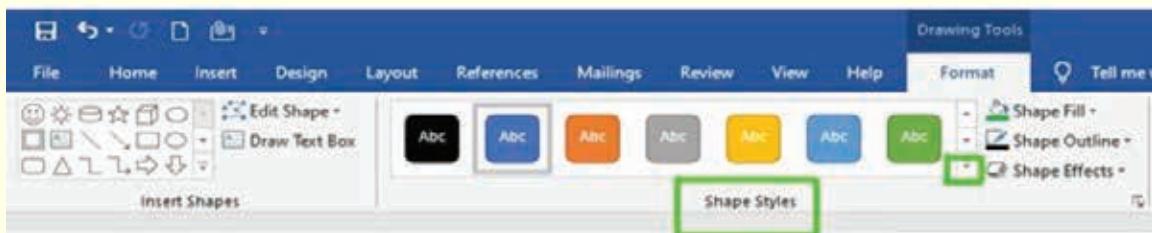


Fig 9

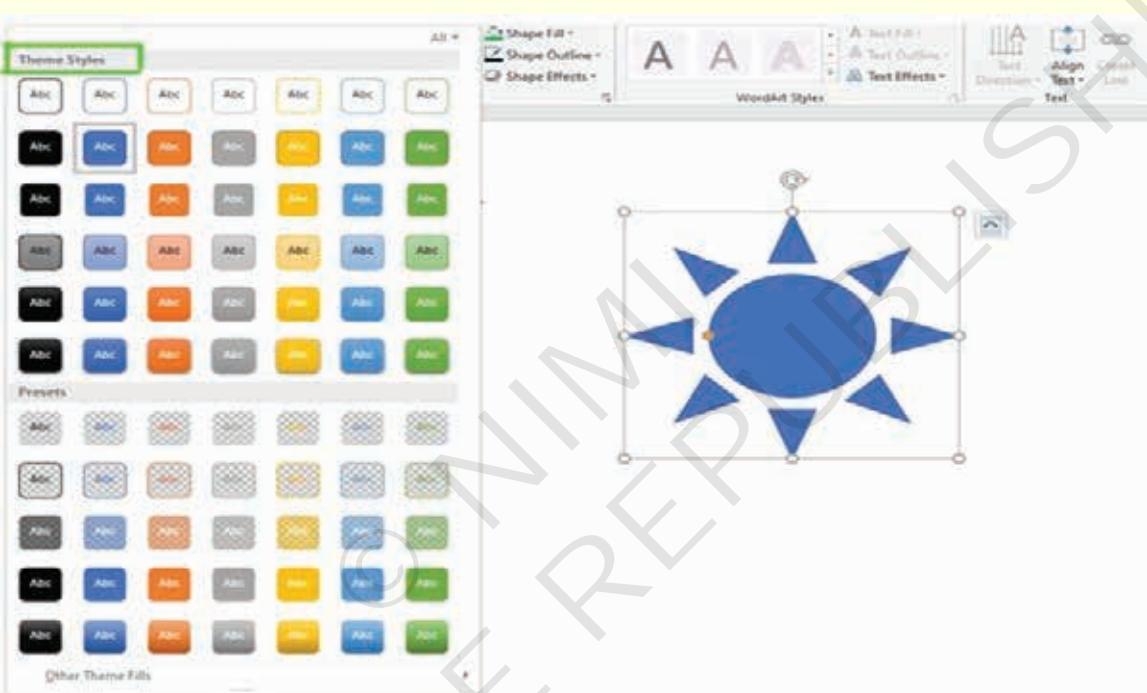


Fig 10

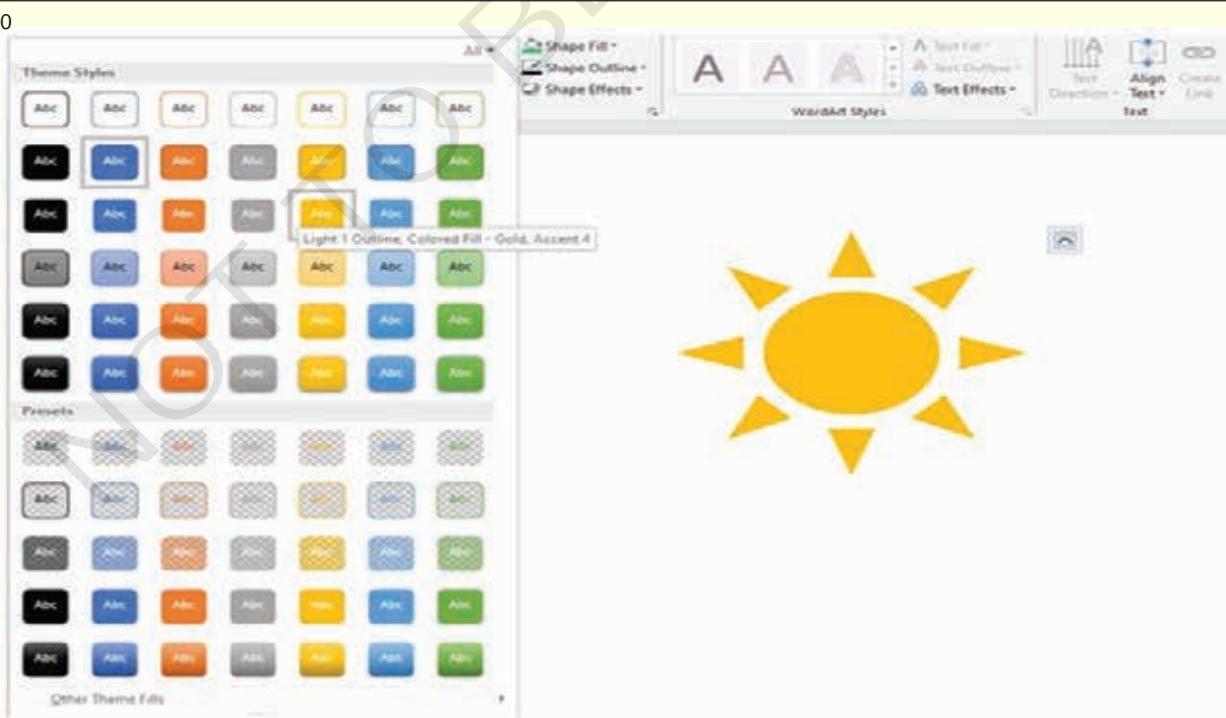


Fig 11

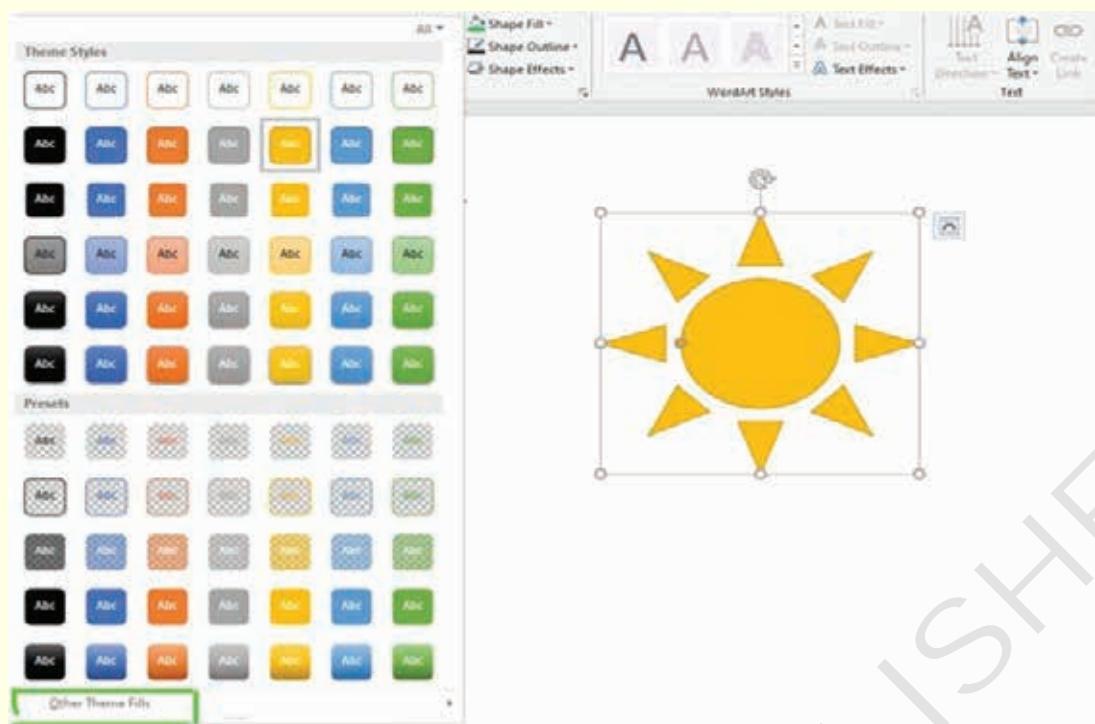


Fig 12



Fig 13

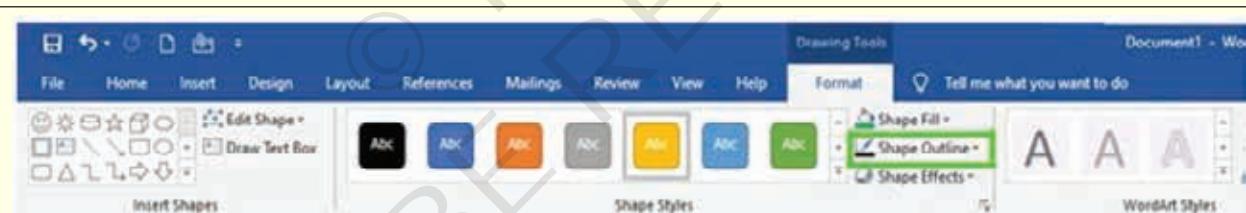


Fig 14

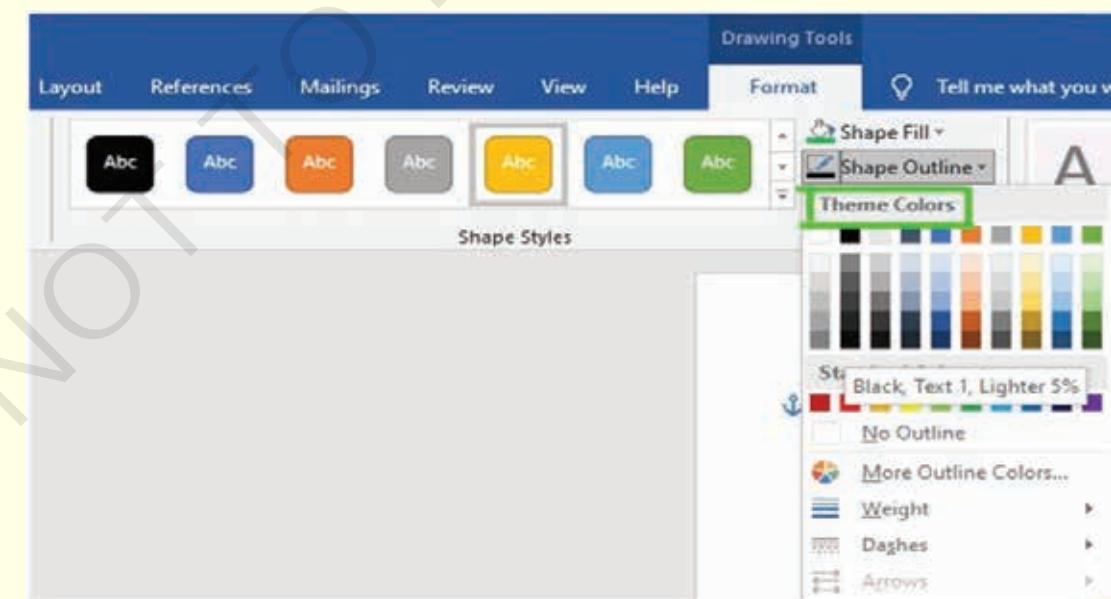


Fig 15

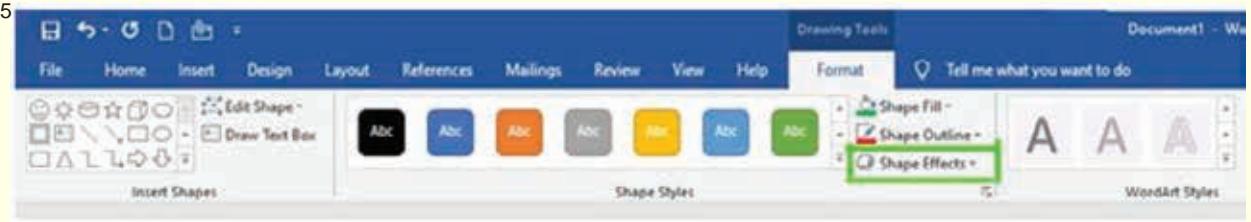


Fig 16

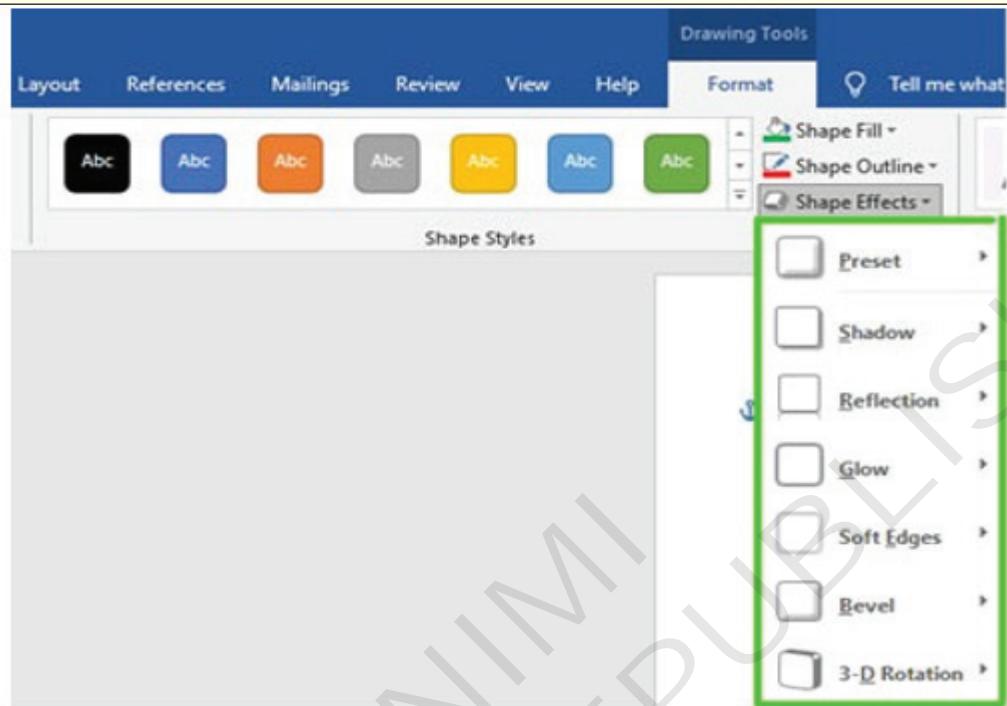


Fig 17

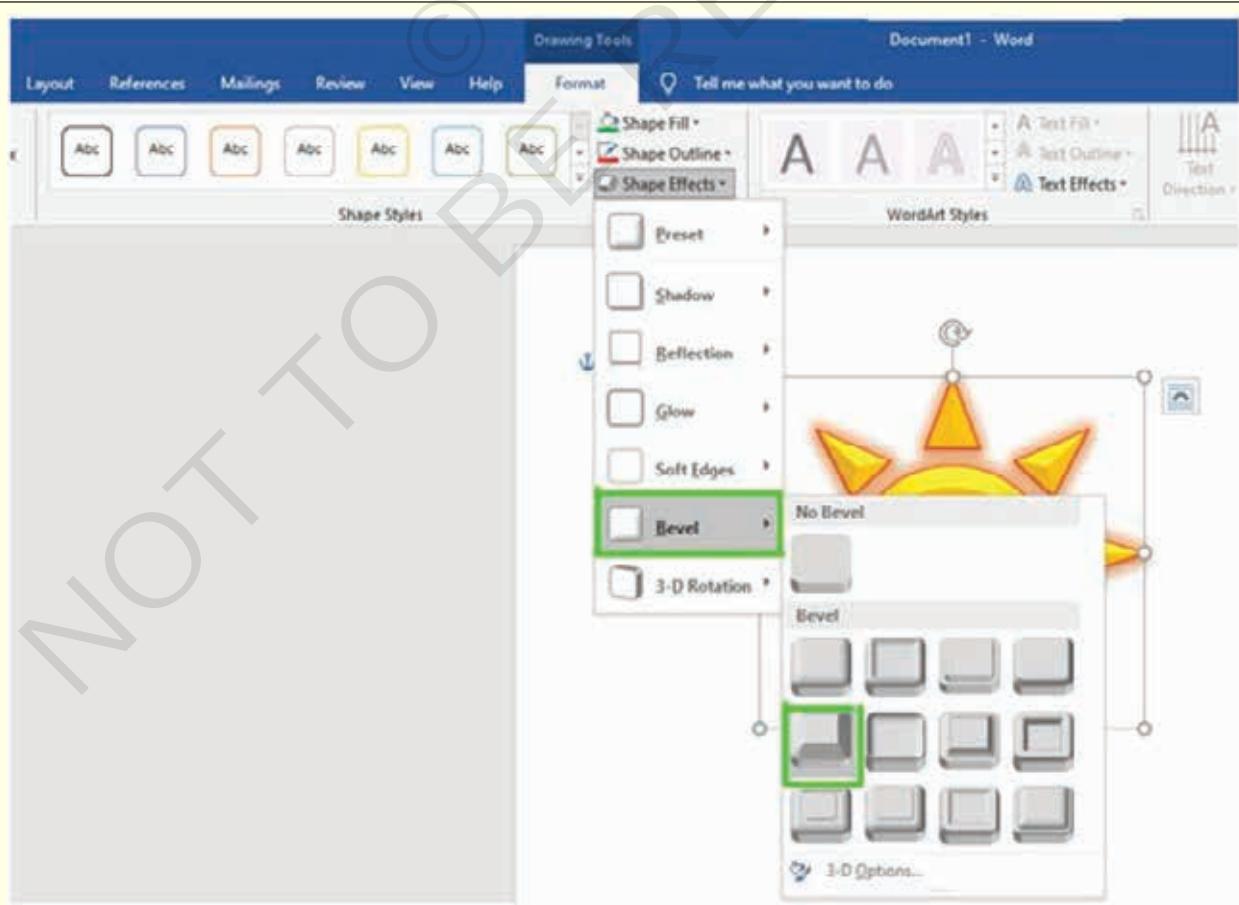
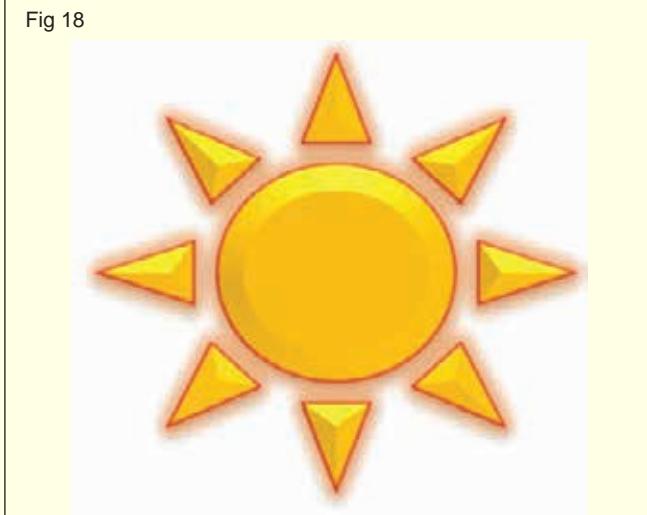


Fig 18



### TASK 2: Insert pictures

#### How to insert pictures from Files in MS Word?

**Step 1:** Select the insert option from the navigation menu. (Fig 19)

**Step 2:** Now select the picture option as shown: (Fig 20)

Fig 19

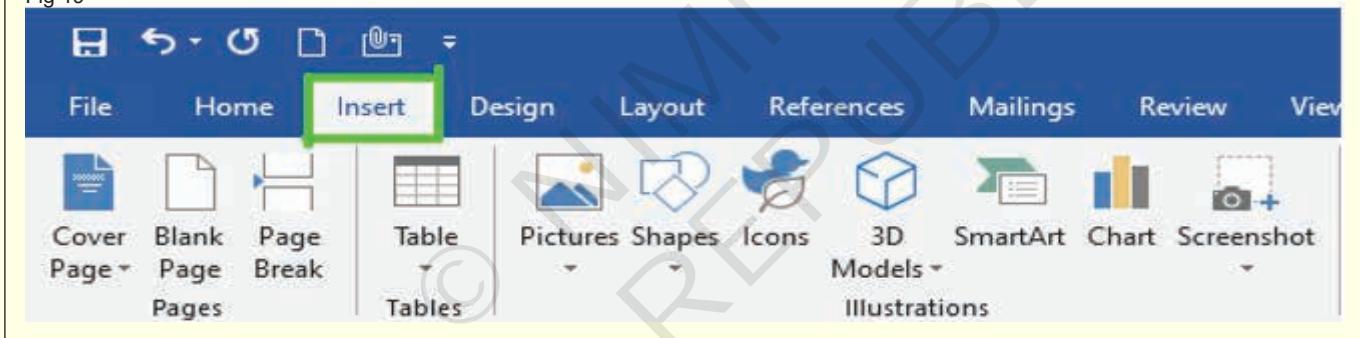
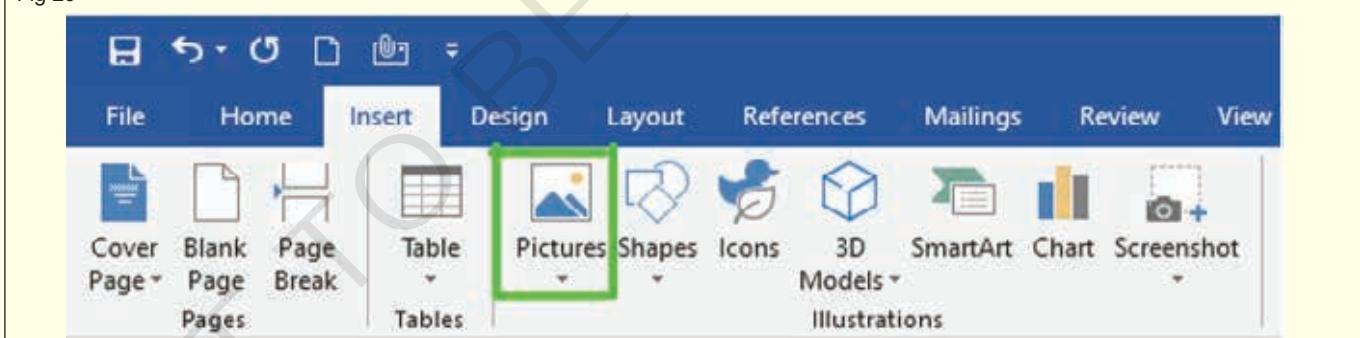


Fig 20



**Step 3:** There are two ways to insert a picture:

- This Device - You can insert a picture file from your computer.
- Online Pictures - You can also insert pictures from online sites.

**Step 4:** Select this device option as shown: (Fig 21)

**Step 5:** A insert picture dialog box will open.

**Step 6:** Select the drive or folder from the left panel menu

**Step 7:** Next select the picture/image you want to insert in your document.

**Step 8:** Click on the insert option as shown: (Fig 22)

**Step 9:** Now you can set or resize the size of your picture according to your requirement using the dot button. (Fig 23)

**Step 10:** To give styles to the picture click on the format option from the navigation menu. (Fig 24)

**Step 11:** Click on drop-down arrow and Select picture style as per your choice. (Fig 25)

Finally, pictures/images are added to your document. (Fig 26)

Fig 21

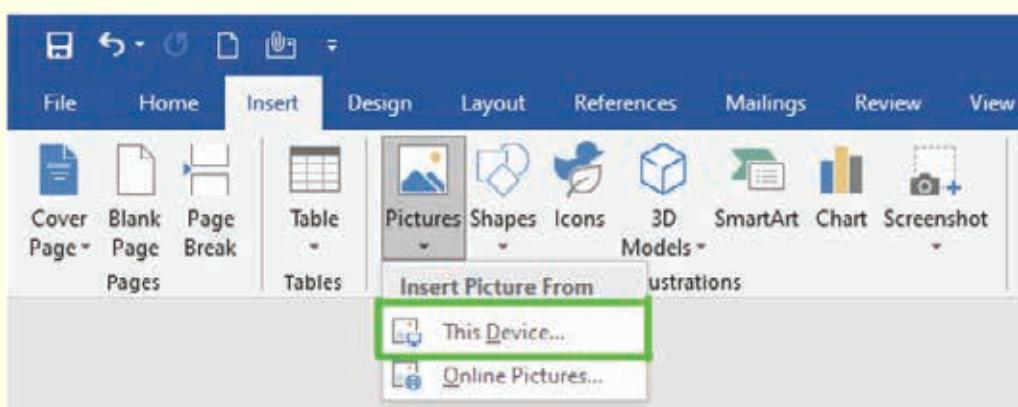


Fig 22

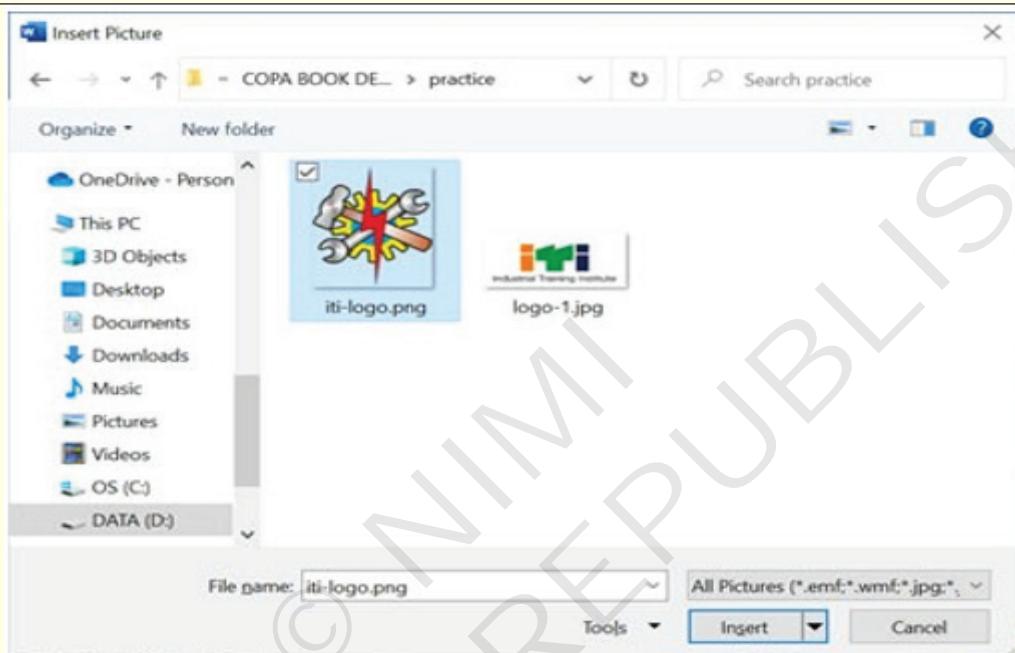


Fig 23

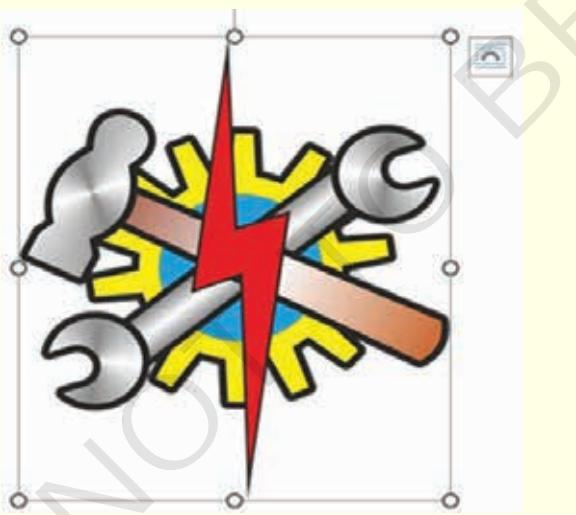


Fig 24



Fig 25

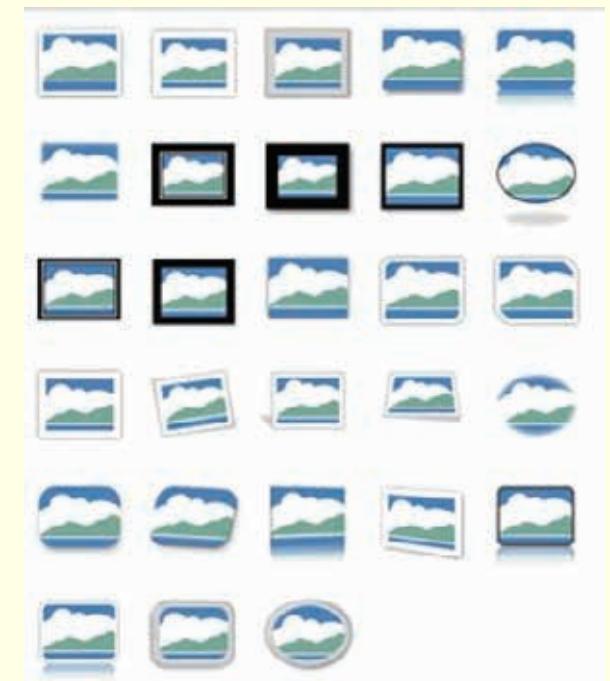


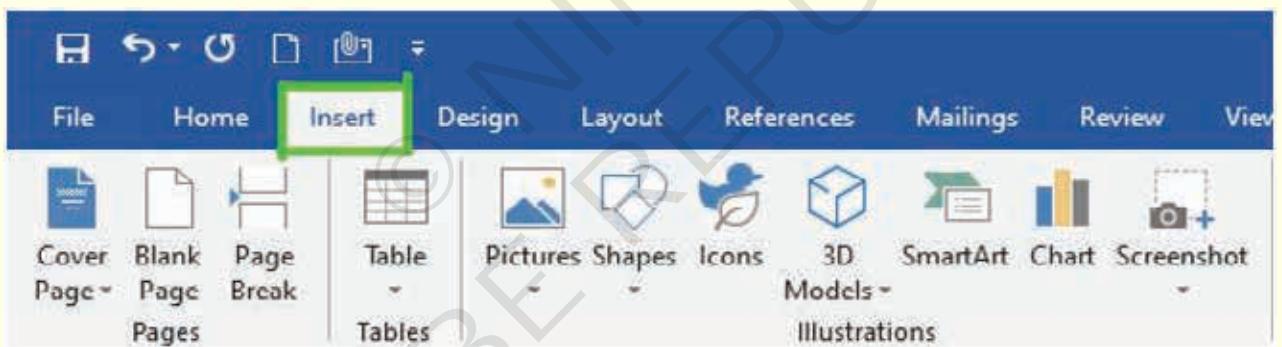
Fig 26



#### How to insert Online Images in MS Word?

**Step 1:** Select the insert option from the navigation menu. (Fig 27)

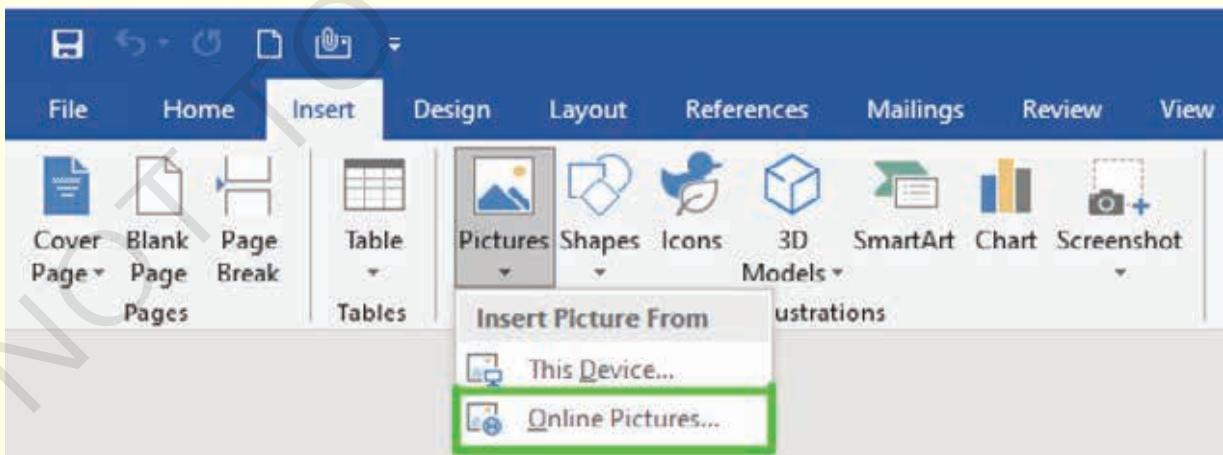
Fig 27



**Step 2:** Now select the picture option and insert picture dialog box will open.

**Step 3:** Select the online pictures option as shown: (Fig 28)

Fig 28



**Step 4:** A online pictures dialog box will open where you can search a variety of online pictures. (Fig 29)

**Step 5:** Search the picture/image name in the search bar. (Fig 30)

**Step 6:** Select the picture and then click on the insert button as shown:

Finally, online images will be added to your document (Fig 31).

Fig 29

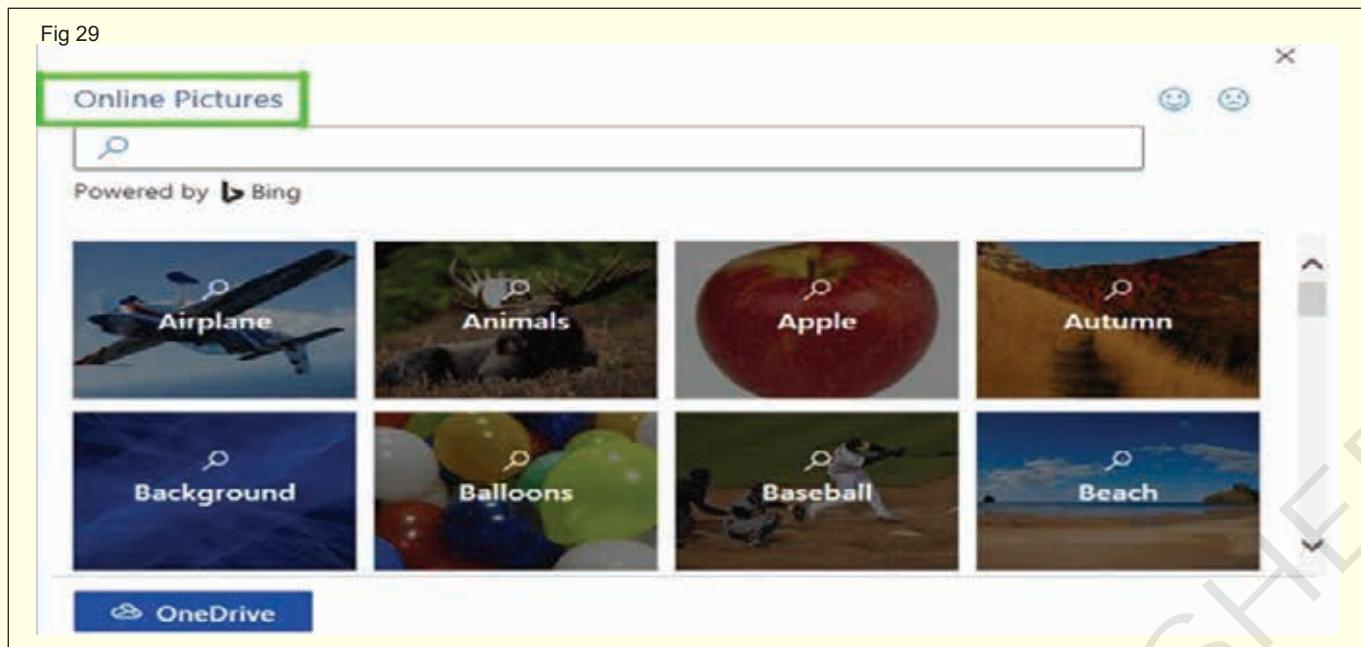


Fig 30



Fig 31

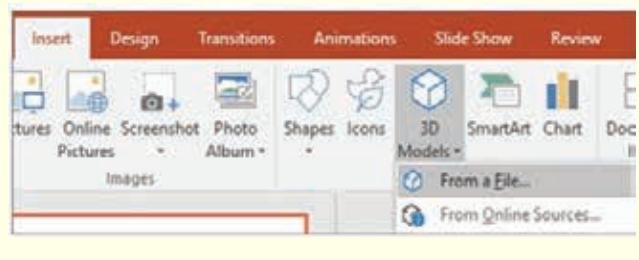


## TASK 3: Insert 3D models

### Add 3D objects from a local file

- 1 You insert 3D models into your files much the same way as other images. On the Insert tab of the ribbon select 3D Models and then From a File. (Fig 32)

Fig 32



- 2 Once it's inserted you can use the controls to manipulate the image: (Fig 33)

Fig 33



3 **1** Use the 3D control to rotate or tilt your 3D model in any direction. Just click, hold and drag with your mouse.

**2** Drag the image handles in or out to make your image larger or smaller.

**3** You can still use the rotation handle to rotate your image clockwise or counter-clockwise, but you'll get a much better experience using the 3D rotation control we talked about above.

### Add 3D Models from our online library

- 1 To select a 3D Model from our online library, choose 3D Models > From Online Sources. In the dialog box that appears you can browse, or search for, 3D images from the catalog. (Fig 34)

- 2 Select one or more images and click Insert. (Fig 35)

### Change how your 3D models look in Office

1 When you insert a 3D model into your Office file you'll get a contextual tab on the ribbon under 3D Model Tools called Format. On the format tab there are some handy controls to help you customize how your 3D images are going to look.

2 The 3D Model Views gallery gives you a collection of preset views that you can use on your image. For example you can quickly select the head-on view or the top-down view. (Fig 36)

3 If you've got multiple 3D models and you're having trouble selecting the one you want to work with, click the Selection Pane to turn on the list of objects. Then you can easily select the image or images that you want to select. (Fig 37)

4 The Align tool helps you place your image on the page or slide-at the top or side, for example.

Fig 34



Fig 35



Fig 36

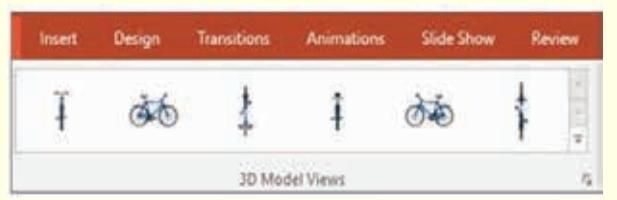


Fig 37



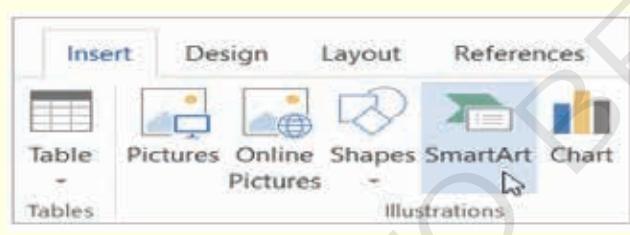
- 5 Pan & Zoom gives you control of how your 3D image fits within the frame. Click the Pan & Zoom button, then click and drag the object within the frame to move it. Use the Zoom arrow on the right-side of the frame to make the object appear larger or smaller within the frame.
- 6 Once you have your 3D images inserted you can do all kinds of exciting things with them, such as using PowerPoint's Morph Transition to make the object appear to rotate or spin.

#### TASK 4: Insert Smart Art graphics

##### Insert a SmartArt graphic and add text to it

- 1 On the Insert tab, in the Illustrations group, click SmartArt. (Fig 38)

Fig 38



- 2 In the Choose a SmartArt Graphic dialog box, click the type and layout that you want. (Fig 39)

Fig 39



- 3 Enter your text by doing one of the following:

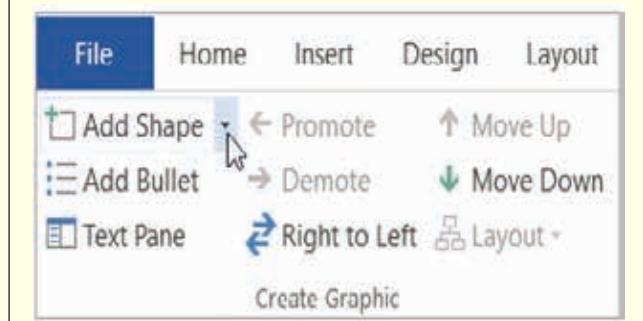
- Click [Text] in the Text pane, and then type your text. (Fig 40)

- 4 After Text Typed will be shown here. (Fig 41)

##### Add or delete shapes in your SmartArt graphic

- 1 Click the SmartArt graphic that you want to add another shape to.
- 2 Click the existing shape that is located closest to where you want to add the new shape.
- 3 Under SmartArt Tools, on the Design tab, in the Create Graphic group, click the arrow next to Add Shape. (Fig 42)

Fig 42



- If you don't see the SmartArt Tools or Design tabs, make sure that you've selected the SmartArt graphic. You may have to double-click the SmartArt graphic to open the Design tab.
- 4 Do one of the following:
  - To insert a shape after the selected shape, click Add Shape After.
  - To insert a shape before the selected shape, click Add Shape Before.

Fig 40

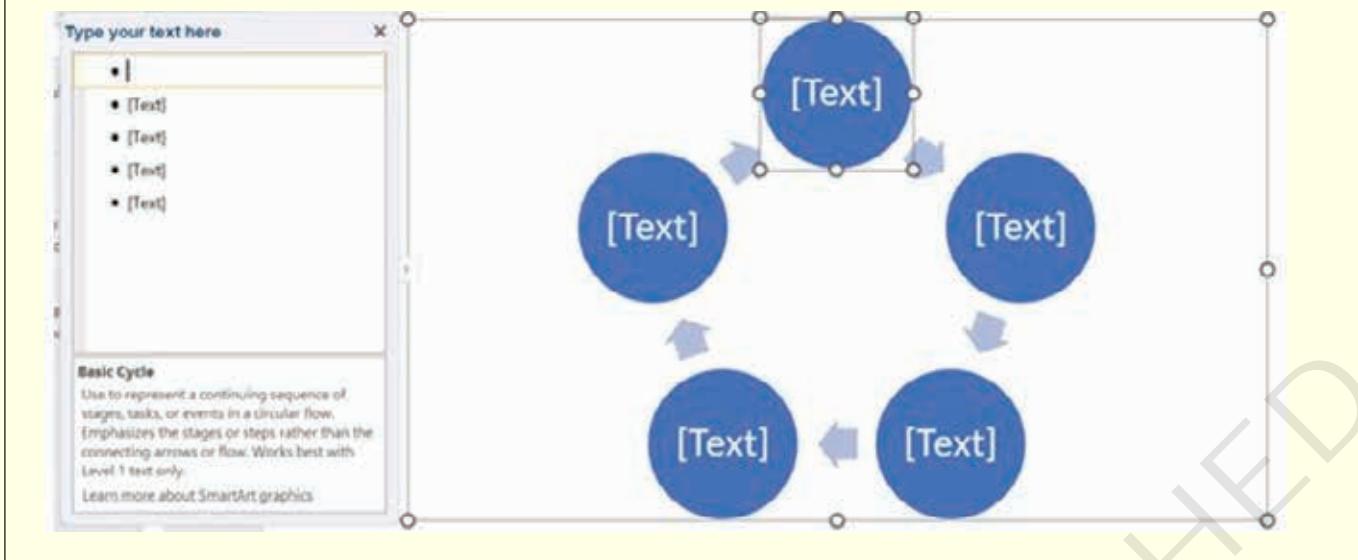
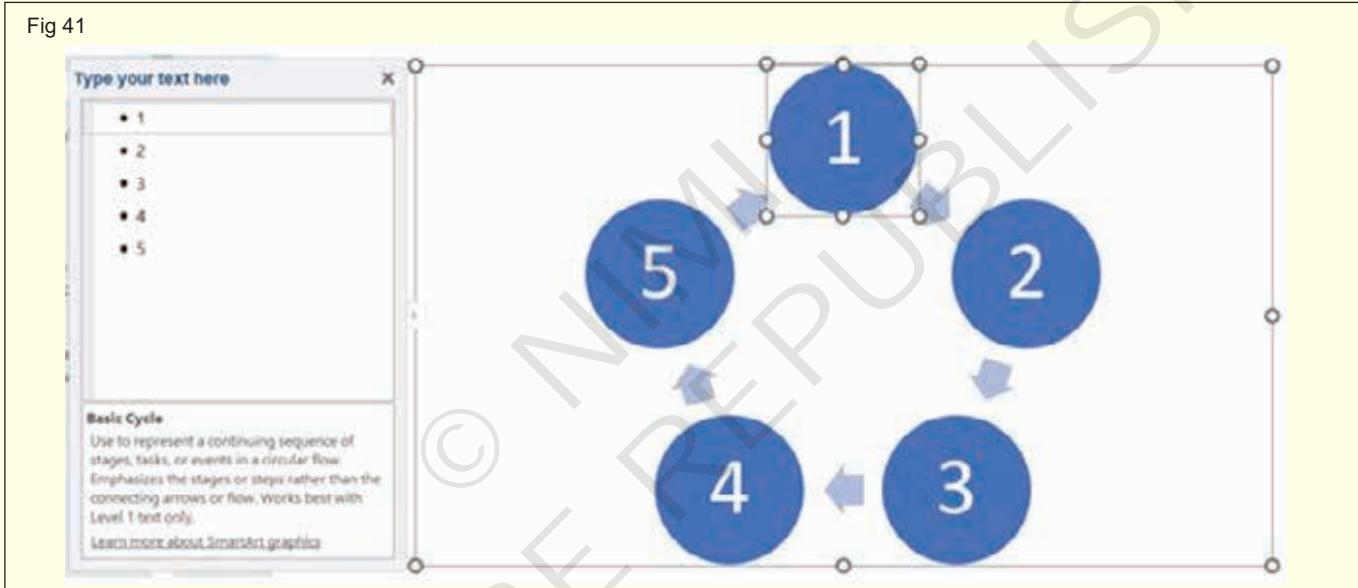
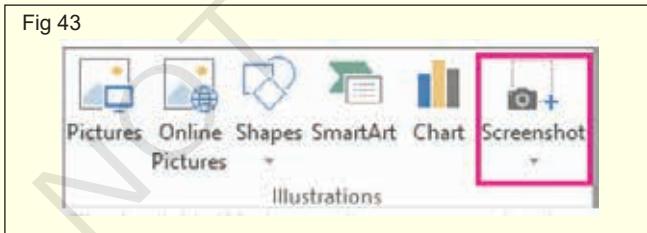


Fig 41



### TASK 5: Insert screenshots and screen clippings

- 1 Click in the document at the location where you want to add the screenshot.
- 2 On the Insert tab, in the Illustrations group, click Screenshot. (Fig 43)



- 3 The Available Windows gallery appears, showing you all the windows that you currently have open. Do one of the following:

- To insert a screenshot of an entire window into your document, click the thumbnail image of that window.
  - To add a selected portion of the first window shown in the Available Windows gallery, click Screen Clipping; when the screen turns white and the pointer becomes a cross, press and hold the left mouse button and drag to select the part of the screen that you want to capture. (Fig 44)
- 4 The window or portion of the screen you selected is automatically added to your document. You can use the tools on the Picture Tools tab to edit and enhance the screenshot. (Fig 45)

Fig 44

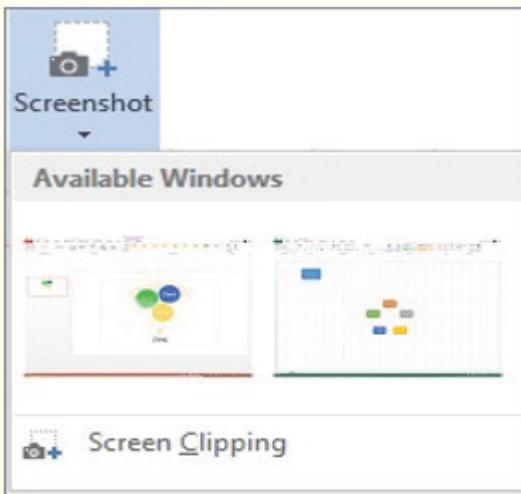
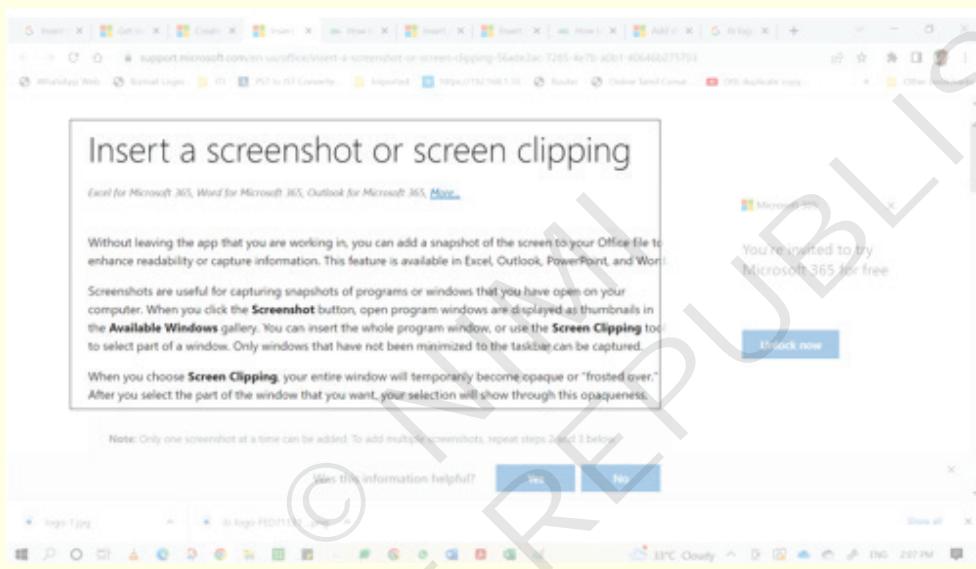


Fig 45

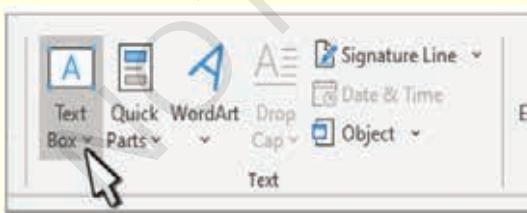


## TASK 6: Insert text boxes

### Add a text box

- 1 Go to Insert > Text Box, and then select one of the pre-formatted text boxes from the list, select More Text Boxes from Office.com, or select Draw Text Box. (Figs 46 & 47)

Fig 46



- 2 If you select Draw Text Box, click in the document, and then drag to draw the text box the size that you want. (Fig 48)
- 3 To add text, select inside the box and type or your paste text. (Fig 49)

### If you aren't using a mouse

- 1 Press and release ALT, N, and then press X.
- 2 Press the arrow keys to select the text box that you want, and then press ENTER.
- 3 Type the text that you want.
- 4 When you are finished typing and want to switch back to editing text in your document, press ESC.

### Copy a text box

- 1 Select the border of the text box that you want to copy.
- 2 Press Ctrl+C.

**Note:** Make sure the pointer is on the border of the text box, not inside it. If the pointer is inside, pressing Ctrl+C will copy the text, not the text box.

Fig 47

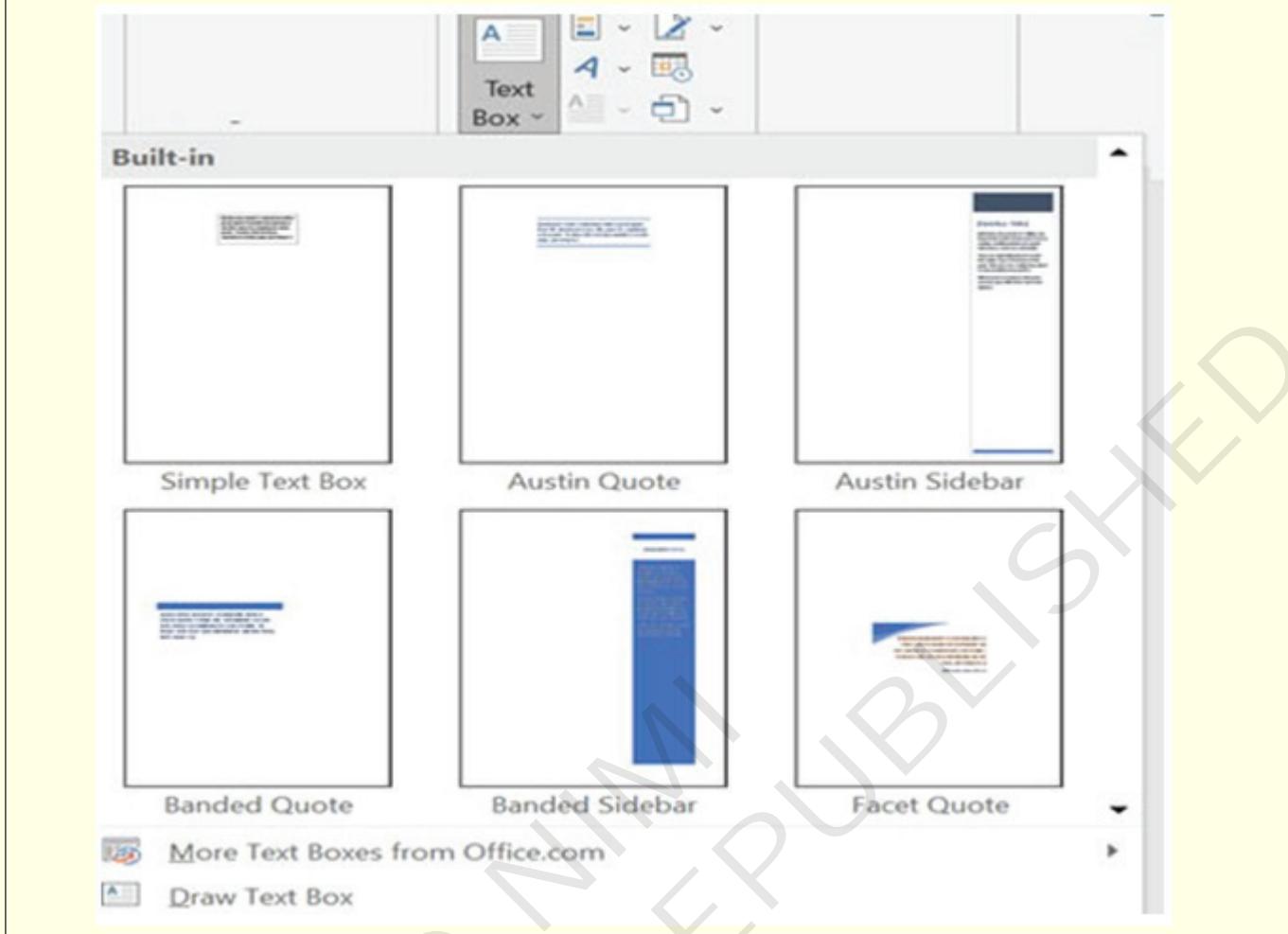
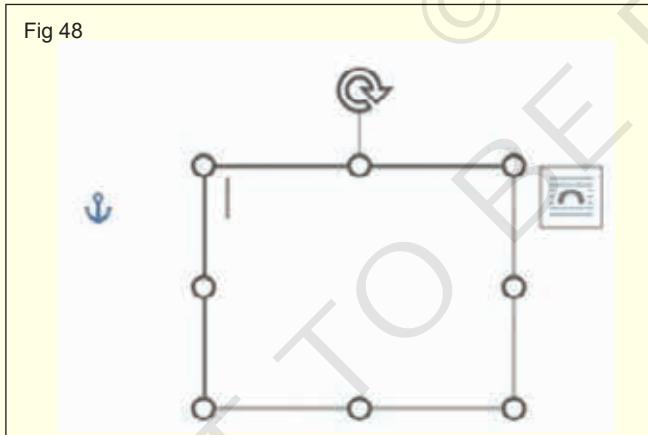


Fig 48



- 3 Select a location and press **Ctrl+V** to paste the text box.

#### Delete a text box

- Select the border of the text box that you want to delete, and then press **Delete**.

Fig 49



**Note:** Make sure the pointer is on the border of the text box and not inside it. If the pointer is inside the box, pressing Delete will delete the text inside the text box, not the box.

## COPA - Manage graphic elements

### Format illustrations and text boxes

**Objectives:** At the end of this exercise you shall be able to

- apply artistic effects, picture effects and picture styles
- remove picture backgrounds
- format graphic elements, SmartArt graphics & 3D models.

#### Requirements

##### Tools/Equipment/Machines

- |                                   |         |                           |         |
|-----------------------------------|---------|---------------------------|---------|
| • A Working PC with Windows 10 OS | - 1 No. | • MS Office 2019 / Latest | - 1 No. |
|-----------------------------------|---------|---------------------------|---------|

### PROCEDURE

#### TASK 1: Apply artistic effects

##### Apply artistic effects

- 1 Select the picture.
- 2 Select Picture Format and select Artistic Effects. (Fig 1)

- 3 Hover over the options to preview them, then select the one you want. (Fig 2)

**Note:** You can apply only one artistic effect at a time to a picture, so applying a different artistic effect will remove the previously applied artistic effect. (Figs 3a&3b )

Fig 1

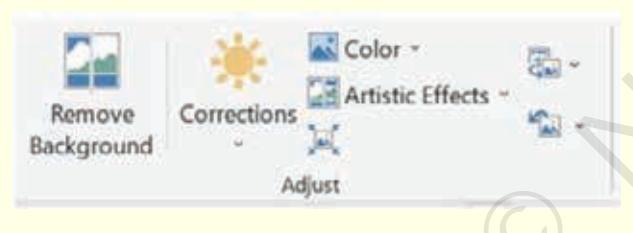


Fig 2

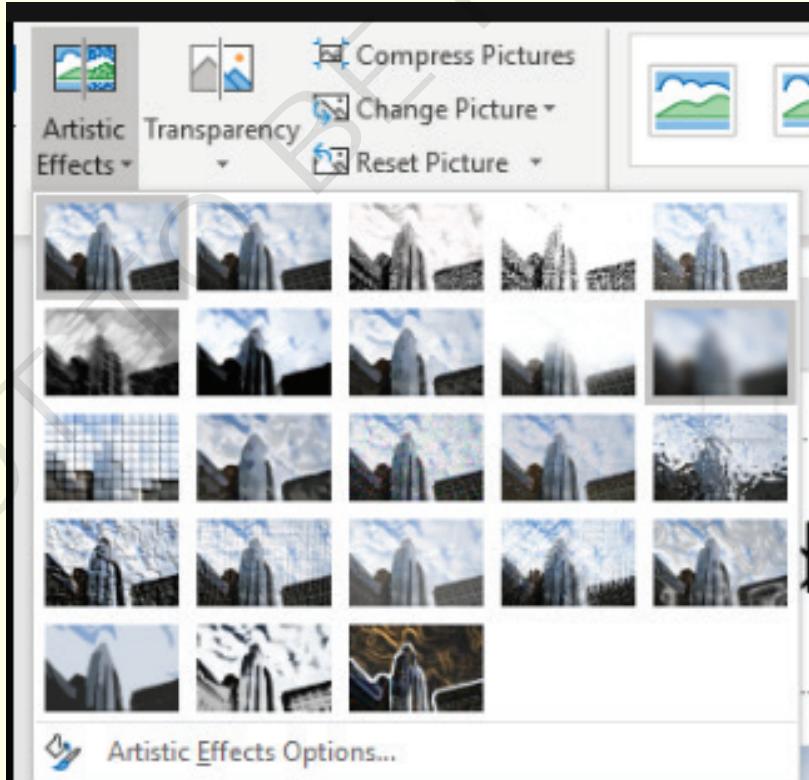
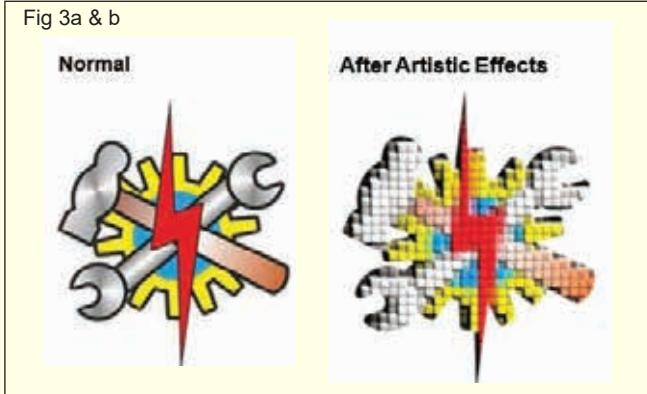


Fig 3a & b

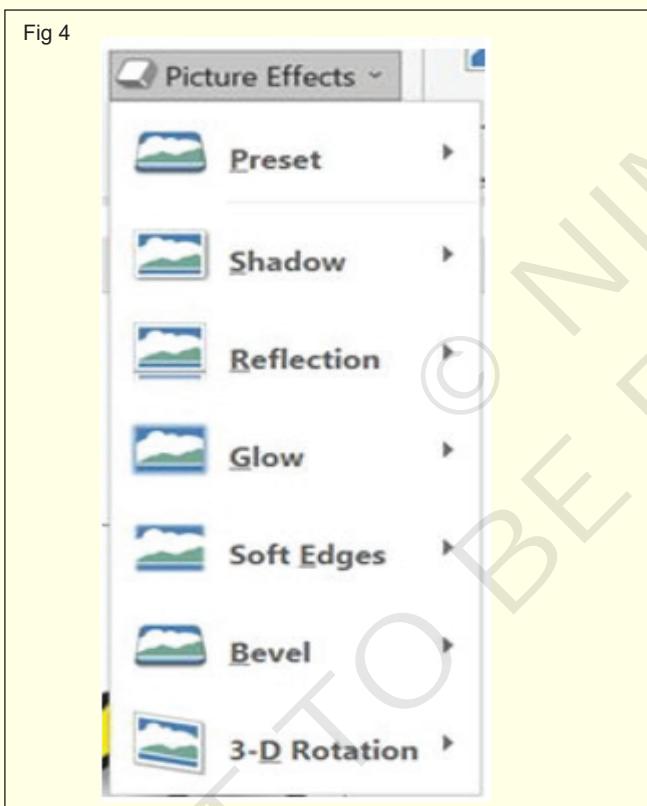


## TASK 2: Apply picture effects and picture styles

### Apply picture effects

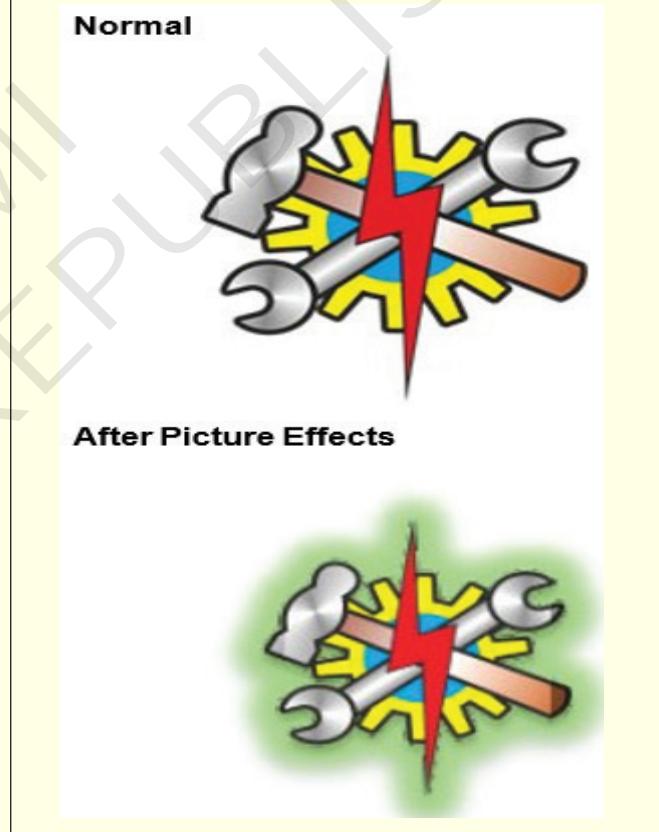
- 1 Select the picture.
- 2 Select Picture Format and select Picture Effects. (Fig 4)

Fig 4



- 3 Select the one you want: Shadow, Reflection, Glow, Soft Edges, Bevel, or 3-D Rotation. (Fig 5)

Fig 5



## TASK 3: Remove picture backgrounds

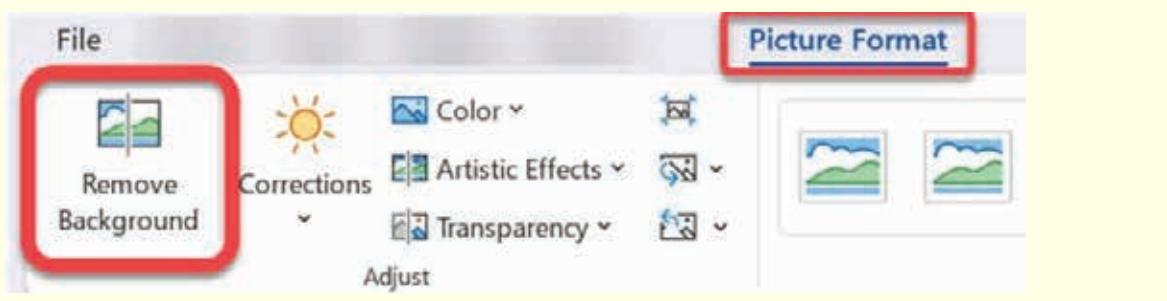
- 1 Select the picture that you want to remove the background from.
- 2 On the toolbar, select Picture Format > Remove Background, or Format > Remove Background. (Fig 6)

If you don't see Remove Background, make sure you have selected a picture. You might have to double-

click the picture to select it and open the Picture Format tab.

- 3 The default background area will be colored magenta to mark it for removal, while the foreground will retain its natural coloring.

Fig 6



Default Background (Fig 7)

Fig 7



After Remove Background Choose (Fig 8)

Fig 8

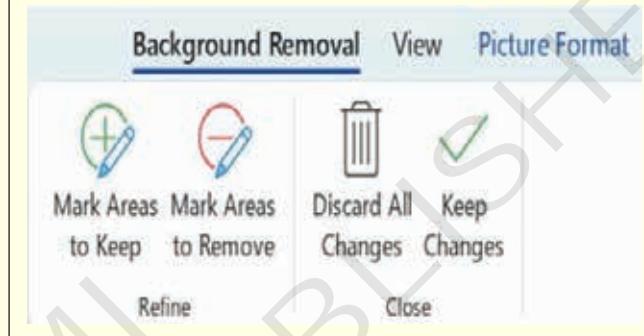


4 If the default area isn't correct, go to Background Removal > Picture Tools and do one or both of the following:

- If parts of the picture that you want to keep are magenta (marked for removal), select Mark Areas to Keep and use the free-form drawing pencil to mark the areas on the picture that you want to keep.

- To remove more parts of the picture, select Mark Areas to Remove and use the drawing pencil to mark those areas. (Fig 9)

Fig 9



5 When you're done, select Keep Changes or Discard All Changes.

To save the image in a separate file for later use, right-click the image and select Save as Picture. (Fig 10)

Fig 10



#### TASK 4: Format graphic elements

- Click in your document where you want to create the drawing/Picture.
- On the Insert tab, in the Illustrations group, click Shapes or Picture (Fig 11)
- You can do any of the following on the Format tab, which appears after you insert a drawing shape / Picture:

- Select the picture.
- Select Picture Format

#### Picture Format

- Select the Shape
- Select Shape Format

#### Shape Format (Fig 12)

Fig 11

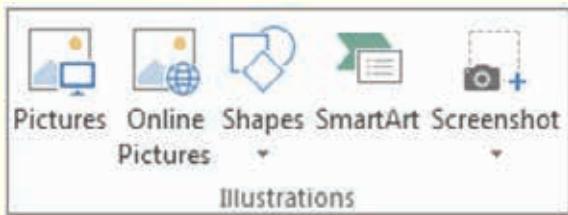
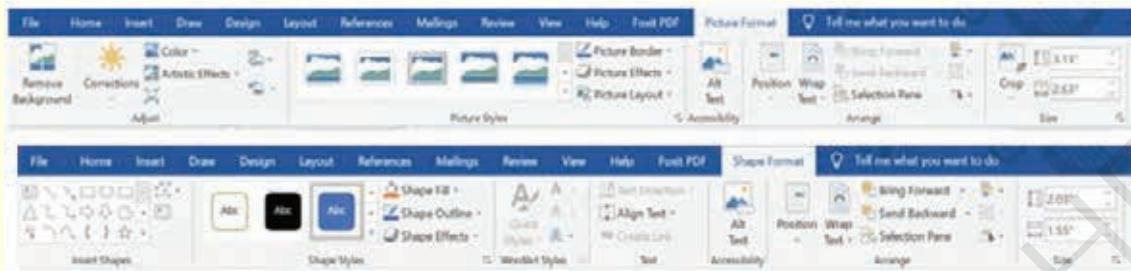


Fig 12



### TASK 5: Format SmartArt graphics

You can customize the look of each shape in the SmartArt graphic.

- 1 Click the SmartArt shape you want to format.

- 2 Click the Format tab under SmartArt Tools.
- 3 Use the options in the Shape Styles group to format each shape. (Fig 13)

Fig 13



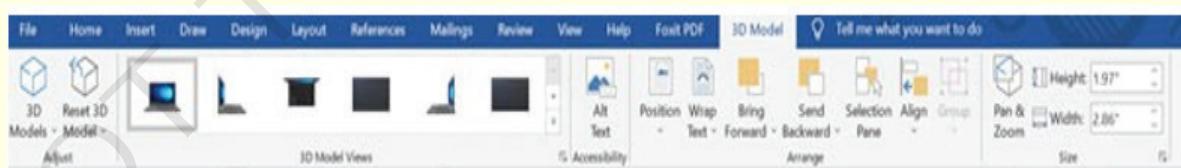
### TASK 6: Format 3D models

You can customize the look of each shape in the 3D Models .

- 1 Click the 3D Models you want to format.

- 2 Click the Format tab under 3D Models Tools. Use the options in the 3D Model View group to format each shape (Fig 14)

Fig 14



**COPA - Manage graphic elements****Add text to graphic elements**

**Objectives:** At the end of this exercise you shall be able to

- add and modify text in text boxes
- add and modify text in shapes
- add and modify SmartArt graphic content.

**Requirements****Tools/Equipment/Machines**

- |                                   |         |                           |         |
|-----------------------------------|---------|---------------------------|---------|
| • A Working PC with Windows 10 OS | - 1 No. | • MS Office 2019 / Latest | - 1 No. |
|-----------------------------------|---------|---------------------------|---------|

**PROCEDURE****TASK 1: Add and modify text in text boxes**

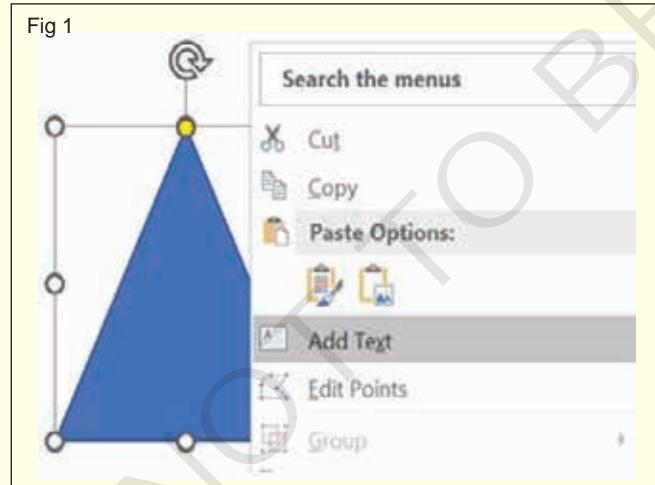
- 1 Click Insert > Draw Text Box
- 2 Draw a text box close to the shape.
- 3 Click inside the text box, and start typing.

**Note:** The text box will not move when you move the shape unless you group the text box and shape.

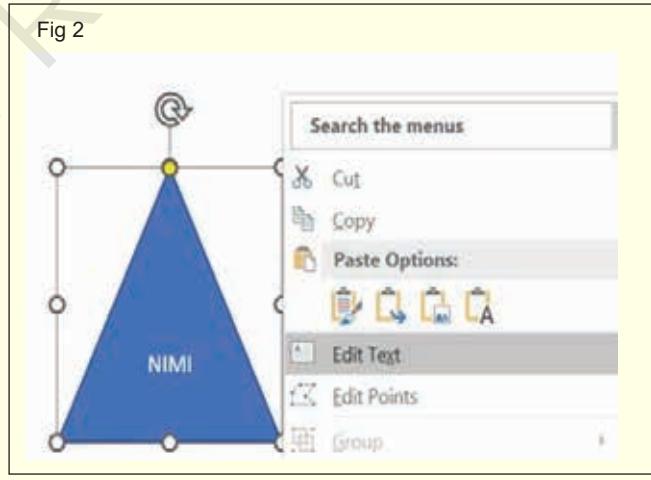
**Note:** To get more on this Ref Ex.1.11.42 Task 6

**TASK 2: Add and modify text in shapes**

- 1 Click Insert > Shapes
- 2 Draw the shape.
- 3 Click inside the Shape or Right Click the shape and choose Add Text then start typing. (Fig 1)



- 4 To Modify Click inside the Shape or Right Click the shape and choose Edit Text then start typing. (Fig 2)



**Note:** The text box will not move when you move the shape unless you group the text box and shape.

**TASK 3: Add and modify SmartArt graphic content**

Refer Ex.No.1.11.42 - Task 4. Insert Smart Art graphics

## COPA - Manage graphic elements

### Modify graphic elements

**Objectives:** At the end of this exercise you shall be able to

- position objects
- wrap text around objects
- add alternative text to objects for accessibility.

#### Requirements

##### Tools/Equipment/Machines

- |                                   |         |                           |         |
|-----------------------------------|---------|---------------------------|---------|
| • A Working PC with Windows 10 OS | - 1 No. | • MS Office 2019 / Latest | - 1 No. |
|-----------------------------------|---------|---------------------------|---------|

### PROCEDURE

#### TASK 1: Position objects

##### Position images, text boxes, shapes on the page

- 1 To change the position, on the Picture Format (Graphics Format, Shape Format) tab, in the Arrange group, click the Position button (Fig 1).
- 2 Choose More Layout option (Fig 2)
- 3 Using these options, position the object in a specific location relative to the page margins.

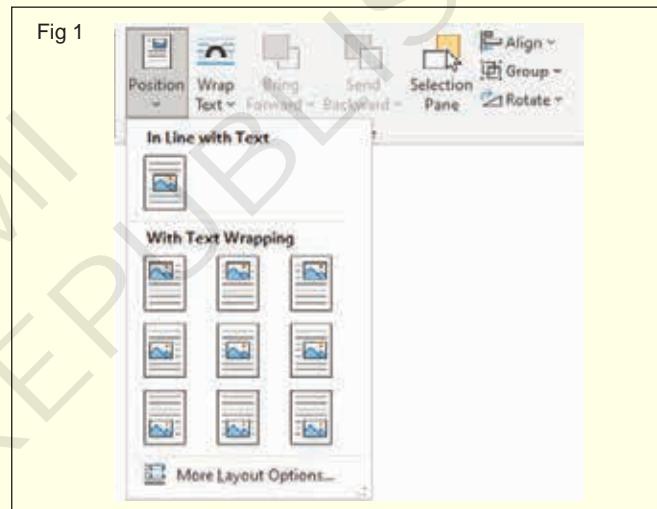
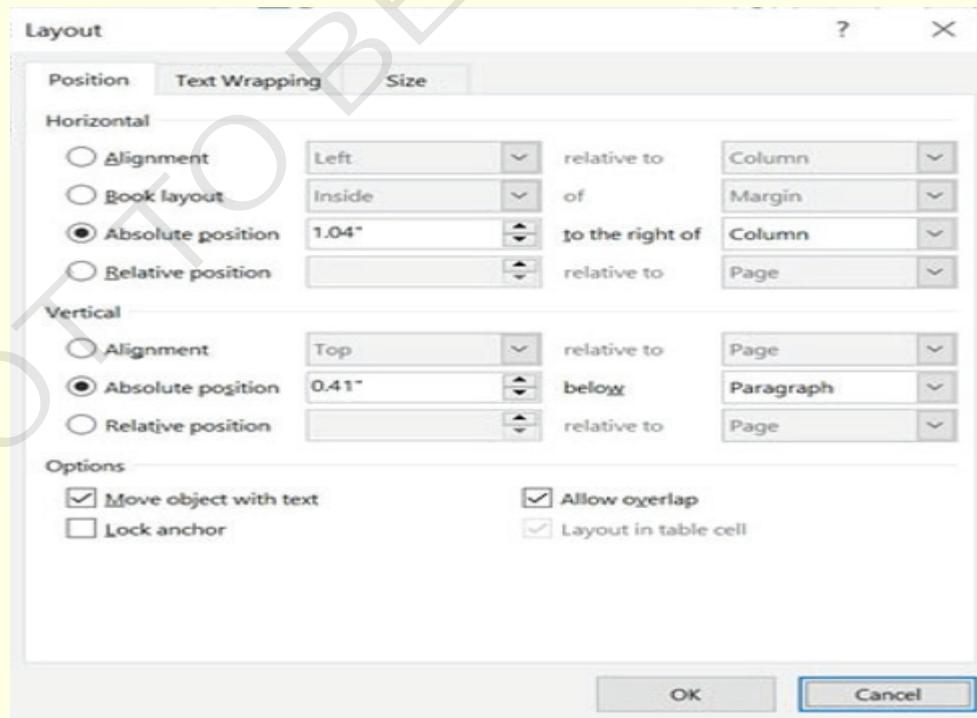


Fig 2



## TASK 2: Wrap text around objects

### Change text wrapping

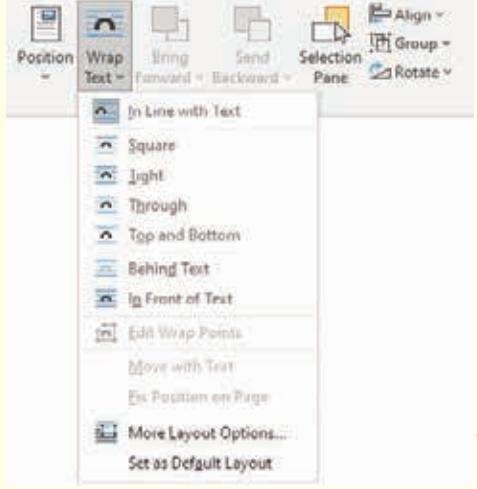
By default, Word inserts (see examples below):

- Pictures (images and photos), charts in line with the text.
- Text boxes, shapes in front of the text.
- WordArt objects behind the text.

To change the way how text should wrap the object, select it, then do one of the following:

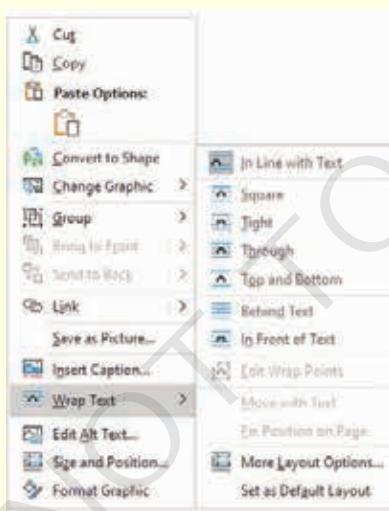
- On the Picture Format (Shape Format, Graphics Format) tab, in the Arrange group, click the Wrap Text button: (Fig 3)

Fig 3



- Right-click on the object, then choose Wrap Text in the popup menu: (Fig 4) or

Fig 4

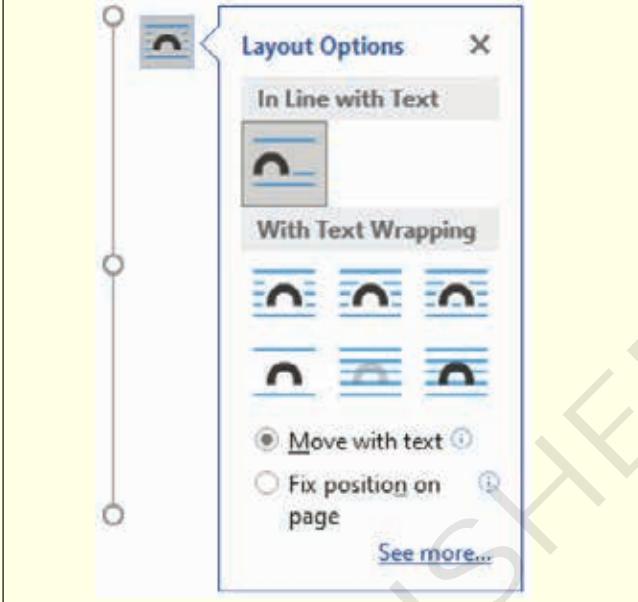


- Click the Layout Options button that appears next to the selected figure: (Fig 5)

**From the Wrap Text list, choose the option you prefer:**

- **In Line with Text places** an object in a paragraph on the same line as the surrounding text. The text does not wrap around it.

Fig 5



- **Square wraps** the text around the picture or shape on all sides at right angles (a square pattern) as if it is rectangular. The text fills the remaining rectangular region.

This option is the most common form of text wrapping

- **Tight wraps** the text around the edges of the figure. The text follows the shape.

This option is most useful for larger images covering most of the page width.(Figs 6,7 & 8)

Fig 6

*Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas porttitor congue massa. Fusce posuere, magna sed pulvinar ultricies, purus lectus malesuada libero, sit amet commodo magna eros quis urna.*



*a tellus.*

*Nunc viverra imperdiet enim. Fusce est. Vivamus*

Fig 7

*Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas porttitor congue massa. Fusce posuere, magna sed pulvinar ultricies, purus lectus malesuada libero, sit amet commodo magna eros quis urna.*



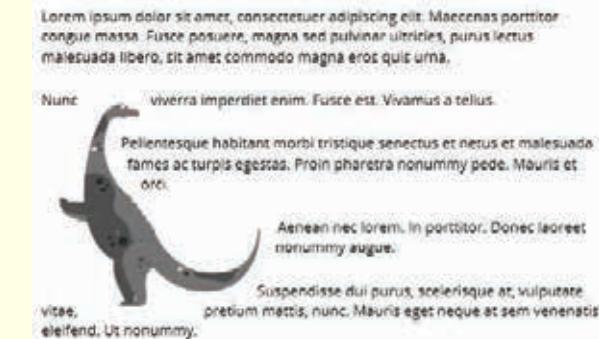
*Nunc viverra imperdiet enim. Fusce est. Vivamus a tellus.*

*Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Proin pharetra nonummy pede. Mauris et orci.*

*Aenean nec lorem. In porttitor. Donec laoreet nonummy augue.*

*Suspendisse dui purus, scelerisque at, vulputate vitae, pretium mattis, nunc. Mauris egestas neque at sem venenatis eleifend. Ut nonummy*

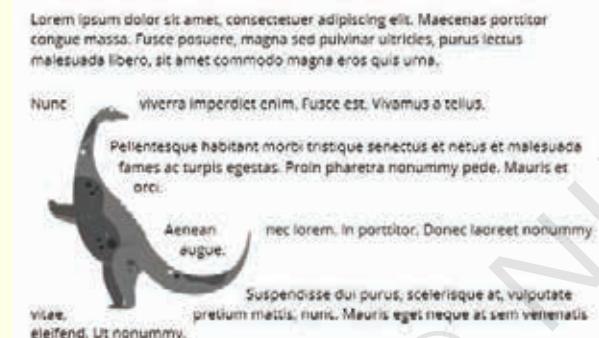
Fig 8



- **Through wraps** the text around the picture or shape edges, including any white gaps. If there is no white space in the image or shape, text wrapping works the same as Tight.

This option is an advanced setting because you pull or drag image and shape points in and out of their original borders: (Fig 9)

Fig 9



- Top and Bottom wraps the text above and below the figure to keep the image on its line. There is no text on either side of it. (Fig 10)

Fig 10



- **Behind Text places** the figure behind, or underneath, any existing text. The text does not wrap around it.

The picture looks like a watermark or background image. (Fig 11)

**Note: Use the Selection pane when working with objects behind the text.**

- **In Front of Text places** the object on top of the text. The text is not wrapped, so some of it may be blocked depending on the figure's transparency. (Fig 12)

Fig 11

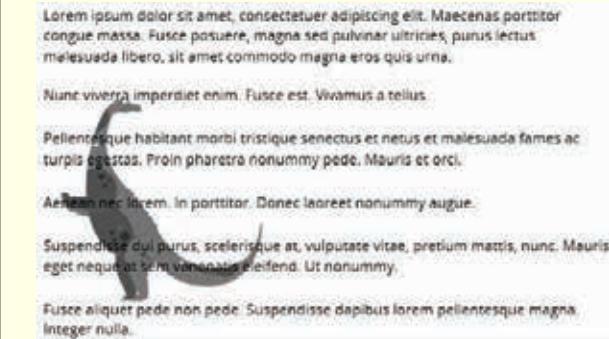
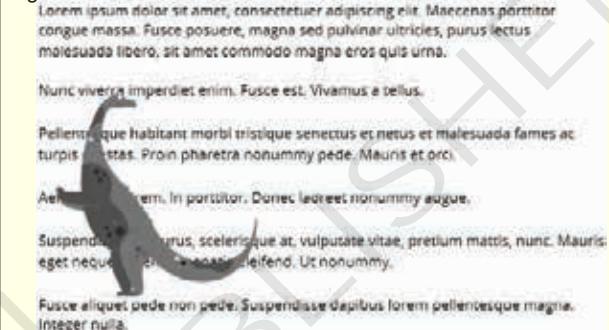


Fig 12



**Note: Figures that use the Square, Tight, Through, Top and Bottom, Behind Text, or In Front of Text wrapping style are all considered floating.**

#### Position a figure to a paragraph or page

Also, Word offers two options for all wrapping styles except In line with Text (for floating figures): or

- Move with Text moves the figure along with the surrounding text.

If a figure is positioned inside the paragraph, and you delete or add any content before the paragraph, the figure moves with the paragraph.

- Fix Position on Page keeps the figure at the same place on the page when text is added or removed.

If the paragraph where the figure is located (that paragraph contains anchor) moves to the next page, the figure moves and keeps its position relative to the page. (Figs 13 &14)

**Note: The same options you can find in the Layout dialog box, on the Position tab, in the Options section: (Fig 15)**

Checking the Move object with text check box is equivalent to the Move with Text option from the Wrap Text dropdown list. Unchecking the Move object with text check box is equivalent to the Fix Position on Page option.

#### Wrap text on both sides, or one side only

- 1 To change additional options, choose More Layout Options... from the Wrap Text dropdown list or the See more... link in the Layout Options menu.

Fig 13

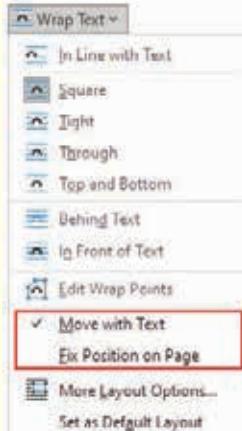


Fig 14

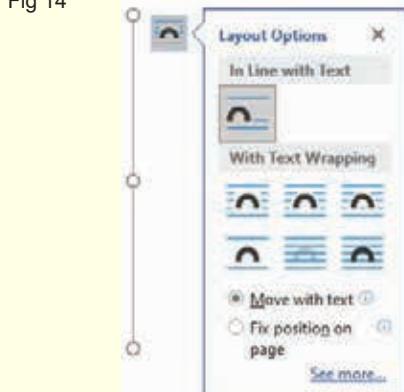
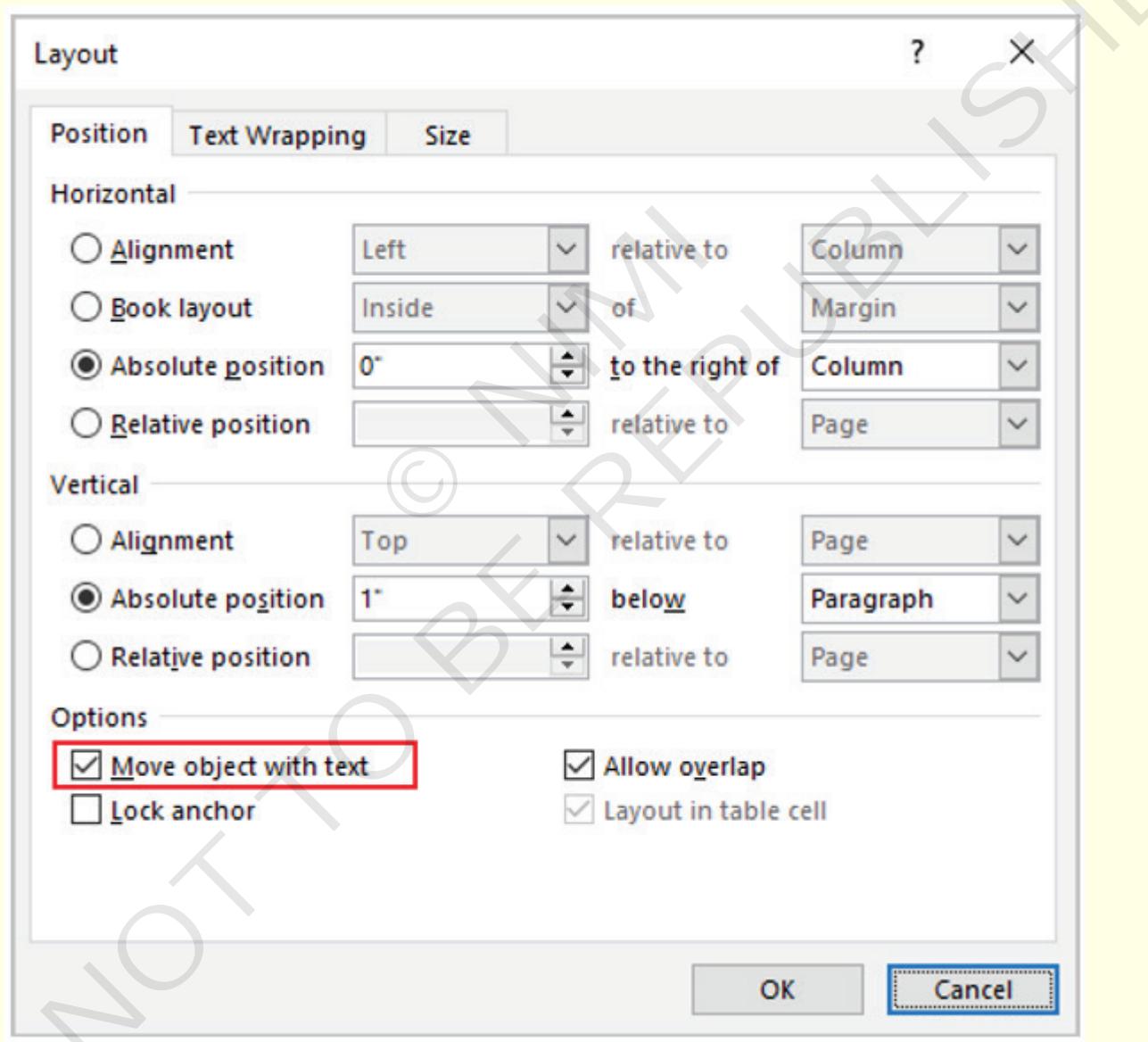


Fig 15



2 In the Layout dialog box, on the Text Wrapping tab: (Fig 16)

- In the Wrapping style group, choose any style exact In line with text (see above).

- In the Wrap text group (available for the Square, Tight, and Thought wrapping styles), choose any of the additional options:
- Both sides wraps text around either side of the image or shape: (Fig 17)

Fig 16

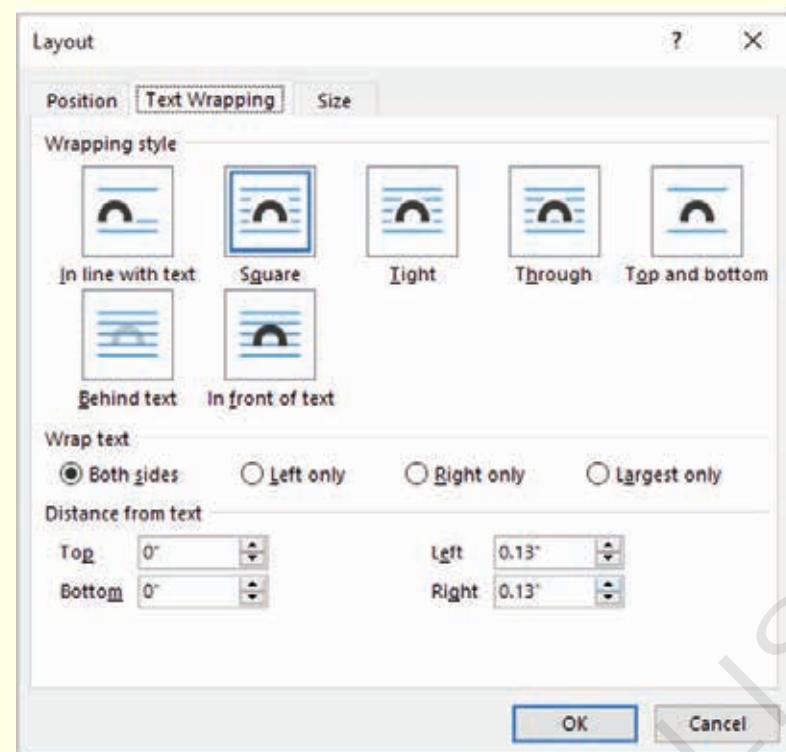


Fig 17

*Consectetur adipiscing elit. Maecenas porttitor congue massa. Fusce posuere, magna sed pulvinar ultricies, purus lectus malesuada libero, sit amet commodo magna eros quis urna.*

Nunc viverra imperdiet enim. Fusce est. Vivamus a tellus.  
Pellentesque fames ac orci.  
Aenean nec nonummy.  
Suspendisse dui premium mattis, eleifend. Ut nonummy.



Imperdiet enim. Fusce est. Vivamus a tellus.  
habitant morbi tristique senectus et netus et malesuada turpis egestas. Proin pharetra nonummy pede. Mauris et  
lorem, in porttitor. Donec laoreet augue.  
purus, scelerisque at, vulputate vitae, nunc. Mauris eget neque at sem venenatis

- Left only wraps text around only the left side of the image or shape: (Fig 18)

Fig 18

*Consectetur adipiscing elit. Maecenas porttitor congue massa. Fusce posuere, magna sed pulvinar ultricies, purus lectus malesuada libero, sit amet commodo magna eros quis urna.*

Nunc viverra imperdiet enim. Fusce est. Vivamus a tellus.  
Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Proin pharetra nonummy pede. Mauris et orci.



- Right only wraps text around only the right side of the image or shape: (Fig 19)
- Largest only wraps text on the side of the image or shape with the larger distance from the margin.

Fig 19

*Consectetur adipiscing elit. Maecenas porttitor congue massa. Fusce posuere, magna sed pulvinar ultricies, purus lectus malesuada libero, sit amet commodo magna eros quis urna.*

Nunc viverra imperdies enim. Fusce est. Vivamus a tellus.  
Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Proin pharetra nonummy pede. Mauris et orci.  
Aenean nec lorem, in porttitor. Donec laoreet nonummy augue.  
Suspendisse dui purus, scelerisque at, vulputate vitae, premium mattis, nunc. Mauris eget neque at sem venenatis eleifend. Ut nonummy.



#### Change the distance between text and object

- To change the distance between text and the visual object, open the Layout dialog box by one of the following methods:
  - On the Picture Format (Shape Format, Graphics Format) tab, in the Arrange group, click the Wrap Text button, then select More Layout Options...
  - Right-click on the object, click the Wrap Text list, then select More Layout Options... in the popup menu.
  - Click the See more... link in the Layout Options menu.

In the Layout dialog box, on the Text Wrapping tab, in the Distance from text section, enter custom values for the distance between the text and the picture independently for:

- Top and Bottom (available for the Square, Tight, Thought, and Top and Bottom wrapping styles),

- Left and Right (available for the Square, Tight, and Thought wrapping styles).

For example, with the 0.3-inch distance on all sides: (Fig 20)

Fig 20

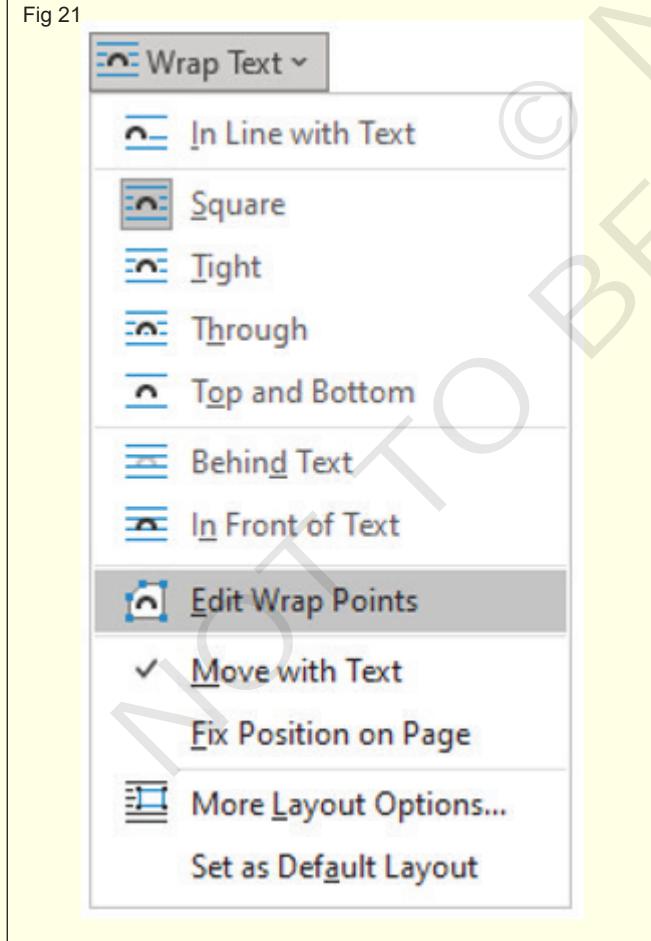


### Edit hyphenation points

To use the Tight or Through options effectively, you may need to adjust the wrapping points for the image or shape. To edit wrap points, select the object, then activate the Edit Wrap Points view by one of the following methods:

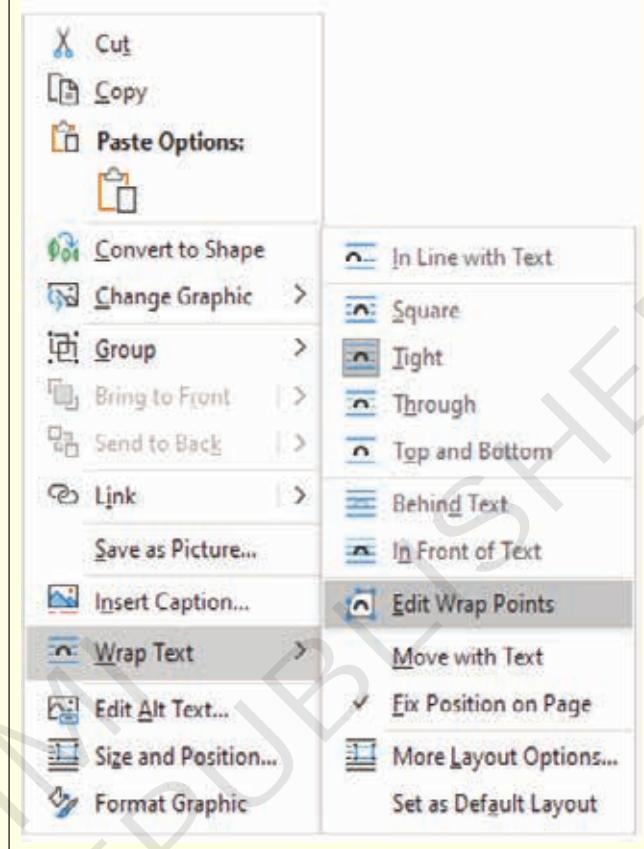
- Picture Format (Shape Format, Graphics Format) tab, in the Arrange group, click the Wrap Text button. Then choose Edit Wrap Points from the Wrap Text dropdown list: (Fig 21)

Fig 21



- Right-click on the object and select Wrap Text -> Edit Wrap Points in the popup menu: (Fig 22)

Fig 22



- In the Edit Wrap Points view, drag the red lines to adjust where the text wraps (Fig 23)

**Note: There is no way to add points. You can move existing wrap points however you want**

Fig 23



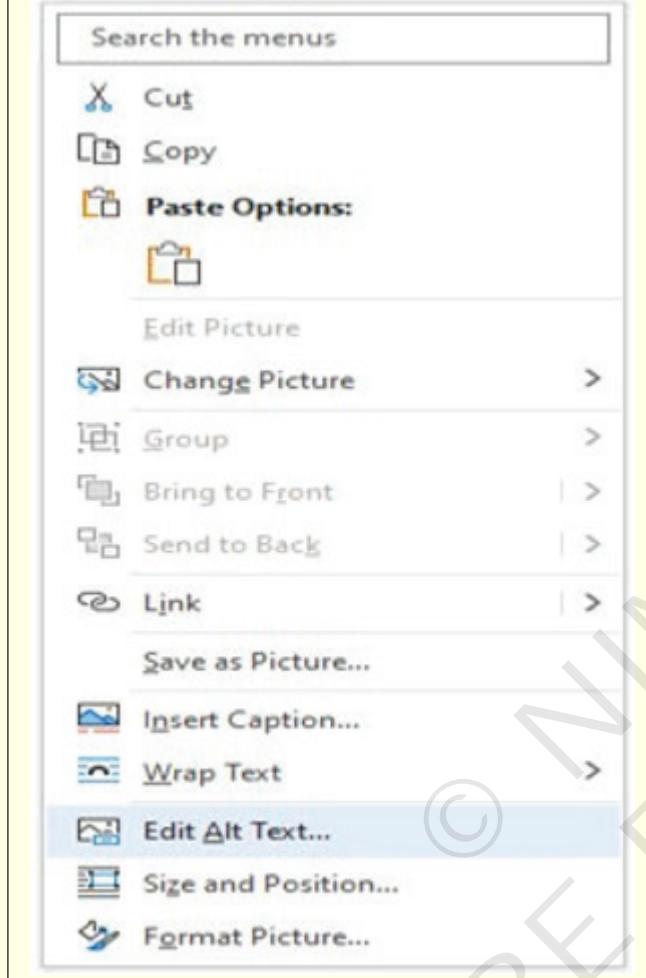
## TASK 3: Add alternative text to objects for accessibility

### Add alt text

1 Do one of the following:

- Right-click the object and select Edit Alt Text (Fig 24)

Fig 24



- Select the object and then select the format menu for the object, for example, Picture Format. Select Alt Text.

**Note:** To add alt text to the entire SmartArt graphic or chart, click the border of the SmartArt graphic or chart, and not an individual shape or piece.

2 In the Alt Text pane, type 1-2 sentences in the text box to describe the object and its context to someone who cannot see it. (Fig 25 & 26)

#### Mark visuals as decorative

1 To open the Alt Text pane, do one of the following:

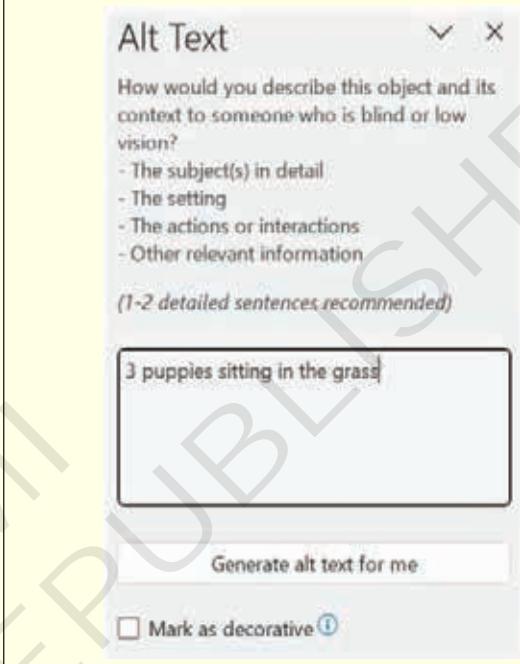
- Right-click an image, and then select Edit Alt Text.
- Select an image, select Format > Alt Text.

2 Select the Mark as decorative checkbox. The text entry field becomes grayed out.

Fig 25



Fig 26



#### Toggle Automatic Alt Text on and off

If you don't want automatically generated alt text to be added to inserted pictures, you can turn off the automatic alt text option. If you change your mind later, you can just as easily turn it back on.

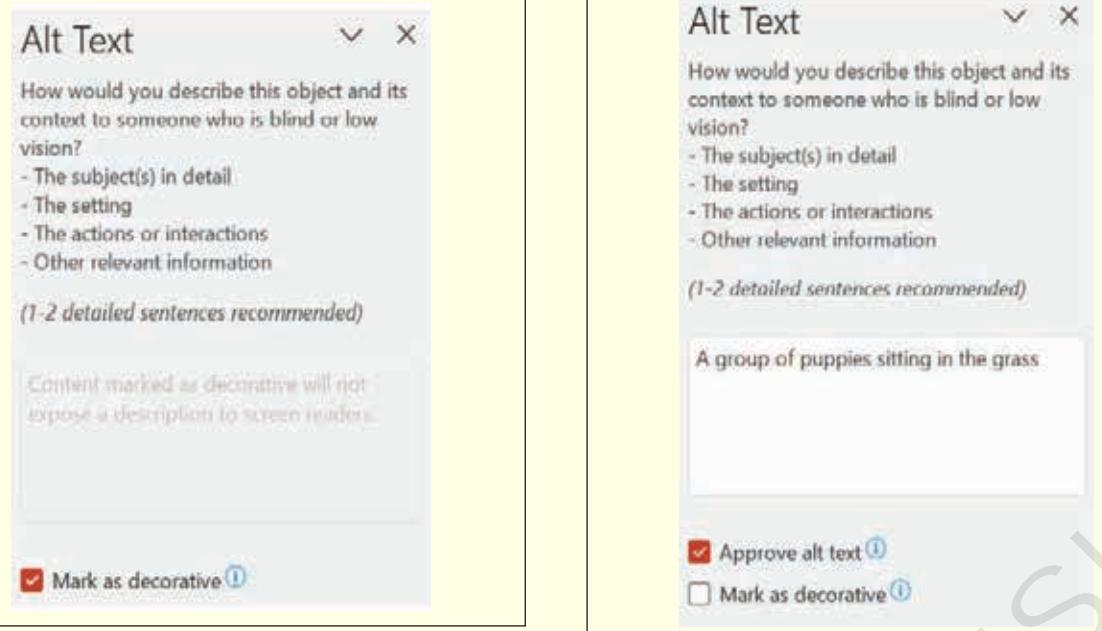
- Select File > Options > Accessibility.
- In the Automatic Alt Text section, select or unselect the Automatically generate alt text for me option, and then select OK.

#### Approve the automatic alt text

You can approve the auto-generated alt text in Microsoft 365.

- If the alt text is satisfactory, select the Approve alt text checkbox. (Fig 27)

Fig 27



**COPA - Manage Document Collaboration****Add and manage comments**

**Objectives:** At the end of this exercise you shall be able to

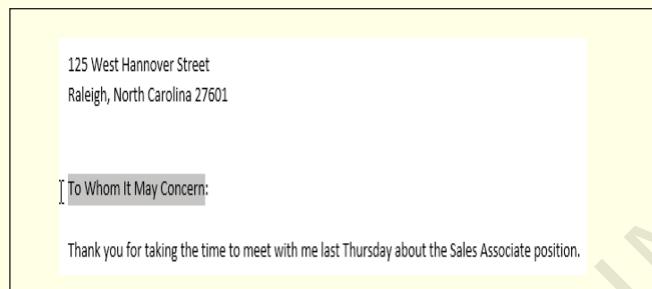
- add comments, review and reply to comments, resolve comments, delete comments.

**Requirements****Tools/Equipment/Machines**

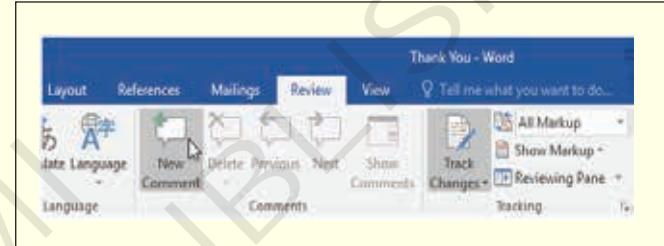
- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

**PROCEDURE****TASK 1: To add comments**

- 1 Highlight some text, or place the **insertion point** where you want the comment to appear.



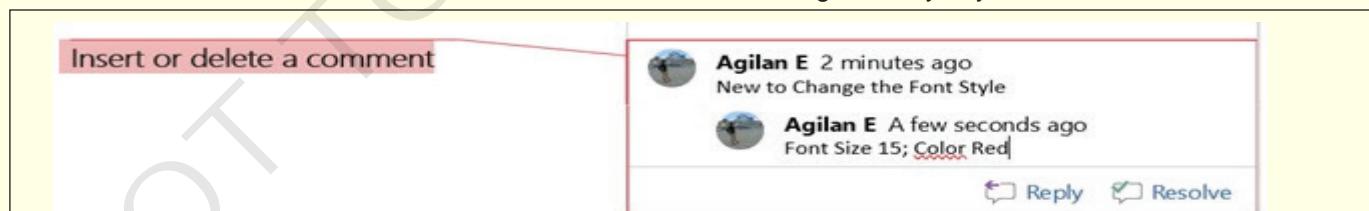
- 2 From the **Review** tab, click the **New Comment** command.



- 3 Type your comment. When you're done, you can close the comment box by pressing the **Esc** key or by clicking anywhere outside the comment box.

**TASK 2: Review and reply to comments**

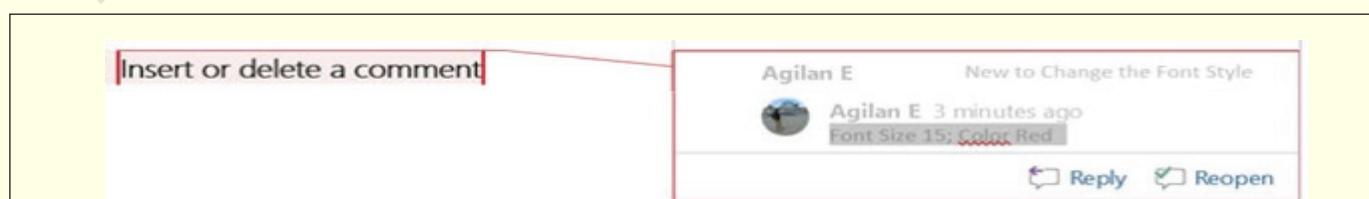
- 1 To Review and reply a comment, go to the comment, and select **Reply**.



- 2 Type your Reply comment. If you want to make changes to any of your comments.

**Resolve comments**

- 1 To resolve a comment, go to the comment, and select **Resolve**.



- 2 Then comment box will be disabled.

- 3 If you want to update comment then select **Reopen**.

## To delete comments

- 1 Select the comment you want to delete.

To Whom it May Concern:

Odessa Mason  
Address to hiring authoring instead.

Thank you for taking the time to meet with me last Thursday about the Sales Associate enjoyed meeting with you and touring the facility. I was very impressed with the layout showroom and **with** the competence of the staff at **your company Quality Furnishings**. chance to work in such a productive and **very** supportive atmosphere.

- 2 From the Review tab, click the Delete command.

Layout References Mailings Review View Tell me what you want to do...

Language New Comment Delete Previous Next Show Comments Track Changes All Markup Show Markup Reviewing Pane

Comments Tracking

- 3 The comment will be deleted.

To delete all comments, click the Delete dropdown arrow and select **Delete All Comments in Document**.

References Mailings Review View Tell me what you want to do...

New Comment Delete Previous Next Show Comments Track Changes All Markup Show Markup Reviewing Pane

Tracking

Delete All Comments in Document

## COPA - Manage Document Collaboration

### Manage change tracking

**Objectives:** At the end of this exercise you shall be able to

- track changes, review tracked changes, accept and reject tracked changes & lock and unlock change tracking.

#### Requirements

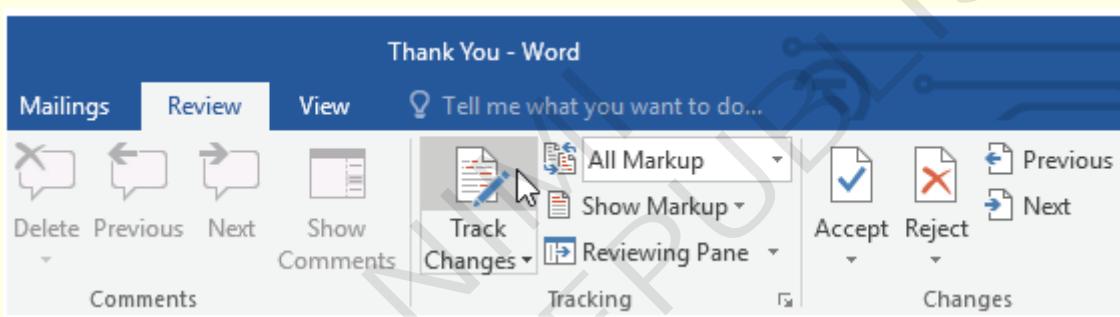
##### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

#### TASK 1: To turn on Track Changes

- 1 From the **Review tab**, click the **Track Changes** command.



- 2 Track Changes will be turned on. From this point on, any changes you make to the document will appear as colored markups.

Your tracked changes may look different from those seen above, depending on your computer's markup settings.

To Whom It May Concern:

Thank you for taking the time to meet with me last Thursday about the Sales Associate position. I enjoyed meeting with you and touring the facility. I was very impressed with the layout of the showroom and with the competence of the staff at your company Quality Furnishings. I would love the chance to work in such a productive and very supportive atmosphere.

#### Reviewing changes

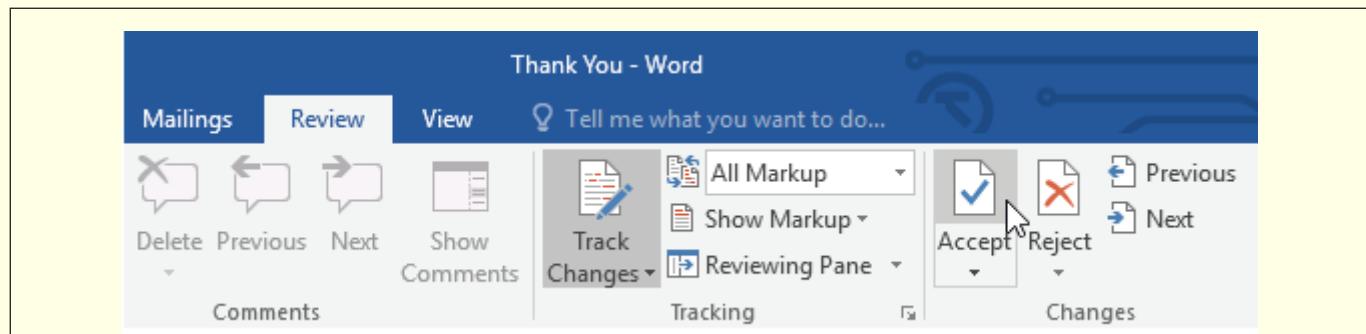
Tracked changes are really just suggested changes. To become permanent, they must be accepted. On the other hand, the original author may disagree with some of the tracked changes and choose to **reject** them.

#### To accept or reject changes:

- 1 Select the change you want to accept or reject.
- 2 From the **Review tab**, click the **Accept or Reject** command.

To Whom It May Concern:

Thank you for taking the time to meet with me last Thursday about the Sales Associate position. I enjoyed meeting with you and touring the facility. I was very impressed with the layout of the showroom and with the competence of the staff at your company Quality Furnishings. I would love the chance to work in such a productive and very supportive atmosphere.

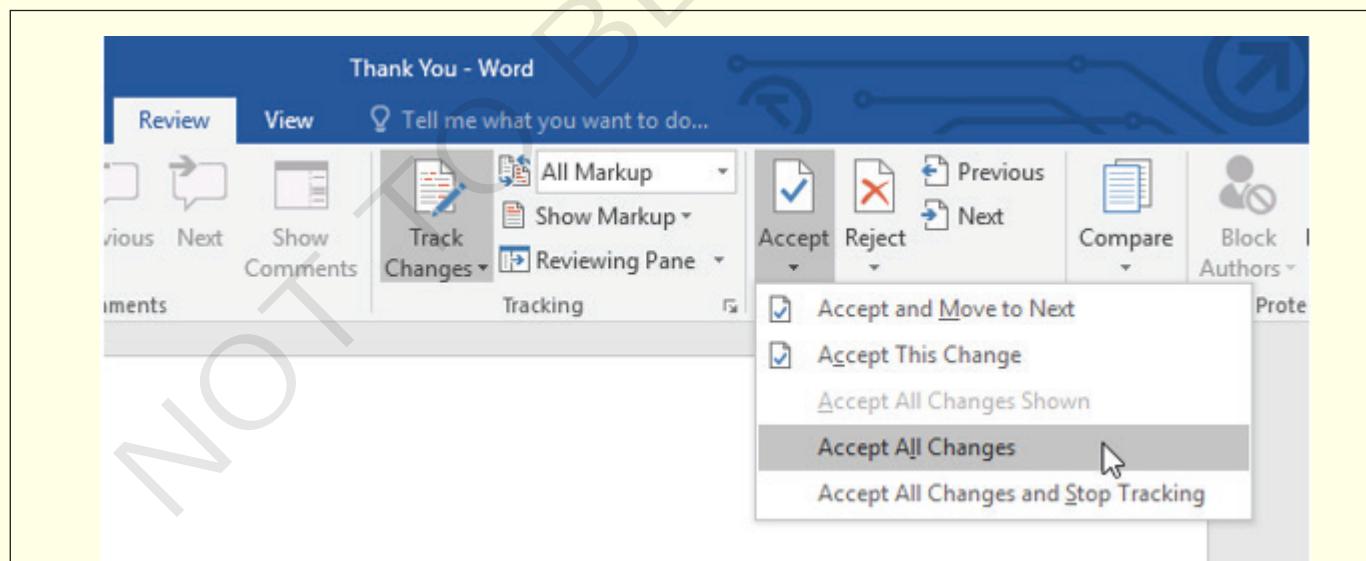
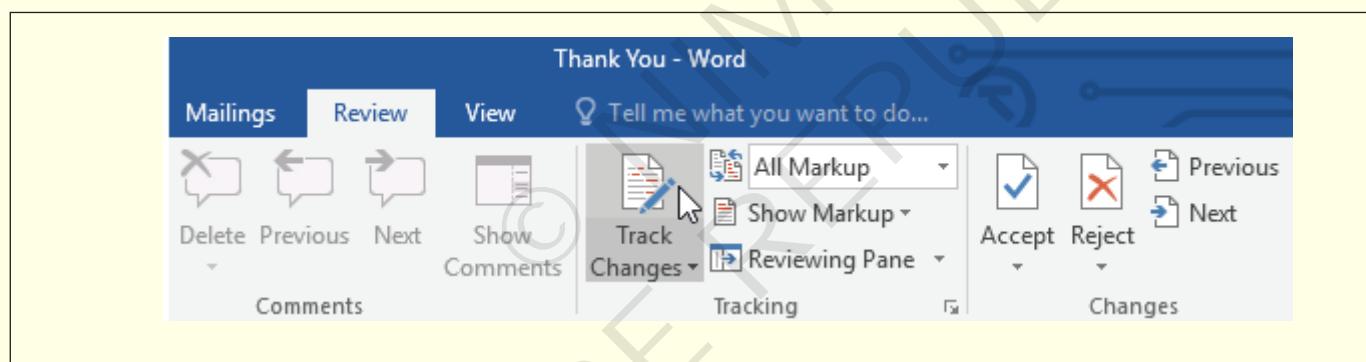


- 3 The markup will disappear, and Word will automatically jump to the next change. You can continue accepting or rejecting each change until you have reviewed all of them.
- 4 When you're finished, click the **Track Changes** command to **turn off** Track Changes.

To accept all changes at once, click the Accept dropdown arrow, then select Accept All. If you no longer want to track your changes, you can select Accept All and Stop Tracking.

To Whom It May Concern:

Thank you for taking the time to meet with me last Thursday about the Sales Associate position. I enjoyed meeting with you and touring the facility. I was very impressed with the layout of the showroom and with the competence of the staff at your company Quality Furnishings. I would love the chance to work in such a productive and very supportive atmosphere.



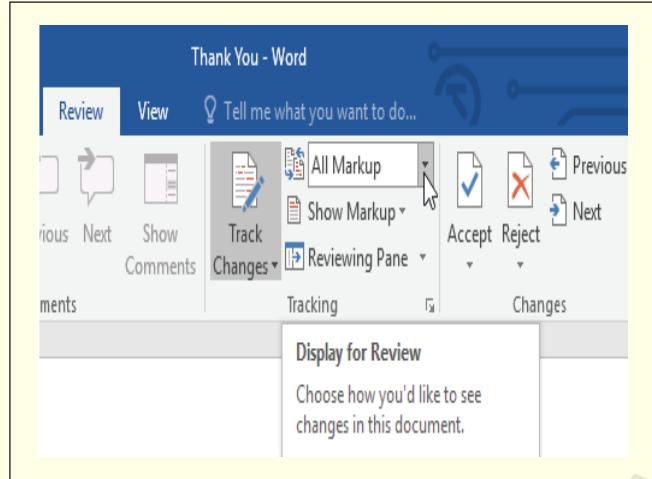
**Track Changes viewing options :** If you have a lot of tracked changes, they may become distracting if you're trying to read through a document. Fortunately, Word provides a few ways to customize how tracked changes appear:

- **Simple Markup:** This shows the final version without inline markups. Red markers will appear in the left margin to indicate where a change has been made.

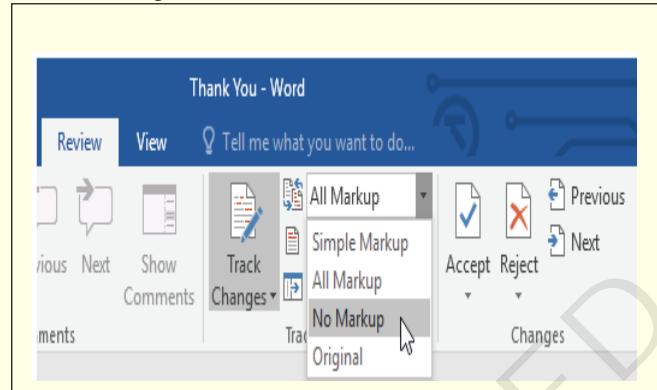
- **All Markup:** This shows the final version with inline markups.
- **No Markup:** This shows the final version and hides all markups.
- **Original:** This shows the original version and hides all markups.

#### To hide tracked changes:

- 1 From the **Review** tab, click the **Display for Review** command to the right of the Track Changes command.



- 2 Select the desired option from the drop-down menu. In our example, we'll select **No Markup** to preview the final version of the document before accepting the changes.



You can also click the marker in the left margin to switch between **Simple Markup** and **All Markup**.

Remember that hiding Track Changes is not the same as **reviewing changes**. You will still need to **accept or reject** the changes before sending out the final version of your document.

#### To Whom It May Concern:

Thank you for taking the time to meet with me last Thursday about the Sales Associate position. I enjoyed meeting with you and touring the facility. I was very impressed with the layout of the showroom and with the competence of the staff at your companyQuality Furnishings. I would love the chance to work in such a productive and very-supportive atmosphere.

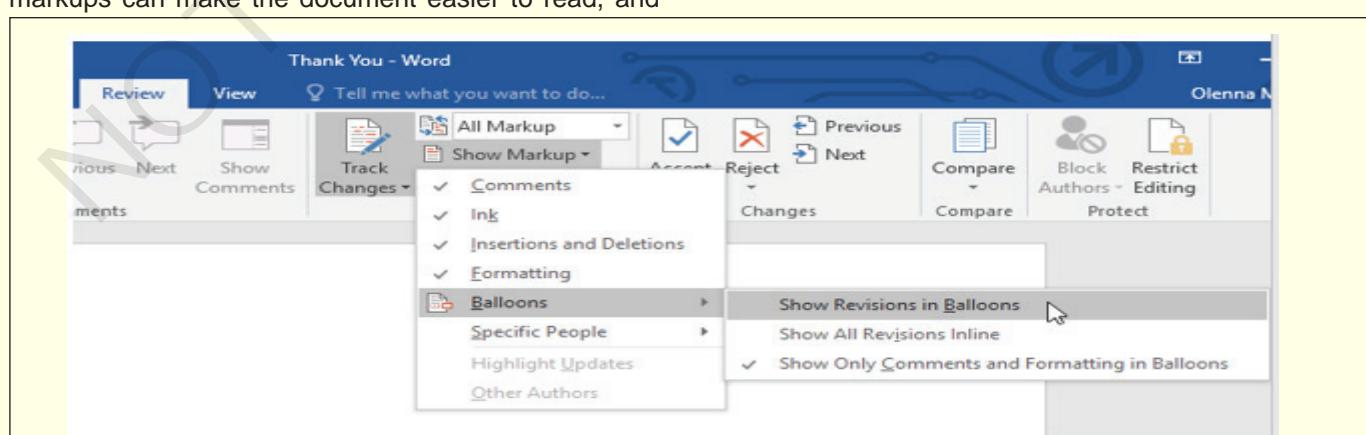
Hide tracked changes.

As we talked about in our meetings, my many years of sales experience, both in commissioned floor sales and in the role of Sales Supervisor, would greatly benefit Quality Furnishings. In that time, I have learned many techniques that would help drive sales and drive increase customer satisfaction ratings ~~at~~ Quality Furnishings.

**To show revisions in balloons:** Most revisions appear **inline**, meaning the text itself is marked. You can also choose to show the revisions in balloons, which moves most revisions to the right margin. Removing inline markups can make the document easier to read, and

balloons also offer more detailed information about some markups.

- 1 From the **Review** tab, click **Show Markup > Balloons > Show Revisions in Balloons**.



- 2 Most revisions will appear in the right margin, although any added text will still appear inline.

To go back to inline markups, you can select either **Show All Revisions Inline** or **Show Only Comments and Formatting in Balloons**.

### Lock and unlock change tracking

- In Word, click on Review > Track Changes > Lock Tracking.

- Enter a password.

Now that Track Changes is locked, it can't be disabled without the password. Other users also cannot accept or reject changes. This lets you manage the changes, enter the password, and then accept or reject changes to settle on its final form.

To Whom It May Concern:

Thank you for taking the time to meet with me last Thursday about the Sales Associate position. I enjoyed meeting with you and touring the facility. I was very impressed with the layout of the showroom and with the competence of the staff at Quality Furnishings. I would love the chance to work in such a productive and supportive atmosphere.

As we talked about in our meetings, my many years of sales experience, both in commissioned floor sales and in the role of Sales Supervisor, would greatly benefit Quality Furnishings. In that time, I have learned many techniques that would help drive sales and increase customer satisfaction ratings.

In addition, I wanted to let you know that I have recently received my certificate from the Superior Sales Training program at the National Business Institute. Several techniques covered in the program are sure to bolster sales. I look forward to having the chance to implement them at Quality Furnishings.

Olenna Mason  
Deleted: your company

Olenna Mason  
Deleted: very

Olenna Mason  
Deleted: drive

Olenna Mason  
Deleted: at Quality Furnishing

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**COPA - Manage Mailings****Perform mail merge**

**Objectives:** At the end of this exercise you shall be able to

- create envelopes, labels, new mailing list & perform mail merge using an existing list.

**Requirements****Tools/Equipment/Machines**

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

**PROCEDURE****TASK 1: Create envelopes****Create an Envelope**

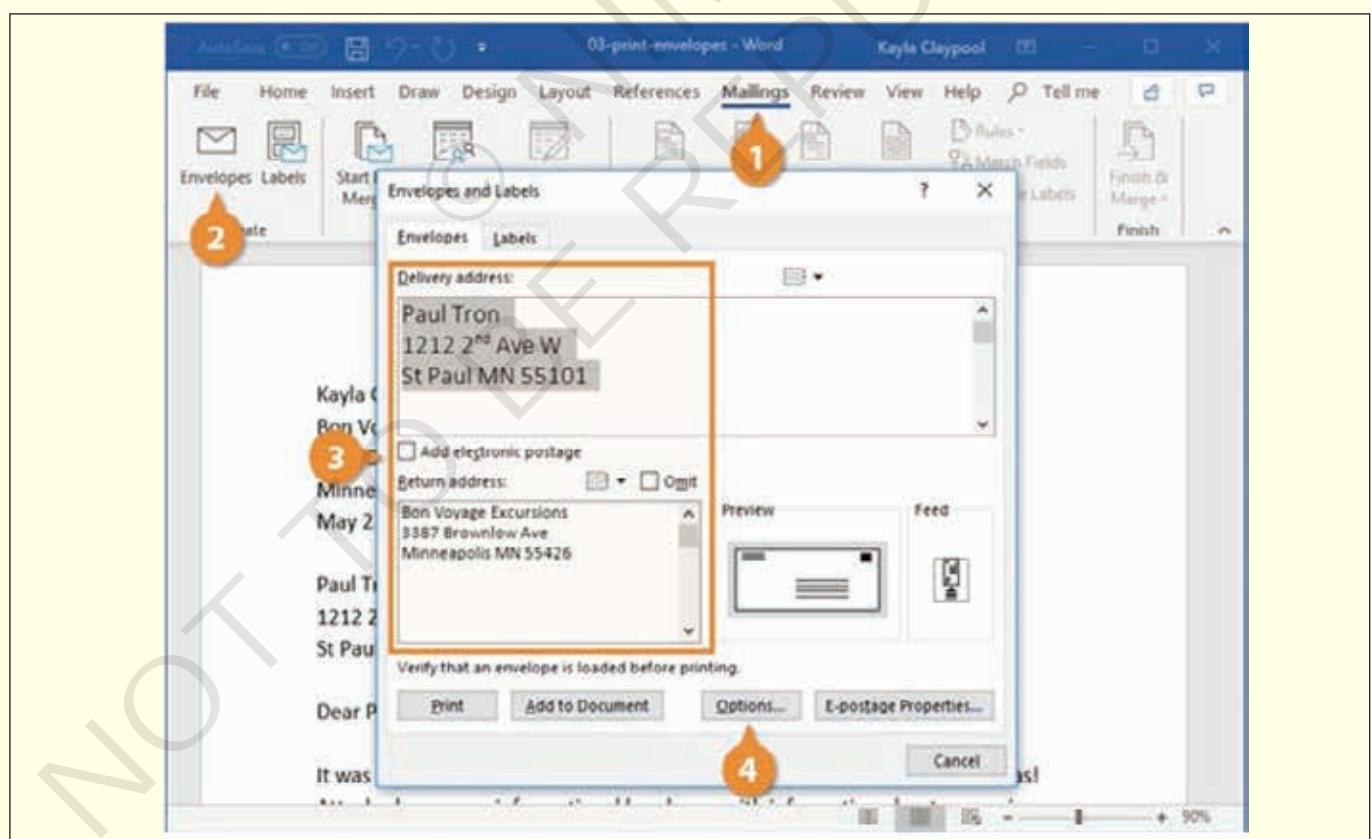
- 1 Click the Mailings tab.
- 2 Click the Envelopes button in the Create group.
- 3 Enter a Delivery and Return Addresses.

If you select a delivery address in the document before clicking the Envelopes button, it will be automatically filled in.

Click the Insert Address button, select the profile you want to use, and select a contact.

**4 (Optional) Click Options**

The Envelope Options dialog box opens, with two tabs of options to set up the envelope.



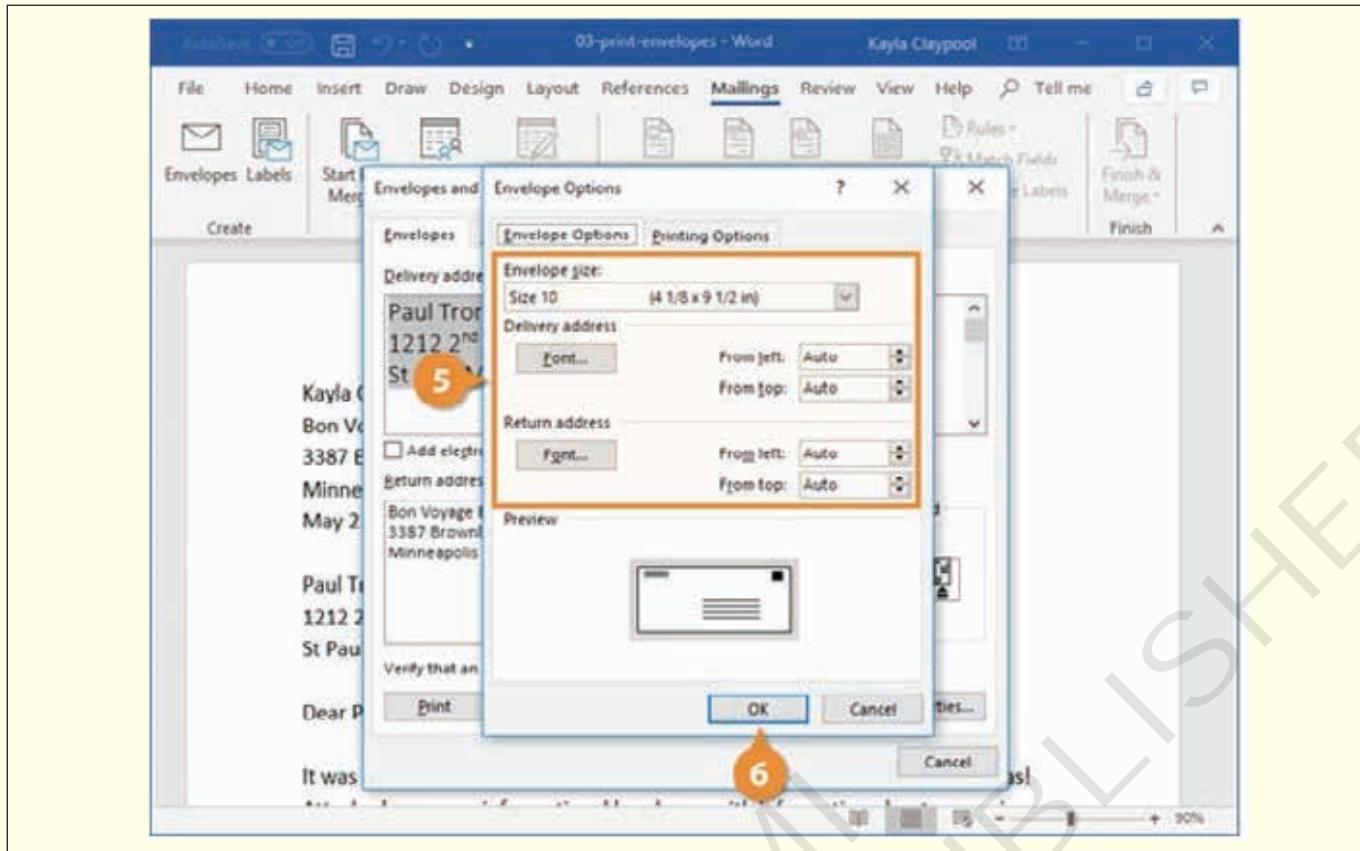
- 5 Select your envelope's options.

- Envelope Options: Specify the envelope size, customize the font used in the return and delivery addresses, and adjust the location of the addresses on the envelope.

- Printing Options: You can specify how the envelope is fed to the printer. This setting will vary, depending on the printer you're using.

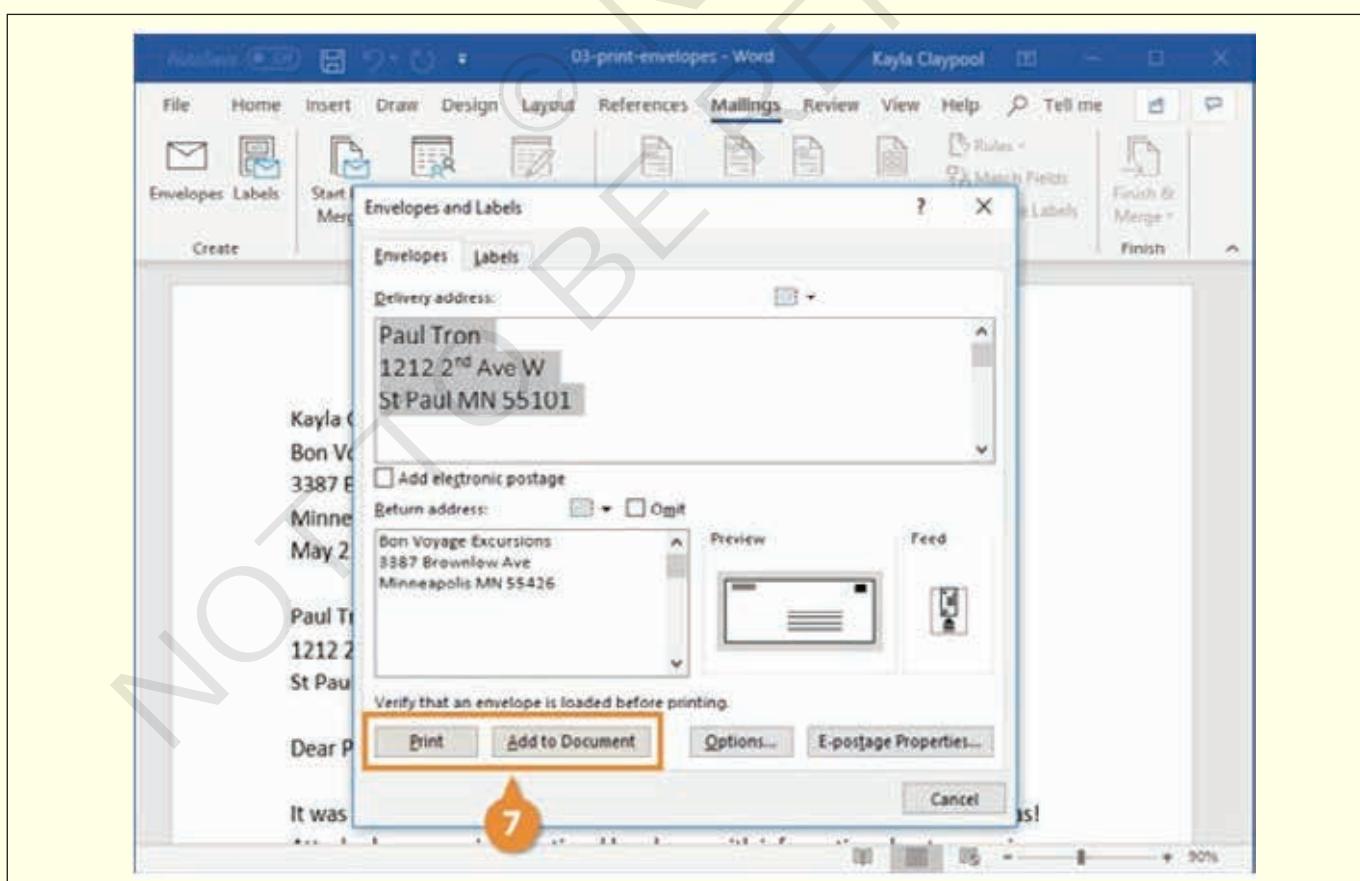
- 6 Click OK.

The envelope options are saved.



- 7 Click Print to print the envelope, or click Add to Document to add the envelope as a new page in the current document.

The envelope is sent to the printer or added as its own page to the current document, depending on your action

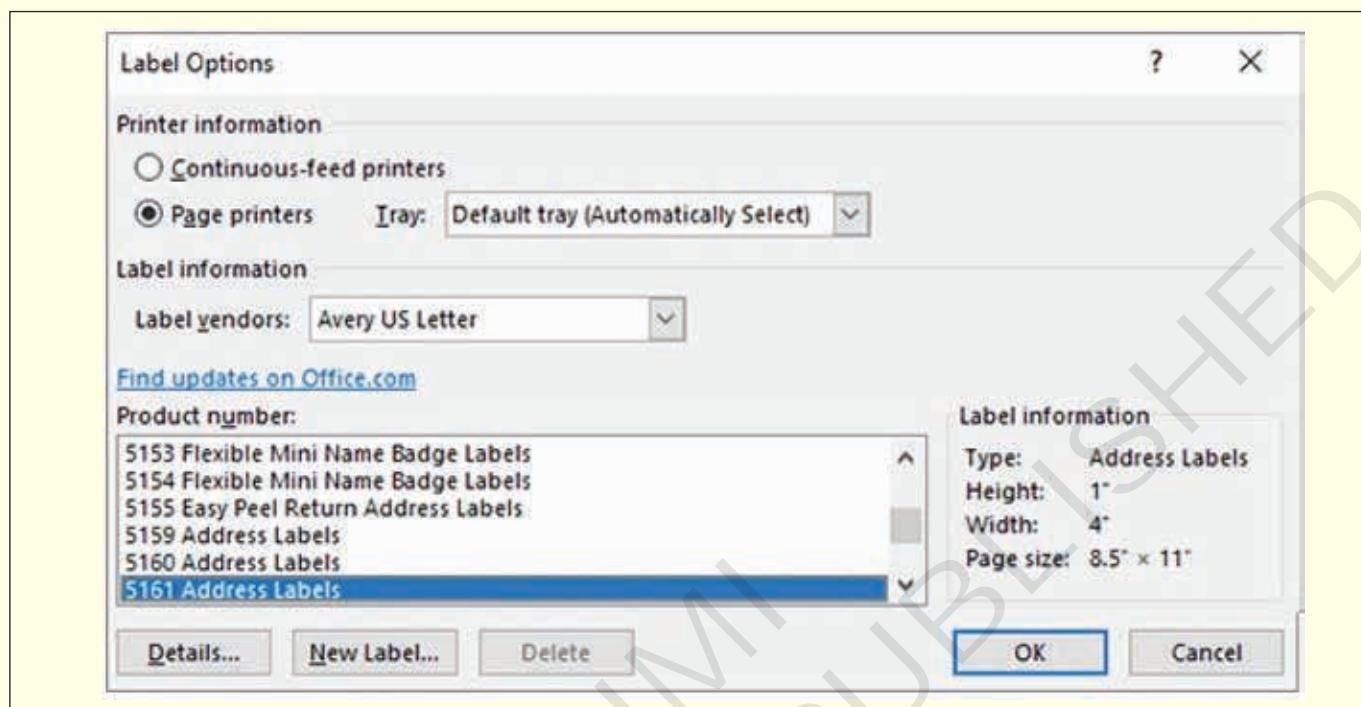


## TASK 2: Create labels

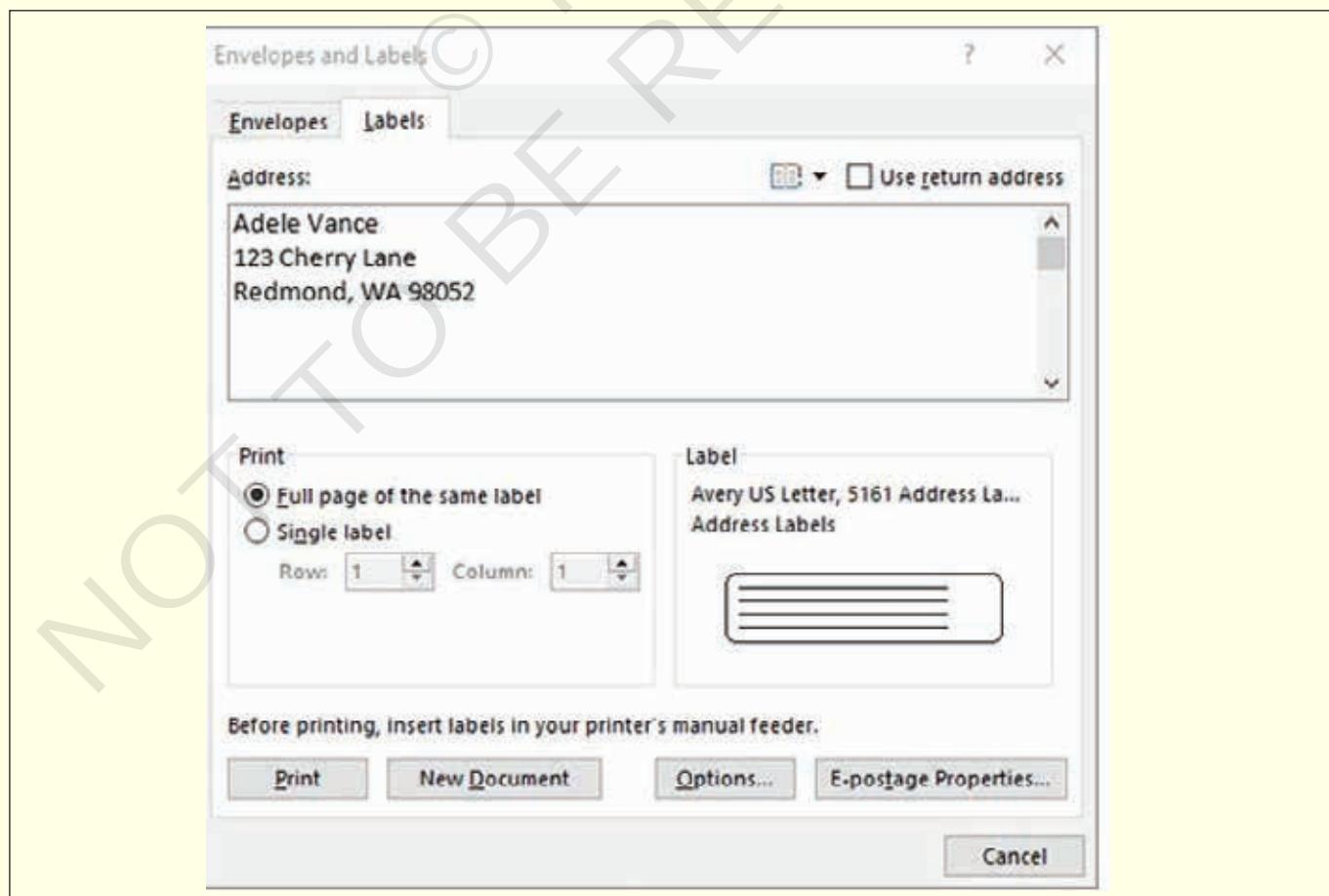
### Create and print a page of identical labels

- 1 Go to Mailings > Labels.
- 2 Select Options and choose a label vendor and product to use. Select OK.

If you don't see your product number, select New Label and configure a custom label.



- 3 Type an address or other information in the Address box (text only).



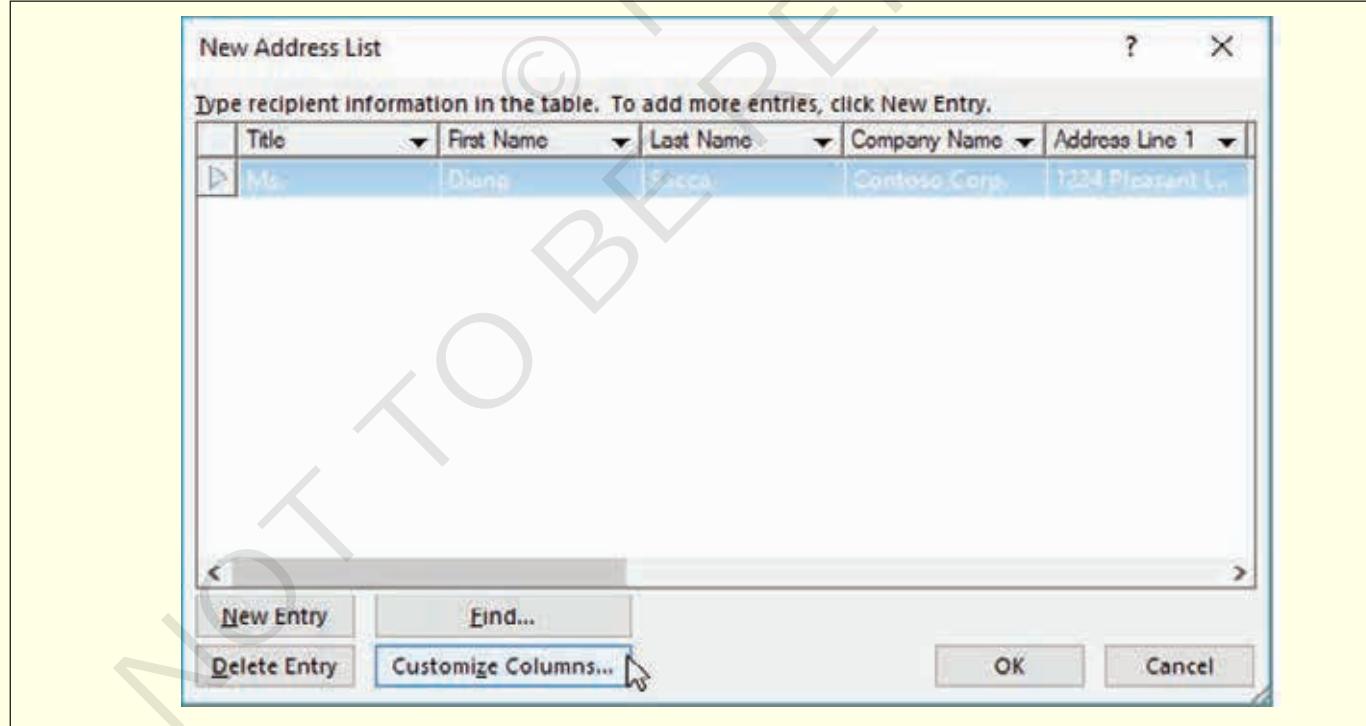
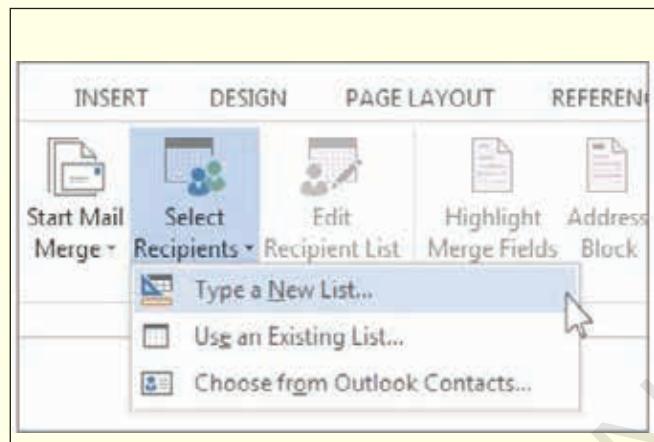
To use an address from your contacts list select Insert Address.

- 4 To change the formatting, select the text, right-click, and make changes with Font or Paragraph.
- 5 Select OK.
- 6 Select Full page of the same label.
- 7 Select Print, or New Document to edit, save and print later.

### TASK 3: Create a new mailing list

#### Create a new mail merge list

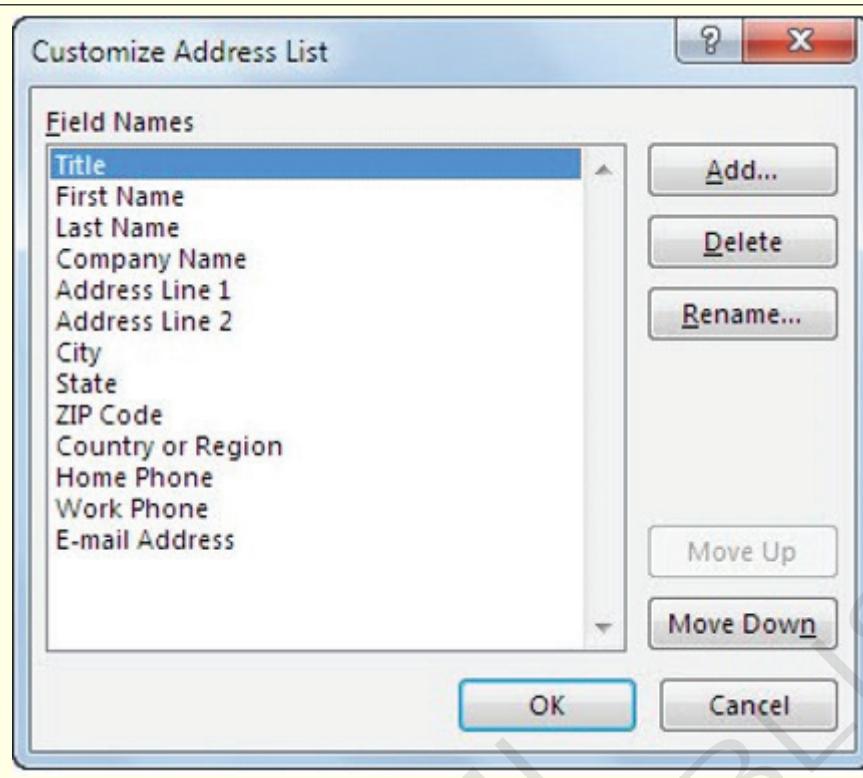
- 1 Go to File > New > Blank Document > Mailings.
- 2 Choose Select Recipients > Type a New List.



If you need just one label, select Single label from the Mailings > Labels menu and the position on the label sheet where you want it to appear. Select OK, the destination, and Save.

**Tip:** Print your labels to a sheet of paper before loading labels into the printer to make sure the text aligns with the labels.

b Choose Add



c Type a field name and then select OK.



d Repeat steps b and c for each column or field to add.

6 When you're done adding all the people you want to your list, choose OK.

7 In the Save Address List dialog box, give your new file a name, and then choose Save.

You can now insert mail merge fields in your document.

#### TASK 4: Perform mail merge using an existing list

##### Existing list

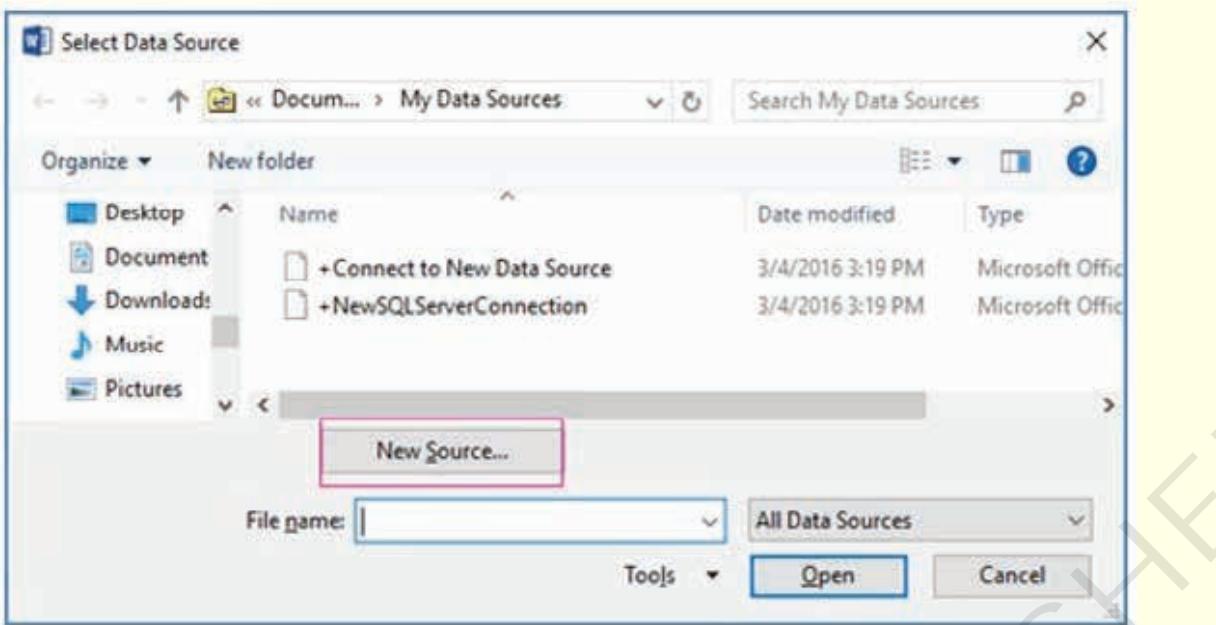
An existing list might be an Excel spreadsheet, Access database, or some other type of database. To use it as your data source, choose Use an Existing List.

Important: No matter what type of file you use as a data source, be sure to save it on your local computer or a file share; saving at an HTTP location isn't supported for mail merge.

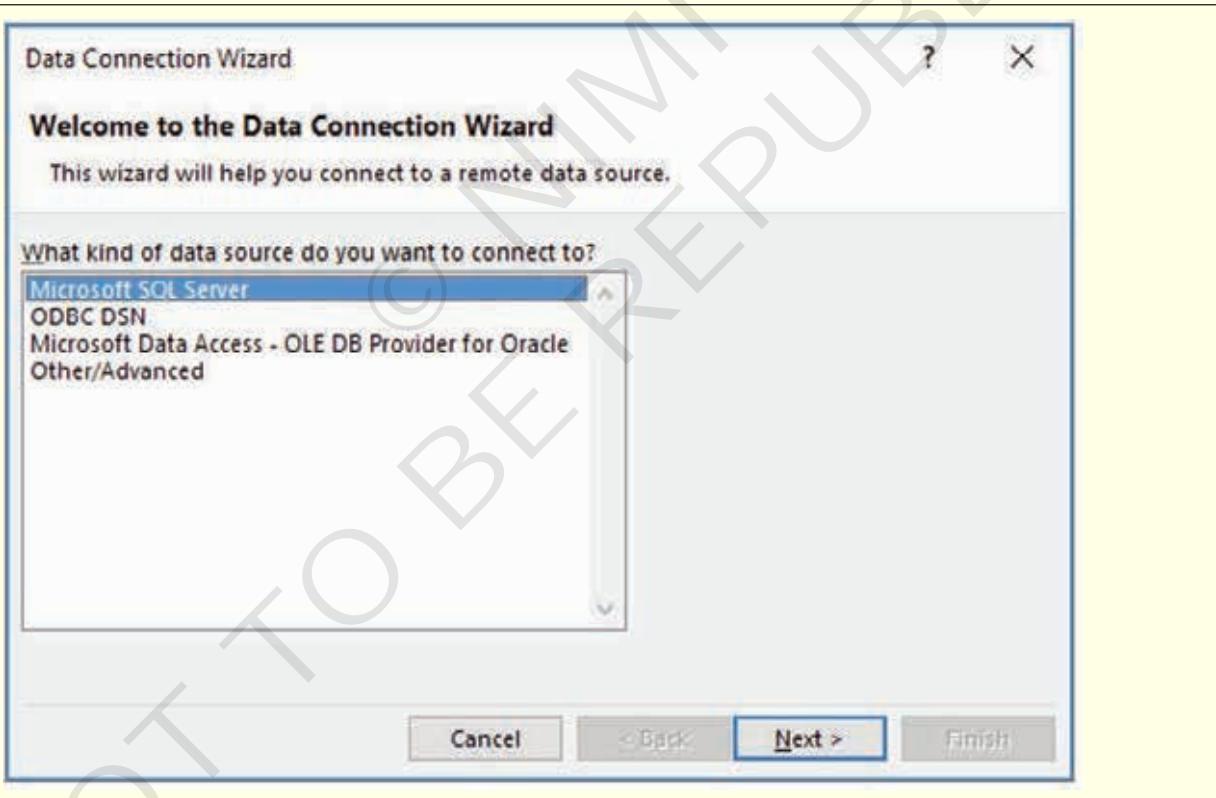
**Note:** Mail merge lets you create batches of documents that are personalised for each recipient. For example 1 Bulk Email 2 Letters 3 Forms 4 Fax distribution 5 Directories.

**It is most commonly used to print or email multiple recipients from letters.**

- Excel spreadsheet An Excel spreadsheet works well as a data source for mail merge if all data is well-formatted and on one sheet so that it can be read by Word.
- Access database With Access, you can select data from any table or query defined in the database.
- Other database files To access other kinds of data sources, you'll run the Data Connection Wizard:
  - 1 Go to Mailings > Select Recipients > Use an Existing List, then choose New Source to open the Data Connection Wizard.



- 2 Choose the type of data source you want to use for the mail merge, and then select Next.
- 3 Follow the prompts in the Data Connection Wizard to complete the data connection to the merge document.



#### Add individual merge fields

To include data like phone numbers or email addresses, you insert those merge fields specifically. Also, a merge field like First Name doesn't have to be part of an Address Block or Greeting Line. If you want to personalize a document by including your recipients' first names, insert the First\_Name merge field on its own.

- 1 Click or tap where you want the merge field.
- 2 Choose the down-arrow under Insert Merge Field, and select a field.



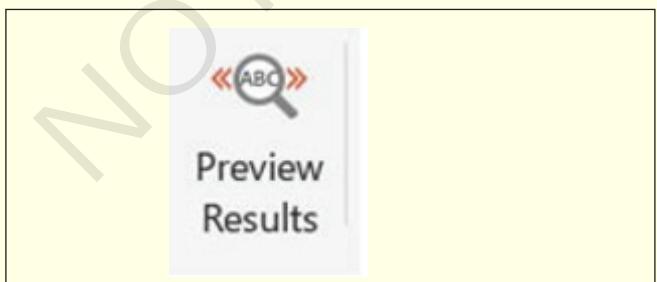
- 3 If you don't see your field name in the list, choose Insert Merge Field.
- 4 Choose Database Fields to see the list of fields that are in your data source.
- 5 Choose Insert.

### Students Address List

Name: «First\_Name»  
 Address: «Address\_Line\_1»  
 City: «City»  
 State: «State»  
 Pin code: «ZIP\_Code»

### View mail merge

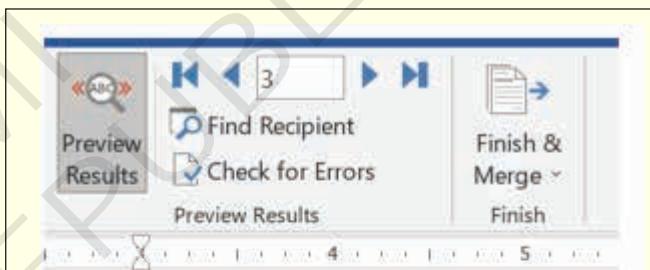
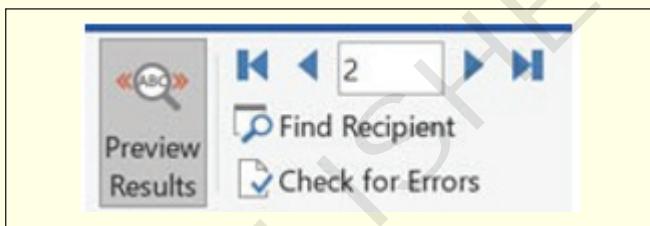
- 1 Choose Mailings > Click Preview Result



### Students Address List

Name: Ramkumar  
 Address: Perumbakkam  
 City: Chennai  
 State: Tamilnadu  
 Pin code: 600131

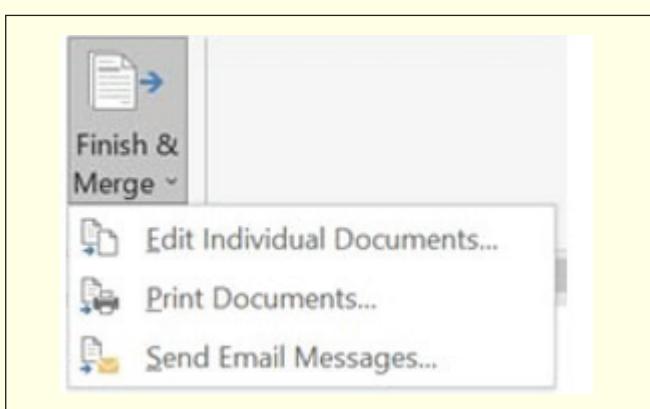
- 2 Click Next, Previous, First and Last to view all the available list in database.



### Students Address List

Name: Suresh  
 Address: Velacherry  
 City: Chennai  
 State: Tamilnadu  
 Pin code: 600054

- 3 Click Finish & Merge to Send as Email or Print Documents.



**COPA - Spread Sheet Application, Manage Worksheets and Workbooks****Open files in MS Excel**

**Objectives:** At the end of this exercise you shall be able to

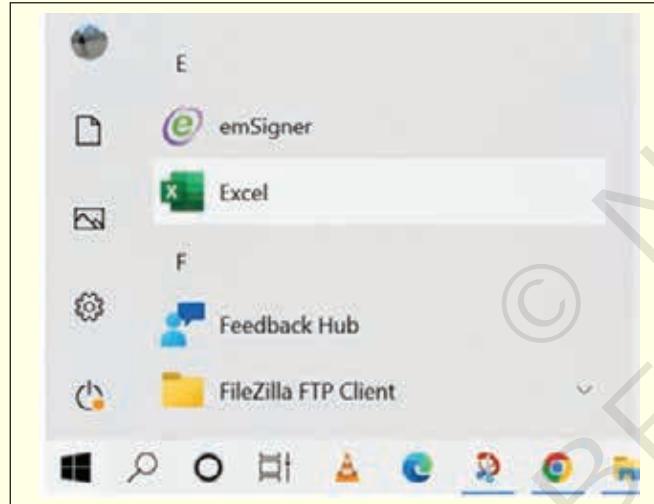
- open MS Excel
- create a new Excel file
- create a new Excel file from a template
- open an existing Excel file.

**Requirements****Tools/Equipment/Machines**

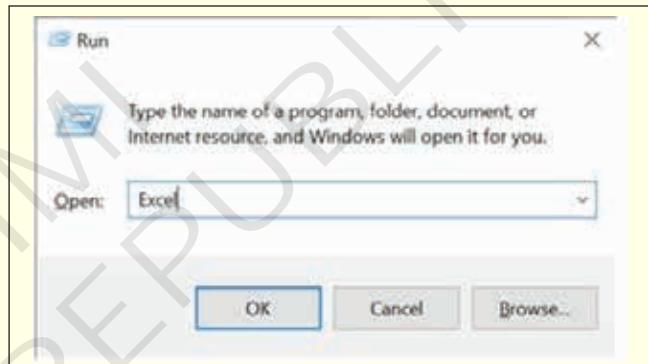
- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

**PROCEDURE****TASK 1: Open MS Excel**

- 1 Click Windows Start Button > Choose Excel from Start Menu.



Or Select **Ctrl + R** > Type Excel > Click OK

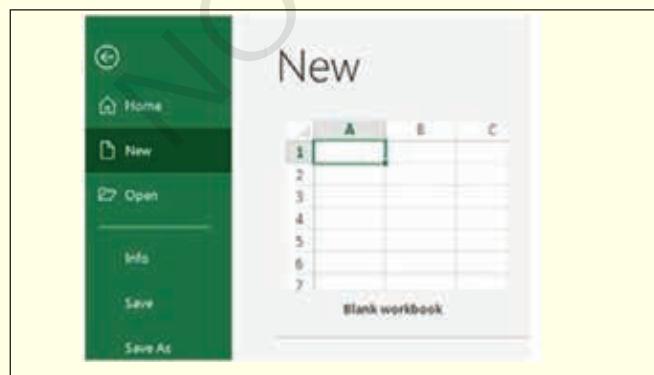


- 2 Microsoft Excel Application will start to open.

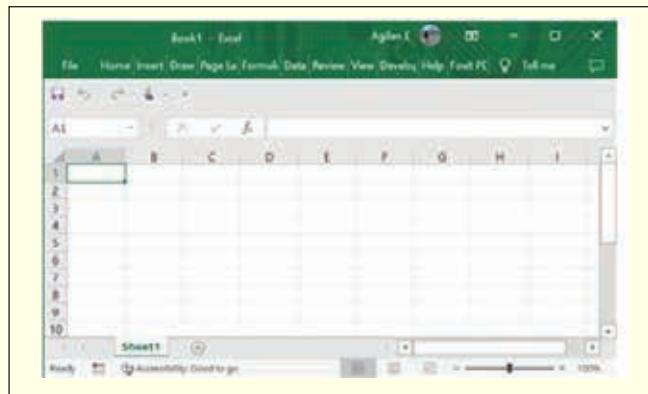
**TASK 2: Create a new Excel file**

Create a workbook

- 1 Open Excel.
- 2 Select Blank workbook or press **Ctrl+N**.



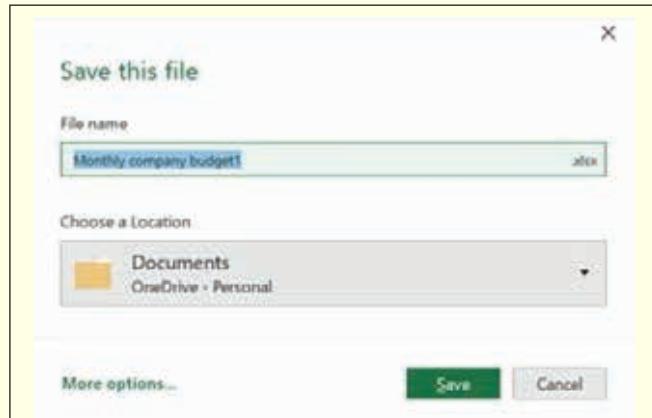
- 3 Start typing.



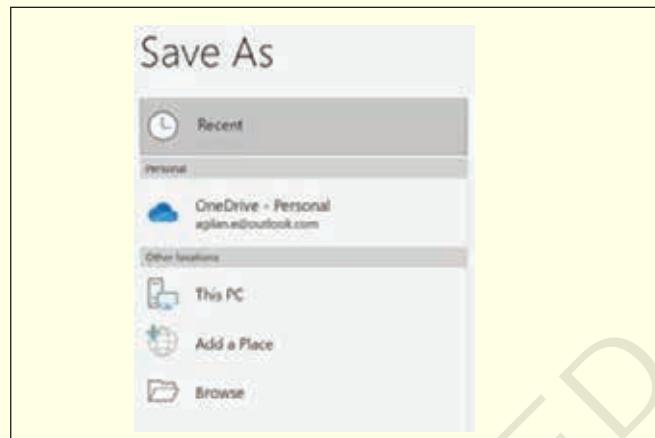
## Save your workbook

Wherever you want to save your workbook on your computer or the web, you do all your saving on the File tab > Save or press Ctrl+S to save first time or you need to use Save As to save your existing workbook in a different location, or to create a copy of your workbook in the same or another location.

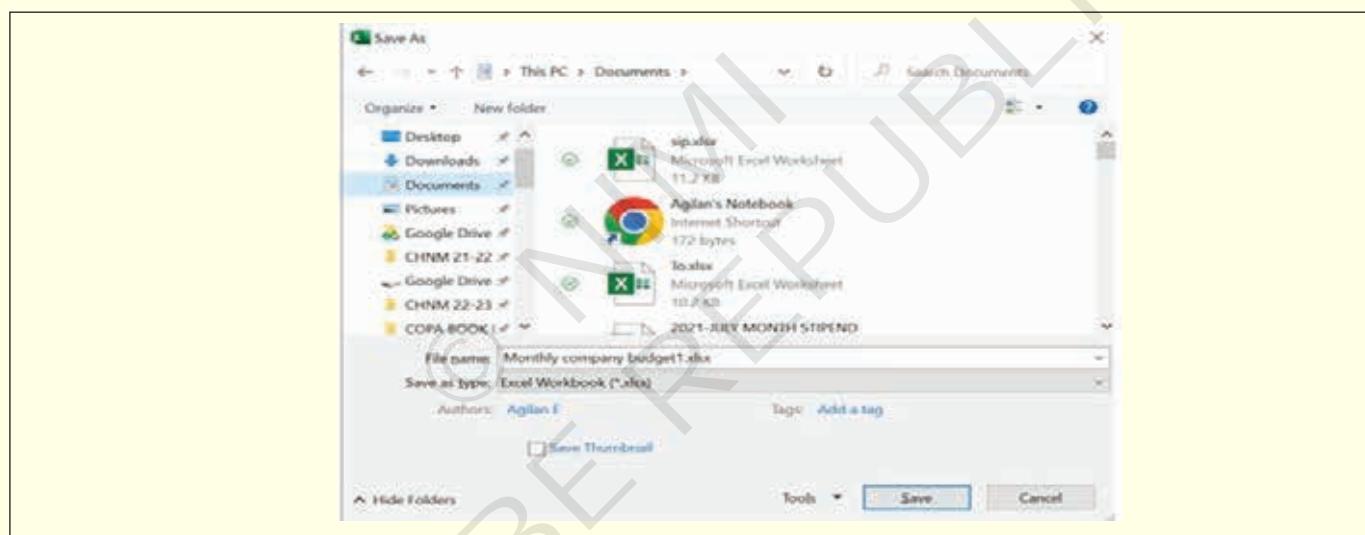
- 1 File tab > Save or press Ctrl+S to save first time



- 2 Choose a Location or More option to Browse the Local Drive.

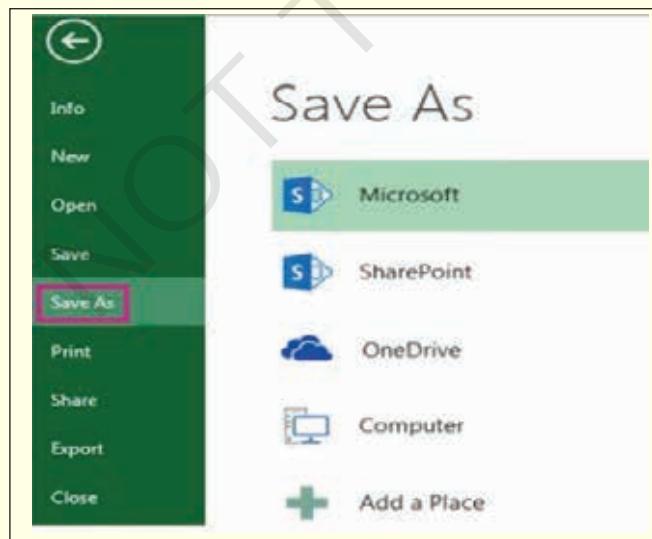


- 3 Browse the Location where you want to save and Name the Filename and Choose the File Type.XLSX then Click Save.

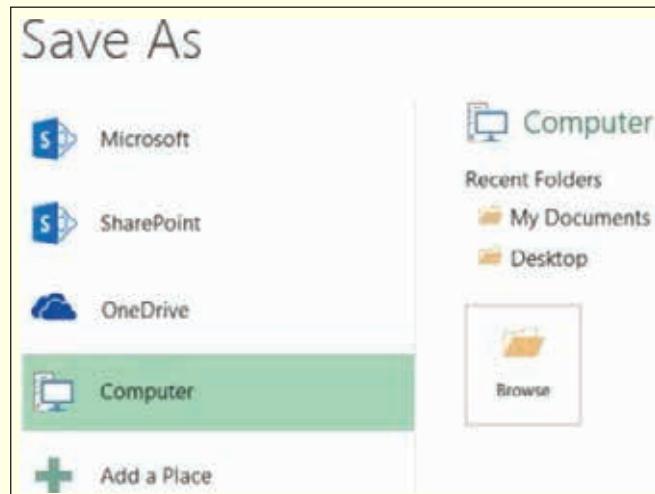


## Save As your workbook

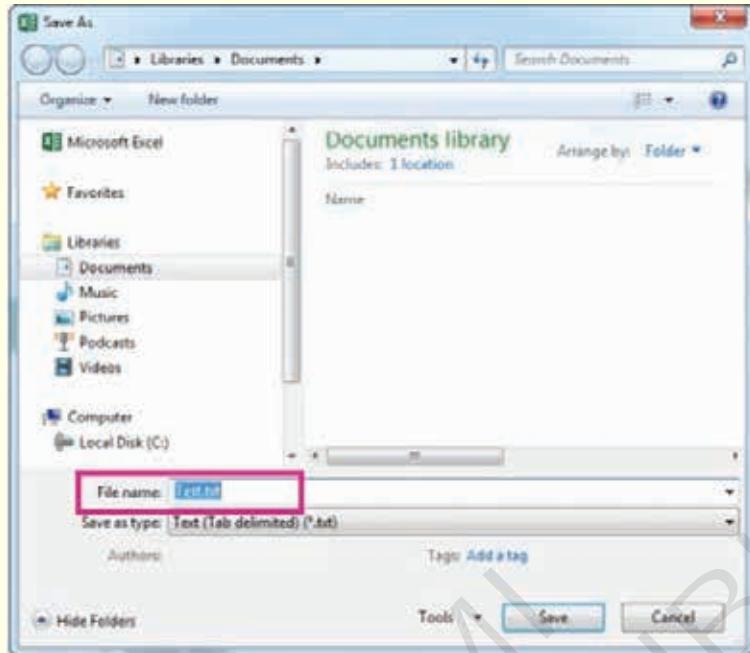
- 1 Click File > Save As.



- 2 Under Save As, pick the place where you want to save your workbook. For example, to save to your desktop or in a folder on your computer, click Computer.



- Click Browse to find the location where you want in your Documents folder.
- In the File name box, enter a name for a new workbook. Enter a different name if you're creating a copy of an existing workbook.
- To save your workbook in a different file format (**like .xls or .txt**), in the Save as type list (under the File name box), pick the format you want.
- Click Save



### TASK 3: Create a new Excel file from a template

Create a workbook from a template

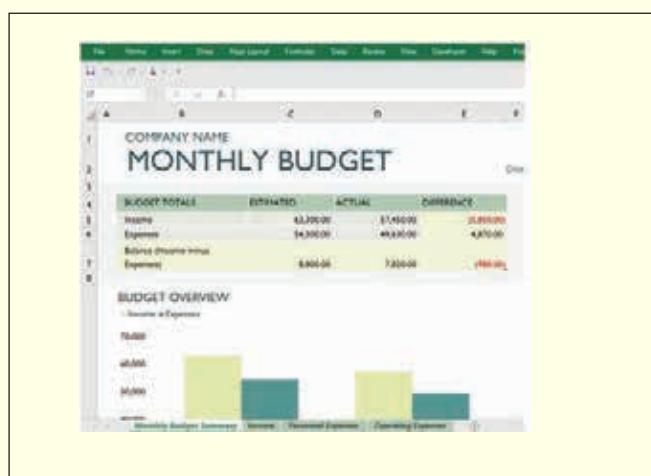
- Select File > New.
- Select More template
- Search or choose from available Template.



- Double-click a template and Click Create



- Click and Entry the Data to use the Template.

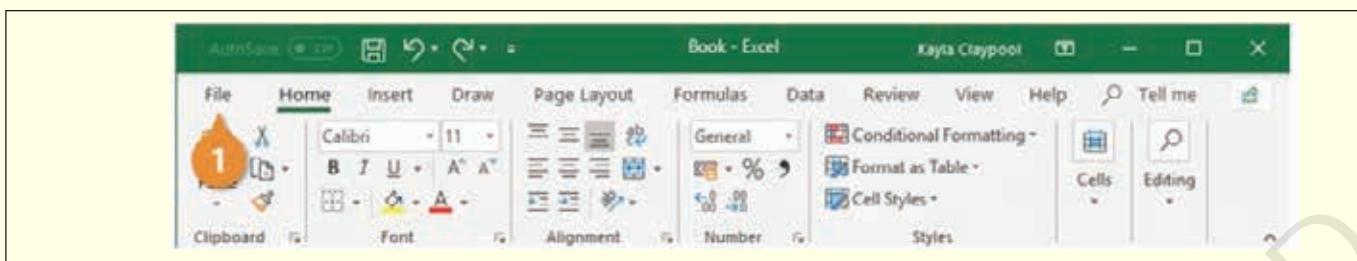


## TASK 4: Open an existing Excel file

Open a Workbook

You can locate a workbook on your computer and simply double-click it to open it, but you can also open a workbook from within the Excel program.

1 Click the File tab.



2 Click Open, or

Press Ctrl + O to quickly display the Open tab of the Backstage view.

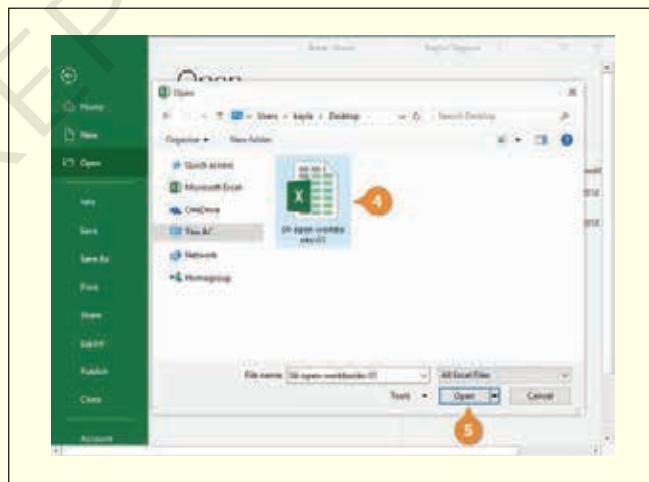
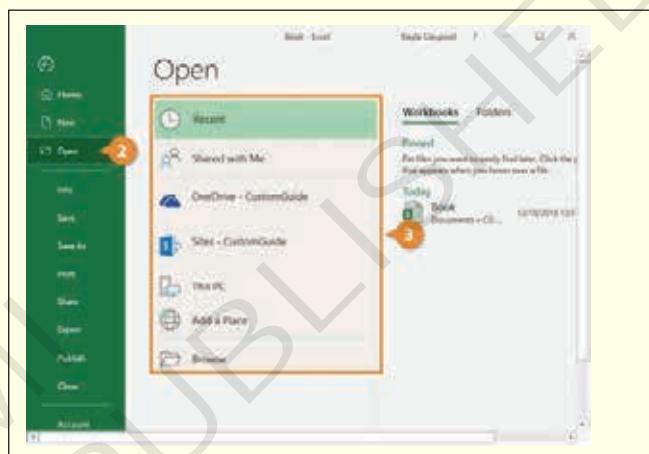
3 Select the location where the file is saved.

You can choose from:

- Recent: Recent files you've worked on.
- Shared with Me: Files others have shared with you on OneDrive or SharePoint Online.
- OneDrive: Microsoft's cloud-based storage.
- This PC: Browse files on your local computer.
- Browse: Opens a dialog box where you can browse through your computer's folders, drives, and network shares.

4 Select the file you want to open.

5 Click Open.



## COPA - Spread Sheet Application, Manage Worksheets and Workbooks

### Import data

**Objectives:** At the end of this exercise you shall be able to

- import data from txt files
- import data from csv files.

### Requirements

#### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

#### TASK 1: Import data from txt files

Import a text file by opening it in Excel

You can open a text file that you created in another program as an Excel workbook by using the Open command. Opening a text file in Excel does not change the format of the file — you can see this in the Excel title bar, where the name of the file retains the text file name extension (for example, .txt or .csv).

- 1 Go to File > Open and browse to the location that contains the text file.
- 2 Select Text Files in the file type dropdown list in the Open dialog box.
- 3 Locate and double-click the text file that you want to open.
  - If the file is a text file (.txt), Excel starts the Import Text Wizard. When you are done with the steps.
- 4 Click Finish to complete the import operation.

#### TASK 2: Import data from csv files

- 1 Go to File > Open or On the Data tab, in the Get & Transform Data group, click From Text/CSV In the Import Data dialog box.
- 2 Locate and double-click the CSV file that you want to open.
  - 3 Click Finish to complete the import operation.

**COPA - Spread Sheet Application, Manage Worksheets and Workbooks****Navigate within workbooks**

**Objectives:** At the end of this exercise you shall be able to

- search data
- navigate to named cells, ranges or workbook elements
- insert and remove hyperlinks.

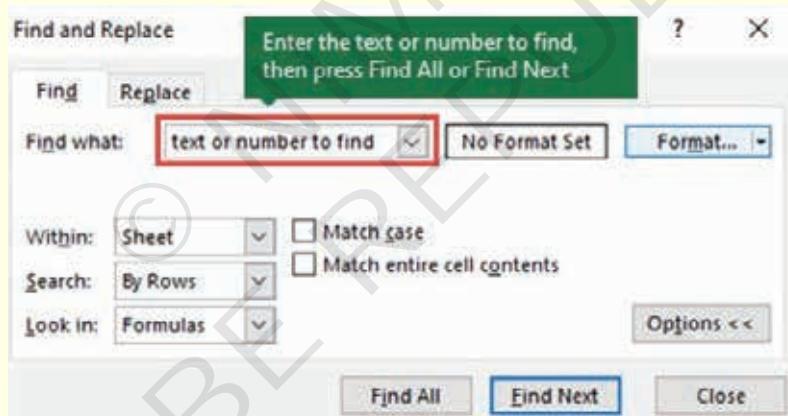
**Requirements****Tools/Equipment/Machines**

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

**PROCEDURE****TASK 1: Search data****Find**

To find something, press **Ctrl+F**, or go to Home > Editing > Find & Select > Find.

**Note:** In the following example, we've clicked the Options >> button to show the entire Find dialog. By default, it will display with Options hidden.



- 1 In the Find what: box, type the text or numbers you want to find, or click the arrow in the Find what: box, and then select a recent search item from the list.

**Tips:** You can use wildcard characters — question mark (?), asterisk (\*), tilde (~) — in your search criteria.

- 2 Click Find All or Find Next to run your search.
- 3 Click Options>> to further define your search if needed:
  - Within: To search for data in a worksheet or in an entire workbook, select Sheet or Workbook.
  - Search: You can choose to search either By Rows (default), or By Columns.

- Look in: To search for data with specific details, in the box, click Formulas, Values, Notes, or Comments.

**Note:** Formulas, Values, Notes and Comments are only available on the Find tab; only Formulas are available on the Replace tab.

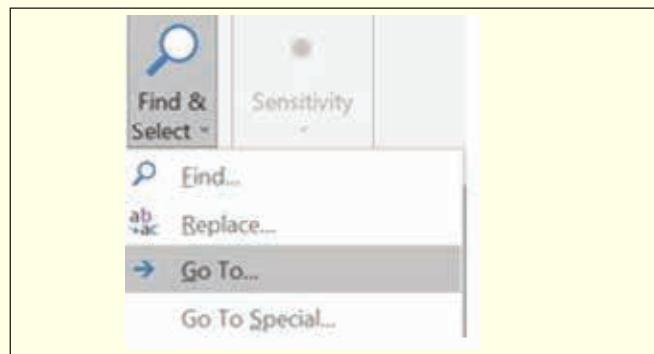
- Match case - Check this if you want to search for case-sensitive data.
  - Match entire cell contents - Check this if you want to search for cells that contain just the characters that you typed in the Find what: box.
- 4 If you want to search for text or numbers with specific formatting, click Format, and then make your selections in the Find Format dialog box.

## TASK 2: Navigate to named cells, ranges or workbook elements

You can find a named range by using the Go To feature which navigates to any named range throughout the entire workbook.

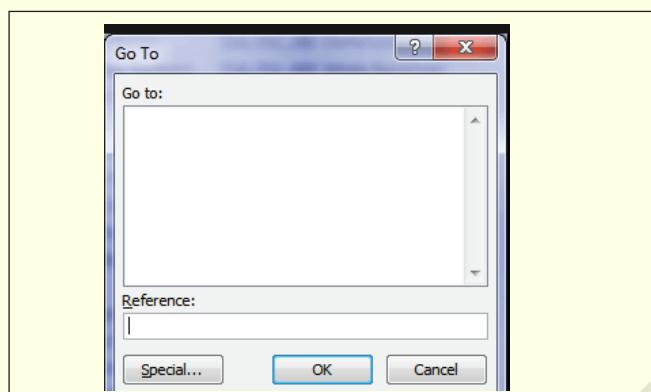
- 1 You can find a named range by going to the Home tab, clicking Find & Select, and then Go To.

Or, press **Ctrl+G** on your keyboard.



- 2 In the Go to box, double-click the named range you want to find.

- 3 Click OK



### Notes:

- To go to a cell or range on another sheet, enter the following in the Reference box: For example: sheet2!\$D\$12 to goto a cell, and sheet3!\$C\$12:\$F\$21 to go to range.
- You can enter multiple named ranges or cell references in the Reference box. Separating each with a comma, like this: Price, Type, or B14:C22,F19:G30,H21:H29. When you press Enter or click OK, Excel will highlight all the ranges.

## TASK 3: Insert and remove hyperlinks

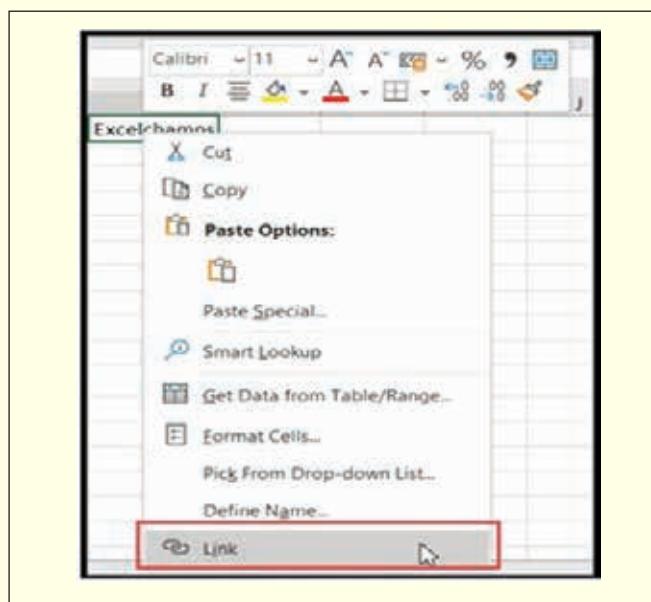
A hyperlink in Excel is a link to a specific file, document, location, web, and email address. By using the hyperlink users can go to a specific file, document, or location.

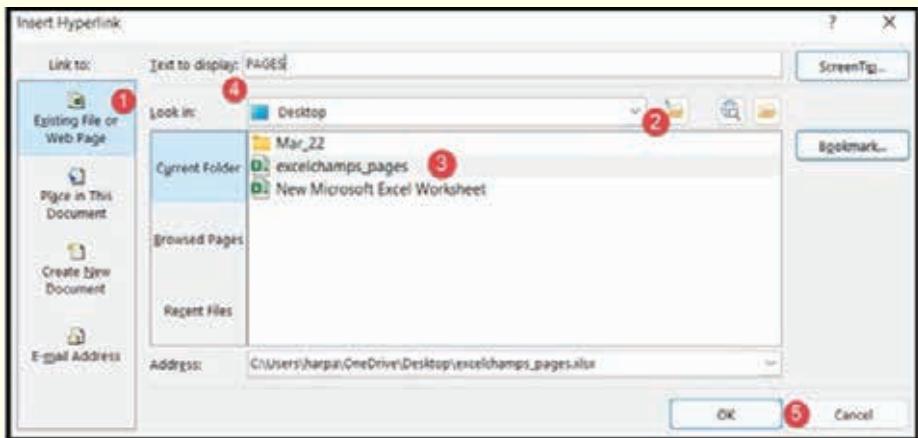
Hyperlinks are easy to recognize as these are underlined blue or purple-colored highlighted text.

### Add Hyperlink to an Existing Workbook



- 2 Or, right click on the cell, where you want to add the hyperlink, and then click on the "Link" option from the pop-up menu.
- 3 Or, press the **CTRL + K** shortcut from the keyboard.
- 4 Once you follow any of the above steps, you will get the "Insert Hyperlink" window opened.
- 5 After that, select the "Existing File or Web Page" option and then select the location where that file or document is placed.
- 6 Now, select the file or document and then enter the text in the "Text to display" column which you want to display as a hyperlinked name, and click OK.

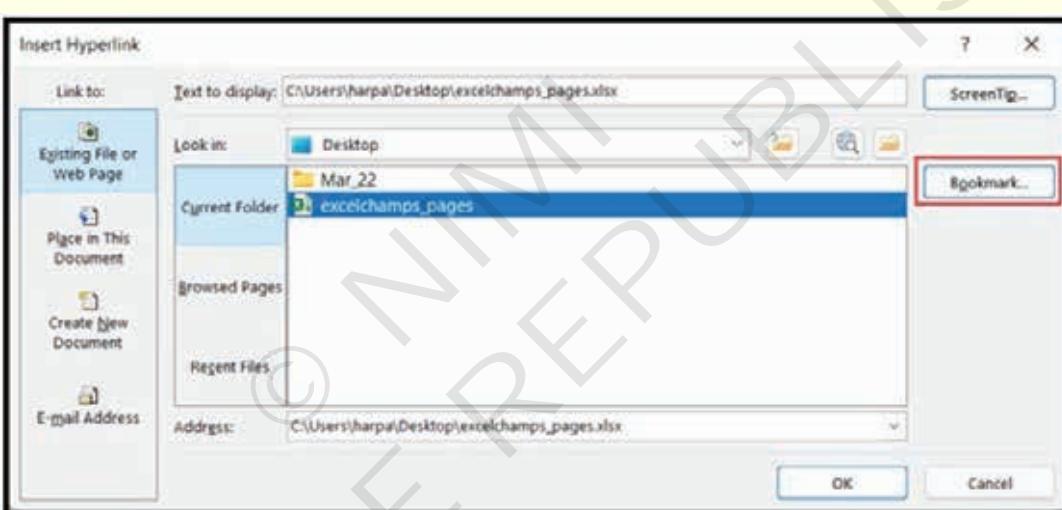




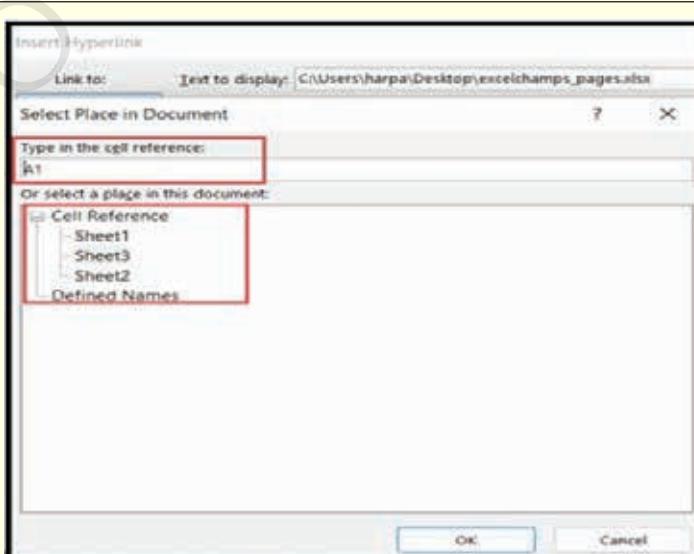
### Add Hyperlink to a Specific Sheet of an Existing Workbook

- 1 First, select the "Existing File or Web Page" option and then select the location where that file or document is placed

- 2 After that, select the file or document and then click on the "Bookmark" button.

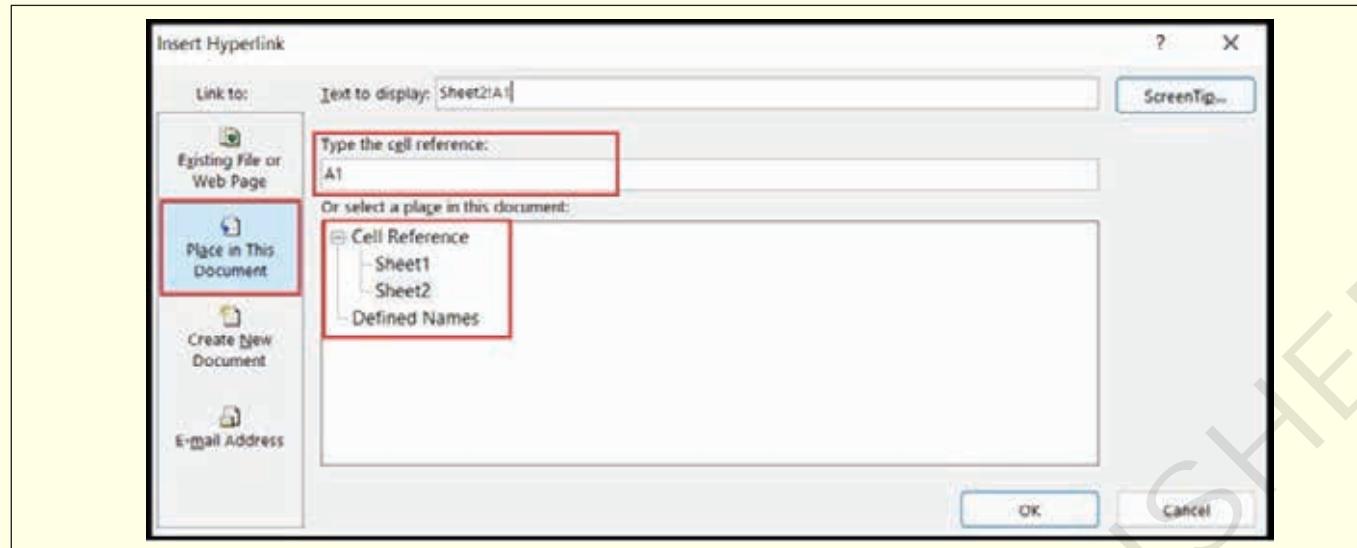


- 3 Now, select the specific sheet and the targeted cell of that existing sheet and click OK.



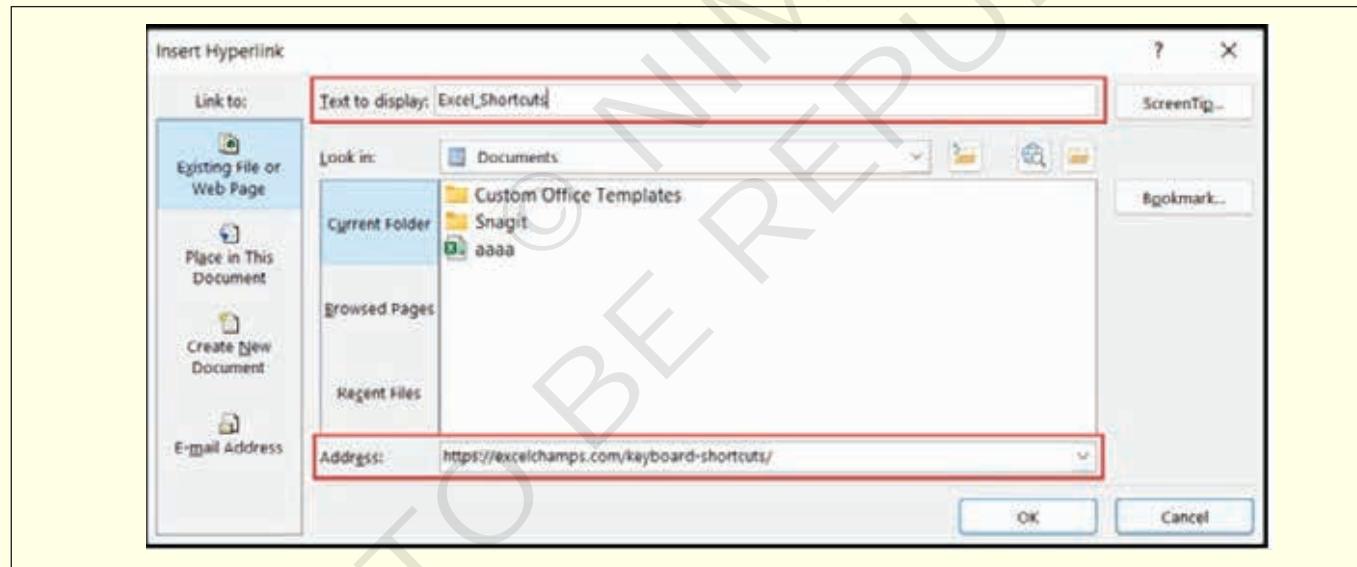
## Add Hyperlink to a Specific Sheet of the Current Workbook

- 1 First, select the “Place in This Document” option and you will get all the sheets of the current workbook



## Add Hyperlink to a Web Address

- 1 First, open the web page in the browser and copy the web address and paste it into the “Address” column in the “Insert Hyperlink” window.



## Add Hyperlink to Open a New Workbook

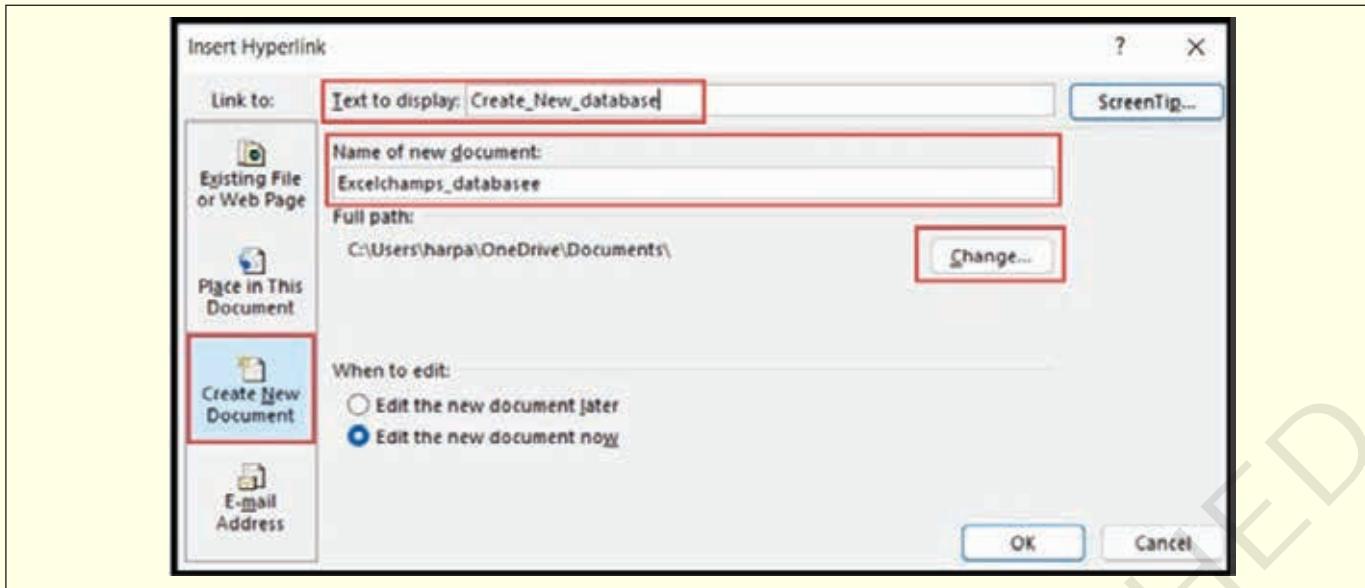
- 1 First, select the “Create New Document” option and enter the name of the new workbook in the “Name of new document” column.

- 2 After that, select the specific sheet and the targeted cell and click OK.

- 2 After that, enter the text in the “Text to display” column that you want to display as a hyperlinked name, and then click OK.

- 2 After that, enter the text in the “Text to display” column that you want to display as a hyperlinked name.

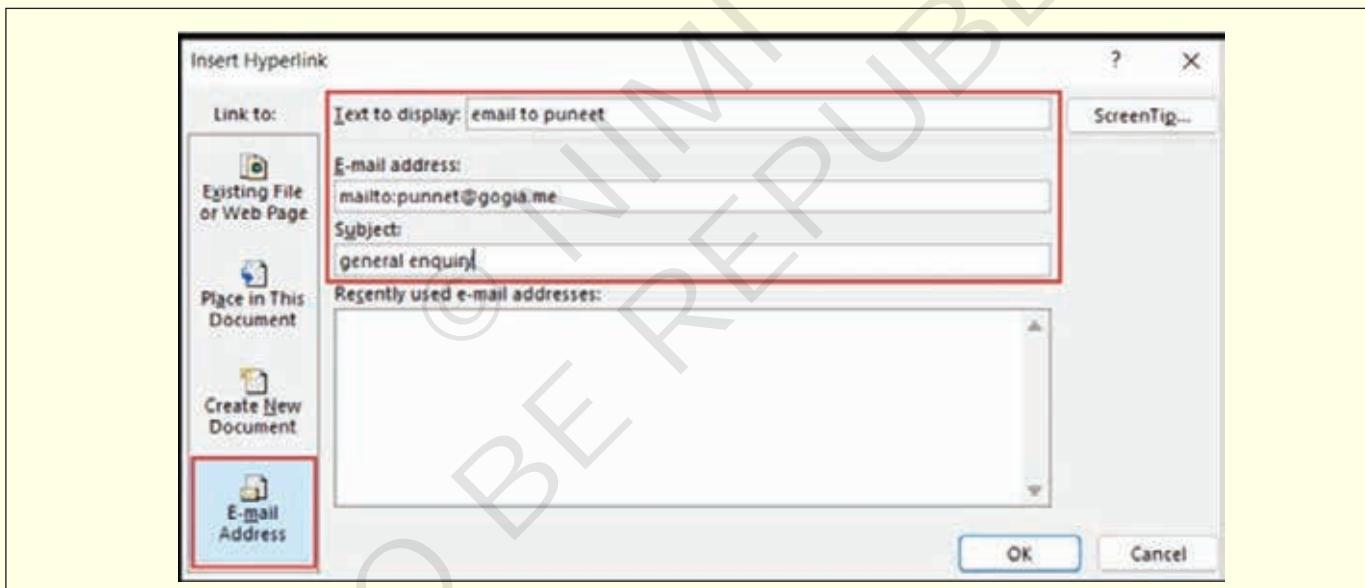
- 3 Now, click on the change button if want to change the saving location of the new workbook and click OK.



### Add Hyperlink to an Email Address

1 First, select the “E-mail Address” option and then enter the email id in the “E-mail address:” column and enter the email subject in the “Subject” column.

- 2 After that, enter the text in “Text to display” which you want to display as a hyperlinked name, and click OK.
- 3 You can even directly enter the email address in the cell and Excel will auto-create the hyperlink to that email.

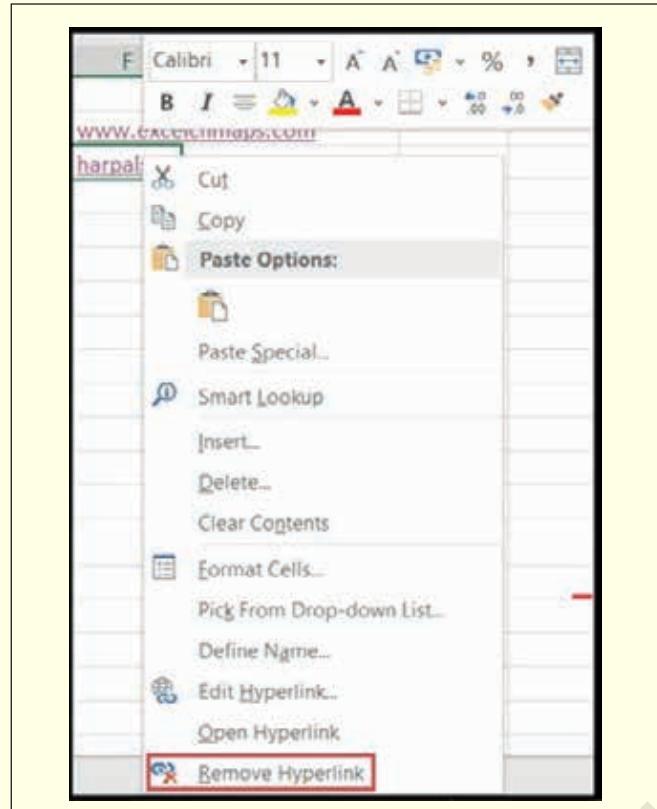


### Remove Hyperlinks in Excel

Removing hyperlinks from Excel is way easy and quick than adding or creating hyperlinks. Excel allows users to remove the hyperlinks just in two clicks as mentioned below.

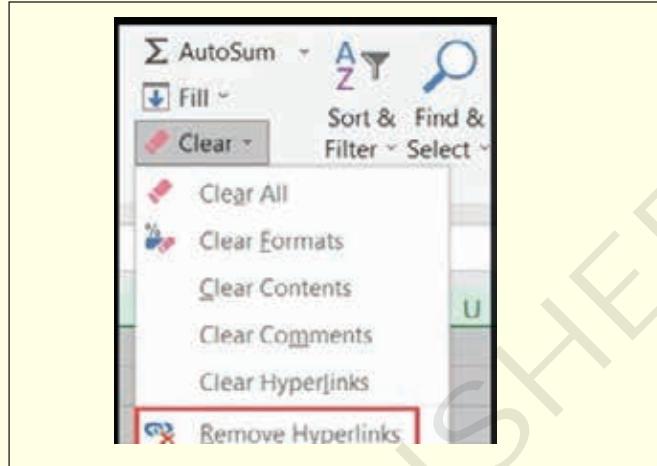
- 1 To remove a hyperlink from a cell, right click on a cell containing a hyperlink and then click on “**Remove Hyperlink**” from the pop-up menu.

2 To remove hyperlinks from multiple cells, select the cells together and right click and select “**Remove Hyperlinks**” from the pop-up menu.



3 To remove the hyperlinks, form the current worksheet, select the whole worksheet by pressing **CTRL+A** from the keyboard.

4 Now, go to the “Home” tab and click on the “Clear” icon drop-down arrow and then select “**Remove Hyperlinks**”.



## Format worksheets and workbooks

**Objectives:** At the end of this exercise you shall be able to

- modify page setup
- adjust row height and column width
- customize headers and footers.

### Requirements

#### Tools/Equipment/Machines

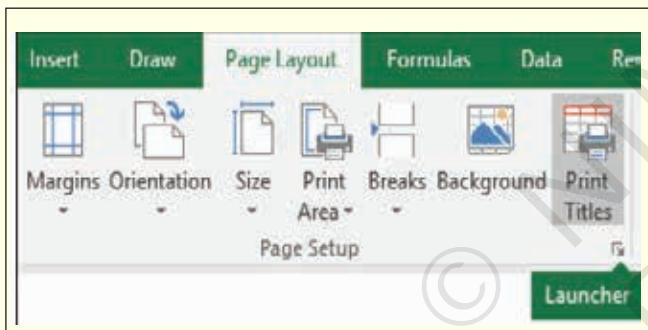
- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

## PROCEDURE

### TASK 1: Modify page setup

#### 1 Page Setup

Use the Page Setup dialog box to set up layout and print options of a page.



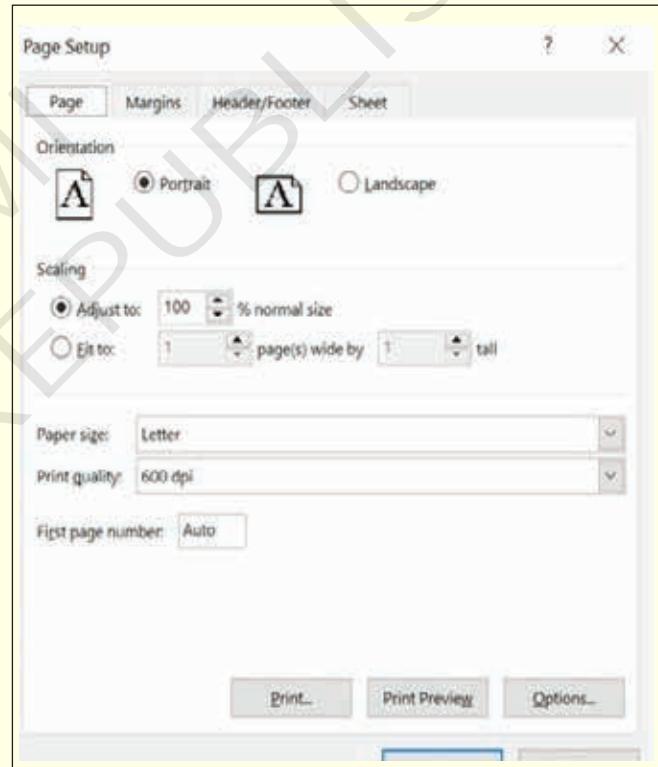
Click on the Page Layout tab, then in the Page Setup group, click the Dialog Box Launcher

**Orientation** Choose between landscape and portrait.

**Scaling** Enlarges or reduces the worksheet or selection when you print so that it fits on the specified number of pages.

- **Adjust to** When you select Adjust to, you can enter a percentage in the % normal size box.
- **Fit to** When you select Fit to, you can enter a number in the page(s) wide by box and the tall box. To fill the paper width and use as many pages as necessary, type 1 in the pages(s) wide by box and leave the tall box blank.

**Paper size:** In this box, click Letter, Legal, or other size options to indicate the size that you want to use for your printed document or envelope.



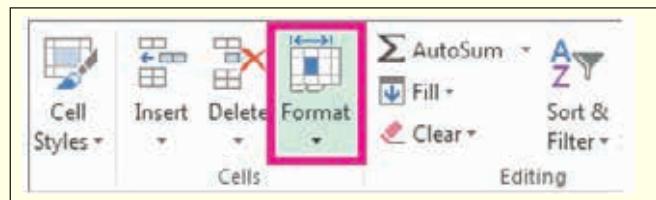
**Print quality:** In this box, click a resolution to specify the print quality for the active worksheet. Resolution is the number of dots per linear inch (dpi) that appear on the printed page.

**First page number:** In this box, enter Auto to start numbering pages at "1" (if it is the first page of the print job) or at the next sequential number (if it is not the first page of the print job). Enter a number to specify a starting page number other than "1."

## TASK 2: Adjust row height and column width

### Set a column to a specific width

- 1 Select the column or columns that you want to change.
- 2 On the Home tab, in the Cells group, click Format.

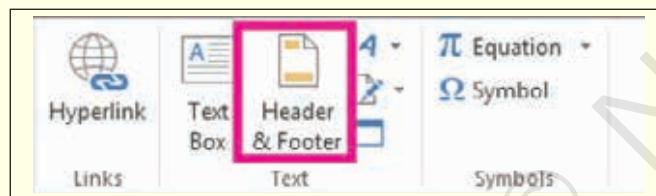


- 3 Under Cell Size, click Column Width or Row Height
- 4 In the Column width and Row Height box, type the value that you want
- 5 Click OK.

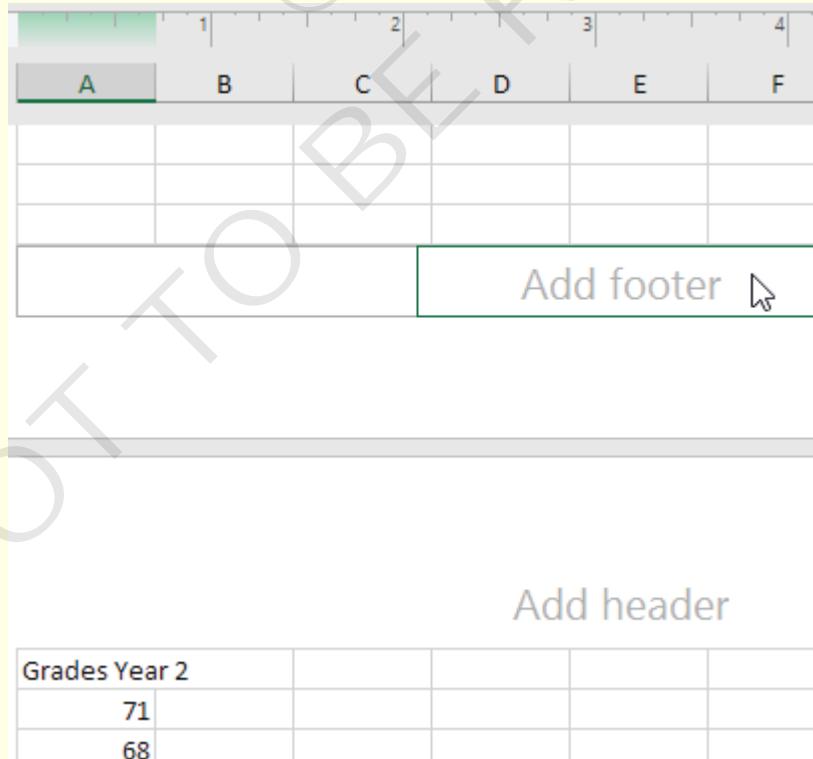
## TASK 3: Customize headers and footers

### Add or change headers or footers in Page Layout view

- 1 Click the worksheet where you want to add or change headers or footers.
- 2 On the Insert tab, in the Text group, click Header & Footer.



NOT TO BE PUBLISHED

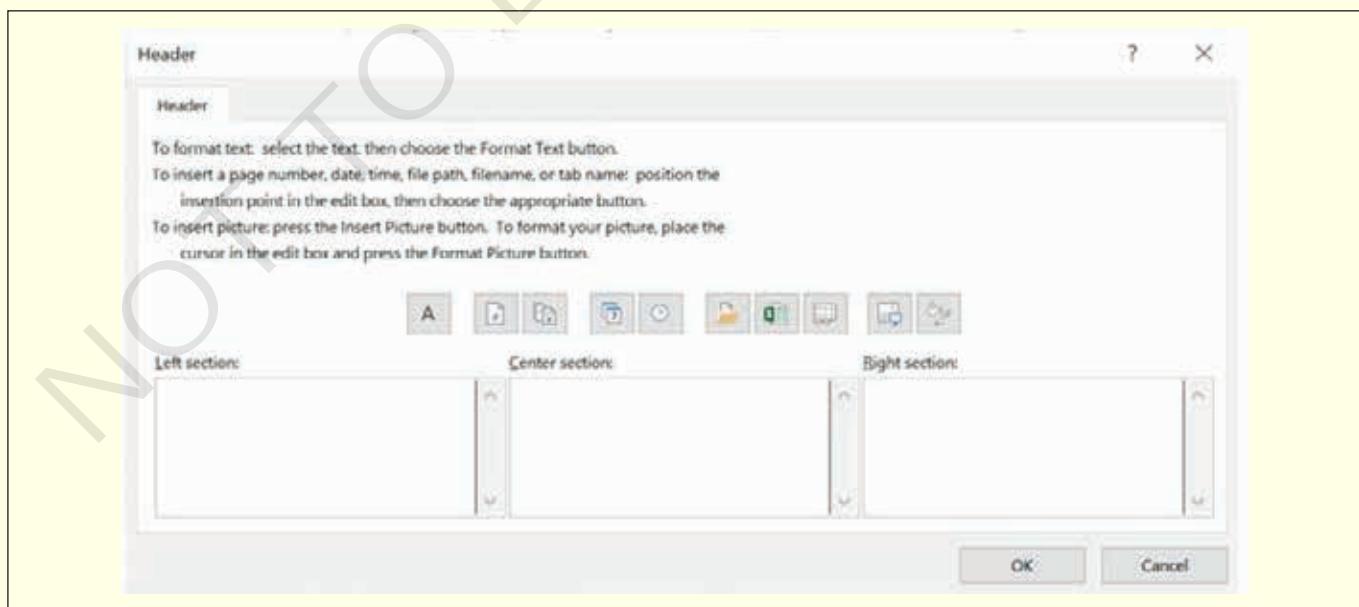
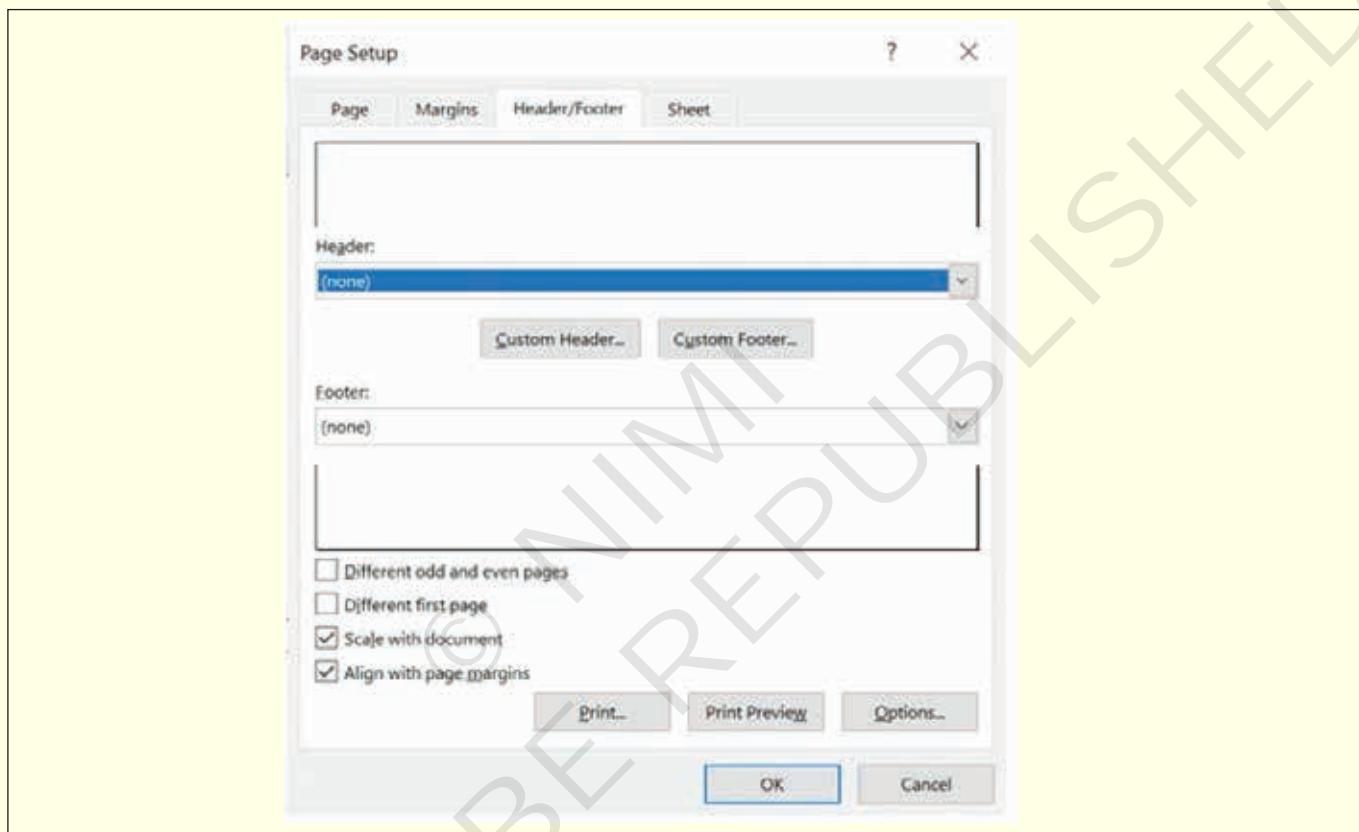
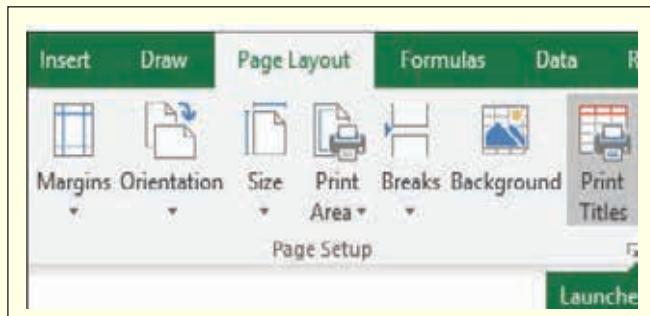


Excel displays the worksheet in Page Layout view.

- 3 To add or edit a header or footer, click the left, center, or right header or footer text box at the top or the bottom of the worksheet page (under Header, or above Footer).
- 4 Type the new header or footer text.

## Add or change headers or footers in Page Setup

- 1 Use the Page Setup dialog box to set up Header and Footer of a page.



- 2 Click on the Page Layout tab, then in the Page Setup group, click the Dialog Box Launcher .
- 3 Choose Header/Footer
- 4 Choose Custom Header or Custom Footer.
- 5 Insert Text, Page Number, Date , Time, Image and etc., you want to keep as Header or Footer in Left Section / Centre Section / Right Section
- 6 Click OK

## Customize options and views

**Objectives:** At the end of this exercise you shall be able to

- display and modify content in different views
- freeze rows and columns
- change window views
- modify basic workbook properties
- display formulas.

### Requirements

#### Tools/Equipment/Machines

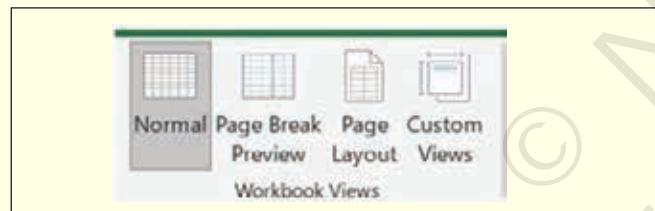
- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

## PROCEDURE

### TASK 1: Display and modify content in different views

There are three built-in view types, Normal, Page Break Preview and Page Layout, as well as a set of customizable view options.

Using view types effectively is an essential part of worksheet management and layout design.



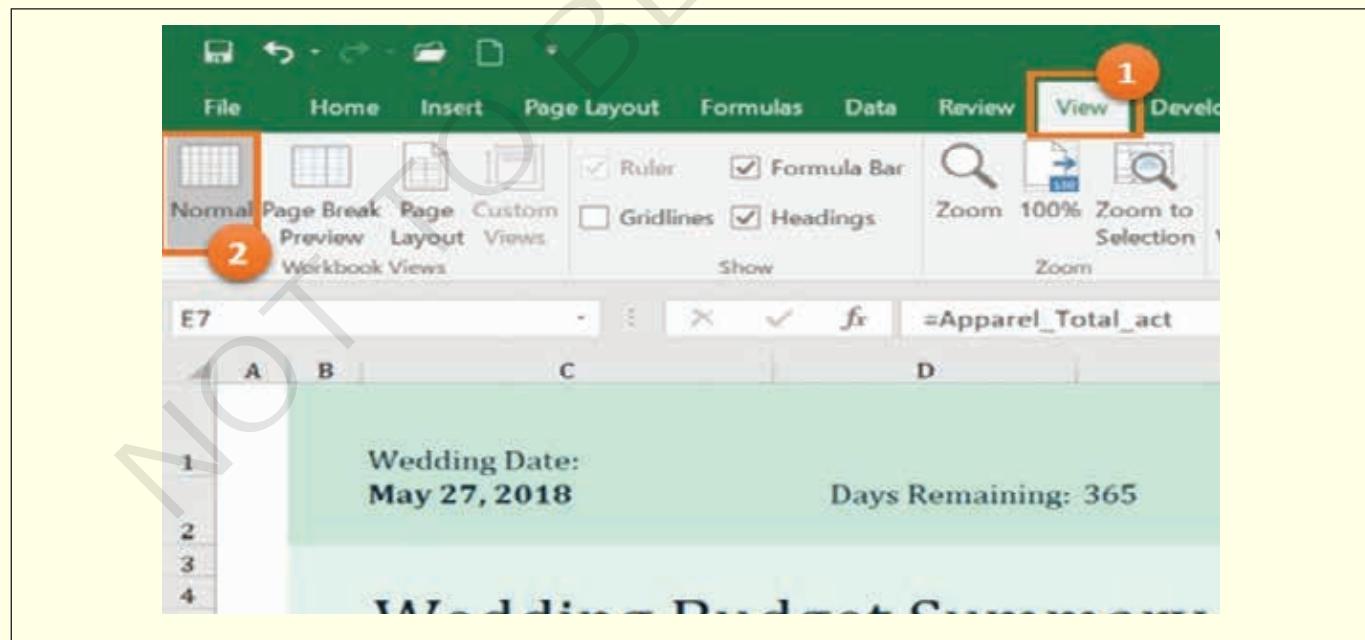
#### Normal View Excel

The Excel normal view, which is also the default view for all worksheets, is the easiest view to use for managing data, creating formulas and formatting rows and columns. When you open a new workbook or sheet, it will usually open with this view activated.

To set a worksheet to Normal view:

- 1 Click on the View tab on the Ribbon.
- 2 In the Workbook Views group, click on Normal.

The Normal view in Excel is the most commonly used view and arguably the best view for adding data to a worksheet.

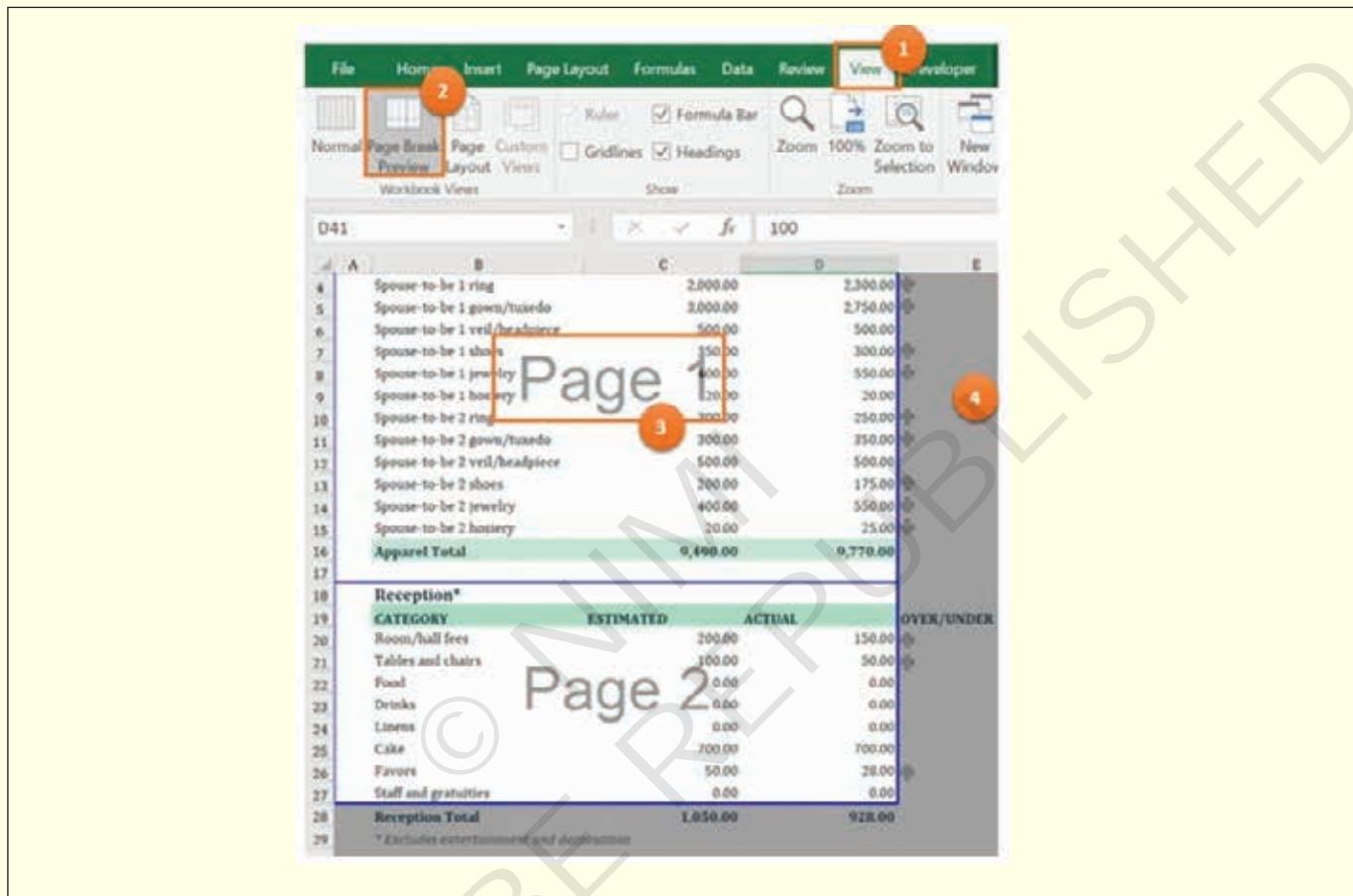


## Page Break Preview Excel

The Page Break Preview in Excel is a very powerful print preview that allows you to manually move page breaks and reorganize a worksheet into pages for printing. You can break off columns or rows in exactly the best spot by moving the blue lines of the Excel 2016 Page Break Preview.

### To use the Excel Page Break Preview:

- 1 Click on the View tab on the Ribbon.



### To resize pages and include or exclude rows or columns

- 1 Click the vertical blue line and hold down the left mouse button to drag the line to the left or right to include or exclude columns. This line sets the width of the page. Excel will automatically resize the data on the page to fit the width you drag this line to, which can sometimes lead to printed data being too small to read.
- 2 Click the horizontal blue line and hold down the left mouse button to drag the line up or down to include or exclude rows. This line sets the height of the page. Excel will automatically resize the data on the page to fit the height you drag this line to, which can also sometimes lead to the data, when printed, being too small to read.

- 2 In the Workbook Views group, click on Page Break Preview.
- 3 The faint watermarks denoting Page 1 and Page 2, is an indication of how many pages the worksheet contains and will print to.
- 4 All the data (numbers, icons, text, etc.) in the dark grey area, will be excluded when you print the worksheet.

It is quick and easy to manipulate a worksheet in this view to ensure it prints over the exact number of pages required.

### Page Layout View Excel

You use the Excel Page Layout View to add design elements to the headers and footers of a worksheet, such as company logos, page numbers, document names, dates and times. These elements are not usually visible in other view types, but will print with each page of the workbook.

### To navigate to the MS Excel Page Layout View:

- 1 Click on the View tab on the Ribbon.
- 2 In the Workbook Views group, click on Page Layout View.

In the Page Layout View, an Excel worksheet can be created, managed, formatted and edited as if it is a page in a regular MS Word document.

**Page 1**

| 1  | A                                  | B        | C               | D             | E              |
|----|------------------------------------|----------|-----------------|---------------|----------------|
|    | Decorations*                       | CATEGORY | ESTIMATED       | ACTUAL        | OVER/UNDER     |
| 1  | Beer for testing                   |          | 0.00            | 0.00          | 0.00           |
| 2  | Confetti                           |          | 300.00          | 320.00        | -20.00         |
| 3  | Candles                            |          | 100.00          | 75.00         | 25.00          |
| 4  | Lighting                           |          | 100.00          | 75.00         | 25.00          |
| 5  | Balloons                           |          | 200.00          | 250.00        | -50.00         |
| 6  | <b>Decorations Total</b>           |          | <b>700.00</b>   | <b>720.00</b> | <b>-20.00</b>  |
| 7  | <i>Total for first page</i>        |          |                 |               |                |
| 8  | <b>Flowers</b>                     |          |                 |               |                |
| 9  | 1                                  | CATEGORY | ESTIMATED       | ACTUAL        | OVER/UNDER     |
| 10 | Bouquets                           |          | 300.00          | 450.00        | +150.00        |
| 11 | Boutonnieres                       |          | 0.00            | 0.00          | 0.00           |
| 12 | Centerpiece                        |          | 0.00            | 0.00          | 0.00           |
| 13 | Circus                             |          | 400.00          | 400.00        | 0.00           |
| 14 | Reception                          |          | 0.00            | 0.00          | 0.00           |
| 15 | <b>Flowers Total</b>               |          | <b>300.00</b>   | <b>850.00</b> | <b>+50.00</b>  |
| 16 | <i>Total for second page</i>       |          |                 |               |                |
| 17 | <b>Gifts</b>                       |          |                 |               |                |
| 18 | 1                                  | CATEGORY | ESTIMATED       | ACTUAL        | OVER/UNDER     |
| 19 | Awardists                          |          | 1,000.00        | 600.00        | -600.00        |
| 20 | Sponsorship 1                      |          | 150.00          | 200.00        | -50.00         |
| 21 | Sponsorship 2                      |          | 150.00          | 200.00        | -50.00         |
| 22 | Party                              |          | 25.00           | 25.00         | 0.00           |
| 23 | Resorts/other participants         |          | 20.00           | 250.00        | -230.00        |
| 24 | <b>Gifts Total</b>                 |          | <b>1,250.00</b> | <b>325.00</b> | <b>-925.00</b> |
| 25 | <b>Travel/Transportation</b>       |          |                 |               |                |
| 26 | 1                                  | CATEGORY | ESTIMATED       | ACTUAL        | OVER/UNDER     |
| 27 | Linen/cutlery                      |          | 100.00          | 125.00        | -25.00         |
| 28 | Flying                             |          | 0.00            | 40.00         | -40.00         |
| 29 | Taxis                              |          | 0.00            | 0.00          | 0.00           |
| 30 | <b>Travel/Transportation Total</b> |          | <b>100.00</b>   | <b>165.00</b> | <b>-65.00</b>  |
| 31 | <b>Other Expenses</b>              |          |                 |               |                |
| 32 | 1                                  | CATEGORY | ESTIMATED       | ACTUAL        | OVER/UNDER     |
| 33 | Officiant                          |          | 0.00            | 0.00          | 0.00           |
| 34 | Church/economy site fee            |          | 0.00            | 35.00         | -35.00         |
| 35 | Wedding coordinator                |          | 0.00            | 0.00          | 0.00           |
| 36 | <b>Other Expenses Total</b>        |          | <b>0.00</b>     | <b>35.00</b>  | <b>-35.00</b>  |

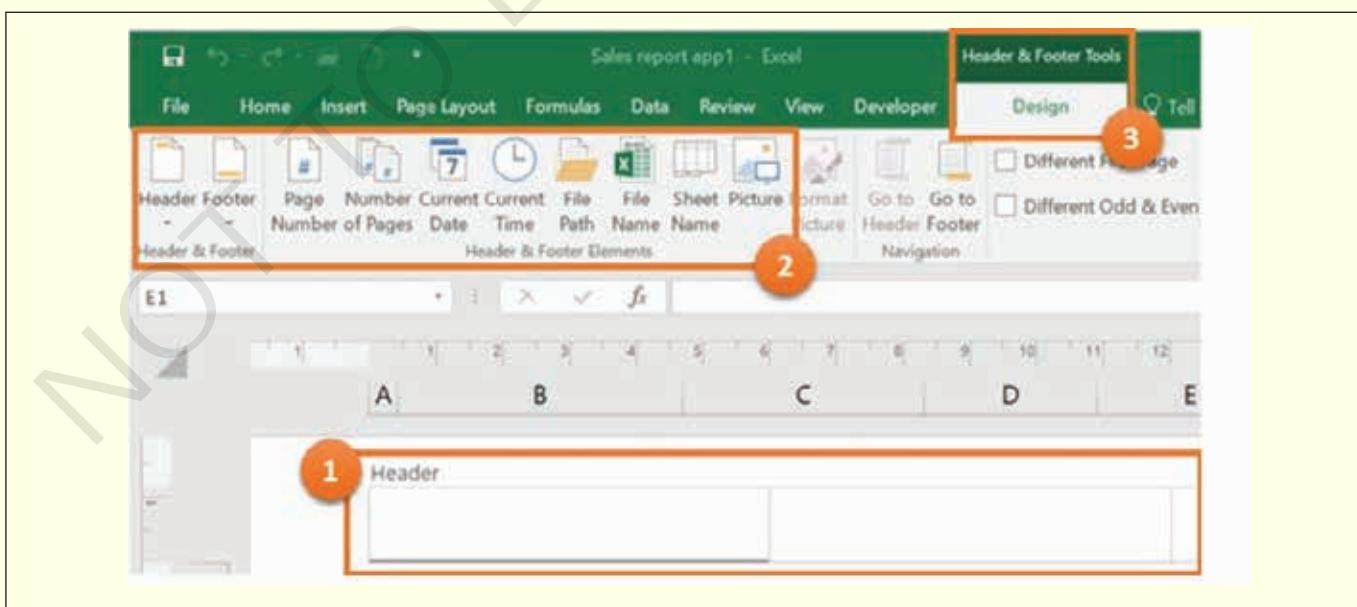
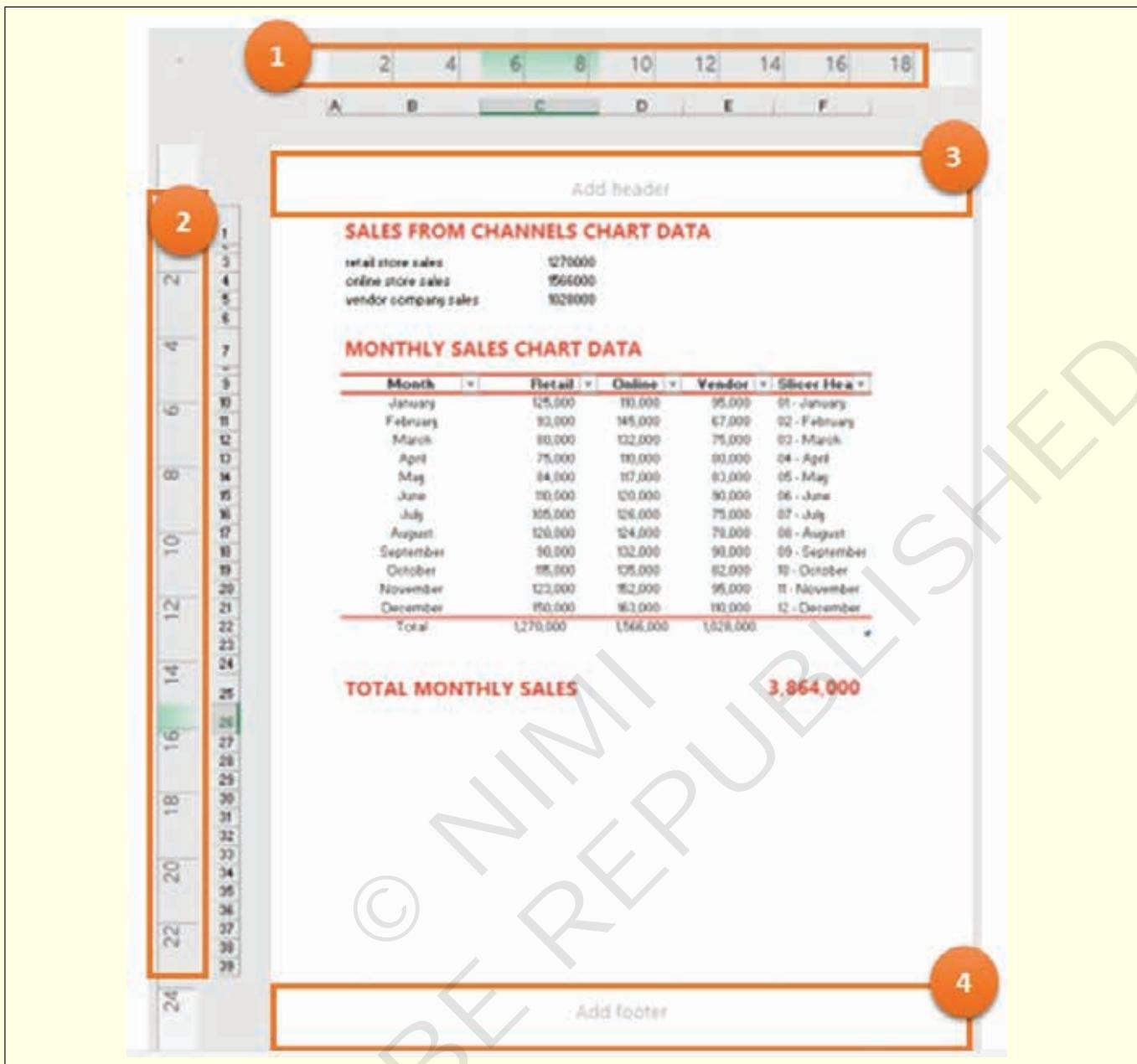
**Key features and actions that can be effected in this layout is:**

- 1 Use the horizontal ruler to resize page margin width.
- 2 Use the vertical ruler for resizing page margin height.
- 3 Click in the Header area to add content.
- 4 Click in the Footer area to add content.

You can add automatic page numbers, date, time, where the file is saved, the file name, worksheet name, images such as a company logo, typed words and numbers and more, to the header or footer region of the worksheet.

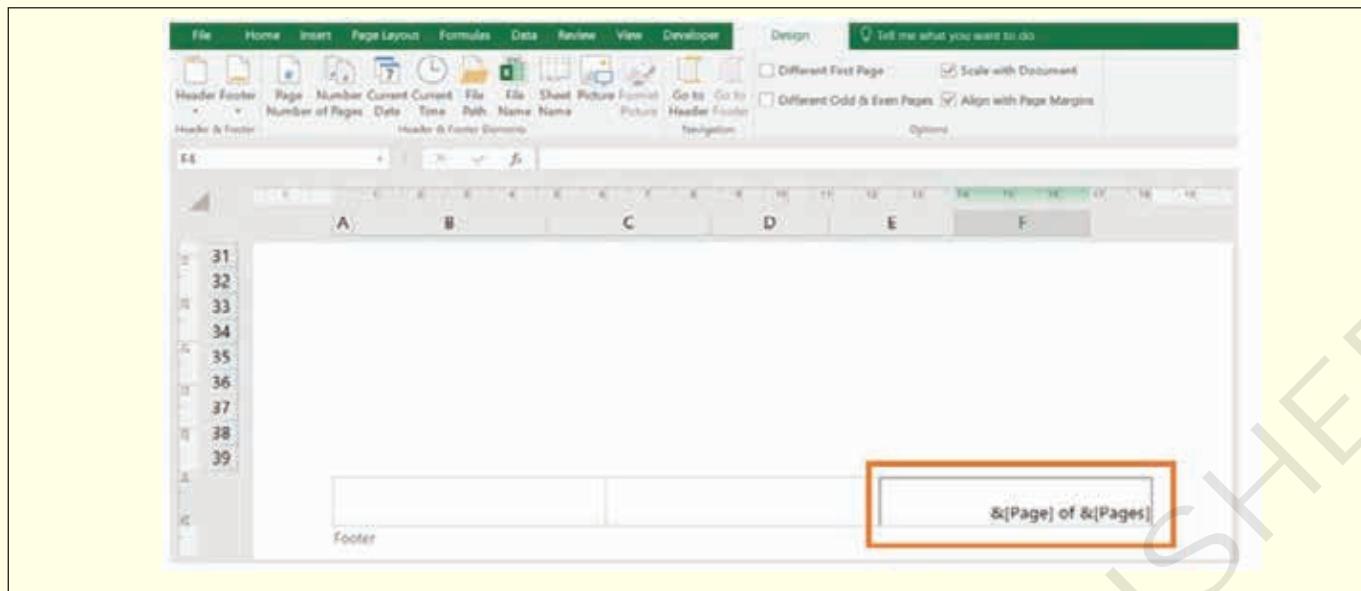
Add content to the Excel Header and Footer areas in three simple steps:

- 1 Click in the Header or Footer area.
- 2 Click on the Header & Footer Tools contextual tab (remember this only appears if you have clicked in a header or footer area).
- 3 Select content to add to the Header or Footer.



Don't be alarmed when content you add to the header or footer displays strangely as in the area outlined in orange in the screenshot below. This is Microsoft

Excel's way of storing the content, and when you exit the Header and Footer region or print the worksheet, these strange characters will disappear.



The Page Layout view in Excel will help you to create professional and aesthetically pleasing worksheets for printing or sharing in PDF format, in no time at all!

### Custom Views Excel

If none of the views listed above is exactly what you are looking for, Microsoft has added a further customizable view type, aptly named Custom Views. This option allows you to set the exact view and print settings you prefer and allows you to then apply this view to other worksheets on demand.

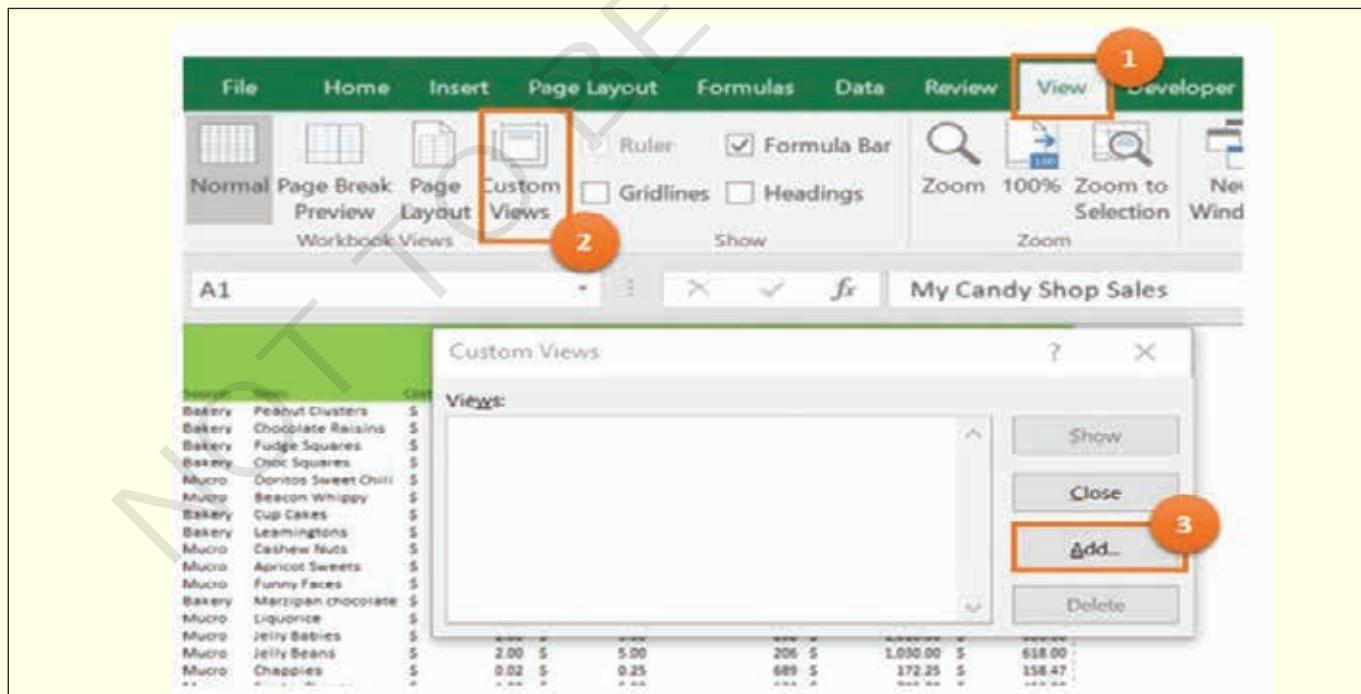
To trial the Custom View feature in Excel:

- 1 Open an existing worksheet.

- 2 Adjust the zoom to 50%. (A quick way to zoom in and out, is to hold down the control key on your keyboard whilst using the scrolling wheel on the mouse to zoom in and out).
- 3 Click on the View tab on the Ribbon and in the Show group, untick the Gridlines and Headings boxes.

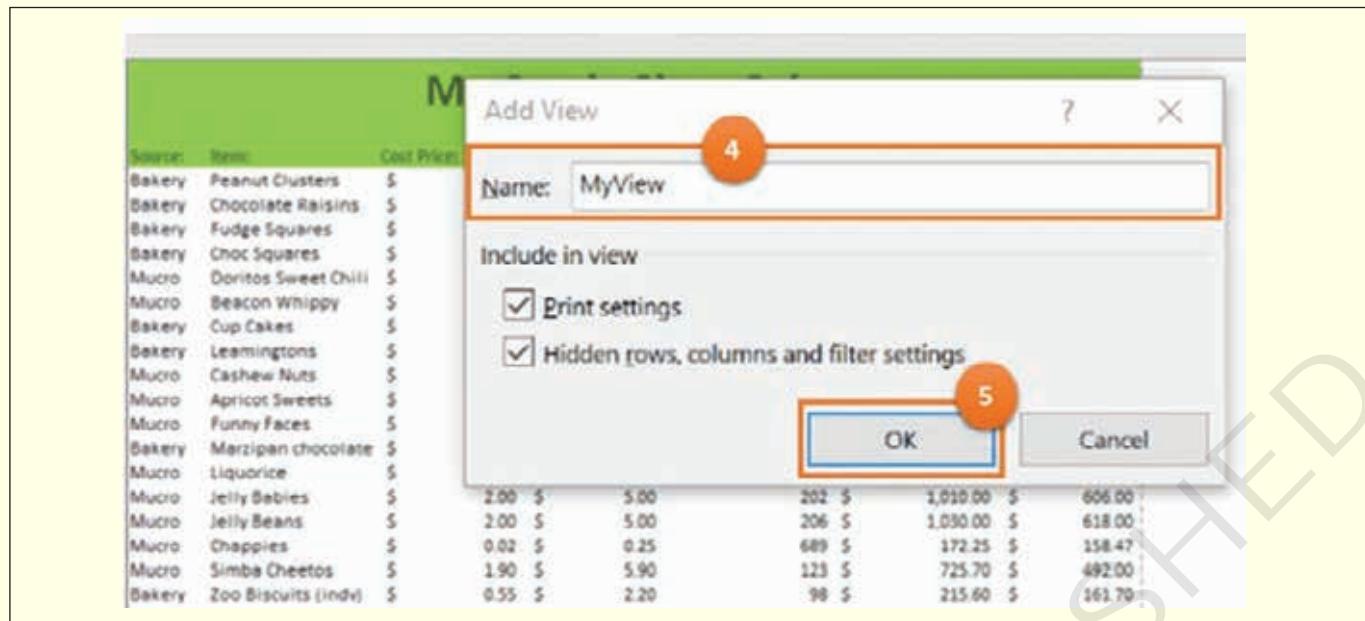
**To save the custom view created in the three steps above:**

- 1 Click on the View tab on the Ribbon.
- 2 In the Workbook Views group, click on Custom Views.
- 3 In the Custom Views dialog box, click on Add.



4 Give your custom view a name, for example, MyView.

5 Press OK to save the Custom View.



To apply the Custom View created in the steps above:

- 1 Change the zoom and re-display the gridlines and headings.
- 2 Click on the View tab on the Ribbon.
- 3 In the Workbook Views group, click on Custom Views.

4 In the Custom Views dialog box, select the name of the Custom View you created and press SHOW to apply it.

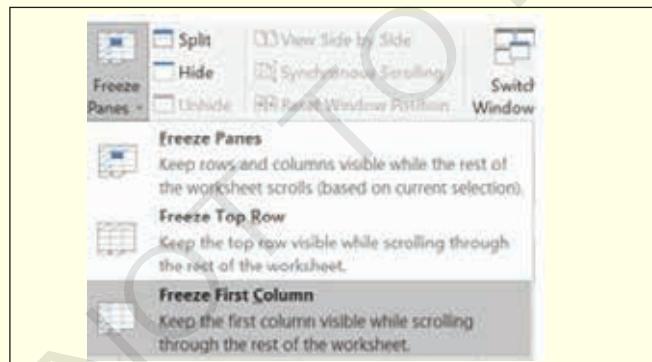
The benefit of this View is that you can zoom in and out of a worksheet or change other view settings to make it more convenient to use the worksheet whilst editing it or adding data. Once you are done, you can quickly return to your preferred view via the named Custom View you created.

## TASK 2: Freeze rows and columns

### Freeze the first column

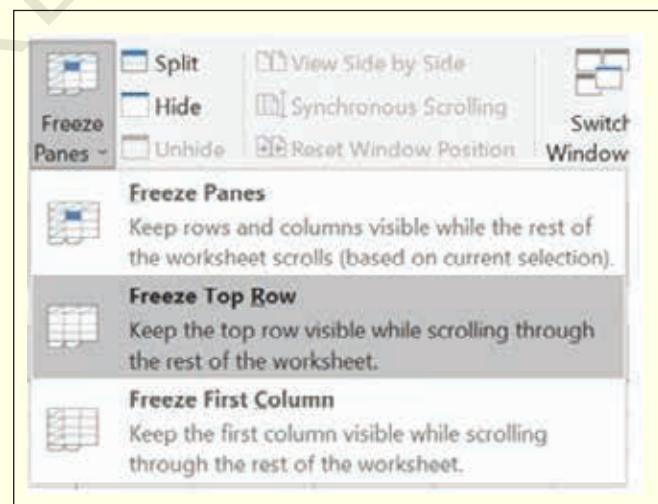
- Select the Second column.
- Select View > Freeze Panes > Freeze First Column.

The faint line that appears between Column A and B shows that the first column is frozen.



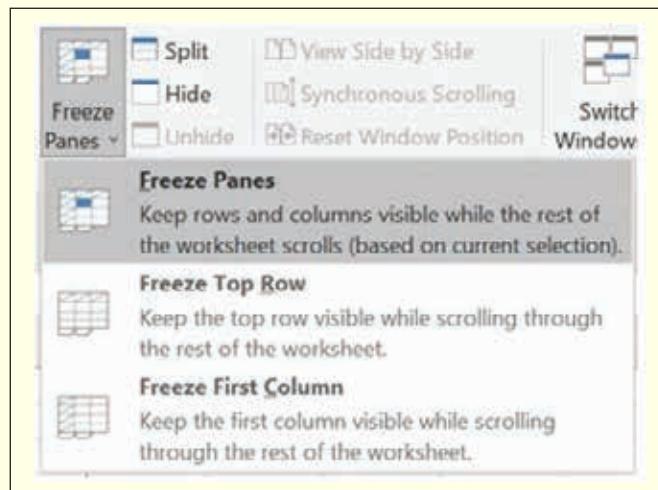
### Freeze the first row

- 1 Select the Second row
- 2 Select View > Freeze Panes > Freeze Top Row.



### Freeze columns and rows

- 1 Select the cell below the rows and to the right of the columns you want to keep visible when you scroll.
- 2 Select View > Freeze Panes > Freeze Panes.



### Unfreeze rows or columns

- On the View tab > Window > Unfreeze Panes.

**Note:** If you don't see the View tab, it's likely that you are using Excel Starter. Not all features are supported in Excel Starter.

### TASK 3: Change window views

#### Switch to full or normal screen view in Excel

To view more data on the screen, you can temporarily switch to full screen view. Full screen view hides the Microsoft Office Fluent user interface Ribbon, the formula bar, and the status bar. To have access to the hidden elements again, you have to return to normal screen view.

### TASK 4: Modify basic workbook properties

- Click the File tab.
- Click Info.
- Click Properties at the top of the page, and then select Advanced Properties.

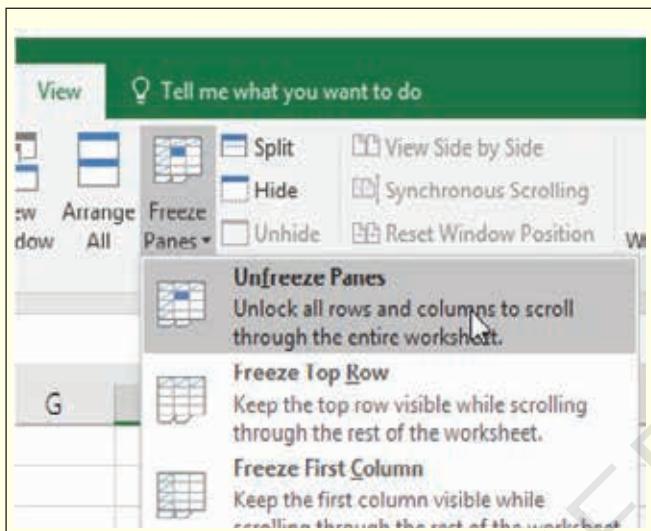
#### Notes:

- In Access you'd select View and edit database properties
- In Project you'd select Project Information
- In Publisher you'd select Publication Properties
- Currently, you can't view or create custom properties for Visio files

### TASK 5: Display formulas

#### Show/Hide Formulas

By default, Excel displays the results of formulas in the worksheet instead of showing the actual formulas. However, you can choose to have Excel display the formulas so you can see how they're put together.



- To switch to full screen view, press **CTRL+SHIFT+F1**.
- To return to normal screen view, press **CTRL+SHIFT+F1** again.

**Tip:** Still can't see everything? Press **ALT+SPACE** and select Maximize.

- Click the Custom tab.

- In the Name box, type a name for the custom property, or select a name from the list.
- In the Type list, select the data type for the property that you want to add.
- In the Value box, type a value for the property. The value that you type must match the selection in the Type list.

- Click the Formulas tab.

- Click the Show Formulas button.

1 Bon Voyage Excursions

|   | Excursion    | Jan            | Feb           | Mar            | Total          |
|---|--------------|----------------|---------------|----------------|----------------|
| 4 | Beijing      | 6,010          | 7,010         | 6,520          | 19,540         |
| 5 | Las Vegas    | 35,250         | 28,125        | 37,455         | 100,830        |
| 6 | Mexico City  | 20,850         | 17,200        | 27,010         | 65,060         |
| 7 | Paris        | 33,710         | 29,175        | 35,840         | 98,725         |
| 8 | Tokyo        | 12,510         | 14,750        | 11,490         | 38,750         |
| 9 | <b>Total</b> | <b>108,330</b> | <b>96,260</b> | <b>118,315</b> | <b>322,905</b> |

Formulas are displayed in the worksheet and the columns widen to accommodate the formulas, if necessary.

If you display formulas and then select a cell that contains a formula, colored lines appear around cells that are referenced by the formula.

- 3 Click the Show Formulas button again to hide the formulas.

1 Bon Voyage Excursions

|   | Excursion    | Jan                | Feb                | Mar                | Total              |
|---|--------------|--------------------|--------------------|--------------------|--------------------|
| 4 | Beijing      | 6010               | 7010               | 6520               | =SUM(B4:D4)        |
| 5 | Las Vegas    | 35250              | 28125              | 37455              | =SUM(B5:D5)        |
| 6 | Mexico City  | 20850              | 17200              | 27010              | =SUM(B6:D6)        |
| 7 | Paris        | 33710              | 29175              | 35840              | =SUM(B7:D7)        |
| 8 | Tokyo        | 12510              | 14750              | 11490              | =SUM(B8:D8)        |
| 9 | <b>Total</b> | <b>=SUM(B4:B8)</b> | <b>=SUM(C4:C8)</b> | <b>=SUM(D4:D8)</b> | <b>=SUM(E4:E8)</b> |

Formulas are no longer displayed and the columns return to their original sizes.

### Highlight Formulas

If you don't want to see the actual formulas, but want to know which cells contain them, highlight cells with formulas instead.

1 Click the Home tab.

2 Click the Find & Select button.

3 Select Formulas.

Any cells that contain a formula are highlighted; however, this doesn't change the cell formatting. When you click any other cell in the worksheet, the highlighted cells are unselected.

The screenshot shows a Microsoft Excel spreadsheet titled "08-display-formulas.xlsx". The "Home" tab is selected in the ribbon. The "Cells" dropdown menu is open, and the "Select Objects" option is highlighted. The table in the worksheet contains the following data:

| 1 Bon Voyage Excursions |                |               |                |                |    |
|-------------------------|----------------|---------------|----------------|----------------|----|
| Excursion               | Jan            | Feb           | Mar            | Total          |    |
| Beijing                 | 6,010          | 7,010         | 6,520          | 19,540         | 1  |
| Las Vegas               | 35,250         | 28,125        | 37,455         | 98,830         | 10 |
| Mexico City             | 20,850         | 17,200        | 27,010         | 65,060         | 6  |
| Paris                   | 33,710         | 29,175        | 35,840         | 98,725         | 7  |
| Tokyo                   | 12,510         | 14,750        | 11,490         | 38,750         | 8  |
| <b>Total</b>            | <b>108,330</b> | <b>96,260</b> | <b>118,315</b> | <b>322,905</b> |    |

## Configure content for collaboration

**Objectives:** At the end of this exercise you shall be able to

- set a print area
- save workbooks in alternative file formats
- configure print settings.

### Requirements

#### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

## PROCEDURE

### TASK 1: Set a print area

There are two ways to specify the workbook data that is printed: setting the print area and adjusting the page breaks.

#### Set the Print Area

Sometimes you may only want to print part of a worksheet. You can define an area so that any time you print, only that cell range is printed.

- 1 Select the cells you want to print.
- 2 Click the Page Layout tab.
- 3 Click the Print Area button.
- 4 Select Set Print Area.

| Date   | Agent        | Office      | Excursion | Price | Packages | Total  |
|--------|--------------|-------------|-----------|-------|----------|--------|
| Jan 2  | Kerry Oki    | Minneapolis | Paris     | 5,500 | 3        | 16,500 |
| Jan 3  | Kerry Oki    | Minneapolis | México DF | 4,500 | 2        | 9,000  |
| Jan 3  | Paul Tron    | Paris       | México DF | 4,500 | 4        | 18,000 |
| Jan 3  | Nena Moran   | Torreón     | Beijing   | 7,000 | 3        | 21,000 |
| Jan 4  | Kerry Oki    | Minneapolis | México DF | 4,500 | 2        | 9,000  |
| Jan 5  | Robin Banks  | Minneapolis | Las Vegas | 3,500 | 2        | 7,000  |
| Jan 8  | Camille Orne | Paris       | Paris     | 5,500 | 6        | 33,000 |
| Jan 8  | Paul Tron    | Paris       | México DF | 4,500 | 7        | 31,500 |
| Jan 9  | Kerry Oki    | Minneapolis | Paris     | 5,500 | 4        | 22,000 |
| Jan 10 | Camille Orne | Paris       | Beijing   | 7,000 | 2        | 14,000 |
| Jan 10 | Paul Tron    | Paris       | Paris     | 5,500 | 2        | 11,000 |
| Jan 11 | Paul Tron    | Paris       | Beijing   | 7,000 | 3        | 21,000 |

Once a print area is set, add additional print areas by selecting the additional cells, clicking the Print Area button, and selecting Add to Print Area.

A dark gray border appears around the print area. When you print, only the cells within that range appear on the page.

## Remove a Print Area

- 1 Click the Page Layout tab.
- 2 Click the Print Area button.

### 3 Select Clear Print Area.

The print area is cleared and the entire worksheet will print once again.

A screenshot of Microsoft Excel showing the 'Page Layout' tab selected in the ribbon. Step 1 highlights the 'Print Area' button in the ribbon. Step 2 highlights the 'Print Area' dropdown menu. Step 3 highlights the 'Clear Print Area' option in the dropdown menu. A data table is visible below the ribbon.

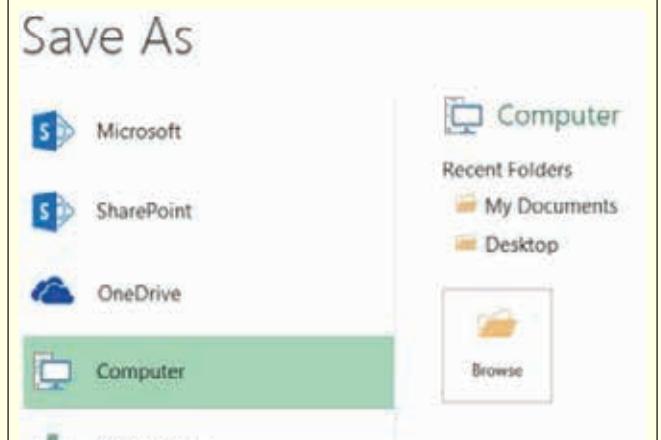
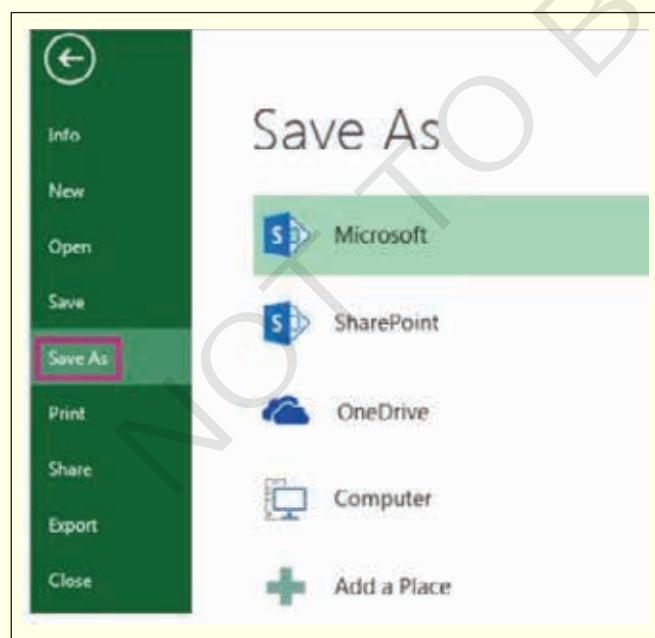
| Date   | Agent        | Office      | Excursion | Price | Packages | Total  |
|--------|--------------|-------------|-----------|-------|----------|--------|
| Jan 2  | Kerry Oki    | Minneapolis | Paris     | 5,500 | 3        | 16,500 |
| Jan 3  | Kerry Oki    | Minneapolis | México DF | 4,500 | 2        | 9,000  |
| Jan 3  | Paul Tron    | Paris       | México DF | 4,500 | 4        | 18,000 |
| Jan 3  | Nena Moran   | Torreón     | Beijing   | 7,000 | 3        | 21,000 |
| Jan 4  | Kerry Oki    | Minneapolis | México DF | 4,500 | 2        | 9,000  |
| Jan 5  | Robin Banks  | Minneapolis | Las Vegas | 3,500 | 2        | 7,000  |
| Jan 8  | Camille Orne | Paris       | Paris     | 5,500 | 6        | 33,000 |
| Jan 8  | Paul Tron    | Paris       | México DF | 4,500 | 7        | 31,500 |
| Jan 9  | Kerry Oki    | Minneapolis | Paris     | 5,500 | 4        | 22,000 |
| Jan 10 | Camille Orne | Paris       | Beijing   | 7,000 | 2        | 14,000 |
| Jan 10 | Paul Tron    | Paris       | Paris     | 5,500 | 2        | 11,000 |
| Jan 11 | Paul Tron    | Paris       | Beijing   | 7,000 | 3        | 21,000 |

## TASK 2: Save workbooks in alternative file formats

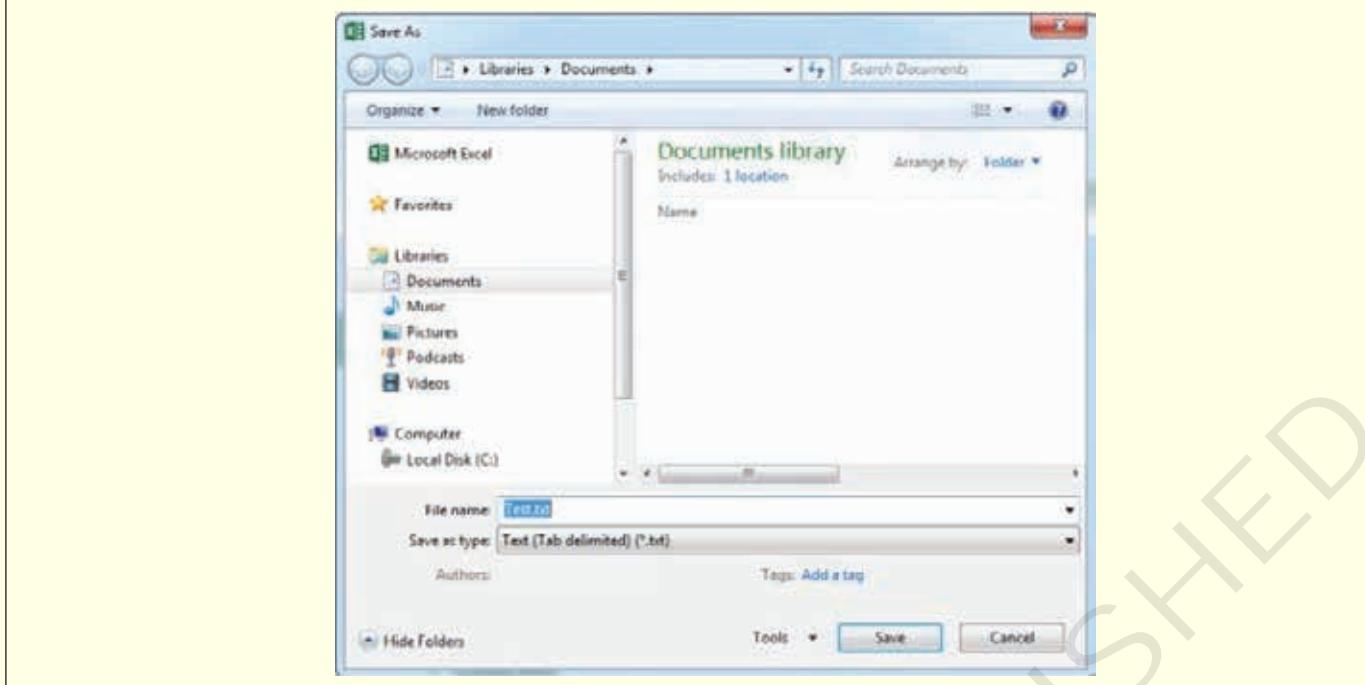
For a list of file formats (also called file types) you can (and can't) open or save in **Excel**.

- 1 Open the workbook you want to save.
- 2 Click File > Save As.

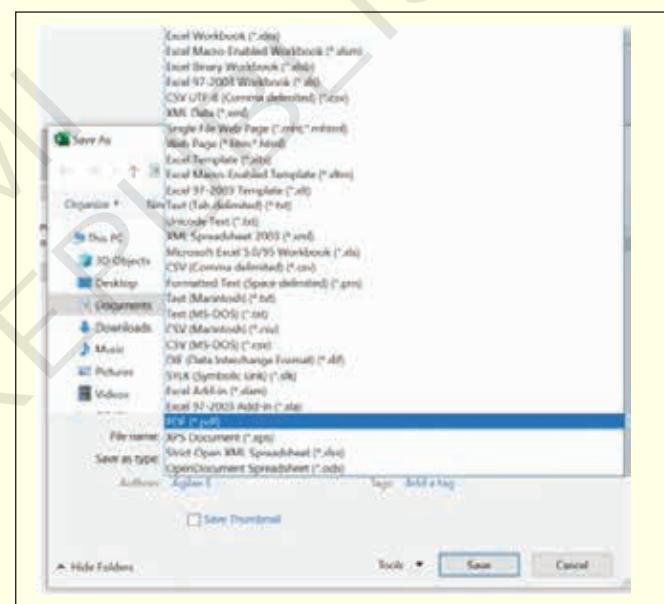
- 3 Under Places, pick the place where you want to save the workbook. For example, pick OneDrive to save it to your Web location or Computer to save it in a local folder like your Documents.



- 4 In the Save As dialog box, navigate to the location you want.



- 5 In the Save as type list, click the file format you want. Click the arrows to scroll to file formats that aren't visible in the list.
- 6 In the File name box, accept the suggested name or type a new name for the workbook



### TASK 3: Configure print settings

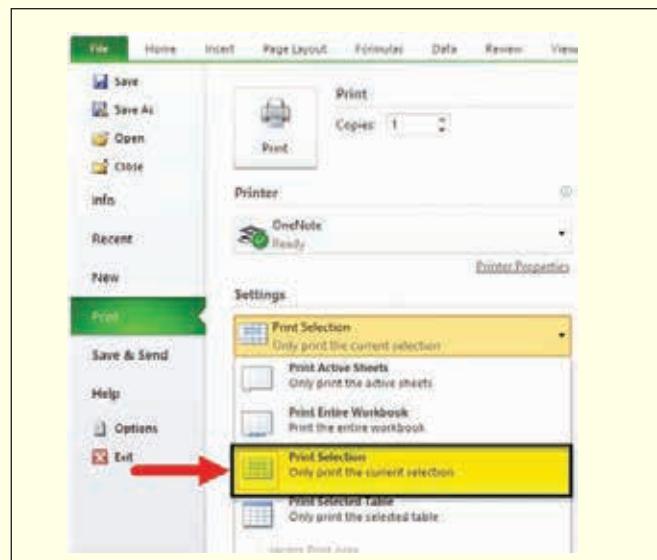
#### Option #1 How to Print entire workbook with N number of copies in MS Excel

**Step 1:** Go to Excel Sheet, which a user wants to print. Open the File menu bar and click on print

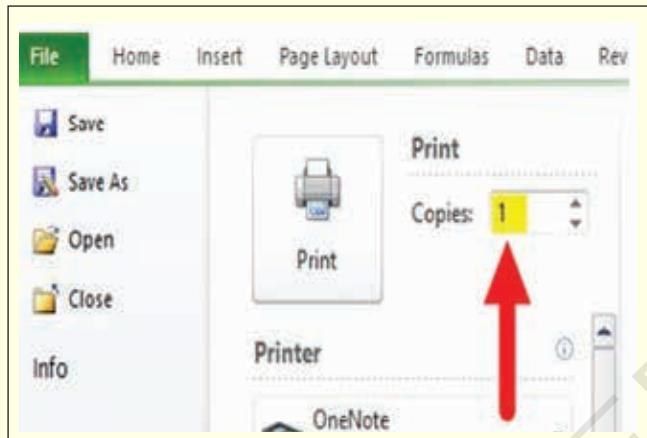


**Step 2:** Now Print setting will open, then under the Setting section, select 'Print

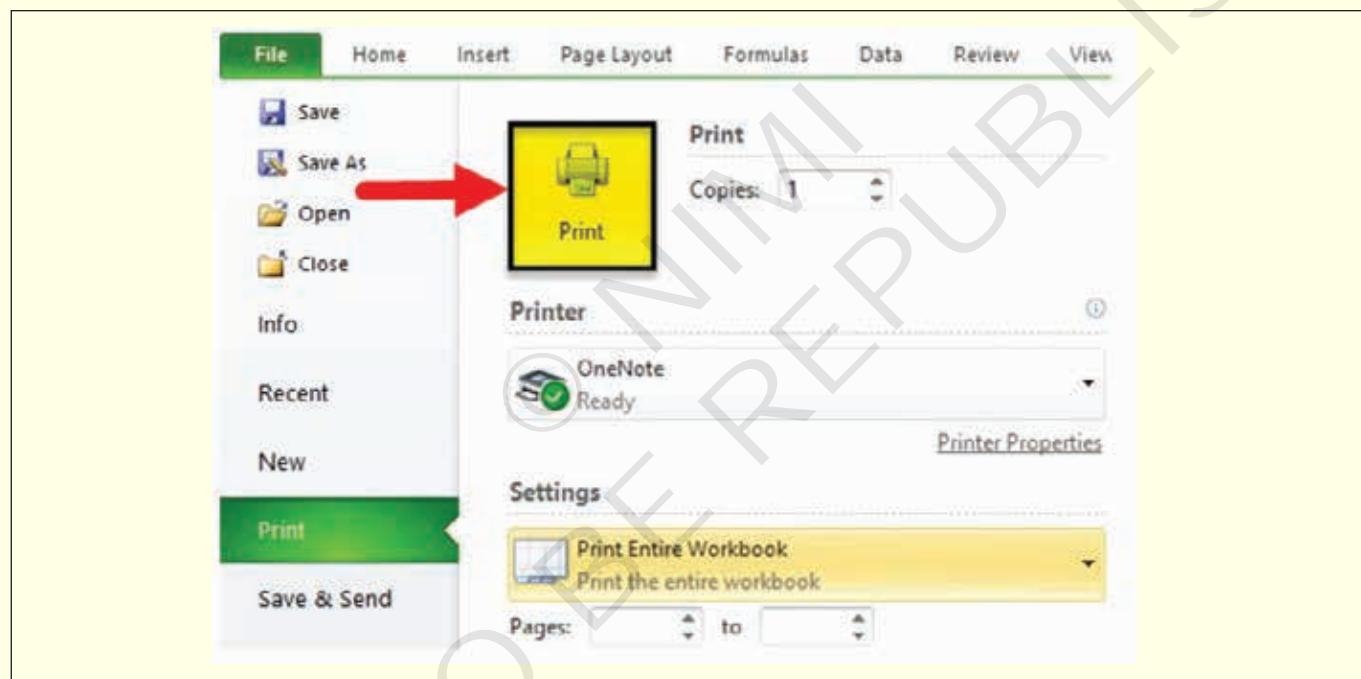
Entire workbook'



**Step 3:** Now click on the number of copies needed by the user



**Step 4:** To print the workbook, click on the print button.

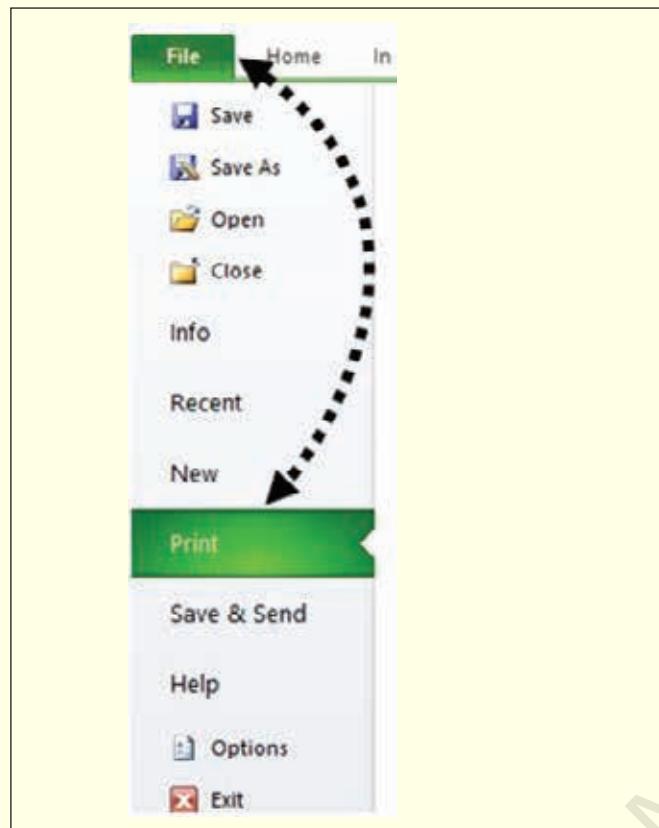


**Summary:** As the user has given instruction in print command, it will print that no of pages with an entire workbook.

**Option #2 How to Print selected area workbook with the page orientation in MS Excel**

|   | A              | B          | C       | D              | E             | F                |
|---|----------------|------------|---------|----------------|---------------|------------------|
| 1 | Name           | CMP Rs.    | P/E     | Mar Cap Rs.Cr. | NP Qtr Rs.Cr. | Sales Qtr Rs.Cr. |
| 2 | Hind. Unilever | ₹ 1,732.20 | ₹ 64.05 | ₹ 374,960.49   | ₹ 1,525.00    | ₹ 9,234.00       |
| 3 | Colgate-Palm.  | ₹ 1,227.95 | ₹ 45.69 | ₹ 33,398.48    | ₹ 196.37      | ₹ 1,168.03       |
| 4 | P & G Hygiene  | ₹ 9,289.65 | ₹ 74.80 | ₹ 30,154.89    | ₹ 144.11      | ₹ 791.80         |
| 5 | Gillette India | ₹ 6,498.10 | ₹ 92.05 | ₹ 21,177.31    | ₹ 65.35       | ₹ 456.51         |
| 6 |                |            |         |                |               |                  |

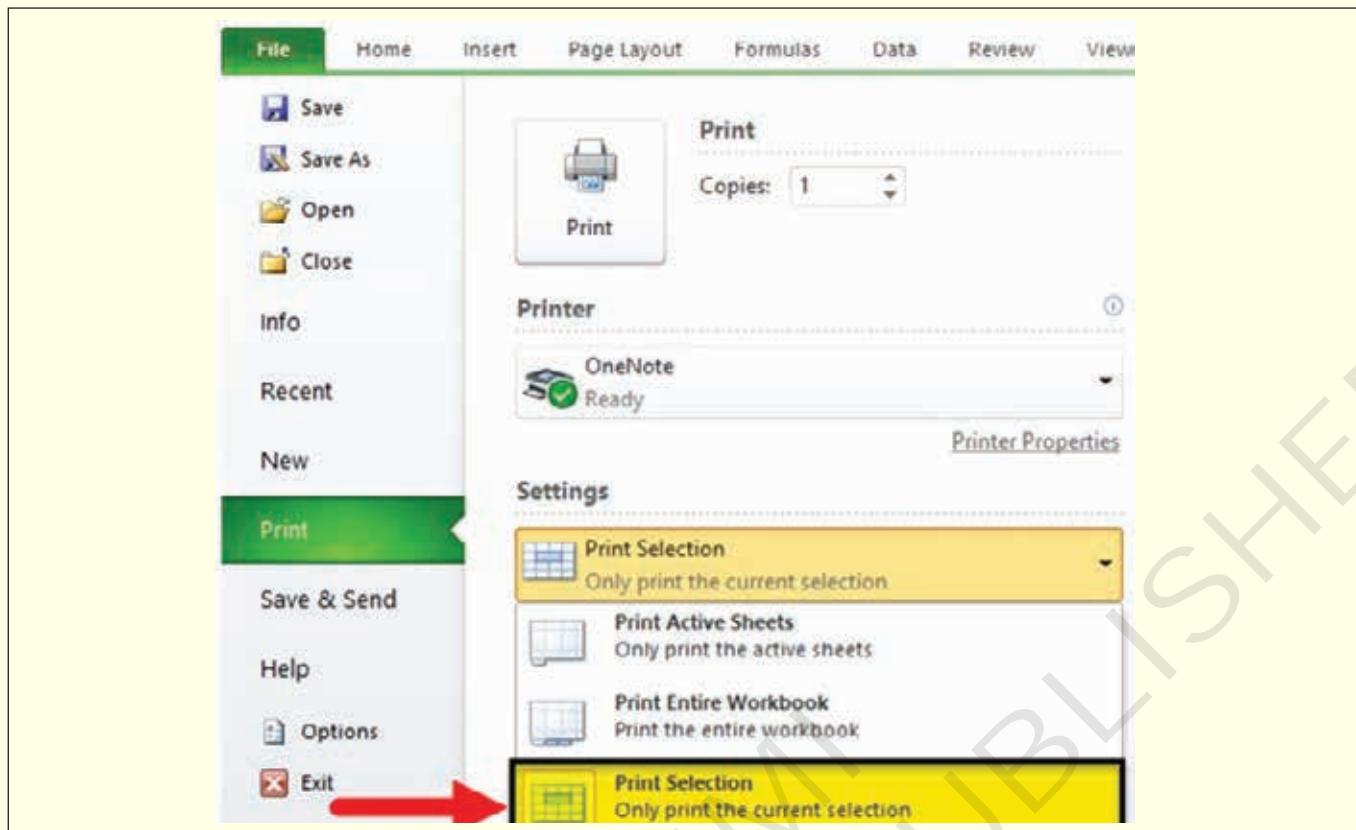
**Step 2:** Open the File menu bar and click on the Print tab.



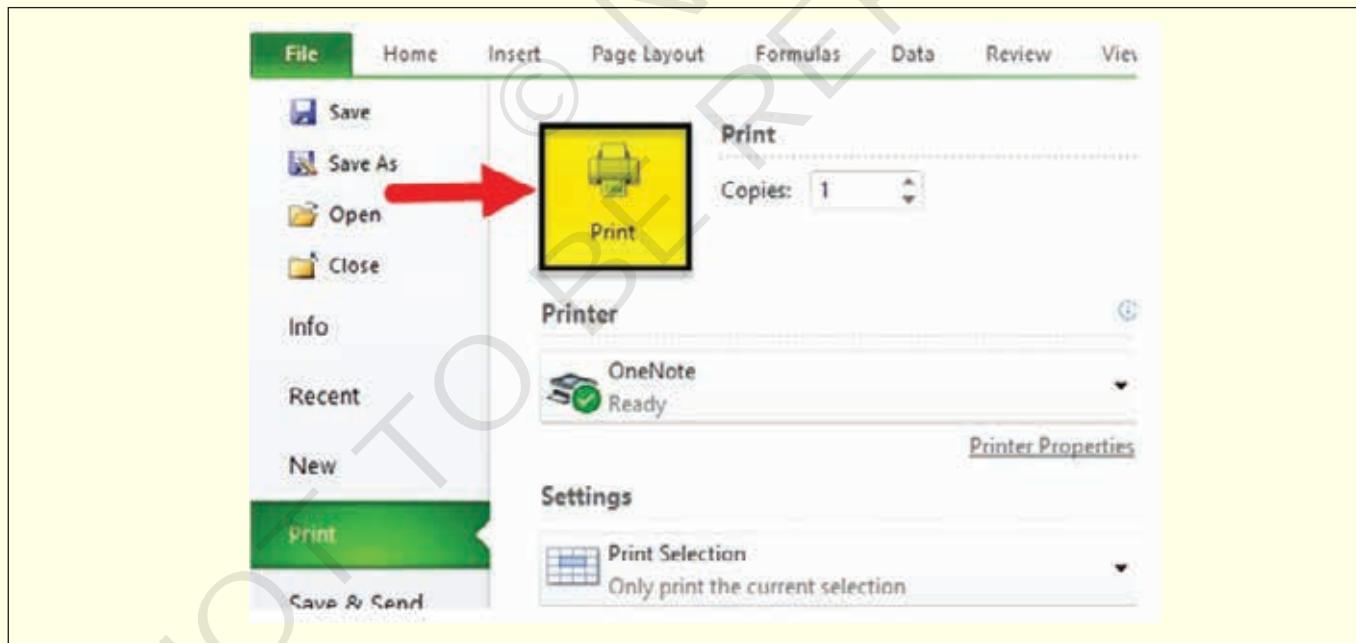
**Step 3:** Now Print setting will open, then under the Setting section, select 'Print selection'

A screenshot of the Microsoft Excel Print dialog box. The 'Print' tab is selected in the ribbon. The 'Printer' dropdown shows 'OneNote Ready'. In the 'Settings' section, a red arrow points to the 'Print Selection' option, which is highlighted with a yellow background. This option is described as 'Only print the current selection'. Other options in the list are 'Print Active Sheets' (Only print the active sheets), 'Print Entire Workbook' (Print the entire workbook), 'Print Selected Table' (Only print the selected table), and 'Ignore Print Area'.

**Step 4:** Now click on the orientation of the page needed by the user.



**Step 5:** Click on the print button to print the workbook as per the setting.

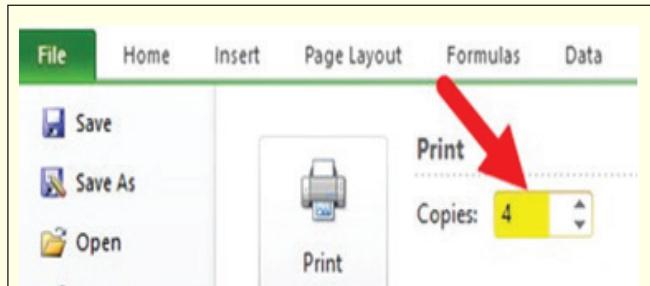


**Summary:** As per the given instruction in the print command, it will print with the selected area only in landscape orientation.

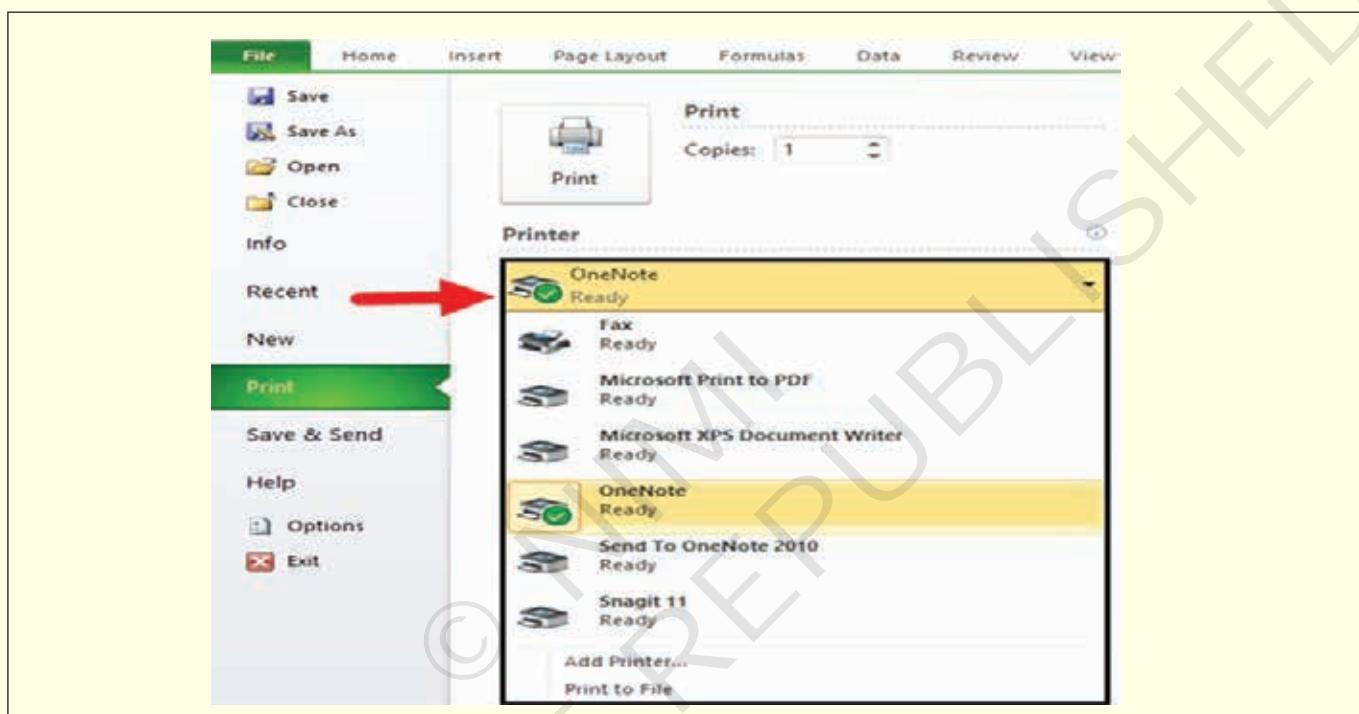
| Name              | CAPITAL    | P/E     | Market Capitalization | NP-Off-Bk-O | Sales On Balance |
|-------------------|------------|---------|-----------------------|-------------|------------------|
| United Breweries  | R 1,732.20 | R 64.05 | R 374,900.49          | R 1,525.00  | R -92,34.00      |
| Colgate-Palmolive | R 1,277.95 | R 45.09 | R 33,398.48           | R 196.37    | R 1,168.03       |
| P & G Fragrances  | R 9,398.05 | R 74.80 | R 3,0154.89           | R 144.11    | R 791.80         |
| Gillette India    | R 6,486.50 | R 82.05 | R 21,177.31           | R 65.35     | R 456.51         |

## Print Settings

**Multiple Copies:** If a user wants to print more than one copy, he just needs to count how many copies he wants to print in the Copies section.



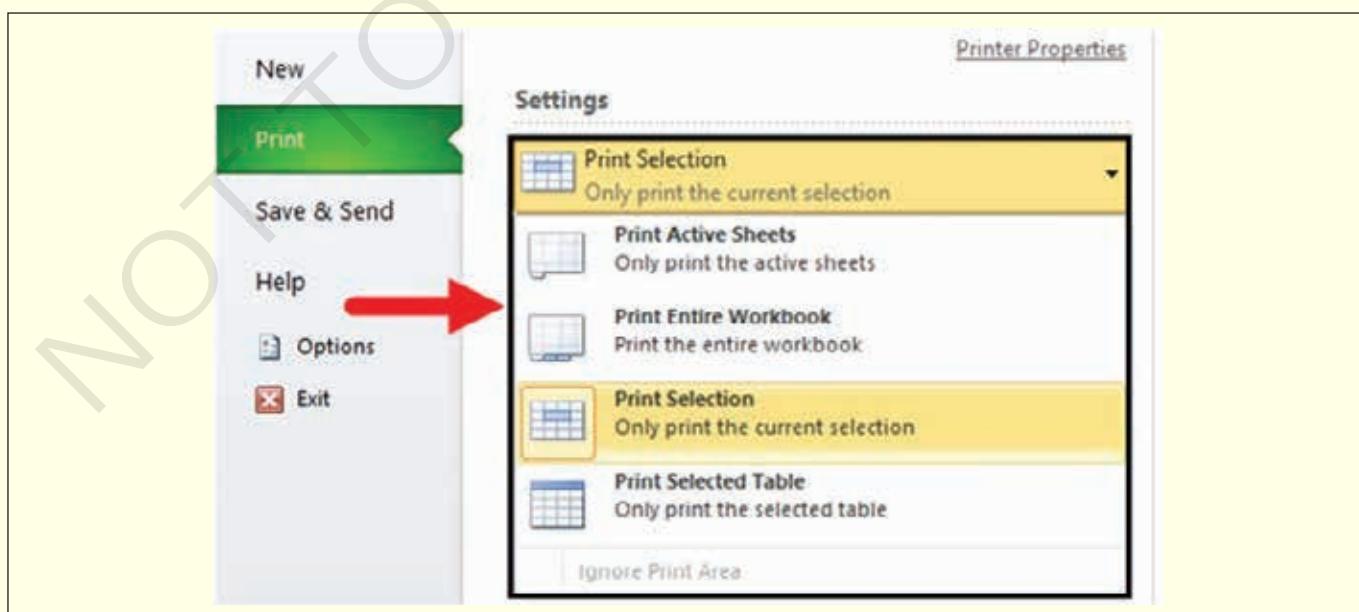
**Select Printer:** There are multiple options to save the workbook; as per the users need; he can select options in the added printer, save as PDF, OneNote, XPS document writer, send FAX or add any new printer.



**Print selection:** This option will print only the current selection in the print command.

**Print Entire Workbook:** This option will print all the workbook pages.

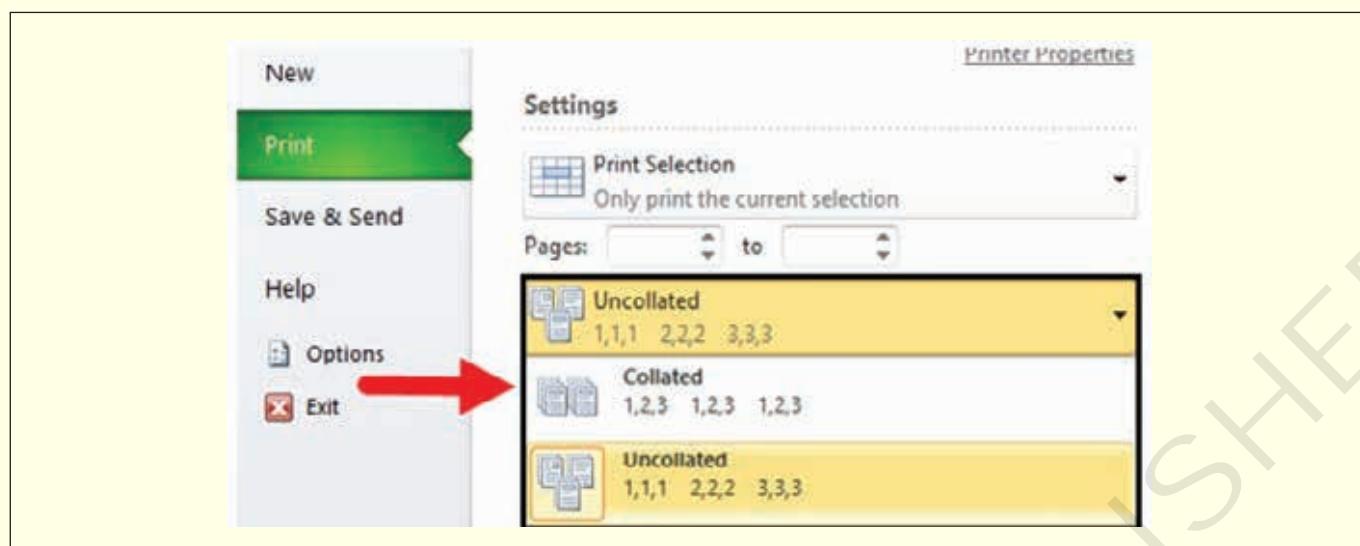
**Print Active sheets:** This option will print only the active sheet in the workbook.



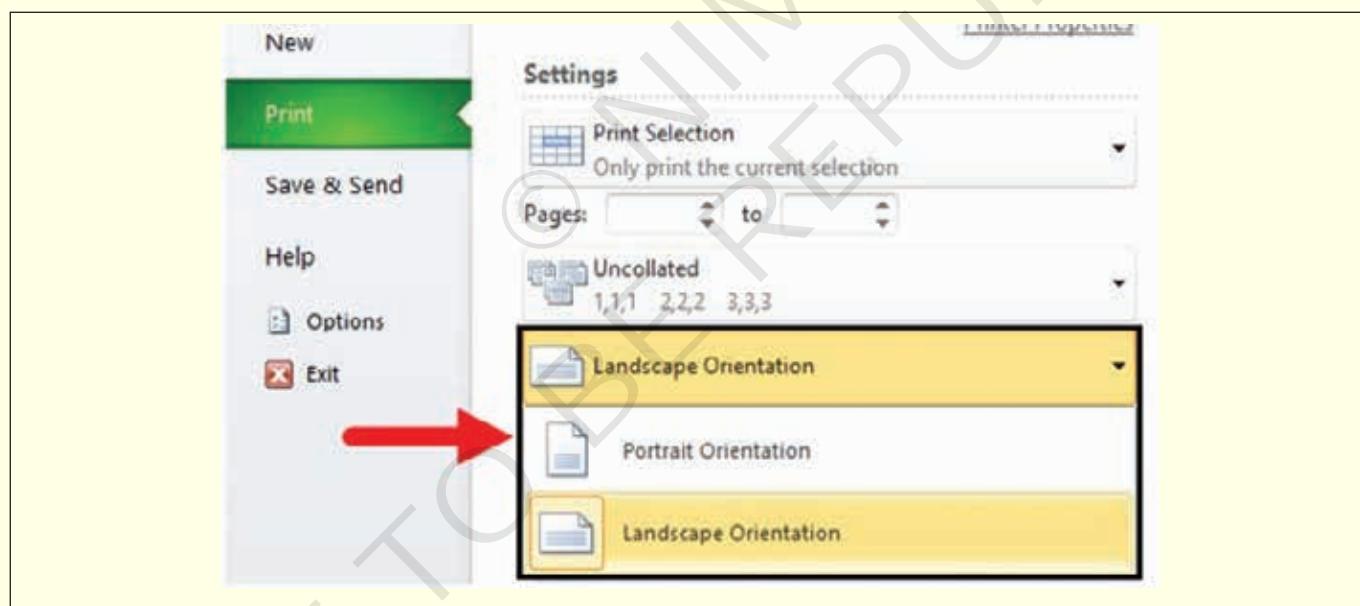
**Collated:** If a user's workbook contains multiple pages, then there is an option to switch between Collated and Uncollated for a print command.

For example, if the user wants to print 10 copies from a workbook, Collated prints the entire first copy and then the entire second copy.

Or if the user is selecting Uncollated prints 10 copies of page 1, 10 copies of page 2, etc.



**Orientation:** A user can switch between Portrait Orientation (best when more rows but fewer columns on a page) and Landscape Orientation (best when more columns but fewer rows on a page).



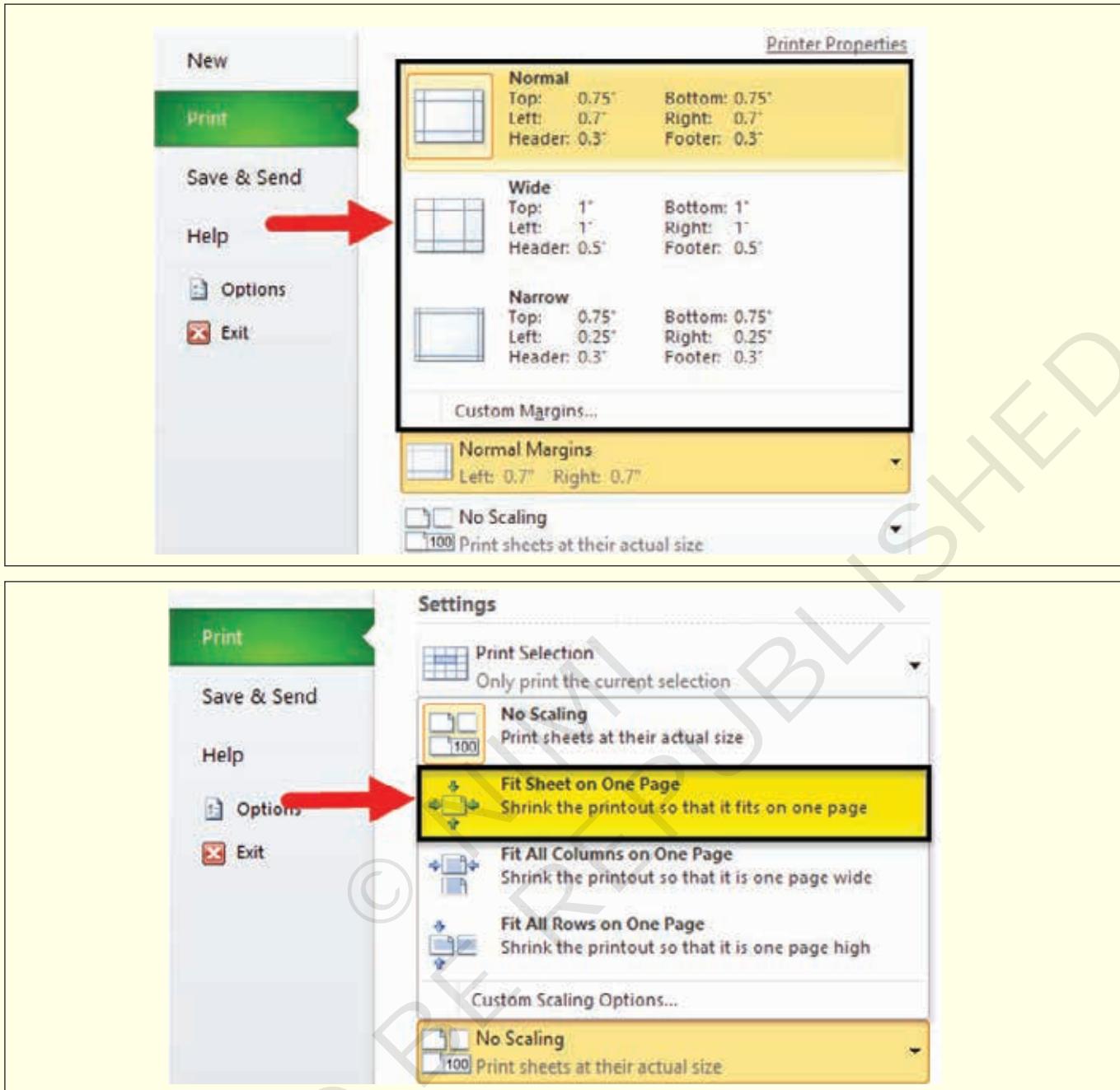
**Page Margins:** If a user wants to adjust the page margins, he can do so by following the below steps.

**Step 1** – By selecting one of the pre-defined margins (Normal, Wide, or Narrow) from the Margins drop-down list.

**Step 2** – Or click the 'Show Margins' icon at the bottom right of the window. Now a user can drag the lines to change the page margins manually.

**Scaling:** If a user wants to fit more and more data on a single page, then he can fit the sheet on one page. To get these settings, he needs to follow the below process.

- Select 'Fit Sheet on One Page' from the Scaling drop-down list.



## COPA - Manage Data Cells and Ranges

### Manipulate data

**Objectives:** At the end of this exercise you shall be able to

- **paste data by using special paste options**
- **fill cells by using Auto Fill**
- **insert and delete multiple columns or rows**
- **insert and delete cells.**

### Requirements

#### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

#### TASK 1: Paste data by using special paste options

##### Paste menu options (on the ribbon)

Select Home, select the clipboard icon (Paste) and pick the specific paste option you want. For example, to paste only formatting from the copied cell, select

Formatting  . This table shows the options available in the Paste menu:

| Icon                                                                                | Option name                | What is pasted                                                                                                                                  |
|-------------------------------------------------------------------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Paste                      | All cell contents.                                                                                                                              |
|  | Keep Source Column Widths  | Copied cell content along with its column width.                                                                                                |
|  | Transpose                  | Reorients the content of copied cells when pasting. Data in rows is pasted into columns and vice versa.                                         |
|  | Formulas                   | Formula(s), without formatting or comments.                                                                                                     |
|  | Values                     | Formula results, without formatting or comments.                                                                                                |
|  | Formatting                 | Only the formatting from the copied cells.                                                                                                      |
|  | Values & Source Formatting | Values and formatting from copied cells.                                                                                                        |
|  | Paste Link                 | Reference to the source cells instead of the copied cell contents.                                                                              |
|  | Picture                    | Copied image.                                                                                                                                   |
|  | Linked Picture             | Copied image with a link to the original cells (if you make any changes to the original cells those changes are reflected in the pasted image). |

## Paste Special

To use options from the Paste Special box, select Home, select the clipboard icon (Paste), and select Paste Special.

Keyboard Shortcut: Press **Ctrl+Alt+V**.

In the Paste Special box, pick the attribute you want to paste.

**Note:** Depending on the type of data you copied and the Paste option you picked, some other options might be grayed out.



| Paste option                    | Action                                                                                           |
|---------------------------------|--------------------------------------------------------------------------------------------------|
| All                             | Pastes all cell contents and formatting of the copied data.                                      |
| Formulas                        | Pastes only the formulas of the copied data as entered in the formula bar.                       |
| Values                          | Pastes only the values of the copied data as displayed in the cells.                             |
| Formats                         | Pastes only cell formatting of the copied data.                                                  |
| Comments and Notes              | Pastes only comments and notes attached to the copied cell.                                      |
| Validation                      | Pastes data validation rules for the copied cells to the paste area.                             |
| All using Source theme          | Pastes all cell contents in the document theme formatting that is applied to the copied data.    |
| All except borders              | Pastes all cell contents and formatting applied to the copied cell except borders.               |
| Column widths                   | Pastes the width of one copied column or range of columns to another column or range of columns. |
| Formulas and number formats     | Pastes only formulas and all number formatting options from the copied cells.                    |
| Values and number formats       | Pastes only values and all number formatting options from the copied cells.                      |
| All merging conditional formats | Pastes the contents and conditional formatting options from the copied cells.                    |

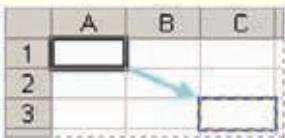
You can also specify a mathematical operation to apply to the copied data.

| Operation     | Action                                                                                                             |
|---------------|--------------------------------------------------------------------------------------------------------------------|
| None          | Specifies that no mathematical operation will be applied to the copied data.                                       |
| Add           | Adds the copied data to the data in the destination cell or range of cells.                                        |
| Subtract      | Subtracts the copied data from the data in the destination cell or range of cells.                                 |
| Multiply      | Multiplies the copied data with the data in the destination cell or range of cells.                                |
| Divide        | Divides the copied data by the data in the destination cell or range of cells.                                     |
| Other options | Action                                                                                                             |
| Skip blanks   | Avoids replacing values in your paste area when blank cells occur in the copy area when you select this check box. |
| Transpose     | Changes columns of copied data to rows and vice versa when you select this check box.                              |
| Paste Link    | Click to create a link to the copied cell(s).                                                                      |

## Verify and fix cell references in a pasted formula

**Note:** Cell references are automatically adjusted when you cut (not copy) and paste formulas.

After you paste a copied formula, you should verify that all cell references are correct in the new location. The cell references may have changed based on the reference type (absolute, relative, or mixed) used in the formula.



For example, if you copy a formula in cell A1 and paste it two cells down and to the right (C3), cell references in the pasted formula will change as follows:

## TASK 2: Fill cells by using Auto Fill

- 1 Select one or more cells you want to use as a basis for filling additional cells.

For a series like 1, 2, 3, 4, 5..., type 1 and 2 in the first two cells. For the series 2, 4, 6, 8..., type 2 and 4.

### This reference:

\$A\$1 (absolute column and absolute row)

\$A\$1

A\$1 (relative column and absolute row)

C\$1

\$A1 (absolute column and relative row)

\$A3

A1 (relative column and relative row)

C3

If cell references in the formula don't give you the result you want, try switching to different reference types:

- 1 Select the cell containing the formula.

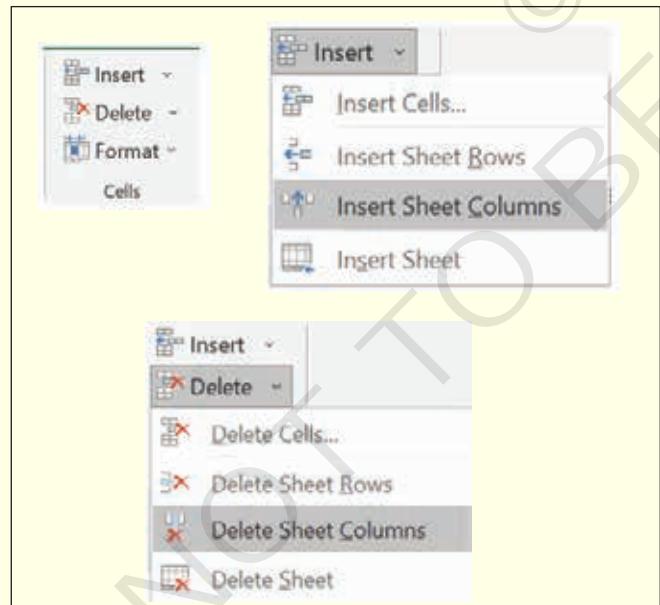
2 In the formula bar , select the reference you want to change.

3 Press F4 to switch between the reference combinations, and choose the one you want.

## TASK 3: Insert and delete multiple columns or rows

### Insert or delete a column

- 1 Select any cell within the column, then go to Home > Insert > Insert Sheet Columns or Delete Sheet Columns.



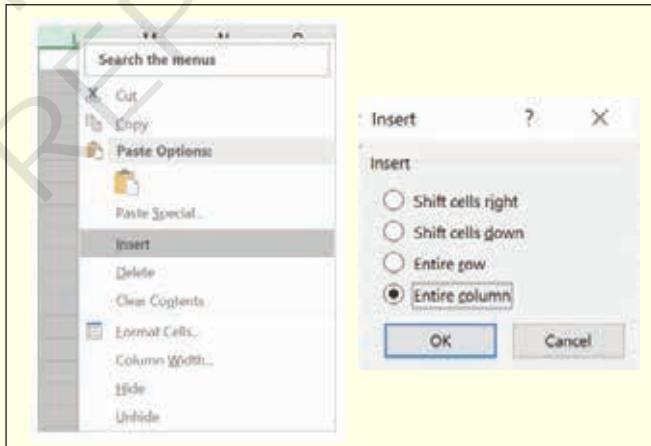
- 2 Alternatively, right-click the top of the column, and then select Insert or Delete.

- 3 Click OK

For the series 2, 2, 2, 2..., type 2 in first cell only.

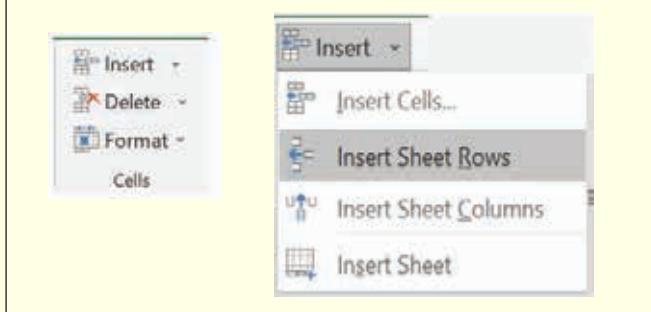
- 2 Drag the fill handle .

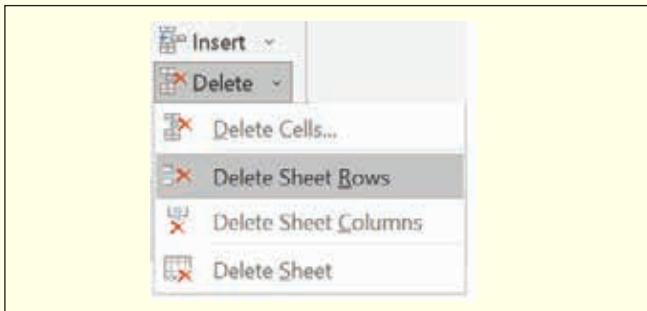
3 If needed, click Auto Fill Options and choose the option you want.



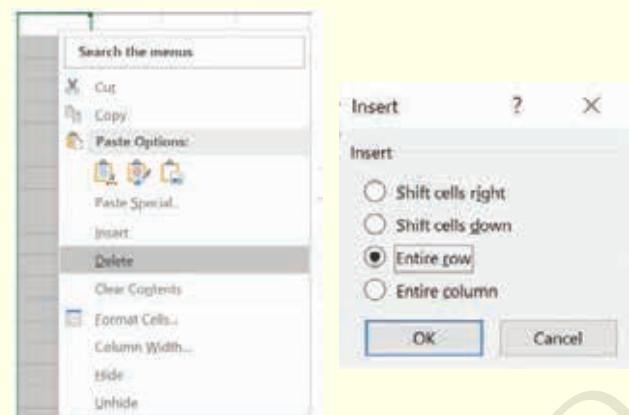
### Insert or delete a row

- 1 Select any cell within the row, then go to Home > Insert > Insert Sheet Rows or Delete Sheet Rows.





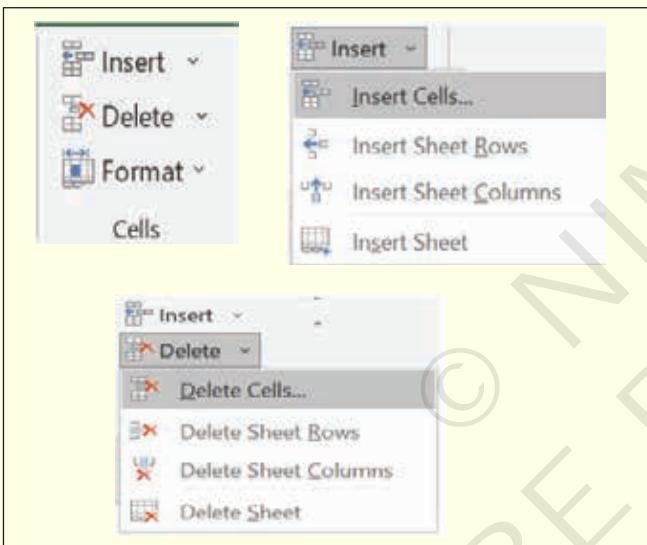
- 2 Alternatively, right-click the row number, and then select Insert or Delete.



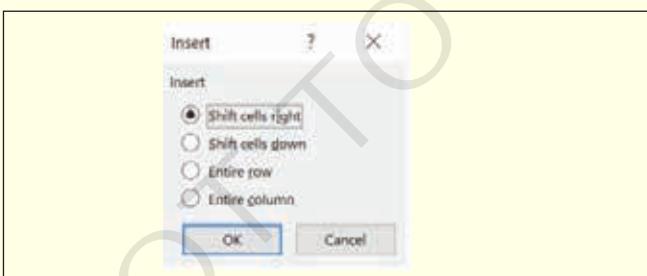
#### TASK 4: Insert and delete cells

##### Insert or delete a Cell

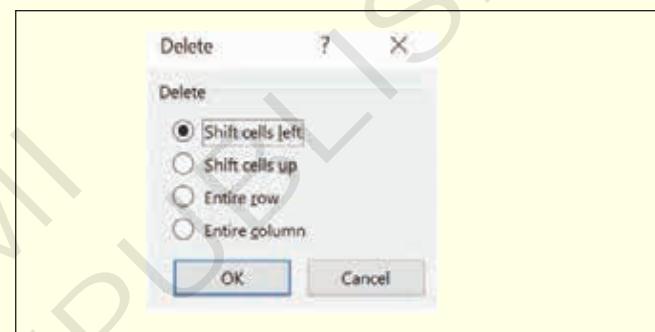
- 1 Select any cell within the column or Row, then go to Home > Insert > Insert Cell or Delete Cell.



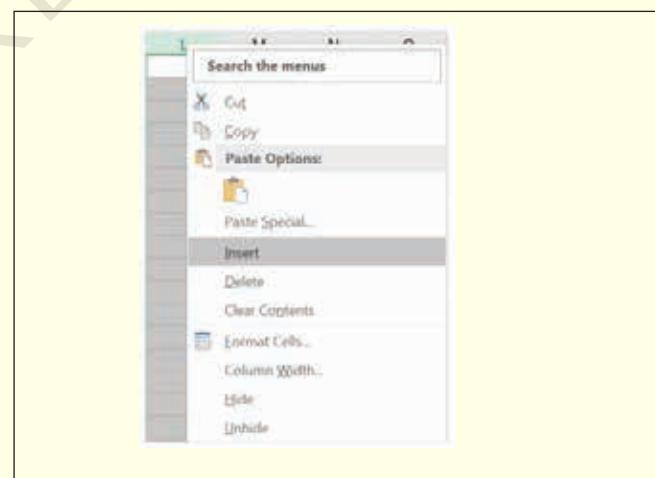
- 2 Choose Shift Cell right or Shift cell down while Inserting Cell and Click OK



- 3 Choose Shift Cell Left or Shift cell up while Deleting Cell and Click OK.



- 4 Alternatively, right-click the top of the column, and then select Insert or Delete.



- 5 Follow the Steps 2 and 3 then Click OK

## COPA - Manage Data Cells and Ranges

### Format cells and ranges

**Objectives:** At the end of this exercise you shall be able to

- merge and Unmerge cells
- modify cell alignment, orientation and indentation
- format cells using Format Painter
- wrap text within cells
- apply number formats
- apply cell formats from the Format cells dialog box
- apply cell styles
- clear cell formatting

### Requirements

#### Tools/Equipment/Machines

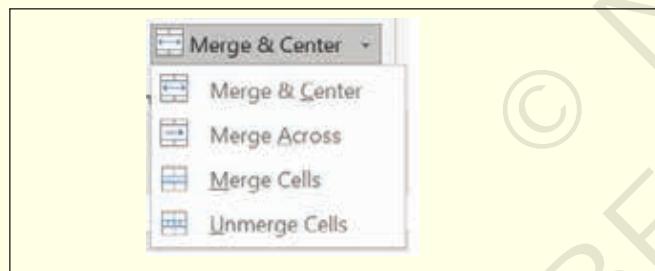
- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

#### TASK 1: Merge and Unmerge cells

##### Merge cells

- 1 Select the cells to merge.
- 2 Select Merge & Center.



##### Unmerge cells

- 1 Select the Merge & Center down arrow.
- 2 Select Unmerge Cells.

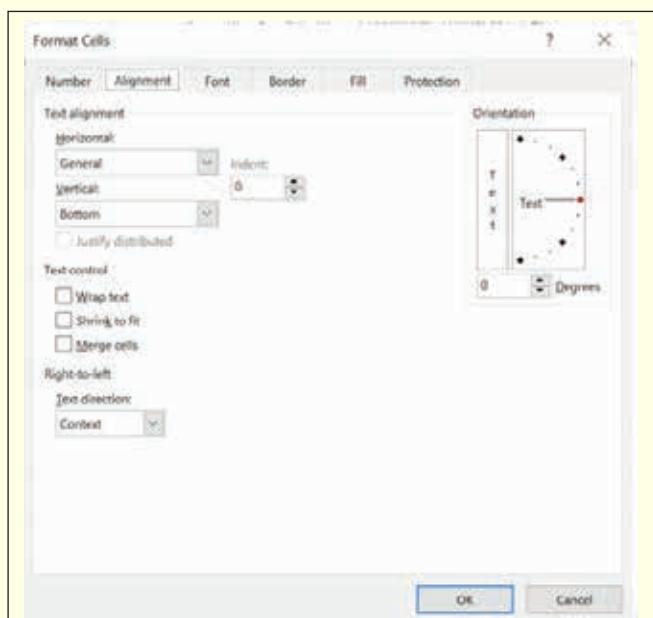
#### TASK 2: Modify cell alignment, orientation and indentation

##### Change the orientation of text in a cell

- 1 Select a cell, row, column, or a range.
- 2 Select Home > Orientation , and then select an option.

You can rotate your text up, down, clockwise, or counterclockwise, or align text vertically:

|   | A     | B     | C      | D          |
|---|-------|-------|--------|------------|
| 1 | March | April | Totals | Promotions |
| 2 | 2     | 2     | 4      | Yes        |
| 3 | 56    | 23    | 79     | Yes        |
| 4 | 12    | 34    | 46     | Yes        |



## Rotate text to a precise angle

- 1 Select a cell, row, column, or a range.
- 2 Select Home > Orientation  > Format Cell Alignment.
- 3 Under Orientation on the right side, in the Degrees box, use the up or down arrow to set the exact number of degrees that you want to rotate the selected cell text.

Positive numbers rotate the text upward. Negative numbers rotate the text downward.

## Align a column or row

Begin by selecting the cell or cells you want to align. You can align text in a single cell, a range of cells, a row or rows, a column or columns, or the entire worksheet. (Use Ctrl+A to select all cells.)

1 Select the cells you want to align.

2 On the Home tab, in the Alignment group, select a horizontal alignment option:

Align Left

Center

Align Right



3 On the Home tab, in the Alignment group, select a vertical alignment option:

Top Align

Middle Align

Bottom Align



## TASK 3: Format cells using Format Painter

- 1 Select the cell with the formatting you want to copy.
- 2 Select Home > Format Painter.

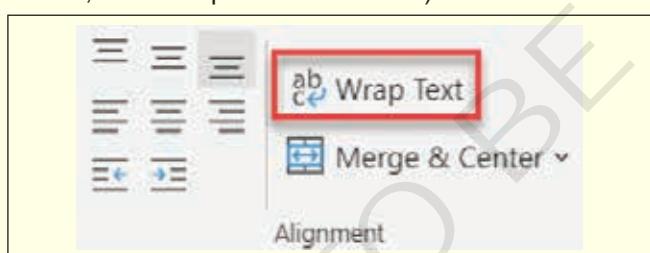
3 Drag to select the cell or range you want to apply the formatting to.

4 Release the mouse button and the formatting should now be applied.

## TASK 4: Wrap text within cells

### Wrap text automatically

- 1 In a worksheet, select the cells that you want to format.
- 2 On the Home tab, in the Alignment group, click Wrap Text. (On Excel for desktop, you can also select the cell, and then press Alt + H + W.)

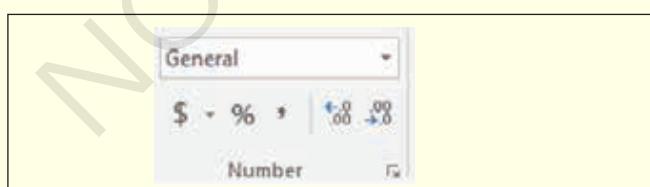


### Adjust the row height to make all wrapped text visible

- 1 Select the cell or range for which you want to adjust the row height.
- 2 On the Home tab, in the Cells group, click Format.
- 3 Under Cell Size, do one of the following:
  - To automatically adjust the row height, click AutoFit Row Height.
  - To specify a row height, click Row Height, and then type the row height that you want in the Row height box

## TASK 5: Apply number formats

- 1 Select a cell or a cell range.
- 2 On the Home tab, select Number from the dropdown.



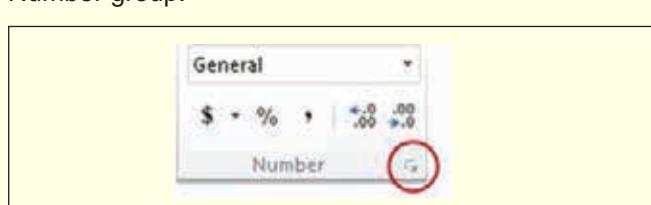
Or, you can choose one of these options:

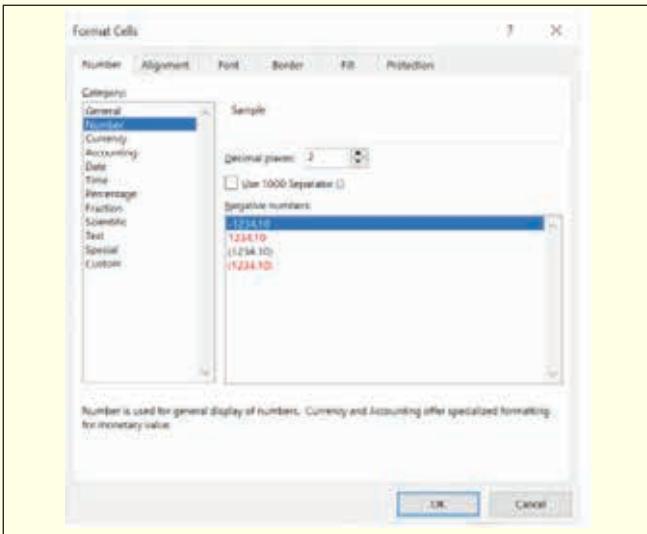
- Press CTRL + 1 and select Number.
- Right-click the cell or cell range, select Format Cells..., and select Number.

- Select the small arrow, dialog box launcher, and then select Number.

### Number formats

To see all available number formats, click the Dialog Box Launcher next to Number on the Home tab in the Number group.





## TASK 6: Apply cell formats from the Format cells dialog box

### Format Cells

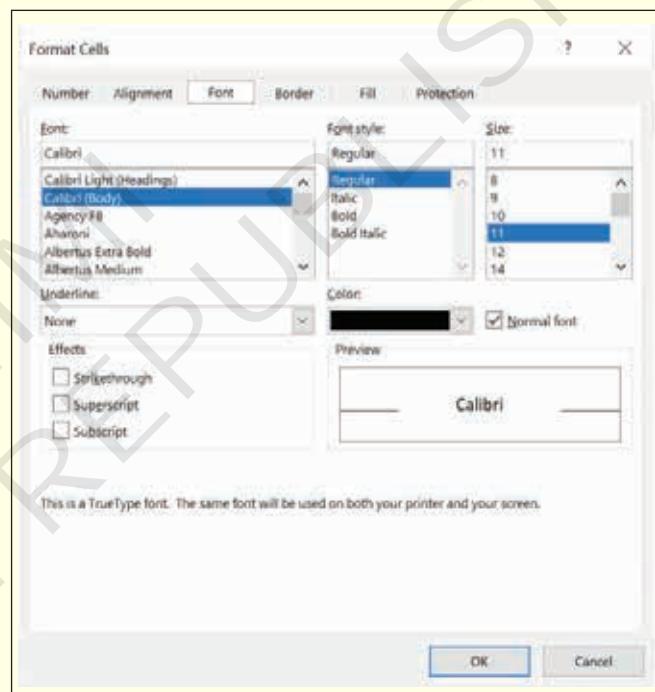
- 1 Select the cells.
- 2 Go to the ribbon to select changes as Bold, Font Color, or Font Size.

### Apply Excel Styles

- 1 Select the cells.
- 2 Select Home > Cell Style and select a style.

### Modify an Excel Style

- 1 Select the cells with the Excel Style.
- 2 Right-click the applied style in Home > Cell Styles.
- 3 Select Modify > Format to change what you want.

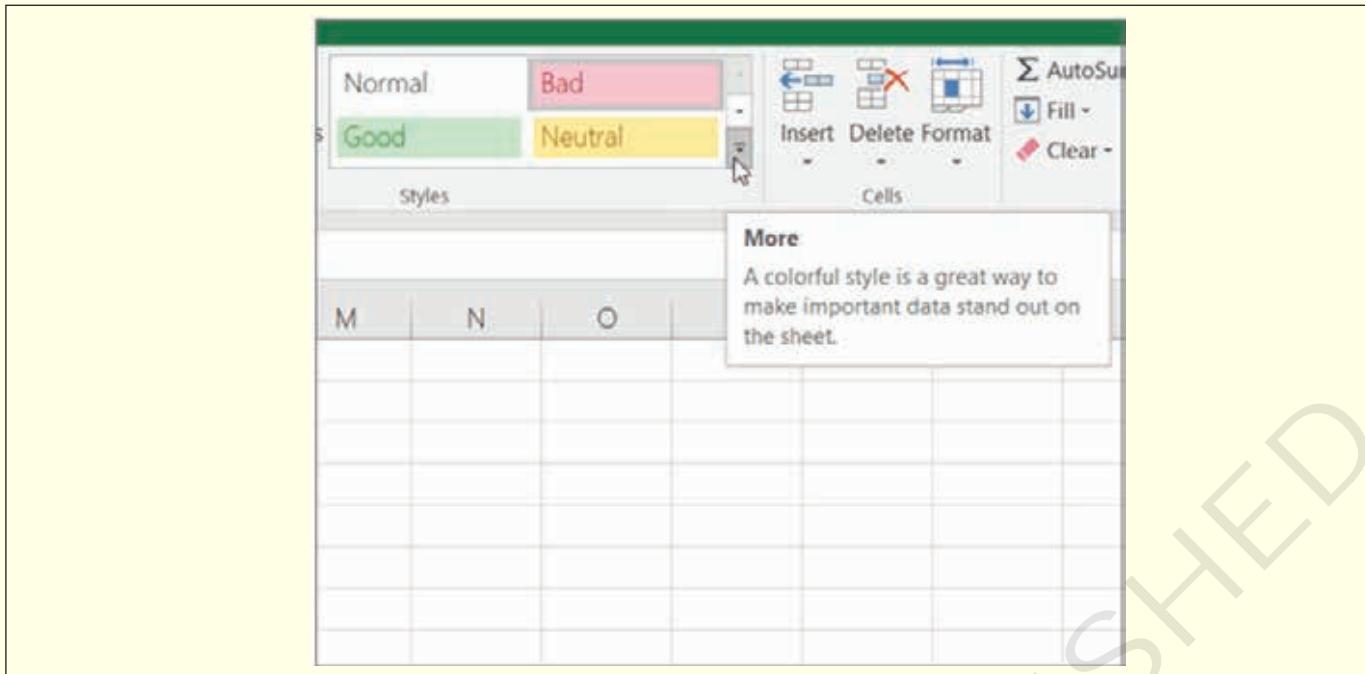


## TASK 7: Apply cell styles

### Apply a cell style

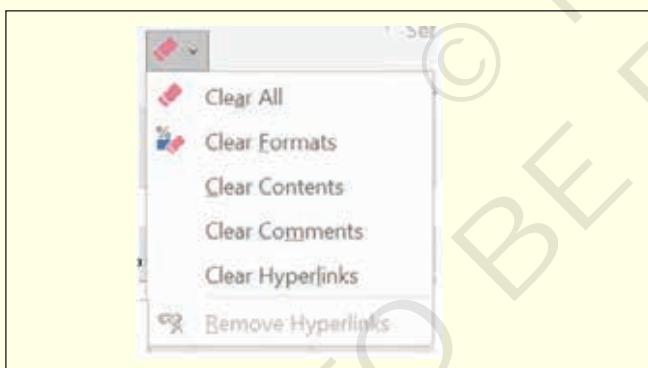
- 1 Select the cells that you want to format.

- 2 On the Home tab, in the Styles group, click the More dropdown arrow in the style gallery, and select the cell style that you want to apply.



#### TASK 8: Clear cell formatting

- 1 Select the cells, rows, or columns that you want to clear.
- 2 On the Home tab, in the Editing group, click the arrow next to the Clear button , and then do one of the following:



- To clear all contents, formats, and comments that are contained in the selected cells, click Clear All.
- To clear only the formats that are applied to the selected cells, click Clear Formats.
- To clear only the contents in the selected cells, leaving any formats and comments in place, click Clear Contents.
- To clear any comments or notes that are attached to the selected cells, click Clear Comments and Notes.
- To clear any hyperlinks that are attached to the selected cells, select Clear Hyperlinks.

## COPA - Manage Data Cells and Ranges

### Define and reference named ranges

**Objectives:** At the end of this exercise you shall be able to

- define a named range
- name a table
- summarize data visually Insert spark lines
- apply built in conditional formatting
- remove conditional formatting

### Requirements

#### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

#### TASK 1: Define a named range

##### How to create an Excel named range

There are 3 ways to define a name in Excel: Name Box, Define Name button, and Excel Name Manager.

##### Type a name in the Name Box

The Name Box in Excel is fastest way to create a named range:

- 1 Select a cell or a range of cells that you want to name.
- 2 Type a name into the Name Box.
- 3 Press the Enter key.

A new Excel named range is created!

##### Range A1:A10 → Item\_List

| Item_list |        |     |
|-----------|--------|-----|
|           | A      | B   |
| 1         | Apples | 200 |
| 2         | Orange | 150 |
| 3         | Banana | 100 |
| 4         | Banana | 100 |
| 5         | Orange | 150 |
| 6         | Apples | 200 |
| 7         | Apples | 200 |
| 8         | Orange | 150 |
| 9         | Apples | 200 |
| 10        | Apples | 200 |

##### Create a name by using the Define Name option

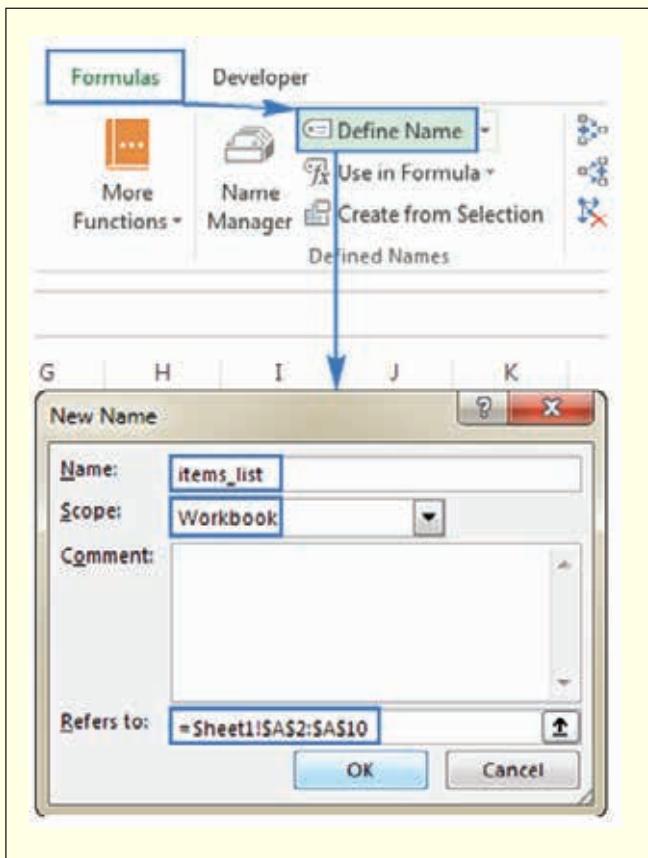
- 1 Select the cell(s).

##### Range B1:B10 → Sales

| sales |        |     |
|-------|--------|-----|
|       | A      | B   |
| 1     | Apples | 200 |
| 2     | Orange | 150 |
| 3     | Banana | 100 |
| 4     | Banana | 100 |
| 5     | Orange | 150 |
| 6     | Apples | 200 |
| 7     | Apples | 200 |
| 8     | Orange | 150 |
| 9     | Apples | 200 |
| 10    | Apples | 200 |

- 2 On the Formulas tab, in the Define Names group, click the Define Name button.
- 3 In the New Name dialog box, specify three things:
  - In the Name box, type the range name.
  - In the Scope dropdown, set the name scope (Workbook by default).
  - In the Refers to box, check the reference and correct it if needed.
- 4 Click OK to save the changes and close the dialog box.

**Note.** By default, Excel creates a name with absolute references. If you'd rather have a relative named range, remove the \$ sign from the reference.

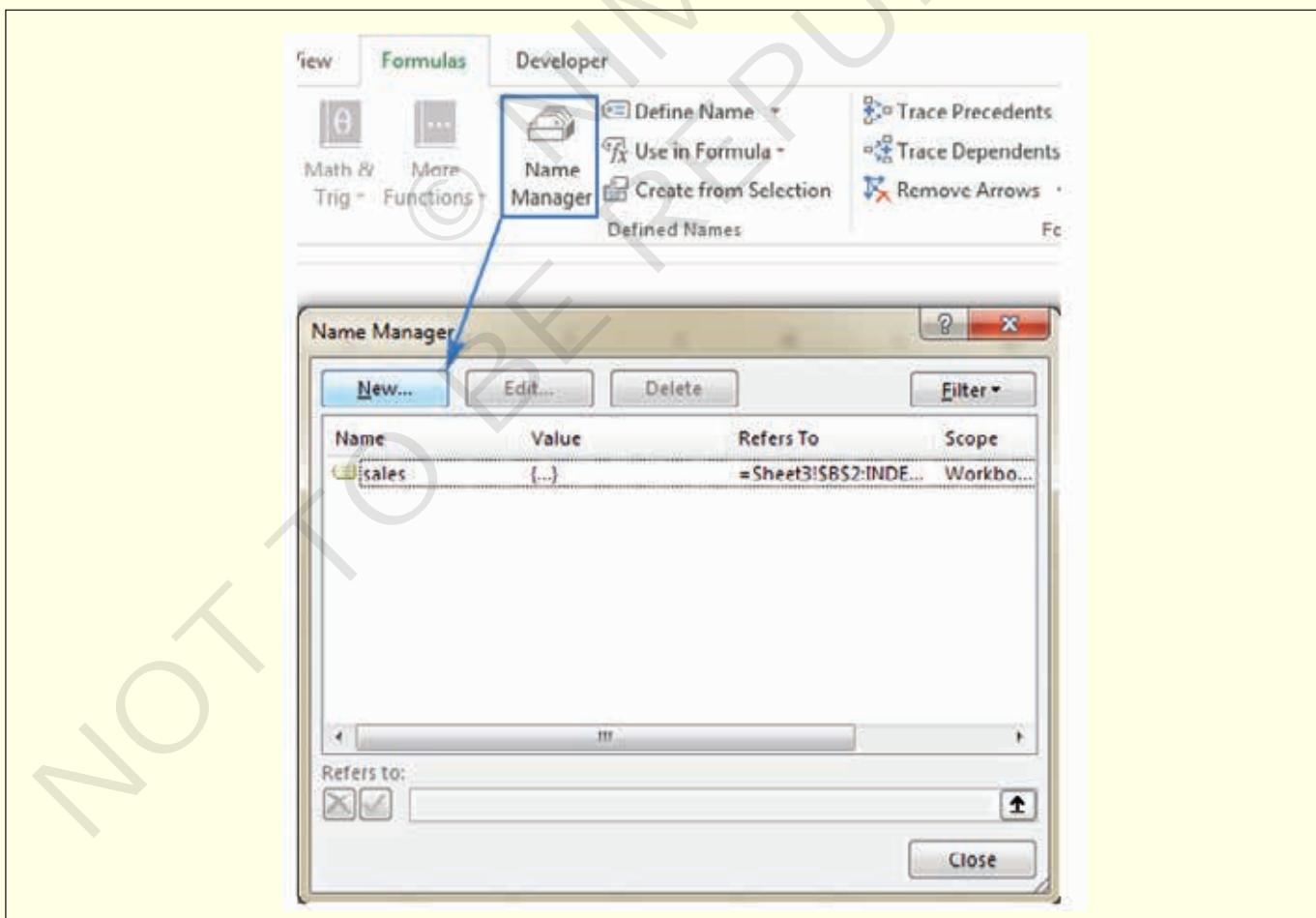


Compared to the previous method, using Define Name in Excel takes a few extra clicks, but it also provides a couple more options such as setting the name's scope and adding a comment that explains something about the name. Additionally, Excel's Define Name feature allows you to create a name for a constant or formula.

Make a named range by using Excel Name Manager

The Name Manager in Excel is used to work with existing names. However, it can help you build a new name too.

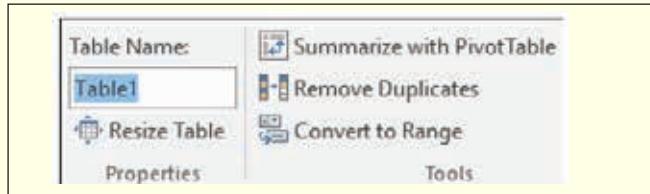
- 1 Go to the Formulas tab > Defined Names group, click Name Manager. Or, just press Ctrl + F3 (my preferred way).
- 2 In the top left hand corner of the Name Manager dialog window, click the New... button:
- 3 This will open the New Name dialog box where you configure a name as demonstrated in the previous section



## TASK 2: Name a table

### To rename a table

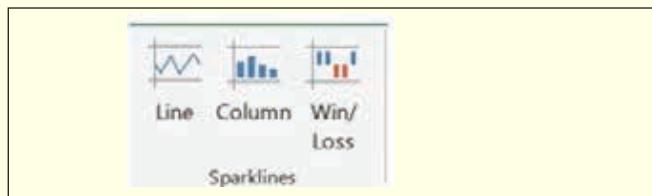
- 1 Click on the table.
- 2 Go to Table Tools > Design > Properties > Table Name.
- 3 Highlight the table name and enter a new name.



## TASK 3: Summarize data visually Insert spark lines

### Add a Sparkline

- 1 Select a blank cell at the end of a row of data.
- 2 Select Insert and pick Sparkline type, like Line, or Column.

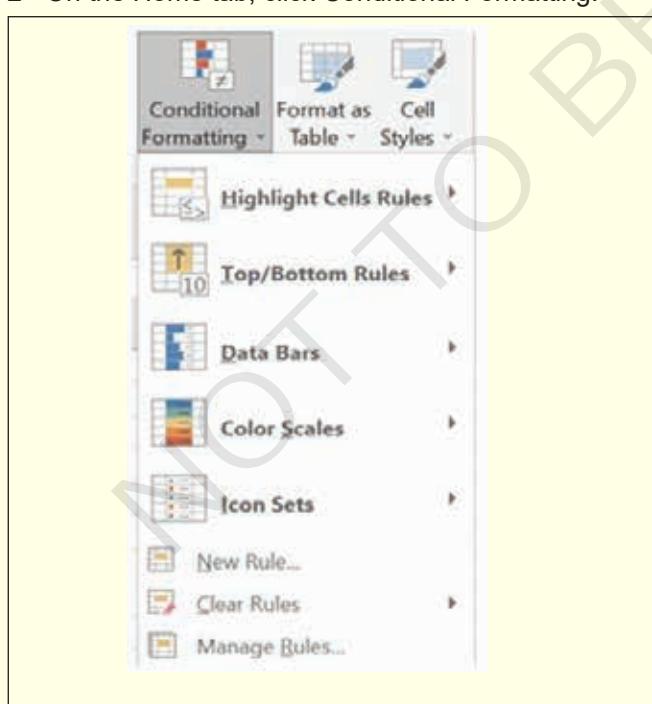


- 3 Select cells in the row and OK in menu.
- 4 More rows of data? Drag handle to add a Sparkline for each row.

## TASK 4: Apply built in conditional formatting

### Apply conditional formatting

- 1 Select the range of cells, the table, or the whole sheet that you want to apply conditional formatting to.
- 2 On the Home tab, click Conditional Formatting.



- 3 Do one of the following:

### Format a Sparkline chart

- 1 Select the Sparkline chart.
- 2 Select Sparkline and then select an option.
  - Select Line, Column, or Win/Loss to change the chart type.
  - Check Markers to highlight individual values in the Sparkline chart.
  - Select a Style for the Sparkline.
  - Select Sparkline Color and the color.
  - Select Sparkline Color > Weight to select the width of the Sparkline.
  - Select Marker Color to change the color of the markers.

#### To highlight

Values in specific cells. Ex: numbers between 50 and 100

#### Do this

Point to Highlight Cells Rules or Top/Bottom Rules, and then click the appropriate option.

The relationship of values in a cell range. Examples are comparisons of prices or populations in the largest cities.

Point to Data Bars, and then click the fill that you want.

The relationship of values in a cell range. Example is sales distributions across regions.

Point to Color Scales, and then click the scale that you want.

A cell range that contains three to five groups of values, where each group has its own threshold. For example you might assign a 5-point rating system for automobiles and apply a set of five icons.

Point to Icon Sets, and then click a set.

Temperature information with conditional formatting applied that shows top 10% and bottom 10% values

|   | A      | B   | C   | D   | E   | F   | G   | H   | I   | J   | K   | L   | M   |
|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 |        | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| 2 | Avg Hi | 40  | 38  | 44  | 46  | 51  | 56  | 67  | 72  | 70  | 59  | 45  | 41  |
| 3 | Avg Lo | 34  | 33  | 39  | 41  | 45  | 48  | 51  | 55  | 54  | 45  | 41  | 38  |

Temperature information with 3-color scale conditional formatting applied

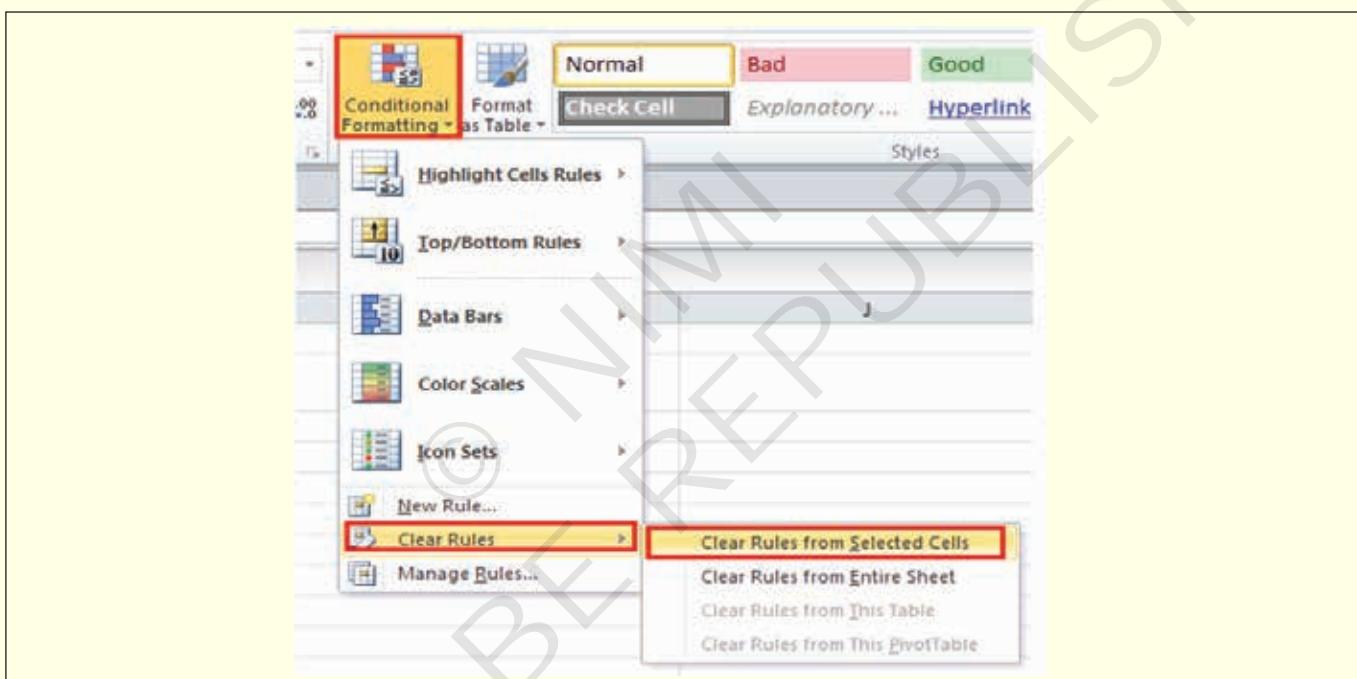
|   | A      | B   | C   | D   | E   | F   | G   | H   | I   | J   | K   | L   | M   |
|---|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 |        | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| 2 | Avg Hi | 40  | 38  | 44  | 46  | 51  | 56  | 67  | 72  | 70  | 59  | 45  | 41  |
| 3 | Avg Lo | 34  | 33  | 39  | 41  | 45  | 48  | 51  | 55  | 54  | 45  | 41  | 38  |

### TASK 5: Remove conditional formatting

To delete the selected range conditional formatting, please do as this:

- 1 Select the range that you want to remove the conditional formatting.

- 2 Click Home > Conditional Formatting > Clear Rules > Clear Rules from Selected Cells. See screenshot:



- 3 And the selected conditional formatting has been removed. See screenshots:

To delete the entire worksheet conditional formatting, please do as follows:

Click Home > Conditional Formatting > Clear Rules > Clear Rules from Entire Sheet, and the entire worksheet conditional formatting will be removed.

|     | A      | B      | C   |
|-----|--------|--------|-----|
| 103 | Name   | Gendar | Age |
| 104 | Jim    | M      | 12  |
| 105 | Lucy   | F      | 13  |
| 106 | Bob    | M      | 12  |
| 107 | Alexia | M      | 11  |
| 108 | Nelly  | F      | 12  |
| 109 | Freda  | M      | 13  |
| 110 | Nocial | F      | 12  |
| 111 | Joanna | F      | 13  |
| 112 | Mignon | M      | 11  |

|     | A      | B      | C   |
|-----|--------|--------|-----|
| 103 | Name   | Gendar | Age |
| 104 | Jim    | M      | 12  |
| 105 | Lucy   | F      | 13  |
| 106 | Bob    | M      | 12  |
| 107 | Alexia | M      | 11  |
| 108 | Nelly  | F      | 12  |
| 109 | Freda  | M      | 13  |
| 110 | Nocial | F      | 12  |
| 111 | Joanna | F      | 13  |
| 112 | Mignon | M      | 11  |

## COPA - Manage Tables and Table Data

### Create and format tables

**Objectives:** At the end of this exercise you shall be able to

- create excel tables from cell ranges
- apply table styles
- convert tables to cell ranges.

### Requirements

#### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

#### TASK 1: Create excel tables from cell ranges

- 1 Select a cell within your data.
  - 2 Select Home > Format as Table.
  - 3 Choose a style for your table.
  - 4 In the Format as Table dialog box, set your cell range.
- 
- 
- 5 Mark if your table has headers.
  - 6 Select OK.

#### TASK 2: Apply table styles

##### Apply a table style to an existing table

- 1 Select any cell in the table.
- 2 Select Home > Format as Table or Design Table
- 3 In the Table Styles gallery, select the table style you want to apply.

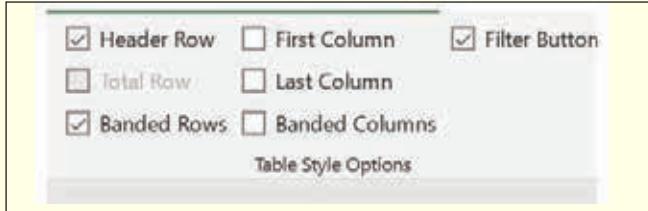


##### Change the table style options

To change the design of the table, do one or more of the following:

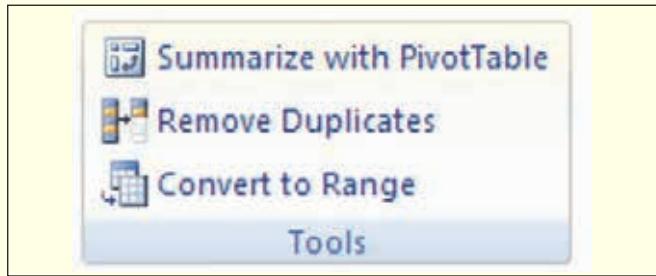
- To add special formatting to the first row in a table, select Design > Header Row.

- To add special formatting to the last row in a table, select Design > Total Row.
- To alternate row or column colors and make tables easier to read, select Design > Banded Rows or Design > Banded Columns.



### TASK 3: Convert tables to cell ranges

- 1 Click anywhere in the table and then go to Table Tools > Design on the Ribbon.
- 2 In the Tools group, click Convert to Range.  
-OR-  
Right-click the table, then in the shortcut menu, click Table > Convert to Range.



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## COPA - Manage Tables and Table Data

### Managing tables and its data

**Objectives:** At the end of this exercise you shall be able to

- add or remove table rows and columns
- configure table style options
- insert and configure total rows.

#### Requirements

##### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No..

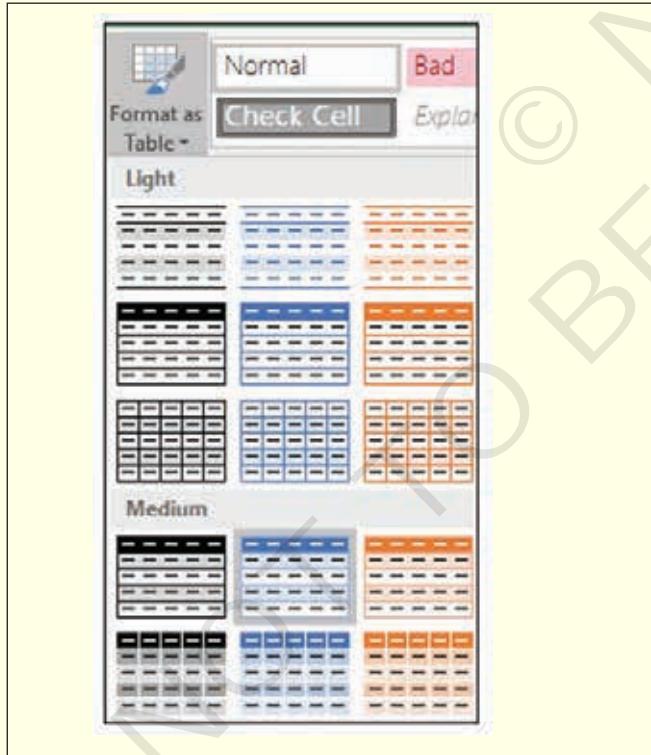
### PROCEDURE

#### TASK 1: Add or remove table rows and columns

Refer Model 15 – Task 3 Insert and delete multiple columns or rows

#### TASK 2: Configure table style options

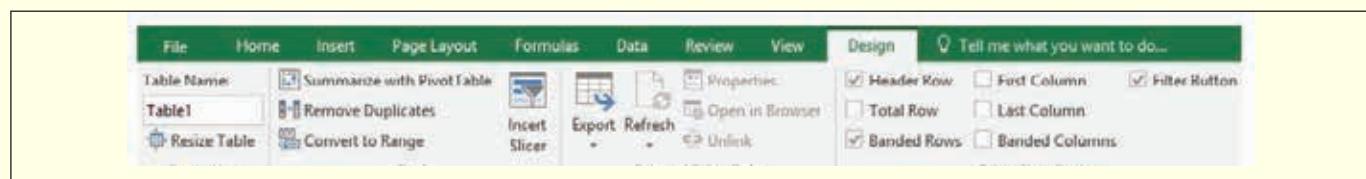
- 1 Select any cell within the table, or range of cells you want to format as a table.
- 2 On the Home tab, click Format as Table.
- 3 Click the table style that you want to use.



### TASK 3: Insert and configure total rows

You can add totals to a table by selecting the Total Row checkbox on the Design tab. You can also add a function from the total row drop-down.

- 1 Select a cell in a table.
- 2 Select Design > Total Row.

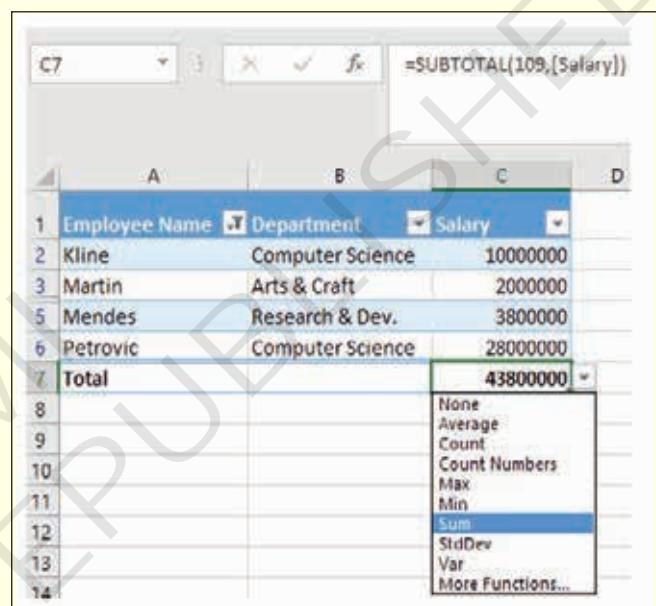


- 3 The Total row is added to the bottom of the table.

| A             | B                | C        |
|---------------|------------------|----------|
| Employee Name | Department       | Salary   |
| Kline         | Computer Science | 10000000 |
| Martin        | Arts & Craft     | 2000000  |
| Mendes        | Research & Dev.  | 3800000  |
| Petrovic      | Computer Science | 28000000 |
| Total         |                  | 43800000 |

Note: To add a new row, uncheck the Total Row checkbox, add the row, and then recheck the Total Row checkbox.

- 4 From the total row drop-down, you can select a function, like Average, Count, Count Numbers, Max, Min, Sum, StdDev, Var, and more.



## COPA - Manage Tables and Table Data

### Filter and sort table data

Objectives: At the end of this exercise you shall be able to

- filter records
- sort data by multiple columns.

#### Requirements

##### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

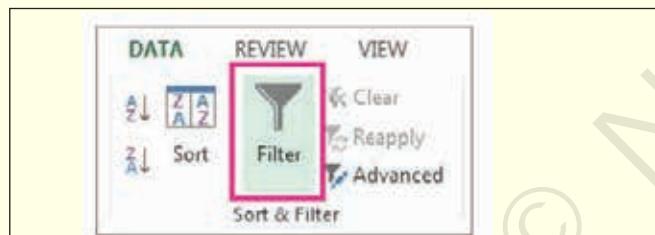
### PROCEDURE

#### TASK 1: Filter records

Use filters to temporarily hide some of the data in a table, so you can focus on the data you want to see.

Filter a range of data

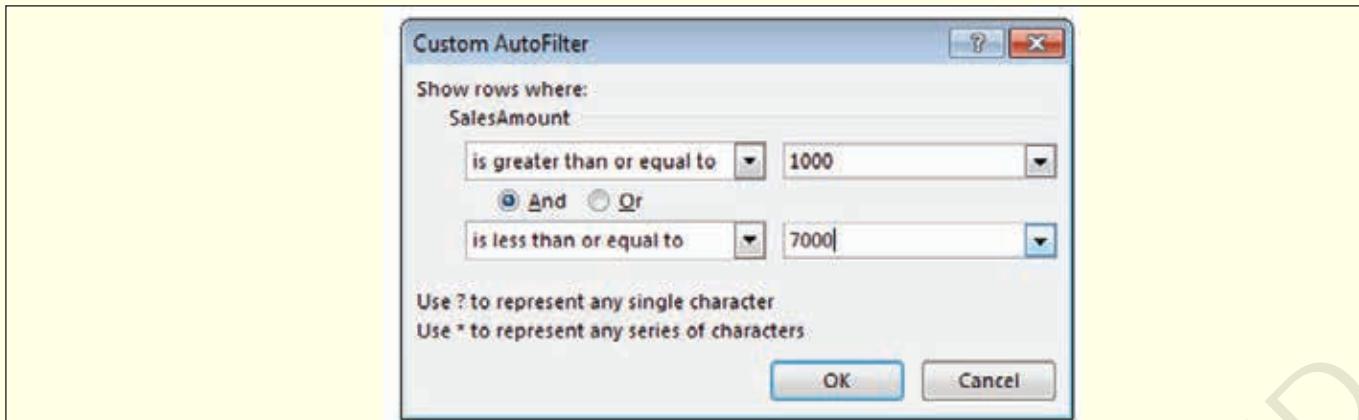
- 1 Select any cell within the range.
- 2 Select Data > Filter.



- 3 Select the column header arrow.
- 4 Select Text Filters or Number Filters, and then select a comparison, like Between.

The screenshot shows a Microsoft Excel table with columns: Category, Country, SalesAmount, Year, and Month. The 'SalesAmount' column has a dropdown arrow indicating it is filtered. A filter dialog is open over the table. The 'Number Filters' section is selected and highlighted with a red box. The 'Between...' option is also highlighted with a red box.

5 Enter the filter criteria and select OK.



### Filter data in a table

When you Create and format tables, filter controls are automatically added to the table headers.

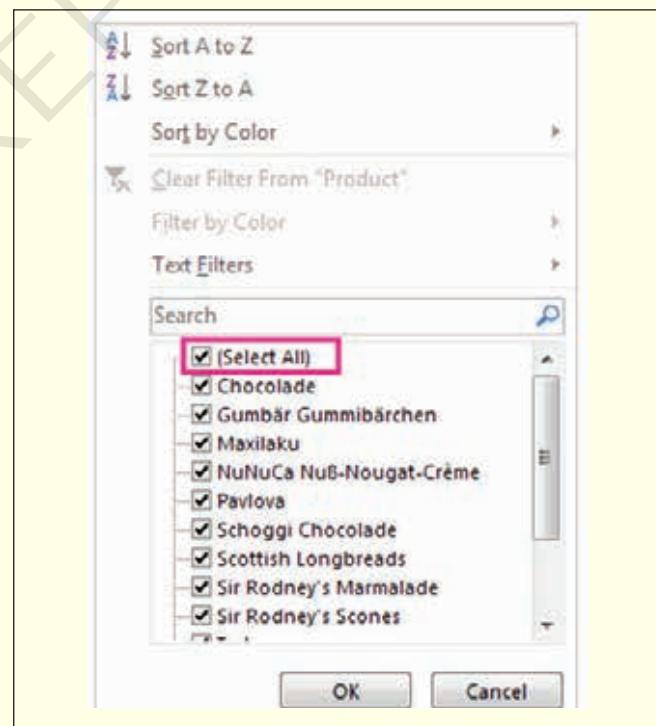
| A                             | B            | C            | D            | E            | F            | G           |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|-------------|
| 1 Product                     |              |              |              |              |              |             |
| 2 Chocolade                   | \$ 744.80    | \$ 162.50    | \$ 68.93     | \$ 306.00    | \$ 3,282.61  | \$ 2,906.41 |
| 3 Gumbär Gummibärchen         | \$ 3,079.60  | \$ 1,248.20  | \$ 2,061.17  | \$ 2,839.66  | \$ 21,225.60 | \$ 1,795.04 |
| 4 Maxilaku                    | \$ 1,609.80  | \$ 620.00    | \$ 839.00    | \$ -         | \$ 3,050.60  | \$ 768.59   |
| 5 NuNuCa Nuß-Nougat-Crème     | \$ 193.20    | \$ 865.20    | \$ -         | \$ 493.50    | \$ 1,351.90  | \$ 317.30   |
| 6 Pavlova                     | \$ 1,685.26  | \$ 2,646.08  | \$ 1,849.70  | \$ 999.01    | \$ 7,180.15  | \$ 1,795.04 |
| 7 Schoggi Chocolade           | \$ 1,755.00  | \$ 5,248.00  | \$ 2,195.00  | \$ 1,756.00  | \$ 10,974.00 | \$ 2,743.50 |
| 8 Scottish Longbreads         | \$ 1,267.00  | \$ 1,062.50  | \$ 492.50    | \$ 1,935.00  | \$ 4,757.50  | \$ 1,189.30 |
| 9 Sir Rodney's Marmalade      | \$ 4,252.50  | \$ 1,260.00  | \$ 1,781.00  | \$ 7,314.30  | \$ 2,438.10  | \$ -        |
| 10 Sir Rodney's Scones        | \$ 1,418.00  | \$ 759.00    | \$ 1,753.00  | \$ 1,434.00  | \$ 3,941.00  | \$ 1,335.25 |
| 11 Tarte au sucre             | \$ 4,728.00  | \$ 4,547.92  | \$ 5,472.30  | \$ 6,014.60  | \$ 20,762.62 | \$ 5,150.71 |
| 12 Testime Chocolate Biscuits | \$ 943.89    | \$ 549.60    | \$ 841.80    | \$ 204.70    | \$ 2,529.99  | \$ 585.00   |
| 13 Valkoinen suklaa           | \$ 845.00    | \$ -         | \$ 385.94    | \$ 942.50    | \$ 2,173.44  | \$ 724.48   |
| 14 Zaanse koekien             | \$ 817.00    | \$ 285.95    | \$ 668.80    | \$ 1,159.00  | \$ 2,930.75  | \$ 732.69   |
| 15 Total                      | \$ 21,082.75 | \$ 22,065.51 | \$ 17,964.86 | \$ 19,780.99 | \$ 80,894.11 | \$ 1,626.42 |

- Select the column header arrow for the column you want to filter.
- Uncheck (Select All) and select the boxes you want to show.
- Click OK.

The column header arrow → changes to a Filter icon.



Select this icon to change or clear the filter



## TASK 2: Sort data by multiple columns

Sort the table

- 1 Select a cell within the data.
- 2 Select Home > Sort & Filter.



Or, select Data > Sort.



3 Select an option:

- Sort A to Z - sorts the selected column in an ascending order.
- Sort Z to A - sorts the selected column in a descending order.
- Custom Sort - sorts data in multiple columns by applying different sort criteria.

Here's how to do a custom sort:

- i Select Custom Sort.
- ii Select Add Level.



- iii For Column, select the column you want to Sort by from the drop-down, and then select the second column you Then by want to sort. For example, Sort by Department and Then by Status.
- iv For Sort On, select Values.
- v For Order, select an option, like A to Z, Smallest to Largest, or Largest to Smallest.

- vi For each additional column that you want to sort by, repeat steps 2-5.

**Note: To delete a level, select Delete Level.**

- vii Check the My data has headers checkbox, if your data has a header row.
- viii Select OK

— — — — —

## COPA - Perform Operations using Formulas and Functions

### Insert references

**Objectives:** At the end of this exercise you shall be able to

- insert relative, absolute and mixed references
- reference named ranges and named tables in formulas.

### Requirements

#### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

#### TASK 1: Insert relative, absolute and mixed references

To create and copy a formula using **relative references**:

In the following example, we want to create a formula that will multiply each item's price by the quantity. Rather than create a new formula for each row, we can create a single formula in cell D2 and then copy it to the other rows. We'll use relative references so the formula correctly calculates the total for each item.

- 1 Select the cell that will contain the formula. In our example, we'll select cell D2.

| A  | B              | C        | D        |       |
|----|----------------|----------|----------|-------|
| 1  | Menu Item      | Price    | Quantity | Total |
| 2  | Rice           | ₹ 60.00  | 2        |       |
| 3  | Eggs           | ₹ 3.99   | 10       |       |
| 4  | Milk           | ₹ 36.00  | 4        |       |
| 5  | Banana         | ₹ 10.00  | 5        |       |
| 6  | Grape          | ₹ 40.00  | 1        |       |
| 7  | Sweet potatoes | ₹ 55.00  | 2        |       |
| 8  | Broccoli       | ₹ 80.00  | 1        |       |
| 9  | Carrot         | ₹ 65.00  | 1        |       |
| 10 | Edible oil     | ₹ 158.00 | 2        |       |
| 11 | Tomato sauce   | ₹ 45.00  | 3        |       |
| 12 | Spinach        | ₹ 25.00  | 2        |       |
| 13 | <b>Total</b>   |          |          |       |

| A  | B              | C        | D        |        |
|----|----------------|----------|----------|--------|
| 1  | Menu Item      | Price    | Quantity | Total  |
| 2  | Rice           | ₹ 60.00  | 2        | =B2*C2 |
| 3  | Eggs           | ₹ 3.99   | 10       |        |
| 4  | Milk           | ₹ 36.00  | 4        |        |
| 5  | Banana         | ₹ 10.00  | 5        |        |
| 6  | Grape          | ₹ 40.00  | 1        |        |
| 7  | Sweet potatoes | ₹ 55.00  | 2        |        |
| 8  | Broccoli       | ₹ 80.00  | 1        |        |
| 9  | Carrot         | ₹ 65.00  | 1        |        |
| 10 | Edible oil     | ₹ 158.00 | 2        |        |
| 11 | Tomato sauce   | ₹ 45.00  | 3        |        |
| 12 | Spinach        | ₹ 25.00  | 2        |        |
| 13 | <b>Total</b>   |          |          |        |

| A  | B              | C        | D        |          |
|----|----------------|----------|----------|----------|
| 1  | Menu Item      | Price    | Quantity | Total    |
| 2  | Rice           | ₹ 60.00  | 2        | ₹ 120.00 |
| 3  | Eggs           | ₹ 3.99   | 10       |          |
| 4  | Milk           | ₹ 36.00  | 4        |          |
| 5  | Banana         | ₹ 10.00  | 5        |          |
| 6  | Grape          | ₹ 40.00  | 1        |          |
| 7  | Sweet potatoes | ₹ 55.00  | 2        |          |
| 8  | Broccoli       | ₹ 80.00  | 1        |          |
| 9  | Carrot         | ₹ 65.00  | 1        |          |
| 10 | Edible oil     | ₹ 158.00 | 2        |          |
| 11 | Tomato sauce   | ₹ 45.00  | 3        |          |
| 12 | Spinach        | ₹ 25.00  | 2        |          |
| 13 | <b>Total</b>   |          |          |          |

- 2 Enter the formula to calculate the desired value. In our example, we'll type =B2\*C2.
- 3 Press Enter on your keyboard. The formula will be calculated, and the result will be displayed in the cell.
- 4 Locate the fill handle in the lower-right corner of the desired cell. In our example, we'll locate the fill handle for cell D2.

- Click, hold, and drag the fill handle over the cells you wish to fill. In our example, we'll select cells D3:D12.
- Release the mouse. The formula will be copied to the selected cells with relative references and the values will be calculated in each cell.

| Menu Item      | Price    | Quantity | Total    |
|----------------|----------|----------|----------|
| Rice           | ₹ 60.00  | 2        | ₹ 120.00 |
| Eggs           | ₹ 3.99   | 10       | ₹ 39.90  |
| Milk           | ₹ 36.00  | 4        | ₹ 144.00 |
| Banana         | ₹ 10.00  | 5        | ₹ 50.00  |
| Grape          | ₹ 40.00  | 1        | ₹ 40.00  |
| Sweet potatoes | ₹ 55.00  | 2        | ₹ 110.00 |
| Broccoli       | ₹ 80.00  | 1        | ₹ 80.00  |
| Carrot         | ₹ 65.00  | 1        | ₹ 65.00  |
| Edible oil     | ₹ 158.00 | 2        | ₹ 316.00 |
| Tomato sauce   | ₹ 45.00  | 3        | ₹ 135.00 |
| Spinach        | ₹ 25.00  | 2        | ₹ 50.00  |
| Total          |          |          |          |

You can double-click the filled cells to check their formulas for accuracy. The relative cell references should be different for each cell, depending on its row.

| Menu Item      | Price    | Quantity | Total    |
|----------------|----------|----------|----------|
| Rice           | ₹ 60.00  | 2        | ₹ 120.00 |
| Eggs           | ₹ 3.99   | 10       | ₹ 39.90  |
| Milk           | ₹ 36.00  | 4        | ₹ 144.00 |
| Banana         | ₹ 10.00  | 5        | ₹ 50.00  |
| Grape          | ₹ 40.00  | 1        | ₹ 40.00  |
| Sweet potatoes | ₹ 55.00  | 2        | =B7*C7   |
| Broccoli       | ₹ 80.00  | 1        | ₹ 80.00  |
| Carrot         | ₹ 65.00  | 1        | ₹ 65.00  |
| Edible oil     | ₹ 158.00 | 2        | ₹ 316.00 |
| Tomato sauce   | ₹ 45.00  | 3        | ₹ 135.00 |
| Spinach        | ₹ 25.00  | 2        | ₹ 50.00  |
| Total          |          |          |          |

**To create and copy a formula using absolute references:** In our example, we'll use the 5% GST tax rate in cell E1 to calculate the GST tax for all items in column D. We'll need to use the absolute cell reference \$E\$1 in our formula. Because each formula is using the same tax rate, we want that reference to remain constant when the formula is copied and filled to other cells in column D.

- Select the cell that will contain the formula. In our example, we'll select cell D3.
- Enter the formula to calculate the desired value. In our example, we'll type =(B3\*C3)\*\$E\$1.

| Menu Item      | Price    | Quantity | Sales Tax | Total    |
|----------------|----------|----------|-----------|----------|
| Rice           | ₹ 60.00  | 2        | ₹ 6.00    | ₹ 120.00 |
| Eggs           | ₹ 3.99   | 10       | ₹ 2.00    | ₹ 39.90  |
| Milk           | ₹ 36.00  | 4        | ₹ 7.20    | ₹ 144.00 |
| Banana         | ₹ 10.00  | 5        | ₹ 2.50    | ₹ 50.00  |
| Grape          | ₹ 40.00  | 1        | ₹ 2.00    | ₹ 40.00  |
| Sweet potatoes | ₹ 55.00  | 2        | ₹ 5.50    | ₹ 110.00 |
| Broccoli       | ₹ 80.00  | 1        | ₹ 4.00    | ₹ 80.00  |
| Carrot         | ₹ 65.00  | 1        | ₹ 3.25    | ₹ 65.00  |
| Edible oil     | ₹ 158.00 | 2        | ₹ 15.80   | ₹ 316.00 |
| Tomato sauce   | ₹ 45.00  | 3        | ₹ 6.75    | ₹ 135.00 |
| Spinach        | ₹ 25.00  | 2        | ₹ 2.50    | ₹ 50.00  |
| Total          |          |          |           |          |

- Press Enter on your keyboard. The formula will calculate, and the result will display in the cell.
- Locate the fill handle in the lower-right corner of the desired cell. In our example, we'll locate the fill handle for cell D3.
- Click, hold, and drag the fill handle over the cells you wish to fill, cells D4:D13 in our example.
- Release the mouse. The formula will be copied to the selected cells with an absolute reference, and the values will be calculated in each cell.

| Menu Item      | Price    | Quantity | Sales Tax | Total    |
|----------------|----------|----------|-----------|----------|
| Rice           | ₹ 60.00  | 2        | ₹ 6.00    | ₹ 120.00 |
| Eggs           | ₹ 3.99   | 10       | ₹ 2.00    | ₹ 39.90  |
| Milk           | ₹ 36.00  | 4        | ₹ 7.20    | ₹ 144.00 |
| Banana         | ₹ 10.00  | 5        | ₹ 2.50    | ₹ 50.00  |
| Grape          | ₹ 40.00  | 1        | ₹ 2.00    | ₹ 40.00  |
| Sweet potatoes | ₹ 55.00  | 2        | ₹ 5.50    | ₹ 110.00 |
| Broccoli       | ₹ 80.00  | 1        | ₹ 4.00    | ₹ 80.00  |
| Carrot         | ₹ 65.00  | 1        | ₹ 3.25    | ₹ 65.00  |
| Edible oil     | ₹ 158.00 | 2        | ₹ 15.80   | ₹ 316.00 |
| Tomato sauce   | ₹ 45.00  | 3        | ₹ 6.75    | ₹ 135.00 |
| Spinach        | ₹ 25.00  | 2        | ₹ 2.50    | ₹ 50.00  |
| Total          |          |          |           |          |

You can double-click the filled cells to check their formulas for accuracy. The absolute reference should be the same for each cell, while the other references are relative to the cell's row.

Be sure to include the dollar sign (\$) whenever you're making an absolute reference across multiple cells. The dollar signs were omitted, this caused the spreadsheet to interpret it as a relative reference, producing an incorrect result when copied to other cells.

|    | A              | B        | C        | D        |
|----|----------------|----------|----------|----------|
| 1  | Menu Item      | Price    | Quantity | Total    |
| 2  | Rice           | ₹ 60.00  | 2        | ₹ 120.00 |
| 3  | Eggs           | ₹ 3.99   | 10       | ₹ 39.90  |
| 4  | Milk           | ₹ 36.00  | 4        | ₹ 144.00 |
| 5  | Banana         | ₹ 10.00  | 5        | ₹ 50.00  |
| 6  | Grape          | ₹ 40.00  | 1        | ₹ 40.00  |
| 7  | Sweet potatoes | ₹ 55.00  | 2        | =B7*C7   |
| 8  | Broccoli       | ₹ 80.00  | 1        | ₹ 80.00  |
| 9  | Carrot         | ₹ 65.00  | 1        | ₹ 65.00  |
| 10 | Edible oil     | ₹ 158.00 | 2        | ₹ 316.00 |
| 11 | Tomato sauce   | ₹ 45.00  | 3        | ₹ 135.00 |

### Mixed Reference

Mixed Reference is a type of Absolute reference in which either the column is made constant or the row is made constant.

#### For example:

- \$F1: In this the column F is constant.
- F\$1: In this the row 1 is constant.

#### To perform Mixed Reference:

**Step 1:** Write the formula in any cell. We write the formula(=B2+A2) in cell C2 and press enter.

|   | A      | B      | C      | D | E |
|---|--------|--------|--------|---|---|
| 1 | Data 1 | Data 2 | Sum    |   |   |
| 2 | 10     | 23     | =B2+A2 |   |   |
| 3 |        | 12     |        |   |   |
| 4 |        |        |        |   |   |
| 5 |        |        |        |   |   |
| 6 |        |        |        |   |   |

**Step 2:** Click and hold on to the Fill handle.

**Step 3:** Drag it to the cell you want to fill. We drag it till cell C3.

|   | A      | B      | C   | D |
|---|--------|--------|-----|---|
| 1 | Data 1 | Data 2 | Sum |   |
| 2 | 10     | 23     | 33  |   |
| 3 |        | 12     | 12  |   |
| 4 |        |        |     |   |
| 5 |        |        |     |   |

**Step 4:** We did not make row 2 of column A constant, thus we see that as we copy the formula to cell C3, A2 changes to A3 i.e. the addition is performed between A2 and B2, A3 and B3.

|   | A      | B      | C   | D | E |
|---|--------|--------|-----|---|---|
| 1 | Data 1 | Data 2 | Sum |   |   |
| 2 | 10     | 23     | 33  |   |   |
| 3 | 12     | =B3+A3 |     |   |   |
| 4 |        |        |     |   |   |
| 5 |        |        |     |   |   |
| 6 |        |        |     |   |   |
| 7 |        |        |     |   |   |

We make row 2 of column A constant by adding a dollar sign before 2.

**Step 5:** Write the formula in any cell. We write the formula(=B2+A\$2) in cell C2 and press enter.

|   | A      | B      | C        | D | E |
|---|--------|--------|----------|---|---|
| 1 | Data 1 | Data 2 | Sum      |   |   |
| 2 | 10     | 23     | =B2+A\$2 |   |   |
| 3 |        | 12     |          |   |   |
| 4 |        |        |          |   |   |
| 5 |        |        |          |   |   |
| 6 |        |        |          |   |   |

**Step 6:** Click and hold on to the Fill handle.

**Step 7:** Drag it to the cell you want to fill. We drag it till cell C3.

|   | A      | B      | C   | D |
|---|--------|--------|-----|---|
| 1 | Data 1 | Data 2 | Sum |   |
| 2 | 10     | 23     | 33  |   |
| 3 | 12     | 22     |     |   |
| 4 |        |        |     |   |
| 5 |        |        |     |   |
| 6 |        |        |     |   |

**Step 8:** We made row 2 of column A constant, thus we see that as we copy the formula to cell C3, A2 does not change to A3 i.e. A2 is added to cell B2 and B3.

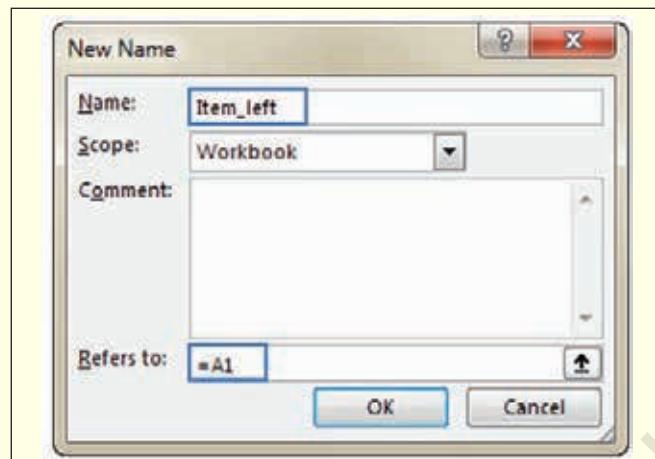
|   | A      | B        | C   | D | E |
|---|--------|----------|-----|---|---|
| 1 | Data 1 | Data 2   | Sum |   |   |
| 2 | 10     | 23       | 33  |   |   |
| 3 | 12     | =B3+A\$2 |     |   |   |
| 4 |        |          |     |   |   |
| 5 |        |          |     |   |   |
| 6 |        |          |     |   |   |

## TASK 2: Reference named ranges and named tables in formulas

### Reference named ranges

Use the same table used in EX.NO.15.57 Define and reference named ranges and Task1: Define a named range to execute this Exercise

- 1 Select cell B1.
- 2 Press Ctrl + F3 to open Excel Name Manager, and click the New...
- 3 In the Name box, type the desired name, say, item\_left.
- 4 In the Refers to box, type =A1.
- 5 Click OK.



Now, let's see what happens when we use the item\_left name in a formula, for example:

=SUMIF(items\_list, item\_left, sales)

Where items\_list refers to \$A\$2:\$A\$10 and sales refers to \$B\$2:\$B\$10 in the table below.

When you enter the formula in cell E2, and then copy it down the column, it will calculate the total sales for each product individually because item\_left is a relative name and its reference adjusts based on the relative position of the column and row where the formula is copied:

|    | A      | B   | C | D | E      | F                                   | G |
|----|--------|-----|---|---|--------|-------------------------------------|---|
| 1  | Apples | 200 |   |   | Apples | =SUMIF(item_list, item_left, sales) |   |
| 2  | Orange | 150 |   |   | Orange | 450                                 |   |
| 3  | Banana | 100 |   |   | Banana | 200                                 |   |
| 4  | Banana | 100 |   |   |        |                                     |   |
| 5  | Orange | 150 |   |   |        |                                     |   |
| 6  | Apples | 200 |   |   |        |                                     |   |
| 7  | Apples | 200 |   |   |        |                                     |   |
| 8  | Orange | 150 |   |   |        |                                     |   |
| 9  | Apples | 200 |   |   |        |                                     |   |
| 10 | Apples | 200 |   |   |        |                                     |   |

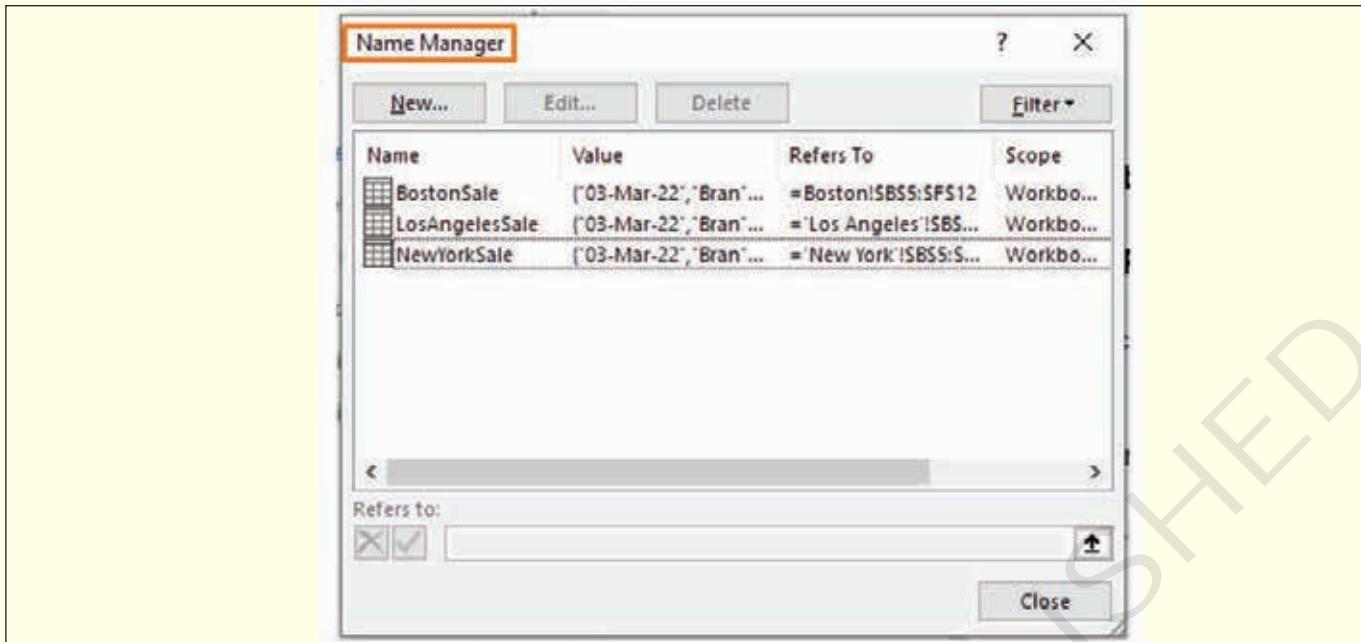
### Reference Named Table

- 1 Select the entire Table or place the cursor in any cell. Excel displays the Table Design tab instantly.
- 2 Click on the Table Design.
- 3 Assign a Table name (i.e., NewYorkSale) under the Table Name dialog box in the Properties section.
- 4 Press ENTER. Excel then assigns the name to this Table.
- 5 Repeat the Steps for the other 2 Tables (i.e., BostonSale, LosAngelesSale).

| Order Date | Product        | Quantity | Unit Price | Total Sale |
|------------|----------------|----------|------------|------------|
| 03-Mar-22  | Bran           | 50       | \$1.87     | \$93.50    |
| 04-Mar-22  | Oatmeal Raisin | 100      | \$2.84     | \$284.00   |
| 05-Mar-22  | Whole Wheat    | 90       | \$3.49     | \$314.10   |
| 06-Mar-22  | Arrowroot      | 75       | \$2.18     | \$163.50   |
| 07-Mar-22  | Chocolate Chip | 200      | \$1.87     | \$374.00   |
| 08-Mar-22  | Whole Wheat    | 45       | \$3.49     | \$157.05   |
| 09-Mar-22  | Bran           | 25       | \$1.87     | \$46.75    |
| 10-Mar-22  | Salt           | 55       | \$2.84     | \$156.20   |

- 6 You can check the naming using Formulas > Name Manager (in the Defined Names section). And you

see all the assigned Table names in the Name Manager window.



Since we have assigned the Tables specific names to easily refer to them, now we move to reference them in formulas. Follow the below methods to reference Tables in another sheet.

#### Refer a Table in Another Sheet Using Structured Reference

**Step 1:** Start typing a formula after inserting an Equal Sign (=) in the Formula bar. Then, type a Table name to reference it as shown in the image below. Excel brings up the Table reference; double click on it.

| City Name   | Total Sale            |
|-------------|-----------------------|
| New York    | =SUM(New[Total Sale]) |
| Boston      |                       |
| Los Angeles |                       |

**Step 2:** After referring to the Table, type a third bracket (i.e., [ ]). Excel shows column names to select from. Double click on Total Sale and close the brackets as pictured below.

| City Name   | Total Sale                    |
|-------------|-------------------------------|
| Boston      | =SUM(NewYorkSale[Total Sale]) |
| Los Angeles |                               |

We assign New York Sale Table at first then one of its columns (i.e., Total Sale) later. We indicate both arguments in colored rectangles.

| A                                | B          | C              | D        | E          | F          |
|----------------------------------|------------|----------------|----------|------------|------------|
| <b>New York City Sale Mar'22</b> |            |                |          |            |            |
| 4                                | Order Date | Product        | Quantity | Unit Price | Total Sale |
| 5                                | 03-Mar-22  | Bran           | 50       | \$1.87     | \$93.50    |
| 6                                | 04-Mar-22  | Oatmeal Raisin | 100      | \$2.84     | \$284.00   |
| 7                                | 05-Mar-22  | Whole Wheat    | 90       | \$3.49     | \$314.10   |
| 8                                | 06-Mar-22  | Arrowroot      | 75       | \$2.18     | \$163.50   |
| 9                                | 07-Mar-22  | Chocolate Chip | 200      | \$1.87     | \$374.00   |
| 10                               | 08-Mar-22  | Whole Wheat    | 45       | \$3.49     | \$157.05   |
| 11                               | 09-Mar-22  | Bran           | 25       | \$1.87     | \$46.75    |
| 12                               | 10-Mar-22  | Salt           | 55       | \$2.84     | \$156.20   |

Step 3: Use the ENTER key to apply the formula in the C5 cell.

|                     |                               |
|---------------------|-------------------------------|
| C5                  | =SUM(NewYorkSale[Total Sale]) |
| <b>Sale Summary</b> |                               |
| A4                  | City Name                     |
| B4                  | Total Sale                    |
| A5                  | New York                      |
| B5                  | \$1,589.10                    |
| A6                  | Boston                        |
| A7                  | Los Angeles                   |

Follow Steps 1, 2, and 3 to reference other Tables in the respective cells. After referencing Excel shows the sum of the Total Sale columns of respective Tables as depicted in the below image.

You can reference any Table just by assigning its name in the formula along with the column header you want to deal with.

|                     |                                  |
|---------------------|----------------------------------|
| C7                  | =SUM(LosAngelesSale[Total Sale]) |
| <b>Sale Summary</b> |                                  |
| A4                  | City Name                        |
| B4                  | Total Sale                       |
| A5                  | New York                         |
| B5                  | \$1,589.10                       |
| A6                  | Boston                           |
| B6                  | \$1,722.46                       |
| A7                  | Los Angeles                      |
| B7                  | \$1,536.07                       |

## COPA - Perform Operations using Formulas and Functions

### Calculate and transform data

**Objectives:** At the end of this exercise you shall be able to

- perform calculations using AVERAGE(), MIN(), MAX() and SUM()
- count cells by using COUNT(), COUNTIF() and COUNTBLANK()
- perform conditional operations by using the IF() function.

#### Requirements

##### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

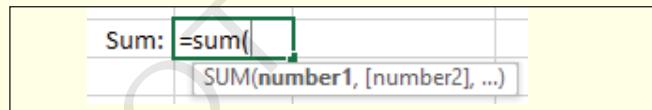
### PROCEDURE

#### TASK 1: Perform calculations using AVERAGE(), MIN(), MAX() and SUM()

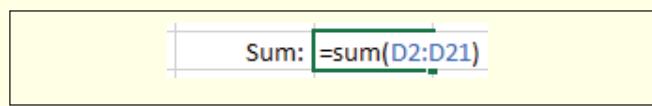
1 Create a Table and fill the respective data.

| A  | B        | C         | D          | E      |           |
|----|----------|-----------|------------|--------|-----------|
| 1  | Order No | Date      | Customer   | Amount | Address   |
| 2  | 1        | 01-Oct-22 | Customer1  | 1500   | Chennai   |
| 3  | 2        | 02-Oct-22 | Customer2  | 2500   | Mumbai    |
| 4  | 3        | 03-Oct-22 | Customer3  | 2100   | Delhi     |
| 5  | 4        | 04-Oct-22 | Customer4  | 1000   | Chennai   |
| 6  | 5        | 05-Oct-22 | Customer5  | 900    |           |
| 7  | 6        | 08-Oct-22 | Customer6  | 4300   | Delhi     |
| 8  | 7        | 09-Oct-22 | Customer7  | 5300   | Chennai   |
| 9  | 8        | 10-Oct-22 | Customer8  | 3500   | Mumbai    |
| 10 | 9        | 11-Oct-22 | Customer9  | 2300   | Delhi     |
| 11 | 10       | 12-Oct-22 | Customer10 | 2400   | Chennai   |
| 12 | 11       | 15-Oct-22 | Customer11 | 1500   |           |
| 13 | 12       | 16-Oct-22 | Customer12 | 2500   | Delhi     |
| 14 | 13       | 17-Oct-22 | Customer13 | 2100   | Chennai   |
| 15 | 14       | 18-Oct-22 | Customer14 | 1000   | Mumbai    |
| 16 | 15       | 19-Oct-22 | Customer15 | 900    |           |
| 17 | 16       | 22-Oct-22 | Customer16 | 4300   | Culcutta  |
| 18 | 17       | 23-Oct-22 | Customer17 | 5300   | Chennai   |
| 19 | 18       | 24-Oct-22 | Customer18 | 3500   | Bengalure |
| 20 | 19       | 25-Oct-22 | Customer19 | 2300   | Bengalure |
| 21 | 20       | 26-Oct-22 | Customer20 | 1750   | Bengalure |

2 Select any cell in the sheet to execute the Excel formulas all start with an = sign, followed by the function name and a section in parentheses to provide ranges or arguments. Start out by typing =sum(



3 Sum requires a range of cells you want to add together. You can type your range in, or you can select it using your mouse or input device. In this case, we will select D2:D21. Next up you can close the parenthesis, although newer versions of Excel will auto close it for you.



4 Repeat the same step of 2 and 3 for other functions also

|          |                  |
|----------|------------------|
| Sum:     | =SUM(D2:D21)     |
| Average: | =AVERAGE(D2:D21) |
| Max:     | =MAX(D2:D21)     |
| Min:     | =MIN(D2:D21)     |
| Count:   | =COUNT(D2:D21)   |

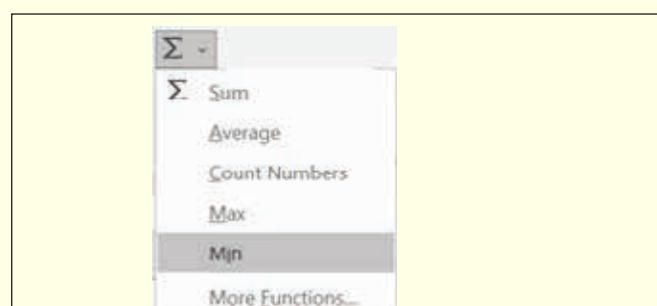
5 The result will be

|         |        |
|---------|--------|
| Sum     | 50950  |
| Average | 2547.5 |
| Min     | 900    |
| Max     | 5300   |
| Count   | 20     |

#### Additional Tips

##### Option1: Auto SUM Functions

1 Select bottom of last row on the empty cell the choose the appropriate function you want.



2 Then Excel will select the range of data to calculate automatically.

|  |                              |           |            |      |           |
|--|------------------------------|-----------|------------|------|-----------|
|  | 19                           | 25-Oct-22 | Customer19 | 2300 | Bengalure |
|  | 20                           | 26-Oct-22 | Customer20 | 1750 | Bengalure |
|  | Total =SUM(D2:D21)           |           |            |      |           |
|  | SUM(number1, [number2], ...) |           |            |      |           |

3 Click Enter to view the value of the function.

default, and can be configured by right-clicking on it to provide minimum, maximum, and numerical count.

#### Option2:

In the bottom right of the screen, select range the data Excel provide you with a Sum, Average, and Count by

Average: \$204.50 Count: 20 Sum: \$4,090.00

### TASK 2: Count cells by using COUNT(), COUNTIF() and COUNTBLANK()

1 Use the same table used in Task 1: and Repeat the Sept 1 and Sept 2 to execute the Count Functions.

- COUNT: To count cells that contain numbers in Amount Column.
- COUNTA: To count cells that are not empty in Address Column.
- COUNTIF: To count cells that meets a specified criteria as "Chennai" in Address Column.
- COUNTBLANK: To count cells that are blank inn Address Column.

|              |                            |
|--------------|----------------------------|
| COUNT()      | =COUNT(D2:D21)             |
| COUNTA()     | =COUNTA(E2:E21)            |
| COUNTIF()    | =COUNTIF(E2:E21,"Chennai") |
| COUNTBLANK() | =COUNTBLANK(E2:E21)        |

2 Result will be.

|              |    |
|--------------|----|
| COUNT()      | 20 |
| COUNTA()     | 17 |
| COUNTIF()    | 6  |
| COUNTBLANK() | 3  |

### TASK 3: Perform conditional operations by using the IF() function

#### If Function

The IF function checks whether a condition is met, and returns one value if TRUE and another value if FALSE.

1 Select cell C1 and enter the following formula. (Fig 1) = 1F (A1 >10,"Correct","incorrect")

| Fig 1                            |    |   |         |   |   |   |
|----------------------------------|----|---|---------|---|---|---|
| C1                               |    |   |         |   |   |   |
| =IF(A1>10,"Correct","Incorrect") |    |   |         |   |   |   |
|                                  | A  | B | C       | D | E | F |
| 1                                | 12 | 3 | Correct |   |   |   |
| 2                                |    |   |         |   |   |   |

The IF function returns Correct because the value in cell A1 is higher than 10.

#### And Function

The AND Function returns TRUE if all conditions are true and returns FALSE if any of the conditions are false.

2 Select cell D1 and enter the following formula. (Fig 2) = 1F(AND(A1)>10,B1>5), "Correct,"incorrect"

The AND function returns FALSE because the value in cell B1 is not higher than 5. As a result the IF function returns Incorrect.

| Fig 2                                      |    |   |         |           |   |   |
|--------------------------------------------|----|---|---------|-----------|---|---|
| D1                                         |    |   |         |           |   |   |
| =IF(AND(A1>10,B1>5),"Correct","Incorrect") |    |   |         |           |   |   |
|                                            | A  | B | C       | D         | E | F |
| 1                                          | 12 | 3 | Correct | Incorrect |   |   |
| 2                                          |    |   |         |           |   |   |

#### Or Function

The OR function returns TRUE if any of the conditions are TRUE and returns FALSE if all conditions are false.

3 Select cell E1 and enter the following formula. (Fig 3) = 1F(OR(A1)>10,B1>5), "Correct,"incorrect")

| Fig 3                                     |    |   |         |           |         |   |
|-------------------------------------------|----|---|---------|-----------|---------|---|
| E1                                        |    |   |         |           |         |   |
| =IF(OR(A1>10,B1>5),"Correct","Incorrect") |    |   |         |           |         |   |
|                                           | A  | B | C       | D         | E       | F |
| 1                                         | 12 | 3 | Correct | Incorrect | Correct |   |
| 2                                         |    |   |         |           |         |   |

**COPA - Perform Operations using Formulas and Functions****Format and modify text**

**Objectives:** At the end of this exercise you shall be able to

- format text using RIGHT(),LEFT() and MID() functions
- format text using UPPER(), LOWER() and LEN() functions
- format text using CONCAT() and TEXTJOIN() functions.

**Requirements****Tools/Equipment/Machines**

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

**PROCEDURE****TASK 1: Format text using RIGHT(),LEFT() and MID() functions****Right**

- 1 Extract the rightmost characters from a string, use the RIGHT function. (Fig 1) = Right (A1,2)

| Fig 1 |              |   |   |    |
|-------|--------------|---|---|----|
| D1    | A            | B | C | D  |
| 1     | example text |   |   | xt |
| 2     |              |   |   |    |

Fig 2

| Fig 2 |              |   |   |      |
|-------|--------------|---|---|------|
| D1    | A            | B | C | D    |
| 1     | example text |   |   | exam |
| 2     |              |   |   |      |

Fig 3

| Fig 3 |              |   |   |     |
|-------|--------------|---|---|-----|
| D1    | A            | B | C | D   |
| 1     | example text |   |   | ple |
| 2     |              |   |   |     |

Note: started at position 5 (p) with length 3(ple).

**Left**

- 2 Extract the leftmost characters from a string, use the LEFT function. (Fig 2) = Left (A1,4)

**Mid**

- 4 Extract a substring, starting in the middle of a string, use the MID function. (Fig 3) =MID(A1,5,3)

**TASK 2: Format text using UPPER(), LOWER() and LEN() functions****Len**

- 1 Get the length of a string, use the LEN function. (Fig 4) =LEN(A1)

**Note: space (position 8) included!**

| Fig 4 |              |   |   |    |
|-------|--------------|---|---|----|
| D1    | A            | B | C | D  |
| 1     | example text |   |   | 12 |
| 2     |              |   |   |    |

**Lower/Uppercase**

- 1 Use the LOWER function to convert all letters in a text string to lowercase. (Fig 5)=LOWER(A1)

| Fig 5 |                        |                        |   |   |
|-------|------------------------|------------------------|---|---|
| B1    | A                      | B                      | C | D |
| 1     | Hi THERE, how are You? | hi there, how are you? |   |   |
| 2     |                        |                        |   |   |

- 2 Use the UPPER function to convert all letters in a text string to uppercase. (Fig 6)=UPPER(A1)

| Fig 6 |                        |                        |   |   |   |
|-------|------------------------|------------------------|---|---|---|
|       | A                      | B                      | C | D | E |
| 1     | Hi THERE, how are You? | HI THERE, HOW ARE YOU? |   |   |   |
| 2     |                        |                        |   |   |   |

### TASK 3: Format text using CONCAT() and TEXTJOIN() functions

#### Concatenate Strings

This example illustrates four different ways to concatenate (join) strings in Excel.

- 1 Simply use the & operator to join strings. (Fig 7)=A2&""&B2&""&C2&""D2

| Fig 7 |       |            |             |           |                  |   |
|-------|-------|------------|-------------|-----------|------------------|---|
|       | A     | B          | C           | D         | E                | F |
| 1     | Title | First Name | Middle Name | Last Name | Full Name        |   |
| 2     | Dr.   | Tom        | F.          | Brady     | Dr. Tom F. Brady |   |
| 3     |       |            |             |           |                  |   |

Note: to insert a space, use " "

- 2 The CONCATENATE function produces the exact same result. (Fig 8) = CONCATENATE(A2,""B2,""C2,""D2")

| Fig 8 |       |            |             |           |                  |   |
|-------|-------|------------|-------------|-----------|------------------|---|
|       | A     | B          | C           | D         | E                | F |
| 1     | Title | First Name | Middle Name | Last Name | Full Name        |   |
| 2     | Dr.   | Tom        | F.          | Brady     | Dr. Tom F. Brady |   |
| 3     |       |            |             |           |                  |   |

- 3 The CONCAT function in Excel 2016 produces the exact same result. (Fig 9) = CONCAT(A2,""B2,""C2,""D2)

| Fig 9 |       |            |             |           |                  |   |
|-------|-------|------------|-------------|-----------|------------------|---|
|       | A     | B          | C           | D         | E                | F |
| 1     | Title | First Name | Middle Name | Last Name | Full Name        |   |
| 2     | Dr.   | Tom        | F.          | Brady     | Dr. Tom F. Brady |   |
| 3     |       |            |             |           |                  |   |

- 4 The CONCAT function can also join a range of strings. If user don't need a delimiter (space, comma, dash, etc.) this can be useful. (Fig 10) =CONCAT(A1:E1)

| Fig 10 |   |   |     |     |      |              |
|--------|---|---|-----|-----|------|--------------|
|        | A | B | C   | D   | E    | F            |
| 1      | + | 1 | 415 | 648 | 5703 | +14156485703 |
| 2      |   |   |     |     |      |              |

- 5 The CONCAT function cannot ignore empty cells. Take a look at all the extra spaces in column E below if drag the function in cell E2 down to cell E11. (Fig 11)

| Fig 11 |          |            |             |           |                    |   |
|--------|----------|------------|-------------|-----------|--------------------|---|
|        | A        | B          | C           | D         | E                  | F |
| 1      | Title    | First Name | Middle Name | Last Name | Full Name          |   |
| 2      | Dr.      | Tom        | F.          | Brady     | Dr. Tom F. Brady   |   |
| 3      | Peyton   |            |             | Manning   | Peyton Manning     |   |
| 4      | Adrian   |            | D.          | Peterson  | Adrian D. Peterson |   |
| 5      | Mr.      | Ray        |             | Lewis     | Mr. Ray Lewis      |   |
| 6      | Ed       |            |             | Reed      | Ed Reed            |   |
| 7      | Troy     |            | E.          | Polamalu  | Troy E. Polamalu   |   |
| 8      | Andre    |            |             | Johnson   | Andre Johnson      |   |
| 9      | Darrelle |            |             | Revis     | Darrelle Revis     |   |
| 10     | Dr.      | Drew       | Q.          | Brees     | Dr. Drew Q. Brees  |   |
| 11     | Julius   |            |             | Peppers   | Julius Peppers     |   |
| 12     |          |            |             |           |                    |   |

- 6 The TEXTJOIN function in Excel 2016 is that it can ignore empty cells (if the second argument is set to TRUE). (Fig 12)

Note: the TEXTJOIN function joins a range of strings using a delimiter (first argument).

6 Get it check with your instructor.

| Fig 12 |          |            |             |           |                    |
|--------|----------|------------|-------------|-----------|--------------------|
|        | A        | B          | C           | D         | E                  |
| 1      | Title    | First Name | Middle Name | Last Name | Full Name          |
| 2      | Dr.      | Tom        | F.          | Brady     | Dr. Tom F. Brady   |
| 3      | Peyton   |            |             | Manning   | Peyton Manning     |
| 4      | Adrian   |            | D.          | Peterson  | Adrian D. Peterson |
| 5      | Mr.      | Ray        |             | Lewis     | Mr. Ray Lewis      |
| 6      | Ed       |            |             | Reed      | Ed Reed            |
| 7      | Troy     |            | E.          | Polamalu  | Troy E. Polamalu   |
| 8      | Andre    |            |             | Johnson   | Andre Johnson      |
| 9      | Darrelle |            |             | Revis     | Darrelle Revis     |
| 10     | Dr.      | Drew       | Q.          | Brees     | Dr. Drew Q. Brees  |
| 11     | Julius   |            |             | Peppers   | Julius Peppers     |
| 12     |          |            |             |           |                    |

**COPA - Manage Charts****Create Charts**

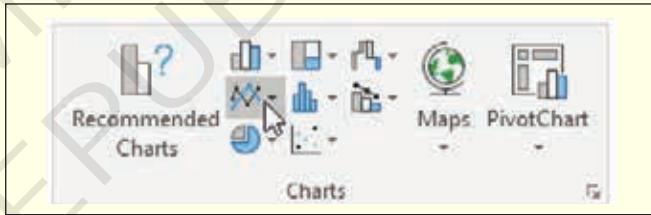
**Objectives:** At the end of this exercise you shall be able to

- create charts
- create chart sheets.

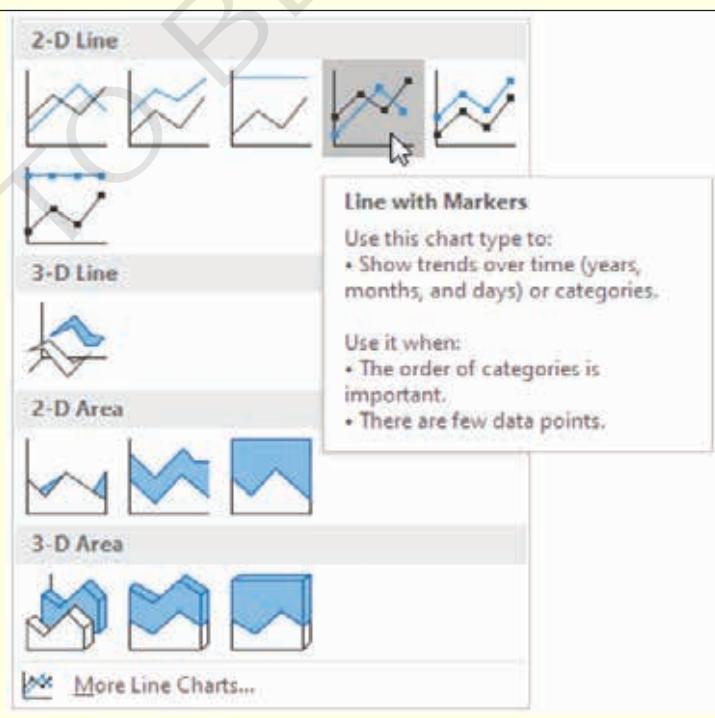
**Requirements****Tools/Equipment/Machines**

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

**PROCEDURE****TASK 1: Create charts**

- 1 Create a Table
  - 2 Select data the range A1:D13for the chart.
  - 3 Select Insert > Recommended Charts.
  - 4 Select a chart on the Recommended Charts tab, to preview the chart.
  - 5 Or On the Insert tab, in the Charts group, click the Line symbol.
- 
- 6 Click Line with Markers.

| A       | B     | C      | D   |
|---------|-------|--------|-----|
| 1 Month | Books | Pencil | Pen |
| 2 JAN   | 100   | 50     | 68  |
| 3 FEB   | 90    | 80     | 70  |
| 4 MAR   | 102   | 58     | 43  |
| 5 APR   | 80    | 100    | 50  |
| 6 MAY   | 70    | 90     | 80  |
| 7 JUN   | 60    | 102    | 58  |
| 8 JUL   | 55    | 80     | 100 |
| 9 AUG   | 90    | 70     | 90  |
| 10 SEP  | 80    | 55     | 102 |
| 11 OCT  | 110   | 90     | 80  |
| 12 NOV  | 95    | 80     | 70  |
| 13 DEC  | 100   | 110    | 43  |



**Line with Markers**

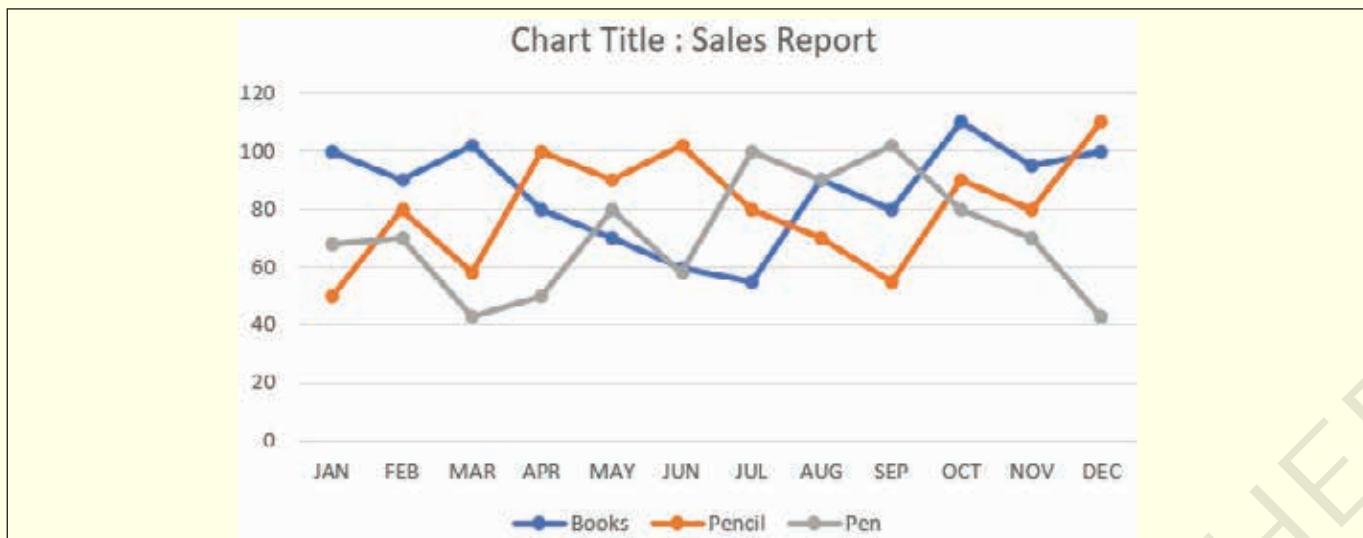
Use this chart type to:

- Show trends over time (years, months, and days) or categories.

Use it when:

- The order of categories is important.
- There are few data points.

Result:

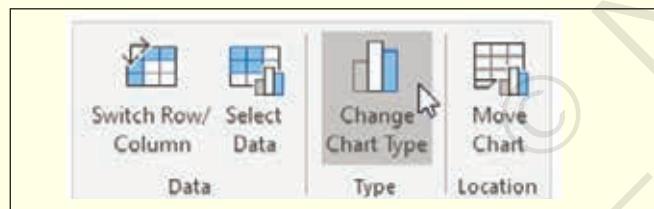


Note: enter a title by clicking on Chart Title.  
For example: Sales Report.

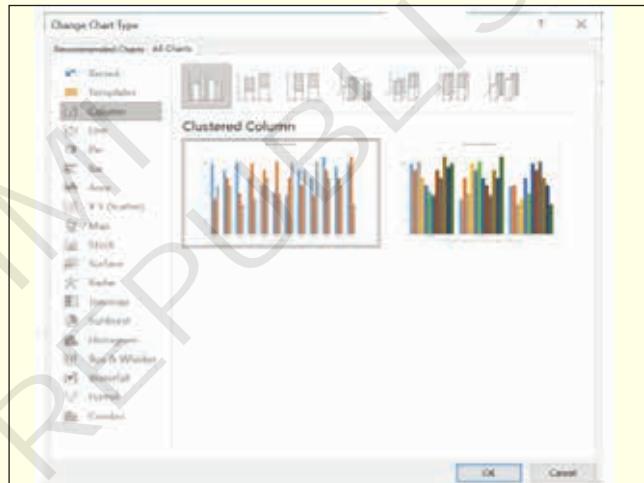
#### Change Chart Type

You can easily change to a different type of chart at any time using table or chart.

- 1 Select the chart.
- 2 On the Chart Design tab, in the Type group, click Change Chart Type.

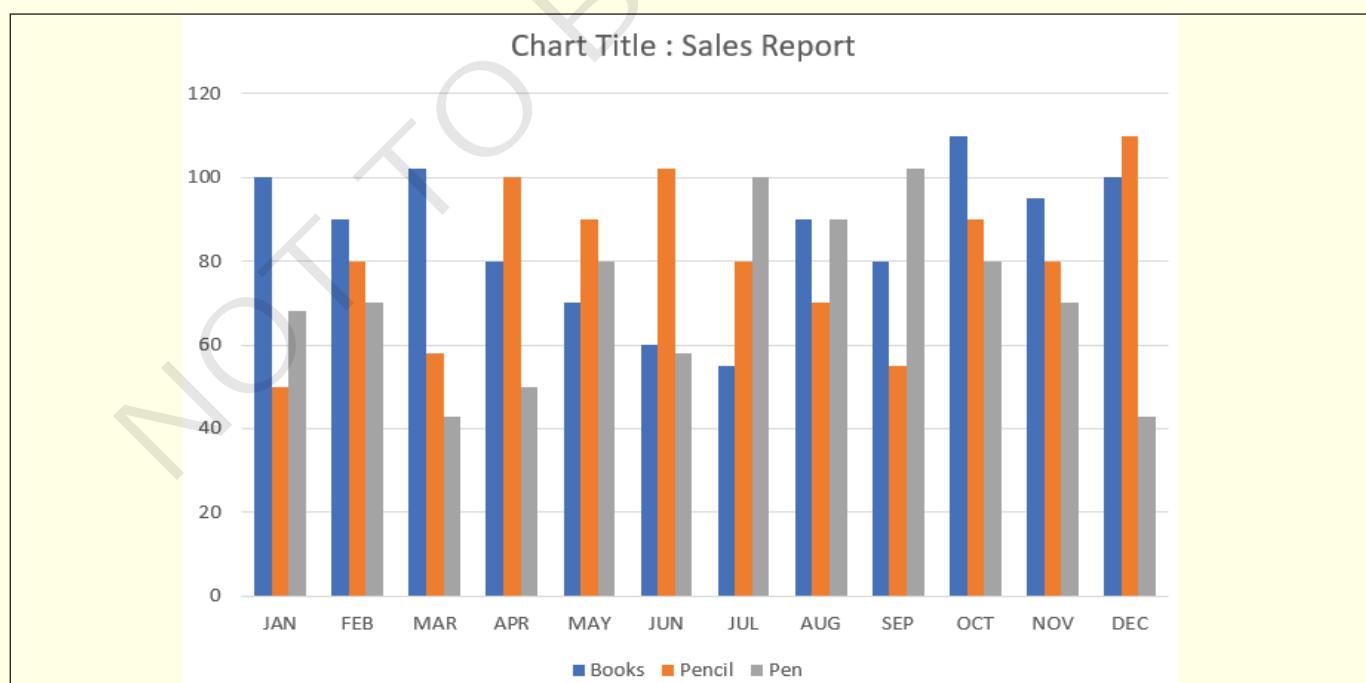


- 3 On the left side, click Column.



- 4 Click OK.

Result:

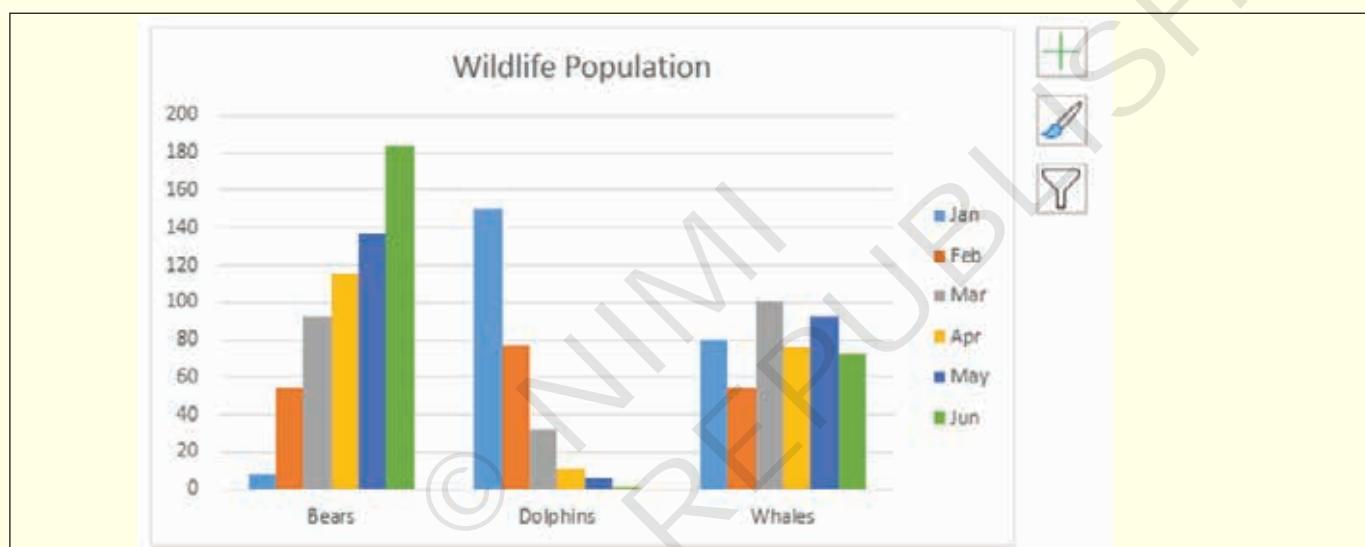
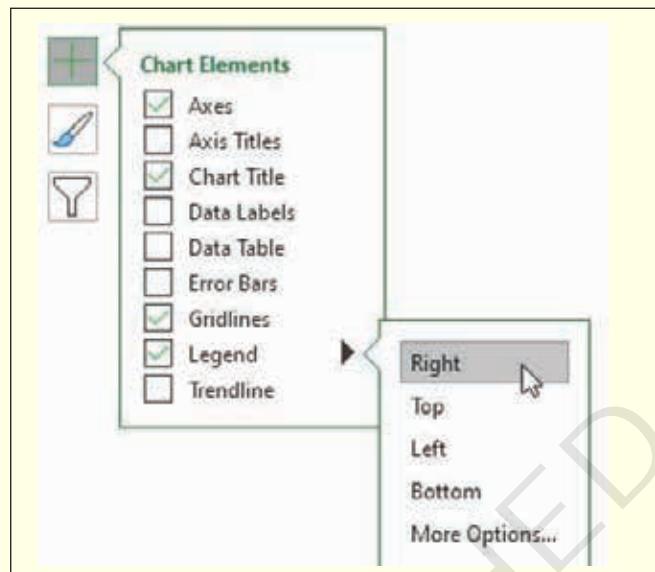


## Legend Position

To move the legend to the right side of the chart, execute the following steps.

- 1 Select the chart.
- 2 Click the + button on the right side of the chart, click the arrow next to Legend and click Right.

Result:

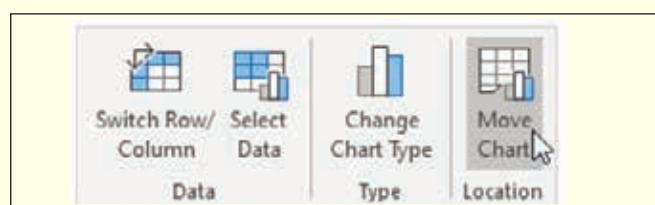


## TASK 2: Create chart sheets

So far, we have only seen charts on the same worksheet as the source data (embedded charts). However, you can also move a chart to a separate sheet that only contains a chart (chart sheet).

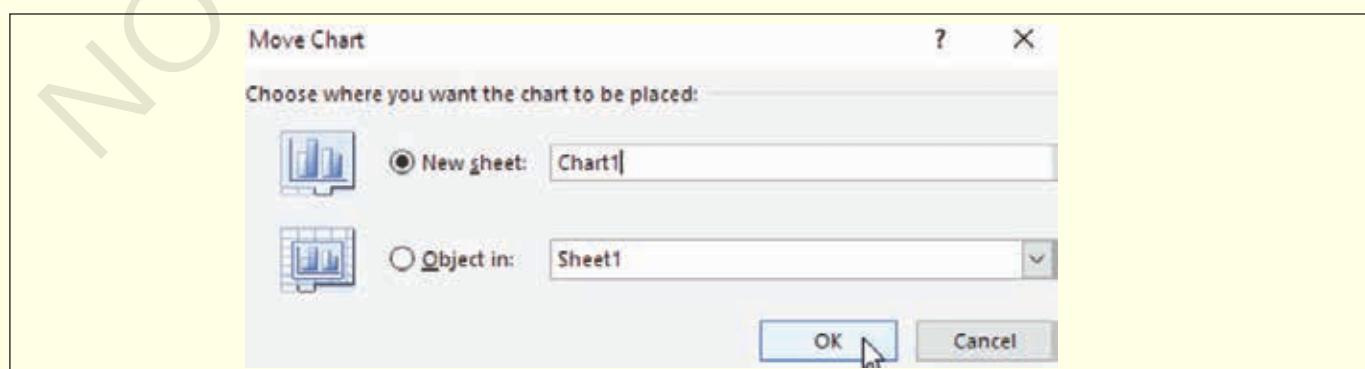
To move a chart to a chart sheet, execute the following steps.

- 1 Select the chart.
- 2 On the Chart Design tab, in the Location group, click Move Chart.



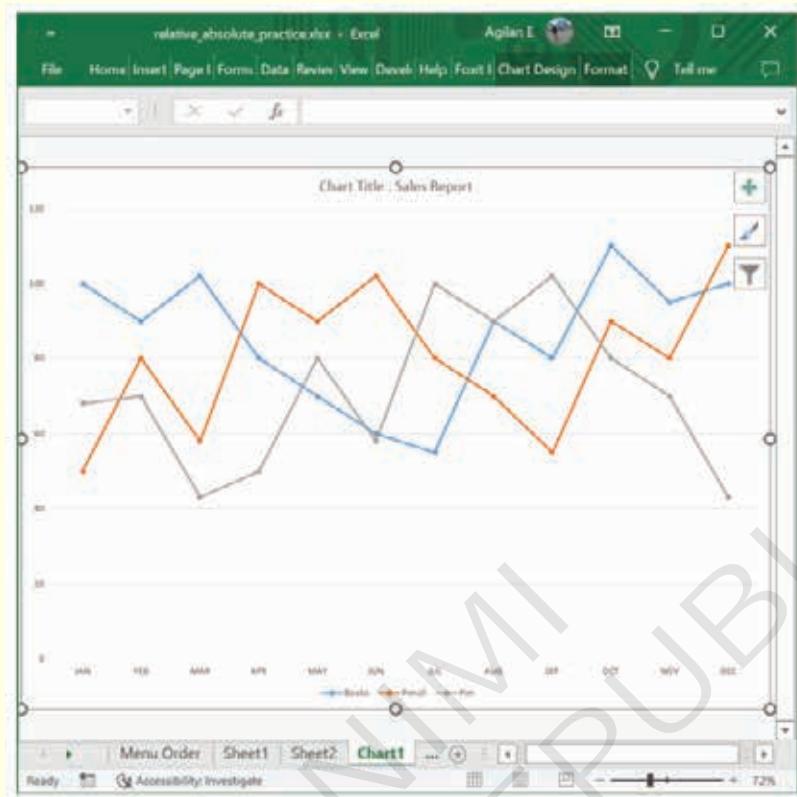
The Move Chart dialog box appears.

- 3 Click New sheet and enter a name.
- 4 Click OK.



## Result

Note: repeat these steps, but instead of New sheet at step 3, click Object in, to move the chart back to the same worksheet as the source data.



## COPA - Manage Charts

### Modify charts

**Objectives:** At the end of this exercise you shall be able to

- add data series to charts
- switch between rows and columns in source data
- add and modify chart elements
- add trend lines to chart.

### Requirements

#### Tools/Equipment/Machines

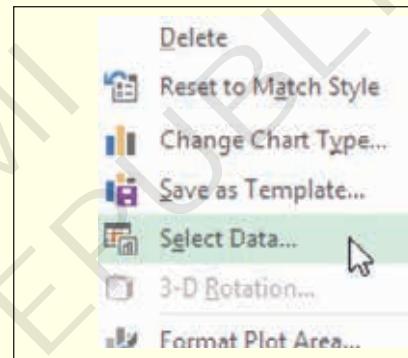
- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

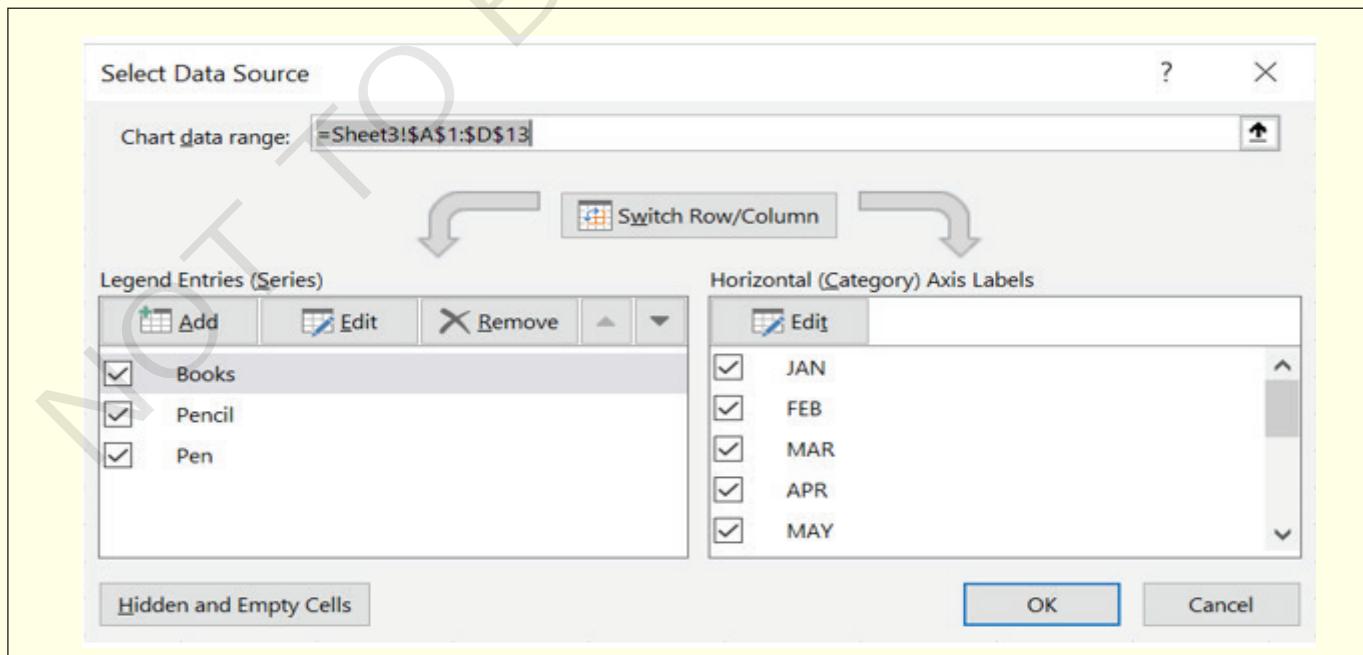
#### TASK 1: Add data series to charts

**Ref - EX.1.18.64 - Task 1 – Table and Chart to execute this exercise.**

- 1 On the worksheet that contains your chart data, in the cells directly next to or below your existing source data for the chart, enter the new data series you want to add.
  - 2 Click the worksheet that contains your chart.
  - 3 Right-click the chart, and then choose Select Data.
- The Select Data Source dialog box appears on the worksheet that contains the source data for the chart.
- 4 Add, Edit and Remove the new data series appears under Legend Entries (Series) and Horizontal(Category) Axis Labels in the Select Data Source dialog box.



- 5 After required changes completed then Click OK to close the dialog box and to return to the chart sheet.



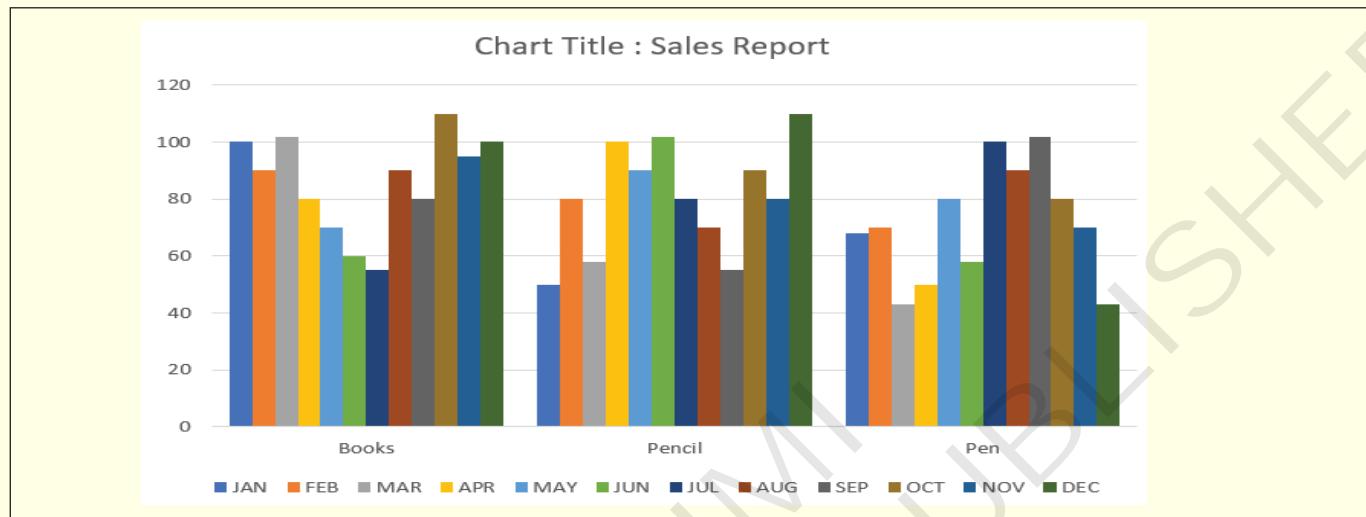
## TASK 2: Switch between rows and columns in source data

**Ref - EX.1.18.64 - Task 1 – Use the same Table and Chart to execute this exercise.**

If you want to display the Items (instead of the months) on the horizontal axis, execute the following steps.

- 1 Select the chart.
- 2 On the Chart Design tab, in the Data group, click Switch Row/Column.

Result:



## TASK 3: Add and modify chart elements

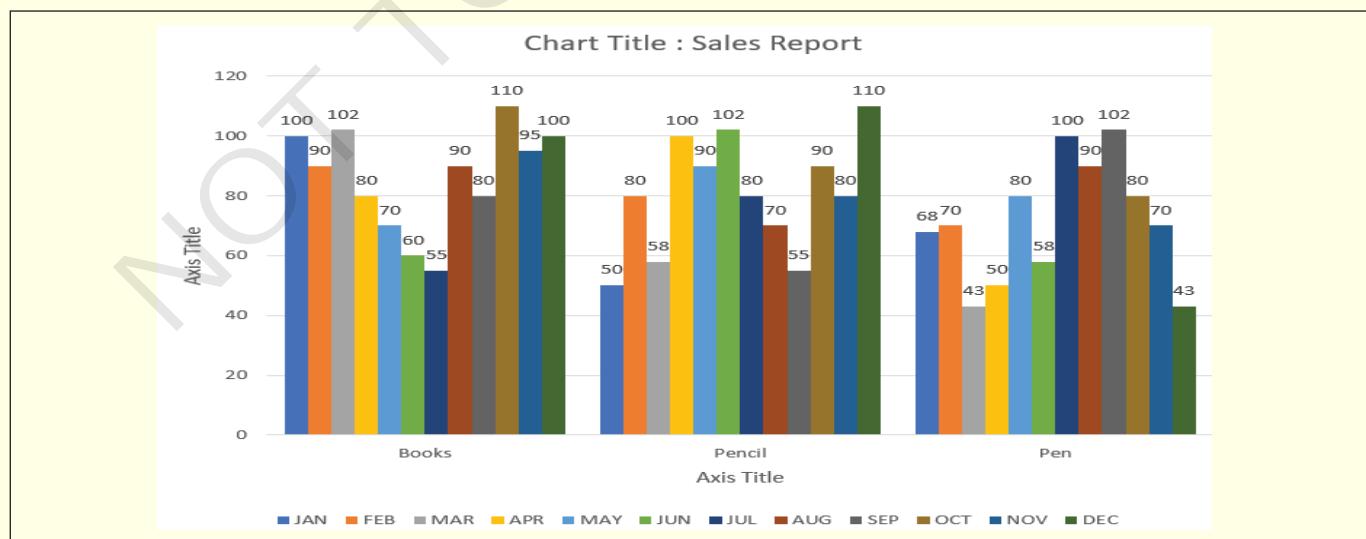
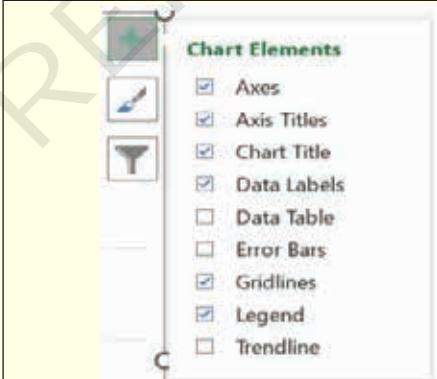
**Ref - EX.1.18.64 - Task 1 – Table and Chart to execute this exercise.**

### Chart Elements

You can use data labels to focus your readers' attention on a single data series or data point.

- 1 Select the chart.
- 2 Click the + button on the right side of the chart and click the check box next to Data Labels.

Result:

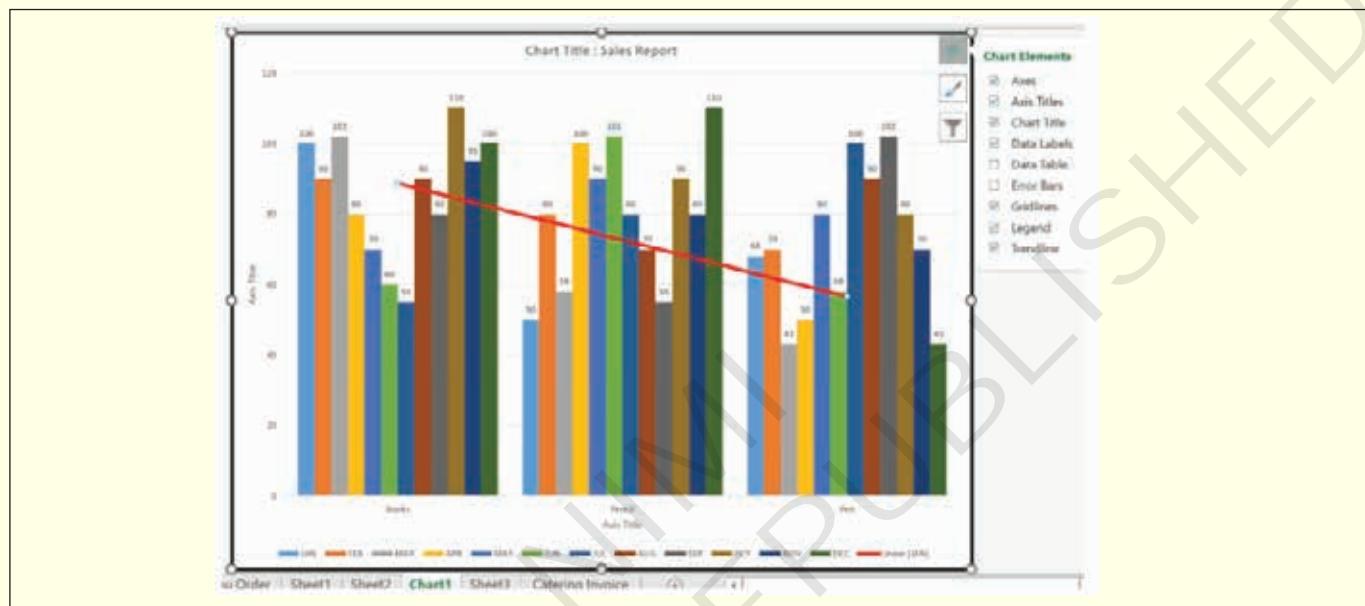
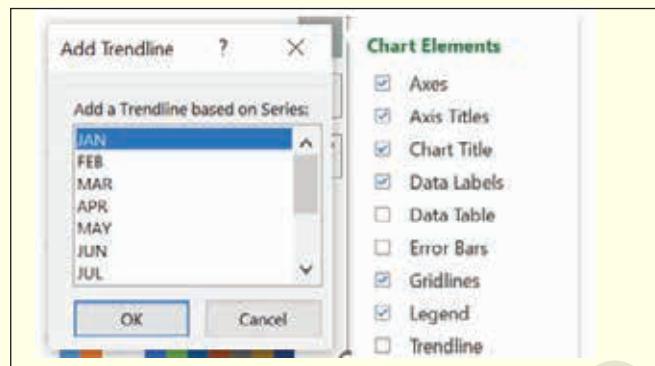


## TASK 4: Add trend lines to chart

**Ref - EX.1.18.64 - Task 1 – Use the same Table and Chart to execute this exercise.**

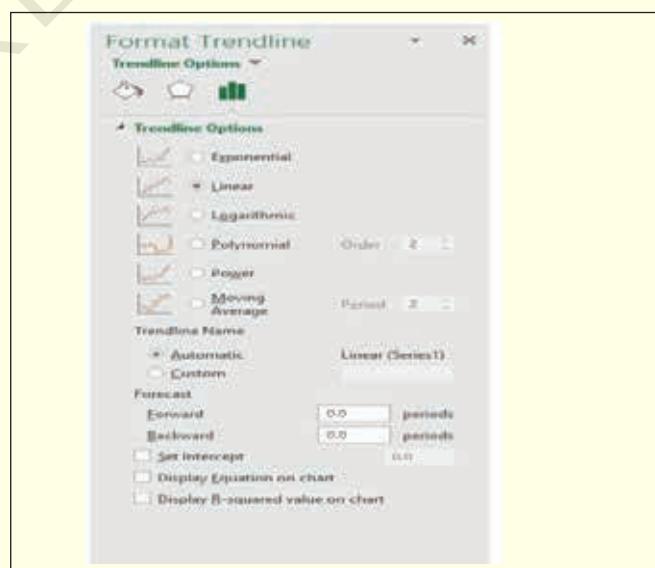
- 1 Select a chart.
- 2 Select the + to the top right of the chart.
- 3 Select Trendline.
- 4 In the Add Trendline dialog box, select any data series options you want, and click OK.

Result:



### Format a trendline

- 1 Click anywhere in the chart.
- 2 On the Format tab, in the Current Selection group, select the trendline option in the dropdown list.
- 3 Click Format Selection.
- 4 In the Format Trendline pane, select a Trendline Option to choose the trendline you want for your chart. Formatting a trendline is a statistical way to measure data:
- 5 Set a value in the Forward and Backward fields to project your data into the future.



**COPA - Manage Charts****Format charts**

**Objectives:** At the end of this exercise you shall be able to

- apply chart layouts
- apply chart styles
- add alternative text to charts for accessibility.

**Requirements****Tools/Equipment/Machines**

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

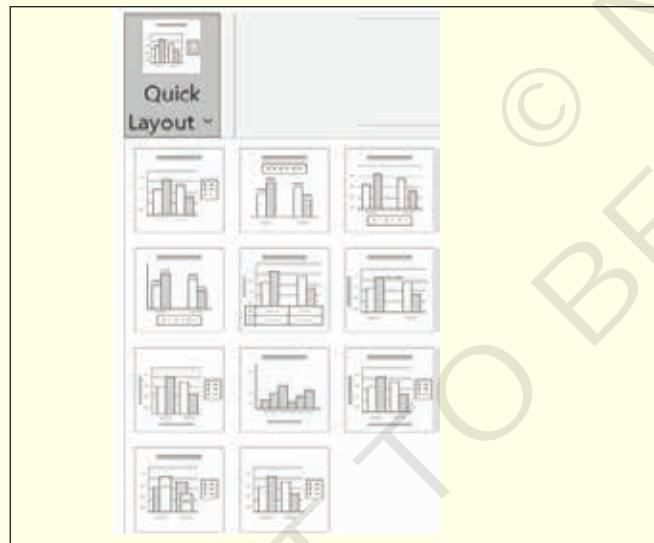
**PROCEDURE****TASK 1: Apply chart layouts**

**Ref - EX.1.18.64 - Task 1 – Use the same Table and Chart to execute this exercise.**

- 1 Click the chart that you want to format.

This displays the Chart Tools, adding the Design, Layout, and Format tabs.

- 2 On the Design tab, in the Chart Layouts group, click the Quick layout that you want to use.

**TASK 2: Apply chart styles**

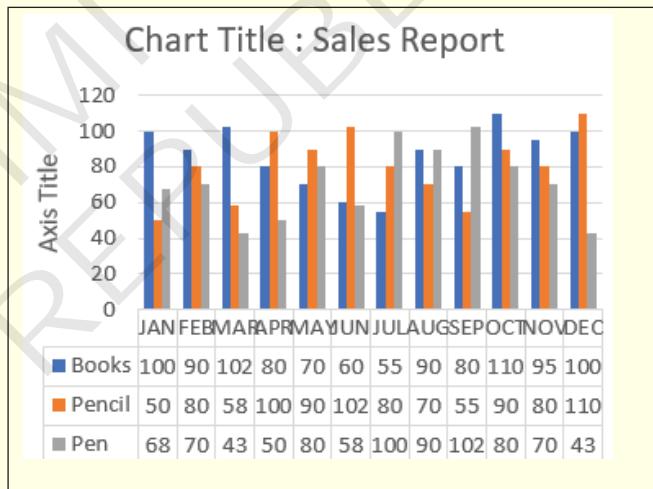
**Ref - EX.1.18.64 - Task 1 – Use the same Table and Chart to execute this exercise.**

- 1 Click the chart that you want to format.

This displays the Chart Tools, adding the Design, Layout, and Format tabs.

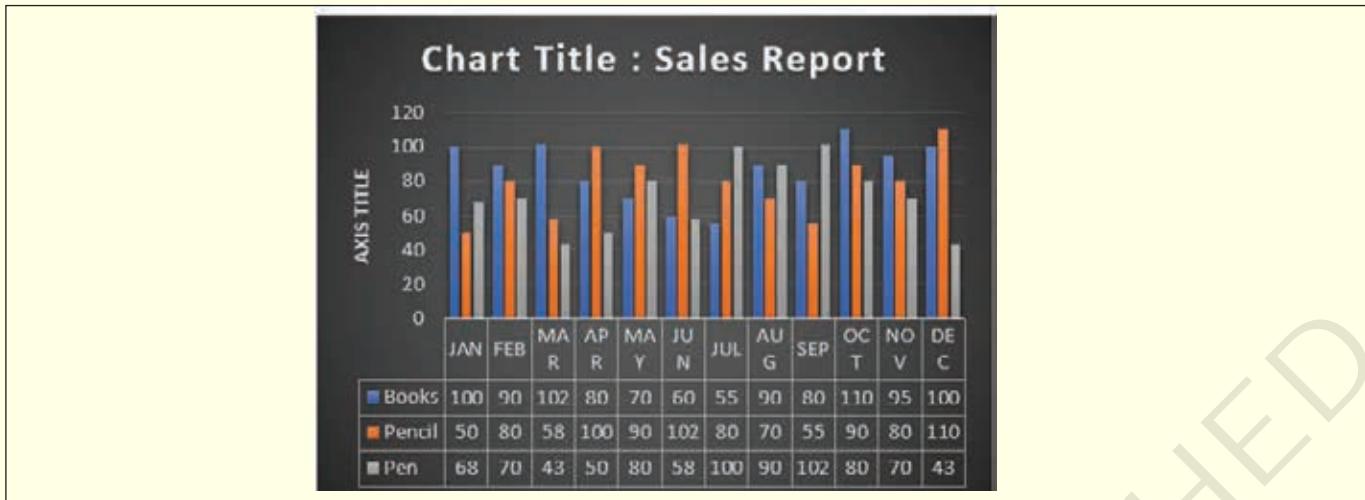
- 3 Choose the any Chart layout that you want to create.

- 4 Result: Layout5 selected



3 Choose the any Chart Style that you want to create.

4 Result: Style 8 selected



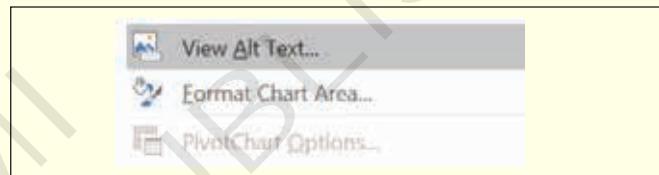
### TASK 3: Add alternative text to charts for accessibility

Ref - EX.1.18.64 - Task 1 – Use the same Table and Chart to execute the this exercise.

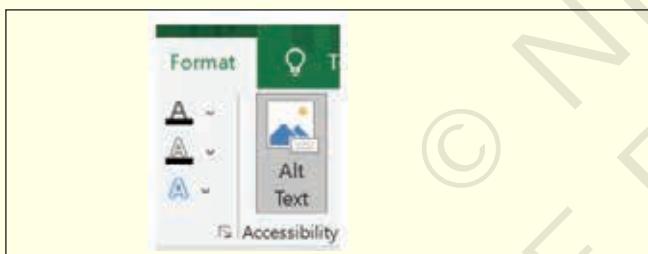
Add alt text to a chart

- 1 Select the entire chart.
- 2 Do one of the following:
  - Select Format > Alt Text.

- Right-click the chart, and select Edit Alt Text.



- 3 In the Alt Text pane, enter alt text describing the chart.



**COPA - Manage Pivot Tables****Create Pivot Tables**

**Objectives:** At the end of this exercise you shall be able to

- create Pivot tables from cell ranges
- manipulate fields (columns) to get desired analysis
- use Filters for pivot tables
- represent data as Count, Sum, Average & % of row / column
- group data in Columns & rows for aggregate reports.

**Requirements****Tools/Equipment/Machines**

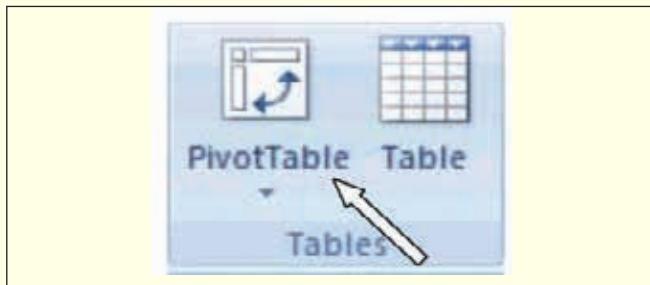
- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

**PROCEDURE****TASK 1: Create Pivot tables from cell ranges**

- 1 Open a new file and enter the data in the subsequent cells as shown in Fig 1.

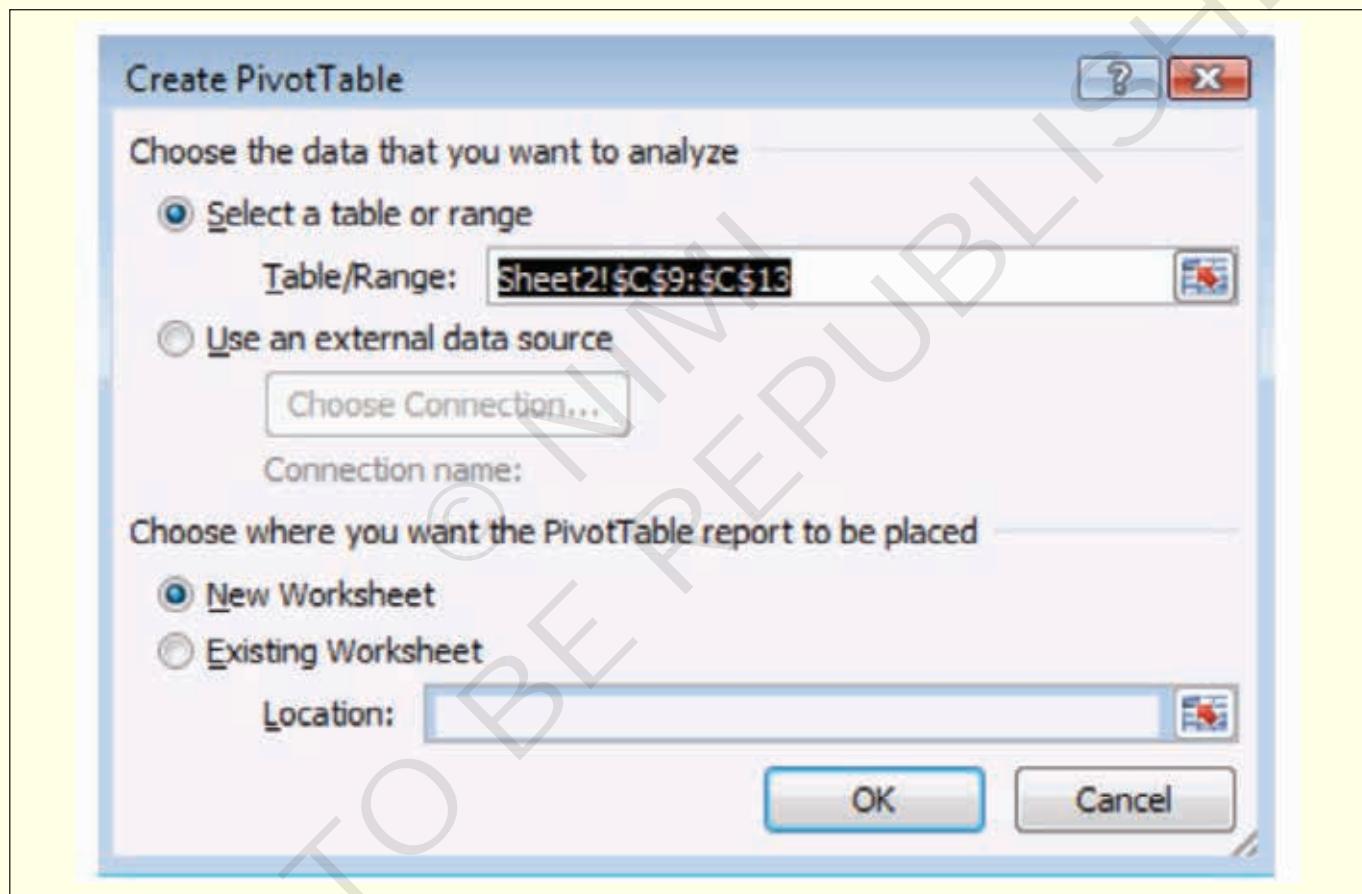
|    | A      | B                       | C      | D       | E   | F |
|----|--------|-------------------------|--------|---------|-----|---|
| 1  | Sl.No. | Name                    | Quali  | Trade   | Age |   |
| 2  | 1      | Amarnath C.             | Dip    | D/Civil | 21  |   |
| 3  | 2      | Azhagengantham G        | NTC    | MMV     | 24  |   |
| 4  | 3      | Balamurugan K.          | PT-Dip | MMV     | 26  |   |
| 5  | 4      | Devadoss J              | NTC    | Fitter  | 32  |   |
| 6  | 5      | Easwaran V.             | Dip    | MMV     | 21  |   |
| 7  | 6      | Ganapathy V.            | NTC    | Turner  | 28  |   |
| 8  | 7      | George Franklin T.      | Dip    | MMV     | 20  |   |
| 9  | 8      | Jayaraman V.            | NTC    | Elec    | 31  |   |
| 10 | 9      | Jeyalakshmi P.          | NTC    | Turner  | 30  |   |
| 11 | 10     | Jeyachandran S.         | NTC    | Fitter  | 30  |   |
| 12 | 11     | Kalaivanan S.           | NTC    | Turner  | 33  |   |
| 13 | 12     | Krishnaraj S.           | NTC    | Turner  | 30  |   |
| 14 | 13     | Lashmanan H.            | Dip    | Turner  | 22  |   |
| 15 | 14     | Leelavathi V.           | Dip    | MRTV    | 21  |   |
| 16 | 15     | Madasamy M.             | NTC    | Elec    | 32  |   |
| 17 | 16     | Mahalekshmi C.          | Dip    | MRTV    | 21  |   |
| 18 | 17     | Muthiah K.              | NTC    | Fitter  | 27  |   |
| 19 | 18     | Narayana Primal         | NTC    | MMV     | 35  |   |
| 20 | 19     | Palaniswami             | Dip    | Turner  | 25  |   |
| 21 | 20     | Parikrama R.            | Dip    | MRAC    | 24  |   |
| 22 | 21     | Ramiza Banu N.          | Dip    | MRTV    | 23  |   |
| 23 | 22     | Ravindranath K.         | Dip    | MRAC    | 27  |   |
| 24 | 23     | Sasidharan K.           | Dip    | MRAC    | 24  |   |
| 25 | 24     | Sathya raj D.           | NTC    | Fitter  | 27  |   |
| 26 | 25     | Soundararajan S.        | NTC    | Turner  | 34  |   |
| 27 | 26     | Sudhaa Dridhe           | Dip    | MRTV    | 21  |   |
| 28 | 27     | Thaniyarasu             | Dip    | MMV     | 21  |   |
| 29 | 28     | Tharmaraj L.            | PT-Dip | Fitter  | 25  |   |
| 30 | 29     | Tillai Bala Sundaram N. | NTC    | Turner  | 29  |   |

- 2 Click A1 inside the table to make the active cell.
- 3 Select **Insert** tab.
- 4 Click  button **Tables** group as shown in Fig 2.



**"Create Pivot Table" dialog box will appear as shown in Fig 3 with auto selected table range.**

- 5 Click  button in the above dialog box.
- A new worksheet will appear in the workbook, with a special pane at right side of the screen as shown in Fig 4.
- 6 Drag the "Trade" field and drop it under  pane and the screen appears as shown in Fig 5.



**PTable - Microsoft Excel**

**PivotTable Tools**

PivotTable Name: Active Field: PivotTable3

Options Design

Group Selection  
Ungroup  
Group Field  
Group  
Sort  
Refresh Change Data Source  
Clear Select Move PivotTable Actions  
PivotChart Formulas OLAP Tools  
Tools  
Field List Buttons Headers Show/Hide

A3

To build a report, choose fields from the PivotTable Field List.

PIVOTABLE FIELD LIST

Choose fields to add to report:  
 Sl.No.  
 Name  
 Qual  
 Trade  
 Age

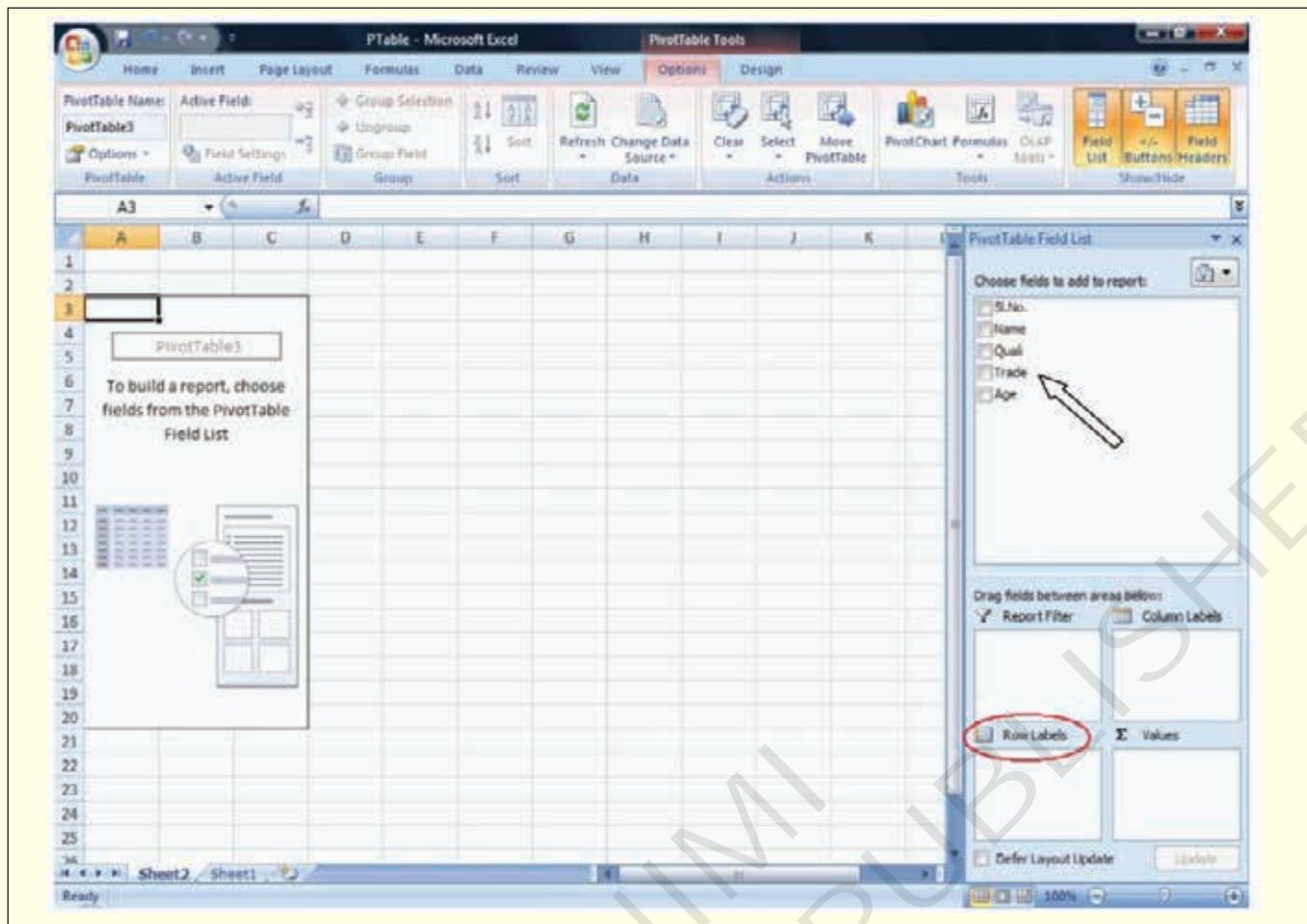
Drag fields between areas below:  
Report Filter Column Labels

Row Labels Values

Defer Layout Update Update

Sheet2 Sheet1

Ready



**PTable - Microsoft Excel**

**PivotTable Tools**

PivotTable Name: Active Field: PivotTable3

Options Design

Group Selection  
Ungroup  
Group Field  
Group  
Sort  
Data  
Refresh Change Data Source  
Clear Select Move PivotTable Actions  
PivotChart Formulas OLAP Tools  
Tools  
Field List Buttons Headers Show/Hide

A3 Row Labels

D/Civil  
Elec  
Fitter  
MMV  
MRAC  
MRTV  
Turner

Grand Total

PIVOTABLE FIELD LIST

Choose fields to add to report:  
 Sl.No.  
 Name  
 Qual  
 Trade  
 Age

Drag fields between areas below:  
Report Filter Column Labels

Row Labels Values

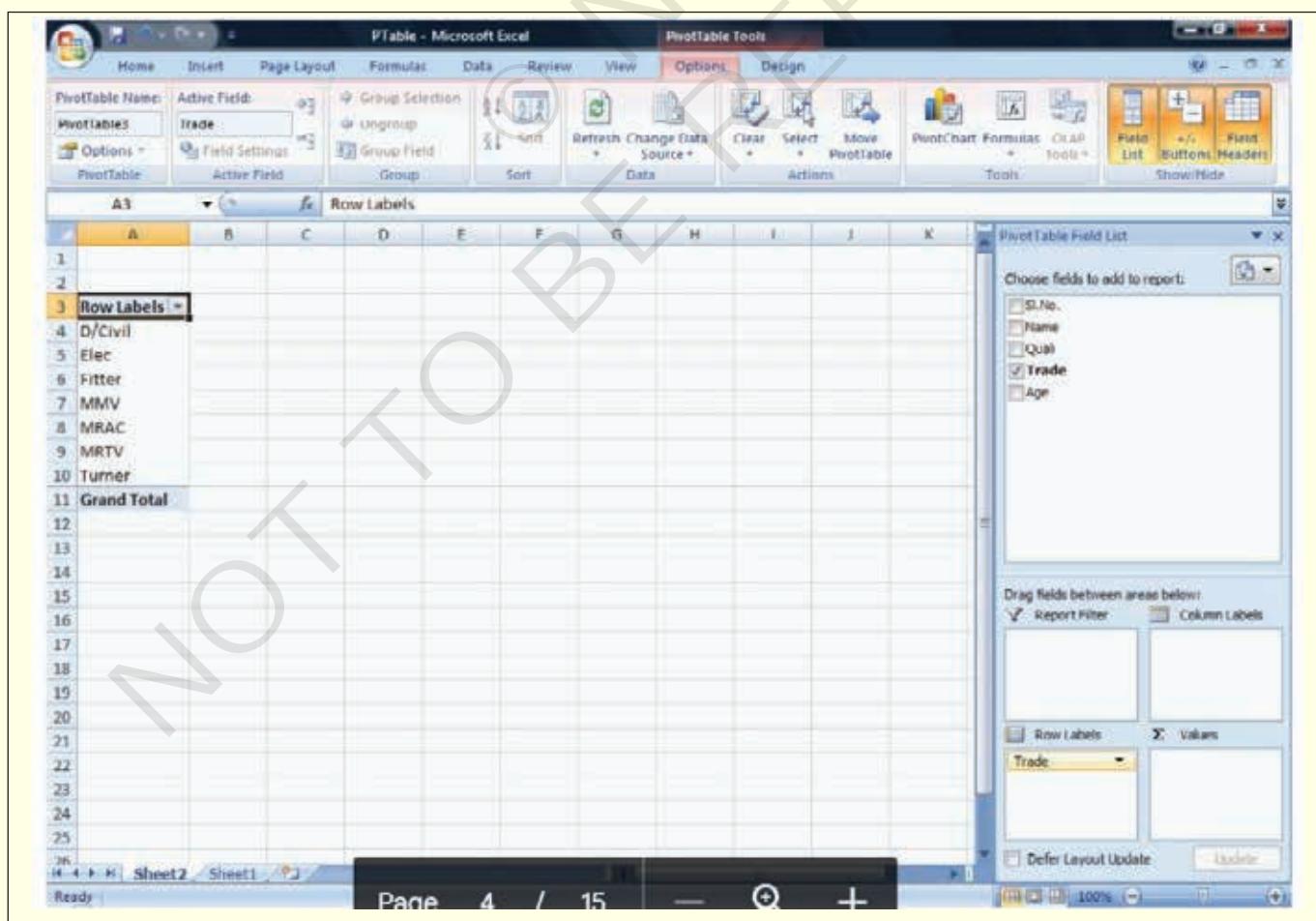
Trade

Defer Layout Update Update

Sheet2 Sheet1

Ready

Page 4 / 15



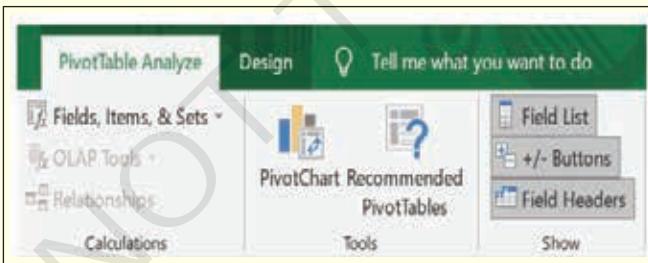
- 7 Drag the “Name” field and drop it under  **$\Sigma$  Values** pane and the screen changes its appearance as shown in Fig 6.

- 8 Drag the “Trade” field and put it outside of the pane.  
 9 Drag the “Quali” field and drop it under **Row Labels** pane.

10 Drag the “Name” field & “Age” field and drop it under  **$\Sigma$  Values** pane.

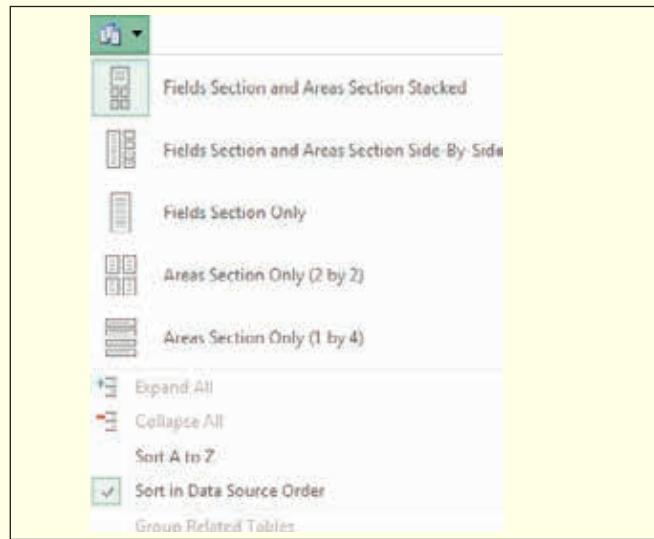
## TASK 2: Manipulate fields (columns) to get desired analysis

- 1 PivotTable Tools on the ribbon and click Analyze> Field List.



- 2 The Field List has a field section in which you pick the fields you want to show in your PivotTable, and the Areas section (at the bottom) in which you can arrange those fields the way you want.

- 3 If you want to change how sections are shown in the Field List, click the Tools button  and then pick the layout you want.



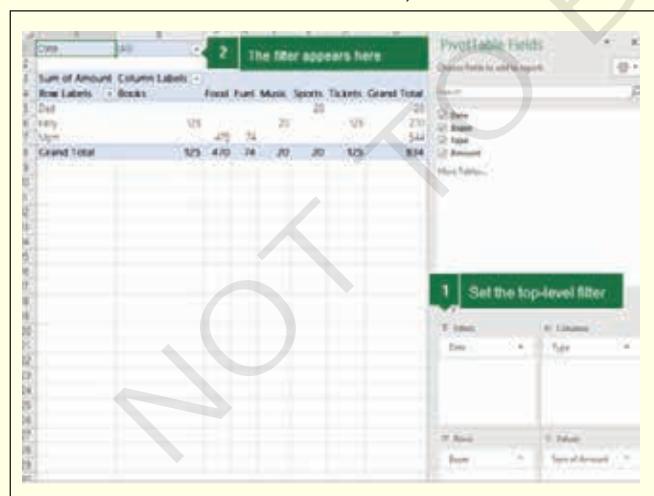
#### Add, rearrange, and delete fields in the Field List

- 1 Use the field section of the Field List to add fields to your PivotTable, by checking the box next to field names to place those fields in the default area of the Field List.

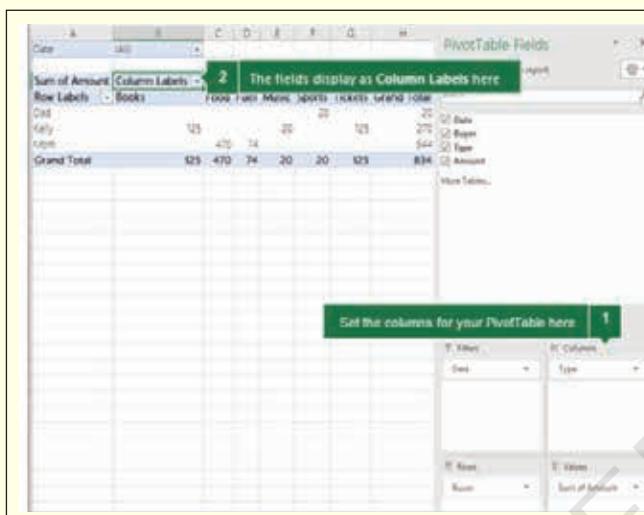
**NOTE:** Typically, nonnumeric fields are added to the Rows area, numeric fields are added to the Values area, and Online Analytical Processing (OLAP) date and time hierarchies are added to the Columns area.

- 2 Use the areas section (at the bottom) of the Field List to rearrange fields the way you want by dragging them between the four areas.  
3 Fields that you place in different areas are shown in the PivotTable as follows:

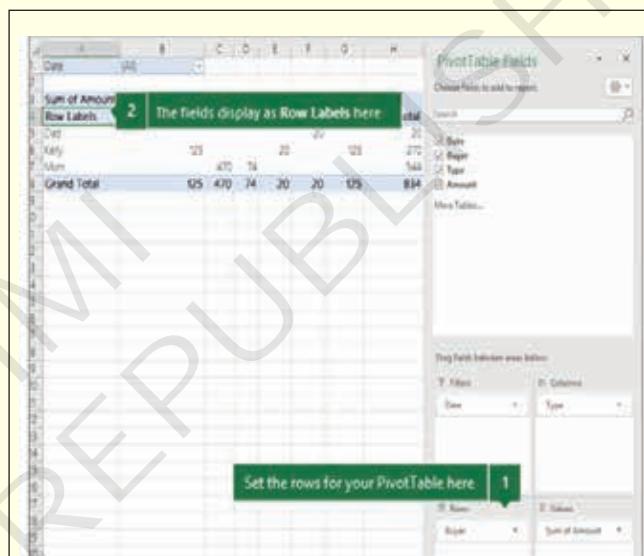
- Filters area fields are shown as top-level report filters above the PivotTable, like this:



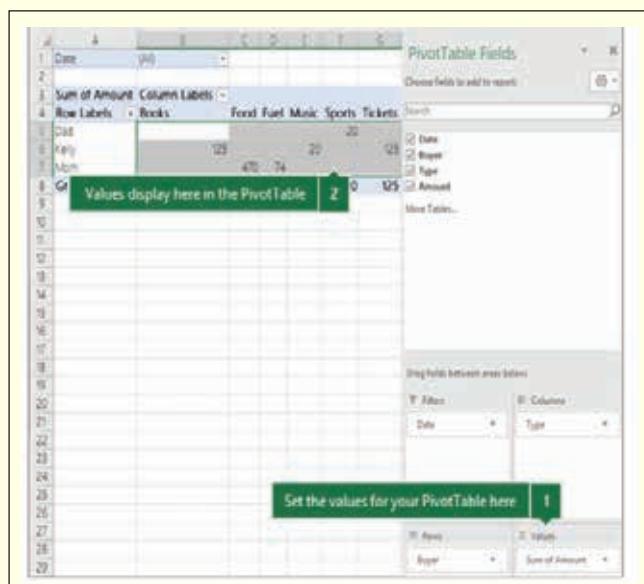
- Columns area fields are shown as Column Labels at the top of the PivotTable, like this:
- 4 Depending on the hierarchy of the fields, columns may be nested inside columns that are higher in position.



- Rows area fields are shown as Row Labels on the left side of the PivotTable, like this:



- 5 Depending on the hierarchy of the fields, rows may be nested inside rows that are higher in position.
- Values area fields are shown as summarized numeric values in the PivotTable, like this:



If you have more than one field in an area, you can rearrange the order by dragging the fields into the precise position you want.

6 To delete a field from the PivotTable, drag the field out of its areas section. You can also remove fields by clicking the down arrow next to the field and then selecting Remove Field.

### TASK 3: Use Filters for pivot tables

- 1 Repeat the Steps 6 and 7 from **Task I** or use the same table.

- 2 Click on the Drop down arrow near the Row Labels

A context menu will appear.



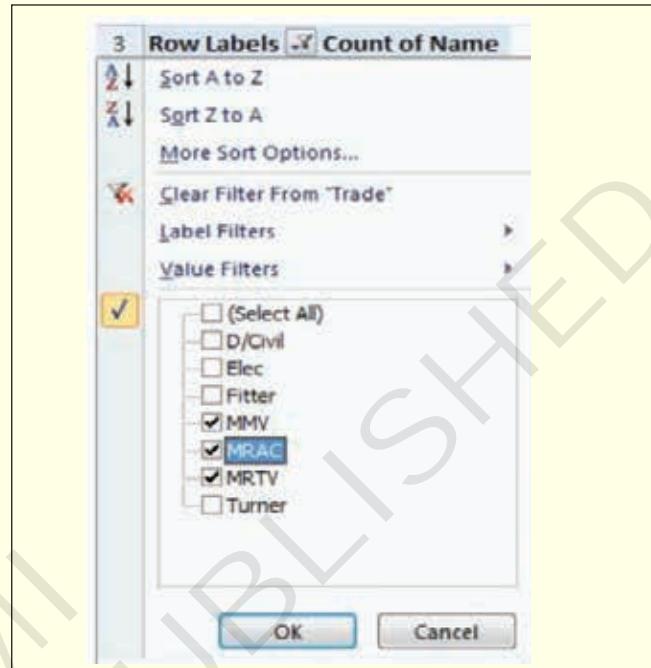
- 3 Select Sort Z to A to arrange the name reversely.

You can change the order manually also by dragging the names here and there

- 4 Deselect some trade name by clicking on the check box near it.

Now the worksheet will appear.

- 5 Double click on B4, to view the details of MMV group.



| A                           | B  | C |
|-----------------------------|----|---|
| 1                           |    |   |
| 2                           |    |   |
| 3 Row Labels  Count of Name |    |   |
| 4 MMV                       | 6  |   |
| 5 MRAC                      | 3  |   |
| 6 MRTV                      | 4  |   |
| 7 Grand Total               | 13 |   |
| 8                           |    |   |
| 9                           |    |   |
| 10                          |    |   |
| 11                          |    |   |
| 12                          |    |   |
| 13                          |    |   |

| Properties |       |                    |        |       |     |   | Tools |  | External Table Data |  |
|------------|-------|--------------------|--------|-------|-----|---|-------|--|---------------------|--|
|            | A1    |                    |        |       |     |   |       |  |                     |  |
|            | A     | B                  | C      | D     | E   | F |       |  |                     |  |
| 1          | Sl.No | Name               | Quali  | Trade | Age |   |       |  |                     |  |
| 2          | 27    | Thaniyarasu        | Dip    | MMV   | 21  |   |       |  |                     |  |
| 3          | 2     | Azhaganantham G    | NTC    | MMV   | 24  |   |       |  |                     |  |
| 4          | 3     | Balamurugan K.     | PT-Dip | MMV   | 26  |   |       |  |                     |  |
| 5          | 18    | Narayana Prumal    | NTC    | MMV   | 35  |   |       |  |                     |  |
| 6          | 5     | Easwaran V.        | Dip    | MMV   | 21  |   |       |  |                     |  |
| 7          | 7     | George Franklin T. | Dip    | MMV   | 20  |   |       |  |                     |  |
| 8          |       |                    |        |       |     |   |       |  |                     |  |

#### TASK 4: Represent data as Count, Sum, Average & % of row / column

The appearance of the screen.

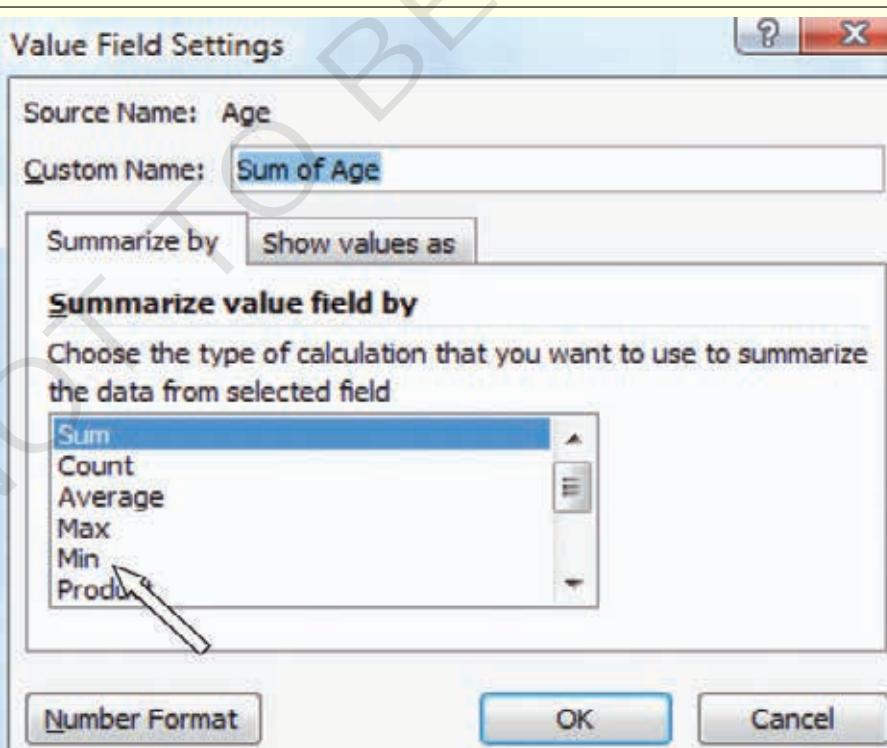
Here Excel uses “Count” function to find the number of persons under each qualification and “Sum” function to add the age of persons under each qualification.

- 1 Double click on the word “Sum of Age”.

A “Value Field Setting” dialog box will appear.

- 2 Select Min option and press **OK**.

|                    | Count of Name | Sum of Age |
|--------------------|---------------|------------|
| Dip                | 13            | 292        |
| NTC                | 14            | 422        |
| PT-Dip             | 2             | 51         |
| <b>Grand Total</b> | <b>29</b>     | <b>765</b> |



Now it will display the Minimum age comes under each qualification.

3 Double click on the word "Min of Age".

4 Select Average option and press **OK**.

The screenshot shows a Microsoft Excel window with the ribbon tabs Home, Insert, Page Layout, Formulas, Data, Review, View, Options, and Design. The Options tab is selected. A PivotTable is displayed in the worksheet area, with the formula bar showing 'PTable - Microsoft Excel'. The PivotTable Field List pane on the right shows fields: Sl.No., name, Quali, Trade, and Age. The 'Values' section of the PivotTable contains the formula 'Min of Age'. The data in the table is:

|    | A           | B             | C          | D                  | E          | F | G | H | I | J |
|----|-------------|---------------|------------|--------------------|------------|---|---|---|---|---|
| 1  |             |               |            |                    |            |   |   |   |   |   |
| 2  |             |               |            |                    |            |   |   |   |   |   |
| 3  |             |               | Values     |                    |            |   |   |   |   |   |
| 4  | Row Labels  | Count of Name | Min of Age |                    |            |   |   |   |   |   |
| 5  | Dip         |               | 13         | 20                 |            |   |   |   |   |   |
| 6  | NTC         |               | 14         | 24                 |            |   |   |   |   |   |
| 7  | PT-Dip      |               | 2          | 25                 |            |   |   |   |   |   |
| 8  | Grand Total |               | 29         |                    | Min of Age |   |   |   |   |   |
| 9  |             |               |            | Value: 25          |            |   |   |   |   |   |
| 10 |             |               |            | Row: PT-Dip        |            |   |   |   |   |   |
| 11 |             |               |            | Column: Min of Age |            |   |   |   |   |   |
| 12 |             |               |            |                    |            |   |   |   |   |   |
| 13 |             |               |            |                    |            |   |   |   |   |   |
| 14 |             |               |            |                    |            |   |   |   |   |   |
| 15 |             |               |            |                    |            |   |   |   |   |   |
| 16 |             |               |            |                    |            |   |   |   |   |   |
| 17 |             |               |            |                    |            |   |   |   |   |   |
| 18 |             |               |            |                    |            |   |   |   |   |   |
| 19 |             |               |            |                    |            |   |   |   |   |   |
| 20 |             |               |            |                    |            |   |   |   |   |   |
| 21 |             |               |            |                    |            |   |   |   |   |   |
| 22 |             |               |            |                    |            |   |   |   |   |   |
| 23 |             |               |            |                    |            |   |   |   |   |   |
| 24 |             |               |            |                    |            |   |   |   |   |   |
| 25 |             |               |            |                    |            |   |   |   |   |   |
| 26 |             |               |            |                    |            |   |   |   |   |   |

Now it will display the Average age comes under each qualification.

The screenshot shows a Microsoft Excel window with the ribbon tabs Home, Insert, Page Layout, Formulas, Data, Review, View, Options, and Design. The Options tab is selected. A PivotTable is displayed in the worksheet area, with the formula bar showing 'PTable - Microsoft Excel'. The PivotTable Field List pane on the right shows fields: Sl.No., name, Quali, Trade, and Age. The 'Values' section of the PivotTable contains the formula 'Average of Age'. The data in the table is:

|    | A           | B             | C              | D           | E | F | G | H | I | J |
|----|-------------|---------------|----------------|-------------|---|---|---|---|---|---|
| 1  |             |               |                |             |   |   |   |   |   |   |
| 2  |             |               |                |             |   |   |   |   |   |   |
| 3  |             |               | Values         |             |   |   |   |   |   |   |
| 4  | Row Labels  | Count of Name | Average of Age |             |   |   |   |   |   |   |
| 5  | Dip         |               | 13             | 22.46153946 |   |   |   |   |   |   |
| 6  | NTC         |               | 14             | 30.14285714 |   |   |   |   |   |   |
| 7  | PT-Dip      |               | 2              | 25.5        |   |   |   |   |   |   |
| 8  | Grand Total |               | 29             | 26.32931034 |   |   |   |   |   |   |
| 9  |             |               |                |             |   |   |   |   |   |   |
| 10 |             |               |                |             |   |   |   |   |   |   |
| 11 |             |               |                |             |   |   |   |   |   |   |
| 12 |             |               |                |             |   |   |   |   |   |   |
| 13 |             |               |                |             |   |   |   |   |   |   |
| 14 |             |               |                |             |   |   |   |   |   |   |
| 15 |             |               |                |             |   |   |   |   |   |   |
| 16 |             |               |                |             |   |   |   |   |   |   |
| 17 |             |               |                |             |   |   |   |   |   |   |
| 18 |             |               |                |             |   |   |   |   |   |   |
| 19 |             |               |                |             |   |   |   |   |   |   |
| 20 |             |               |                |             |   |   |   |   |   |   |
| 21 |             |               |                |             |   |   |   |   |   |   |
| 22 |             |               |                |             |   |   |   |   |   |   |
| 23 |             |               |                |             |   |   |   |   |   |   |
| 24 |             |               |                |             |   |   |   |   |   |   |
| 25 |             |               |                |             |   |   |   |   |   |   |
| 26 |             |               |                |             |   |   |   |   |   |   |

- Select c5 to c8.
- Click the mouse right button.

**Mini Toolbar buttons will appear on the screen.**

- Select “Decrease Decimal” to show fewer decimal places.

## TASK 5: Group data in Columns & rows for aggregate reports

### Group Items in a Pivot Table

Grouping can help you get a clearer view of data and show only data you want to analyze. The following topic describes how to group dates, numbers or selected items in a pivot table.

### Group a Pivot Table by Date

- Right-click a cell within a row or column field containing dates and select Group...

- The Grouping dialog is invoked. Type the first and last date or time you want to group by, select one or more date or time intervals for grouping and click OK.

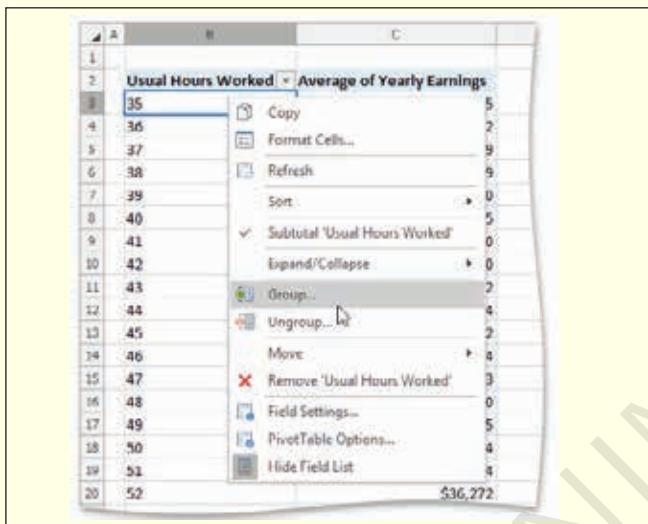
...or on the PivotTable Tools | Analyze tab, in the Group, click the Group Field button.

- 3 As a result, the date field will be grouped as shown in the image below.

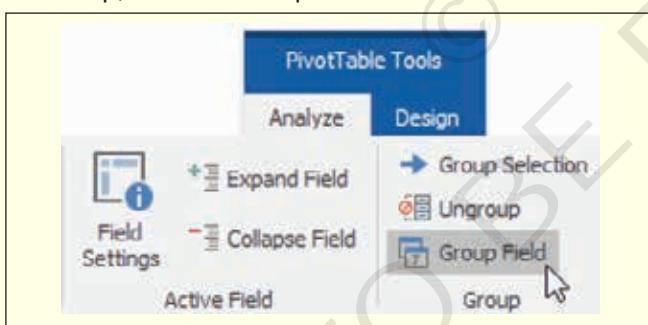
|   | A             | B                 | C            | D            | E            | F             |
|---|---------------|-------------------|--------------|--------------|--------------|---------------|
| 1 | Sum of AMOUNT | Column Labels     |              |              |              |               |
| 2 | Row Labels    | AS&B Supermarkets | Big Foods    | Food Land    | Miller's     | Grand Total   |
| 3 | Jan           | \$ 8,330.00       | \$ 11,242.00 | \$ 8,002.00  | \$ 27,574.00 |               |
| 4 | Feb           | \$ 1,768.00       |              |              | \$ 1,768.00  |               |
| 5 | Mar           | \$ 5,750.00       | \$ 12,602.00 | \$ 8,475.00  | \$ 11,080.00 | \$ 37,507.00  |
| 6 | Apr           | \$ 8,270.00       |              |              | \$ 8,270.00  |               |
| 7 | May           | \$ 11,100.00      |              | \$ 9,166.00  | \$ 3,980.00  | \$ 24,246.00  |
| 8 | JUN           | \$ 10,311.00      | \$ 2,592.00  | \$ 10,866.00 |              | \$ 23,769.00  |
| 9 | Grand Total   | \$ 45,529.00      | \$ 15,194.00 | \$ 18,749.00 | \$ 21,062.00 | \$ 123,544.00 |

### Group a Pivot Table by Numbers

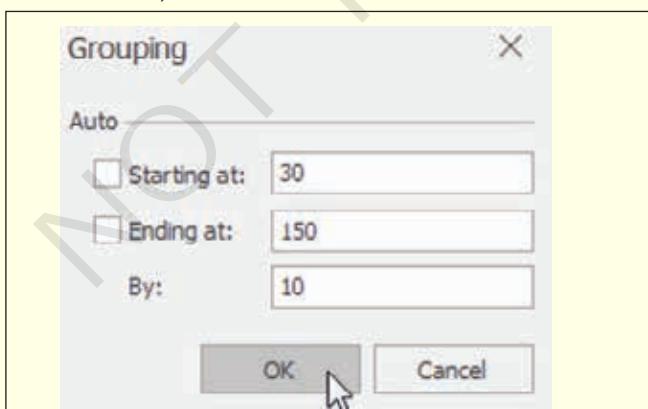
- 1 Right-click a cell within a row or column field containing numeric values and select Group...



...or on the PivotTable Tools | Analyze tab, in the Group, click the Group Field button.



- 2 The Grouping dialog is invoked. Type in start value, end value, interval and click OK.



- 3 The result is shown in the image below.

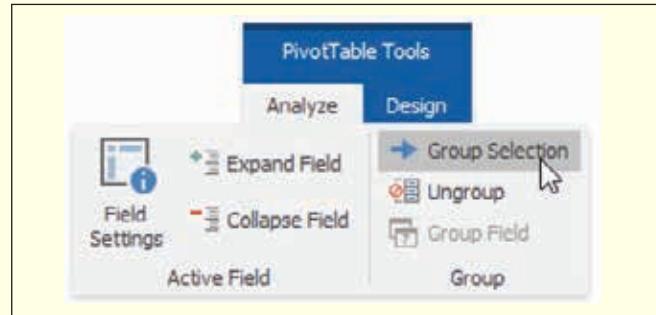
| A  | B                                               | C        |
|----|-------------------------------------------------|----------|
| 1  |                                                 |          |
| 2  | Usual Hours Worked - Average of Yearly Earnings |          |
| 3  | 30-39                                           | \$21,791 |
| 4  | 40-49                                           | \$33,668 |
| 5  | 50-59                                           | \$51,797 |
| 6  | 60-69                                           | \$56,456 |
| 7  | 70-79                                           | \$64,838 |
| 8  | 80-89                                           | \$49,856 |
| 9  | 90-99                                           | \$37,511 |
| 10 | 100-109                                         | \$34,888 |
| 11 | 110-119                                         | \$58,135 |
| 12 | 120-129                                         | \$75,000 |
| 13 | 140-149                                         | \$55,000 |
| 14 | Grand Total                                     | \$37,738 |

### Group Selected Items

- 1 Select the items that you want to group.
- 2 Right-click the selected range and select the Group item from the context menu...

| A  | B            | C              | D              |
|----|--------------|----------------|----------------|
| 1  | Sum of Sales | Column Labels  |                |
| 2  | Row Labels   | Dairy Products | Grains/Cereals |
| 3  | Arizona      | \$ 11,607.00   | \$ 20,736.00   |
| 4  | California   | 10,705.00      | \$ 23,900.00   |
| 5  | Colorado     | 10,035.00      | \$ 23,685.00   |
| 6  | Illinois     | 10,445.00      | \$ 24,165.00   |
| 7  | Kansas       | 9,605.00       | \$ 22,230.00   |
| 8  | Wisconsin    | 10,111.00      | \$ 21,156.00   |
| 9  | Grand Total  | 59,640.00      | \$ 135,872.00  |
| 10 |              |                |                |
| 11 |              |                |                |
| 12 |              |                |                |
| 13 |              |                |                |
| 14 |              |                |                |
| 15 |              |                |                |
| 16 |              |                |                |
| 17 |              |                |                |
| 18 |              |                |                |
| 19 |              |                |                |

...or on the PivotTable Tools | Analyze tab, in the Group, click the Group Selection button.



- 3 As a result, the selected range will be combined into a single group. To rename the group, select the group header, press F2 and type the required name.

|    | A            | B              | C              | D            |
|----|--------------|----------------|----------------|--------------|
| 1  | Sum of Sales | Column Labels  |                |              |
| 2  | Row Labels   | Dairy Products | Grains/Cereals | Grand Total  |
| 3  | West         |                |                |              |
| 4  | Arizona      | \$11,997.00    | \$8,739.00     | \$20,736.00  |
| 5  | California   | \$13,195.00    | \$10,705.00    | \$23,900.00  |
| 6  | Colorado     | \$13,650.00    | \$10,035.00    | \$23,685.00  |
| 7  | Illinois     |                |                |              |
| 8  | Illinois     | \$13,720.00    | \$10,445.00    | \$24,165.00  |
| 9  | Kansas       |                |                |              |
| 10 | Kansas       | \$12,625.00    | \$9,605.00     | \$22,230.00  |
| 11 | Wisconsin    |                |                |              |
| 12 | Wisconsin    | \$11,045.00    | \$10,111.00    | \$21,156.00  |
| 13 | Grand Total  | \$76,232.00    | \$59,640.00    | \$135,872.00 |

- 4 You can also enable or disable displaying the subtotal for the created group. To do that, right-click the group header and select the Subtotal 'Field Name' item.

|    | A            | B              | C              | D           |
|----|--------------|----------------|----------------|-------------|
| 1  | Sum of Sales | Column Labels  |                |             |
| 2  | Row Labels   | Dairy Products | Grains/Cereals | Grand Total |
| 3  | West         |                |                |             |
| 4  | Arizona      | \$8,739.00     | \$20,736.00    |             |
| 5  | California   | \$10,705.00    | \$23,900.00    |             |
| 6  | Colorado     | \$10,035.00    | \$23,685.00    |             |
| 7  | Illinois     |                |                |             |
| 8  | Illinois     | \$10,445.00    | \$24,165.00    |             |
| 9  | Kansas       |                |                |             |
| 10 | Kansas       | \$9,605.00     | \$22,230.00    |             |
| 11 | Wisconsin    |                |                |             |
| 12 | Wisconsin    | \$10,111.00    | \$21,156.00    |             |
| 13 | Grand Total  | \$59,640.00    | \$135,872.00   |             |

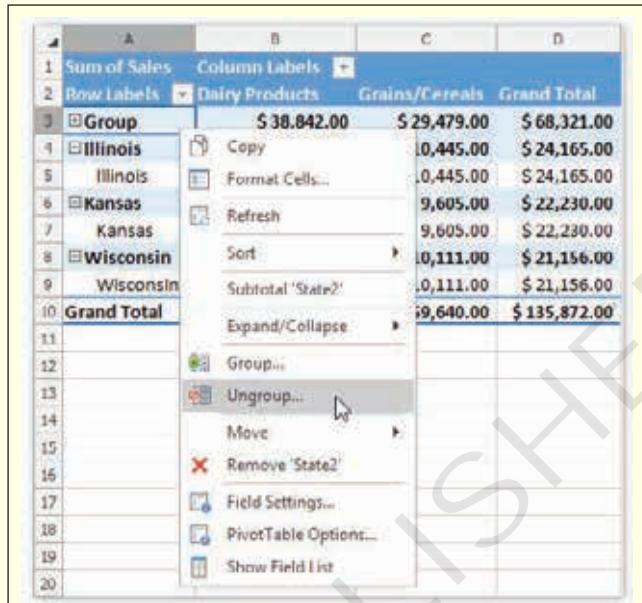
- 5 The resulting report is shown in the image below.

|    | A            | B              | C              | D            |
|----|--------------|----------------|----------------|--------------|
| 1  | Sum of Sales | Column Labels  |                |              |
| 2  | Row Labels   | Dairy Products | Grains/Cereals | Grand Total  |
| 3  | West         | \$38,842.00    | \$29,479.00    | \$68,321.00  |
| 4  | Arizona      | \$11,997.00    | \$8,739.00     | \$20,736.00  |
| 5  | California   | \$13,195.00    | \$10,705.00    | \$23,900.00  |
| 6  | Colorado     | \$13,650.00    | \$10,035.00    | \$23,685.00  |
| 7  | Illinois     | \$13,720.00    | \$10,445.00    | \$24,165.00  |
| 8  | Illinois     | \$13,720.00    | \$10,445.00    | \$24,165.00  |
| 9  | Kansas       | \$12,625.00    | \$9,605.00     | \$22,230.00  |
| 10 | Kansas       | \$12,625.00    | \$9,605.00     | \$22,230.00  |
| 11 | Wisconsin    | \$11,045.00    | \$10,111.00    | \$21,156.00  |
| 12 | Wisconsin    | \$11,045.00    | \$10,111.00    | \$21,156.00  |
| 13 | Grand Total  | \$76,232.00    | \$59,640.00    | \$135,872.00 |

## Ungroup Data

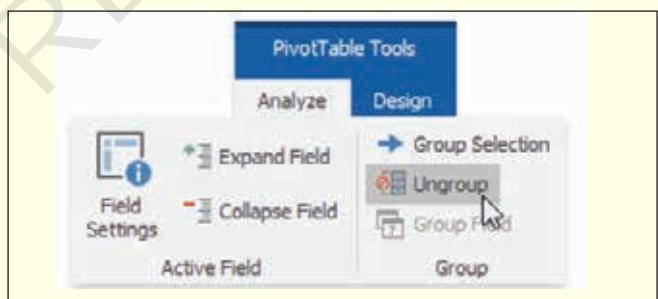
To ungroup data in a pivot table, do one of the following.

- Right-click the grouped field and select Ungroup... from the context menu.



- Select any cell in the grouped field and on the Pivot Table Tools | Analyze tab, in the Group, click the Ungroup button.

Note that ungrouping a numeric or date and time field will remove all groups for that field. If you ungroup a group of selected items, only the selected items will be ungrouped.



## COPA - Power Point Presentations

### Open files in MS PowerPoint

**Objectives:** At the end of this exercise you shall be able to

- open MS PowerPoint
- create a new PowerPoint file
- create a new PowerPoint file from a template
- open an existing PowerPoint file.

### Requirements

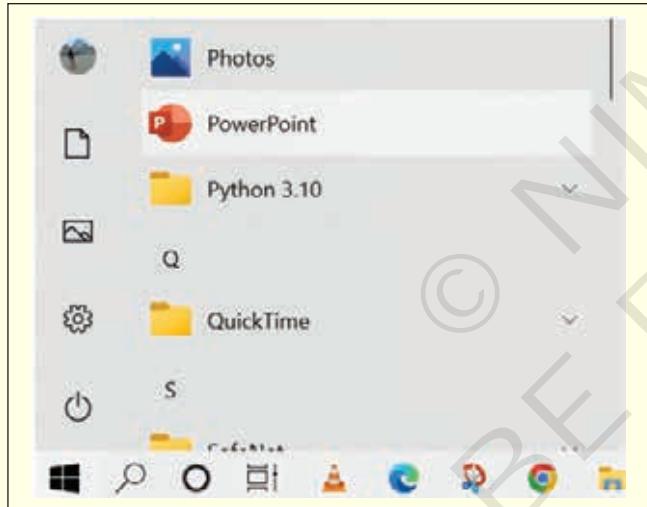
#### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

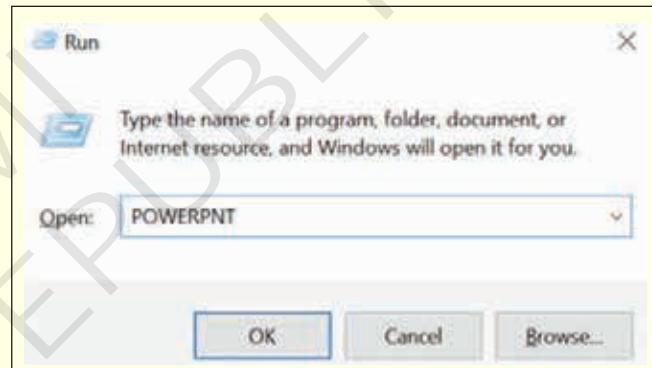
## PROCEDURE

### TASK 1: Open MS PowerPoint

- 1 Click Windows Start Button > Choose Excel from Start Menu.



Or Select **Ctrl + R** > Type POWERPNT > Click OK



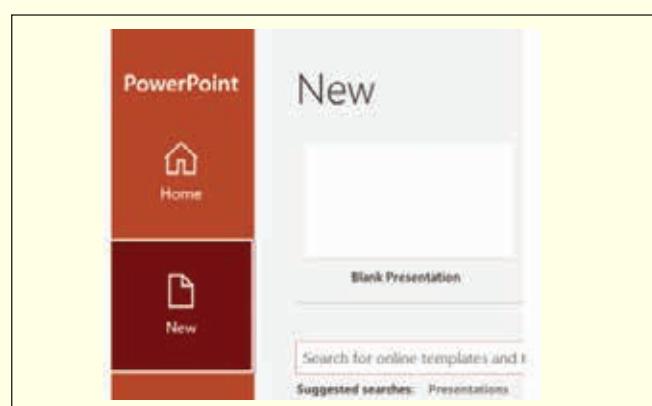
- 2 Microsoft Power Point Application will start to open.



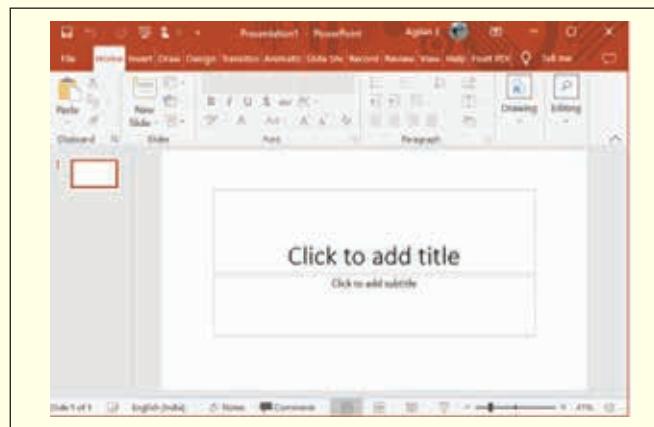
### TASK 2: Create a new PowerPoint file

#### Create a presentation

- 1 Open PowerPoint.
- 2 In the left pane, select New or press **Ctrl+N**.
- 3 Select an option:
  - To create a presentation from scratch, select Blank Presentation.



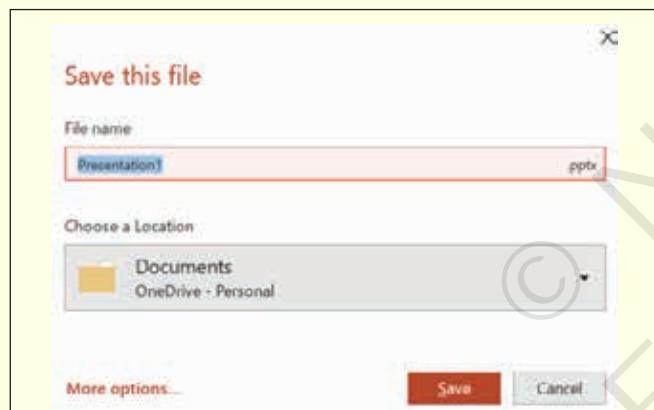
- 4 By default, Title Slide will appear then Start typing Title and Subtitle.



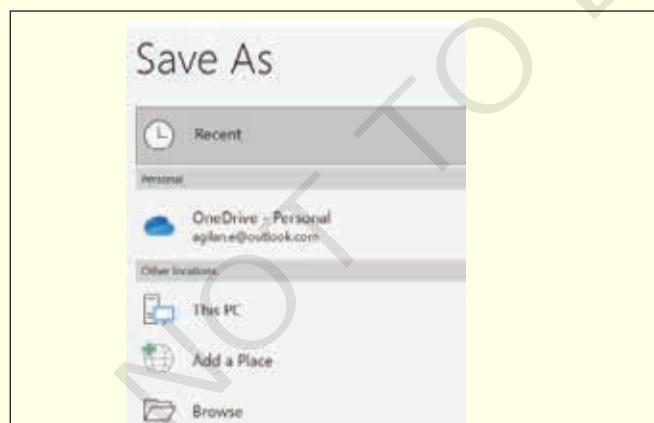
## Save your workbook

Wherever you want to save your presentation on your computer or the web, you do all your saving on the File tab > Save or press **Ctrl+S** to save first time or you need to use Save As to save your existing presentation in a different location, or to create a copy of your presentation in the same or another location.

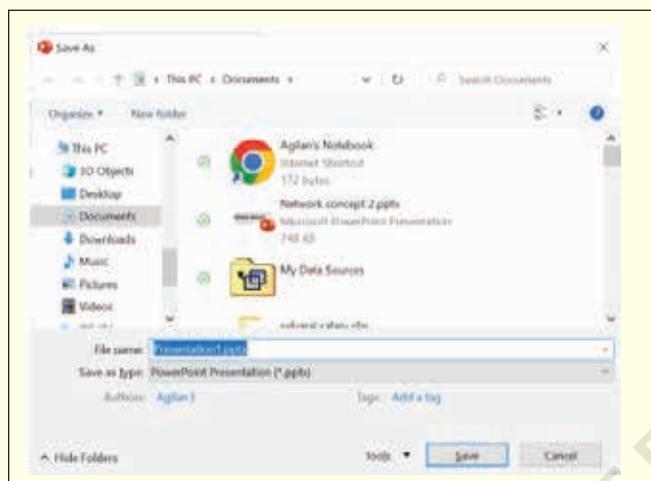
- 1 File tab > Save or press **Ctrl+S** to save first time



- 2 Choose a Location or More option to Browse the Local Drive.

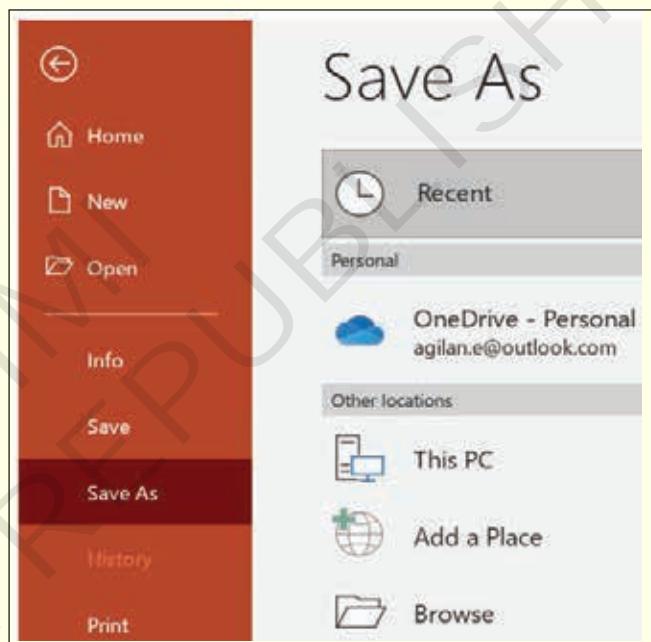


- 3 Browse the Location where you want to save and Name the Filename and Choose the File Type.PPTX then Click Save.

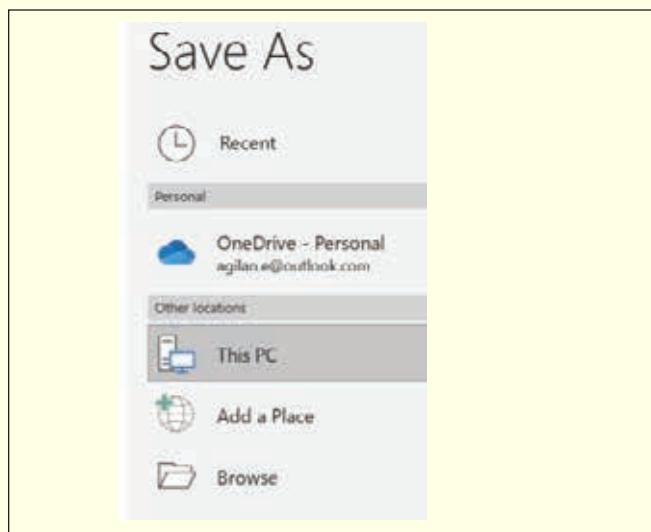


## Save As your workbook

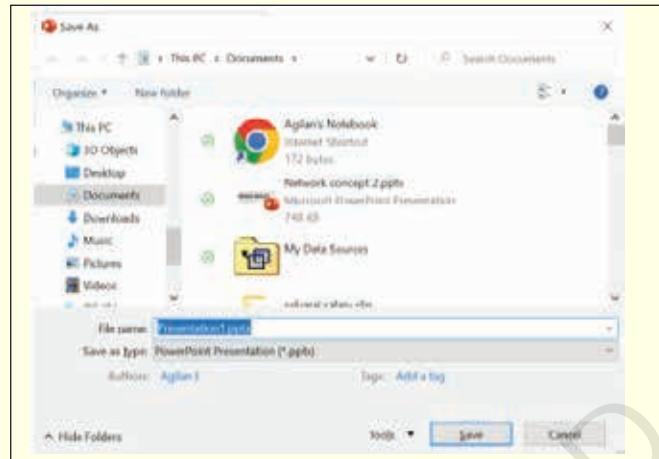
- 1 Click File > Save As.



- 2 Under Save As, pick the place where you want to save your workbook. For example, to save to your desktop or in a folder on your computer, click This PC.



- 3 Click Browse to find the location you want in your Documents folder.
- 4 In the File name box, enter a name for a new Presentation. Enter a different name if you're creating a copy of an existing Presentation.
- 5 To save your Presentation in a different file format (**like .pdf or .ppsx**), in the Save as type list (under the File name box), pick the format you want.
- 6 Click Save



### TASK 3: Create a new PowerPoint file from a template

#### Create a Presentation from a template

1 Select File > New.

2 Select More template

3 Search or choose from available Template.

4 Choose a template and Click Create

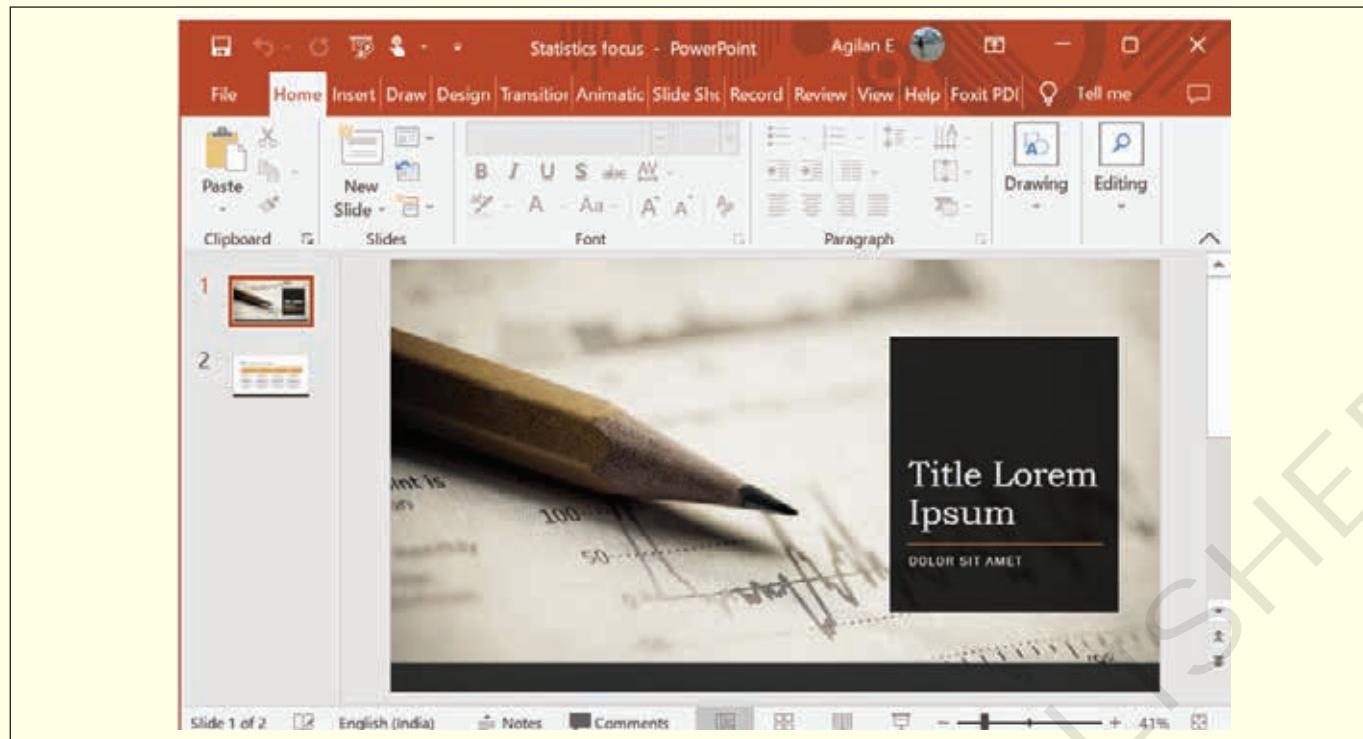
**Statistics focus**  
Provided by: Microsoft Corporation

Download themes for PowerPoint and get a prefab design that you apply to your entire slideshow. This modern scientific template includes an example timeline to arrange advancements and breakthroughs. Use a PowerPoint design theme to achieve a great coherent look for any kind of presentation. With fonts, colors, and a slideshow background to start, you'll be making effective presentations faster and better. This is an accessible template.

Download size: 2449 KB

**Create**

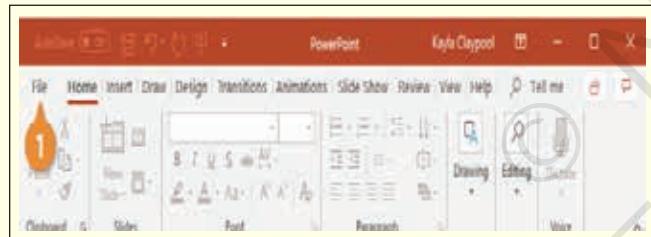
5 Click and Edit the text from the Template.



#### TASK 4: Open an existing PowerPoint file

##### Open an Existing Presentation

1 Click the File tab.



2 Click Open.

Press **Ctrl + O**.

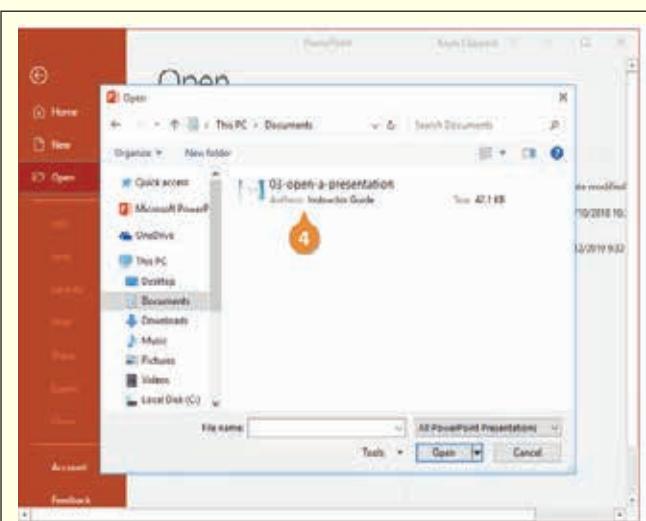
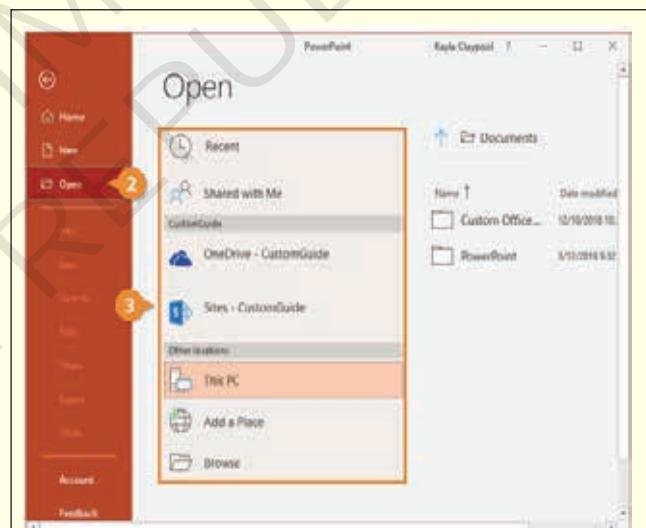
The Open screen appears and gives you a few ways to find a presentation to open.

3 Select the location where the file is saved.

- Recent displays a list of presentations that you've recently opened.
- Shared with Me displays files others have shared with you on OneDrive or SharePoint Online.
- OneDrive and/or SharePoint let you browse through your files stored on these cloud services, if you have them.
- This PC lets you browse through your Documents folder for files to open.
- Browse opens a dialog box, where you can browse through your computer's folders, drives, and network shares.

4 Locate and double-click the file you want to open.

The presentation opens in PowerPoint and you can begin making edits.



## COPA - Power Point Presentations

### Format PowerPoint Presentations

**Objectives:** At the end of this exercise you shall be able to

- add slides, add titles and text
- select slide layouts
- add PowerPoint templates
- duplicate slides.

### Requirements

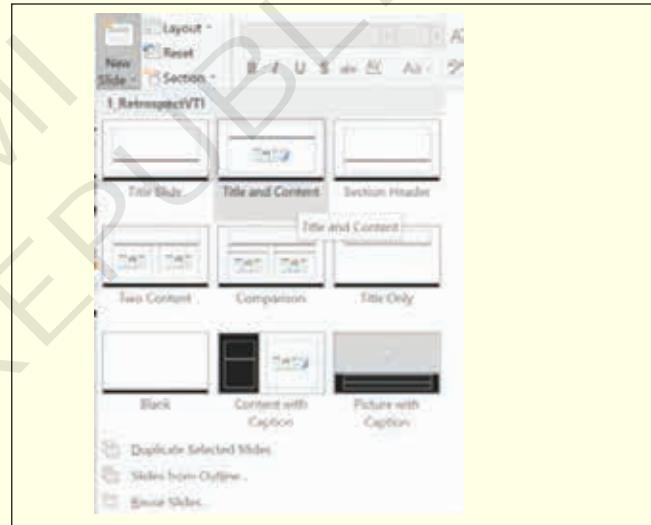
#### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

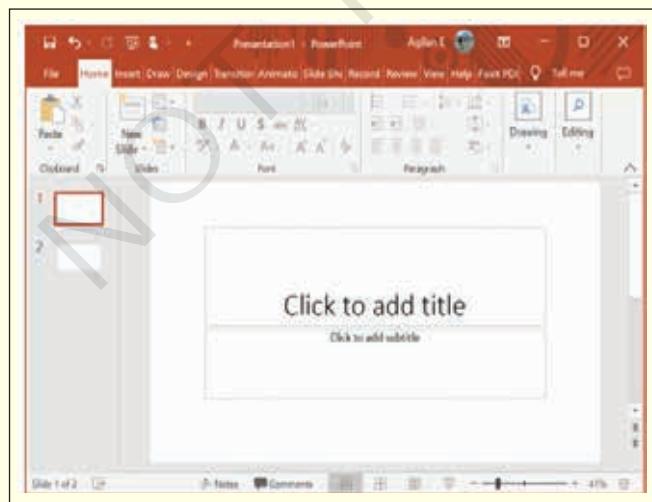
#### TASK 1: Add slides

- 1 Select the slide you want your new slide to follow.
- 2 Select Home > New Slide or Ctrl M.
- 3 Select a Tile and Content Slide layout and choose respective other layouts where ever its required.
- 4 Then Select the text box and type the required content of the Presentation.

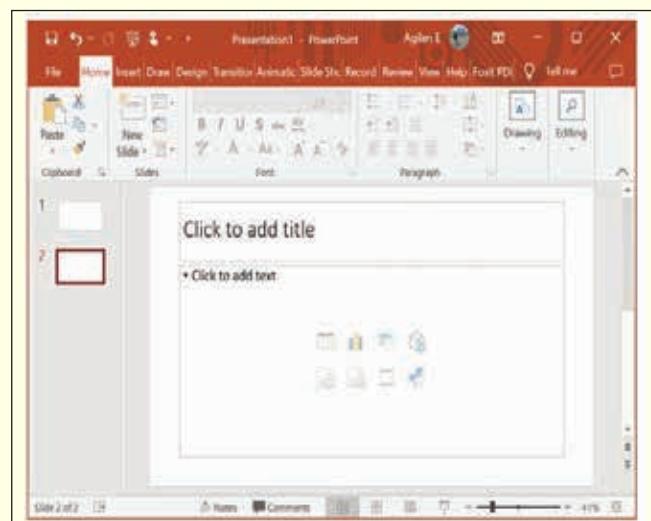


#### TASK 2: Add titles and text

- 1 From the previous exercise and Tasks add the text into Text boxes where ever its available as Click to add Title and Click to add subtitle in Title Slide:



- 2 Click to add Title and Click to add text content slide.

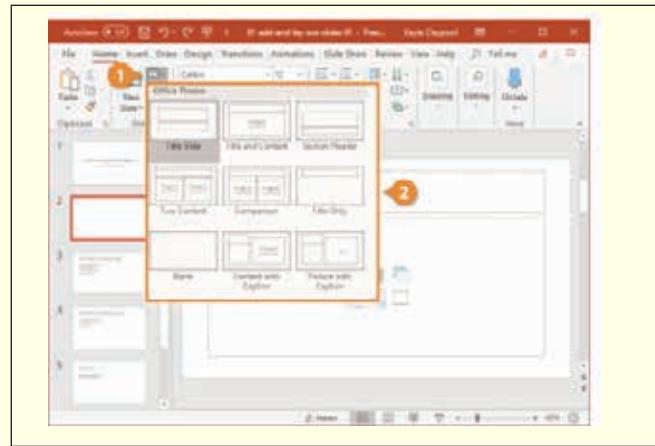


### TASK 3: Select slide layouts

#### Change the Slide Layout

If you don't like the layout that has been assigned to the new slide by default, choose a new one. PowerPoint gives you nine different layouts to choose from, and you can even create your own custom layouts.

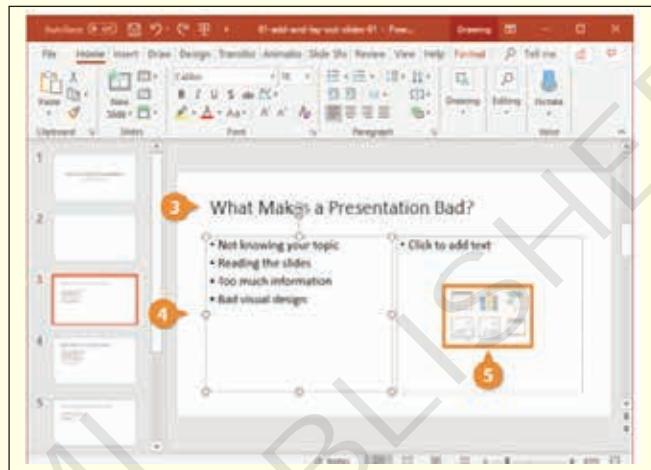
- 1 With the slide selected, click the Slide Layout button in the Slides group.
- 2 Select a new layout.



A new slide with the selected layout is inserted into the presentation.

- 3 Click in the title placeholder and type your text.
- 4 Click in a content placeholder and type your text.
- 5 Select a graphic type and insert the desired graphic.

If you later decide to change the layout, the text and pictures are automatically moved and resized according to the new layout.



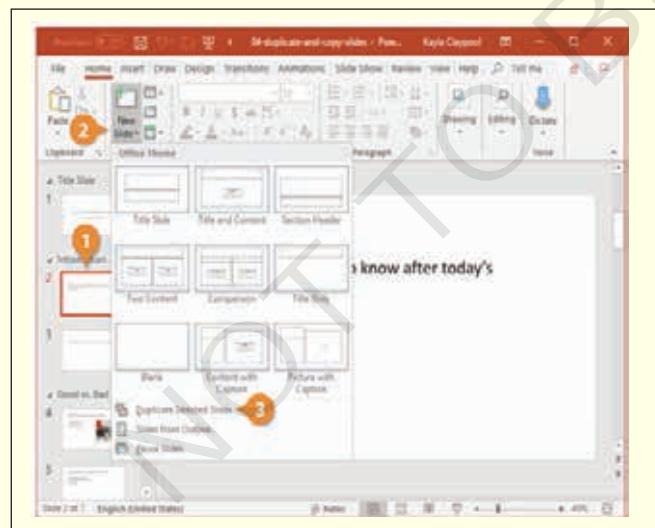
### TASK 4: Add PowerPoint templates

Refer EX.1.20.68 – Task 3

#### TASK 5: Duplicate slides

##### Duplicate a Slide

- 1 Select the slide you want to duplicate.
- 2 Click the New Slide list arrow.
- 3 Select Duplicate Selected Slides.



Press **Ctrl + D** or right-click the slide and select Duplicate Slide.

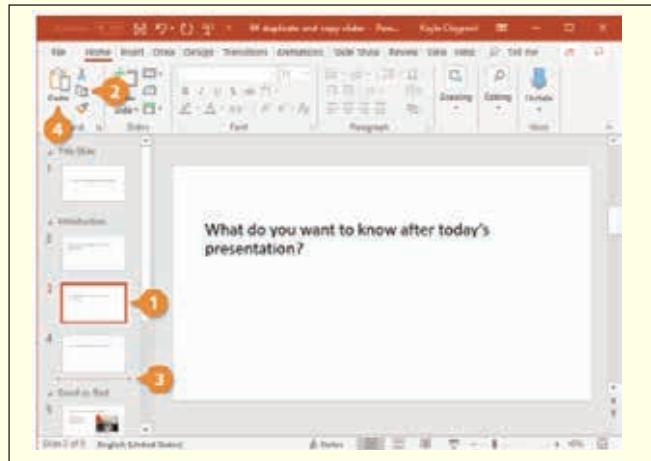
The slide is duplicated and is positioned right after the original slide.

##### Copy a Slide

If you want to create a copy in another spot in the presentation, use copy and paste instead.

- 1 Select the slide you want to copy.
- 2 Click the Copy button on the Home tab.
- 3 Press **Ctrl + C**.
- 4 Click in a new location in the Thumbnails pane where you want to place the copy.
- 5 Click the Paste button.

Press **Ctrl + V**.



## COPA - Power Point Presentations

**Modify slide masters, handout masters, and note masters**

**Objectives:** At the end of this exercise you shall be able to

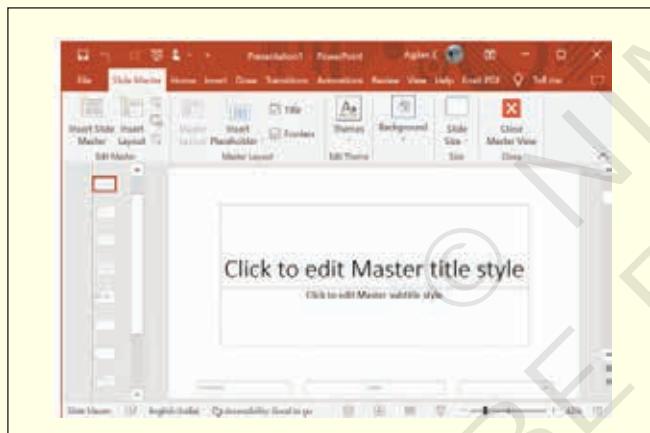
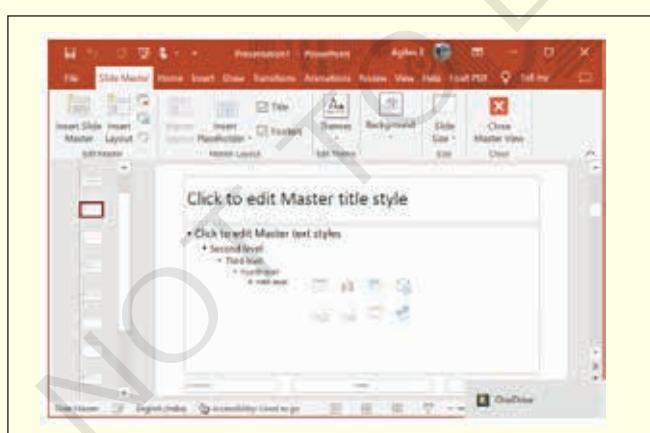
- change the slide master theme or background
- modify slide master content
- modify slide layouts.

**Requirements****Tools/Equipment/Machines**

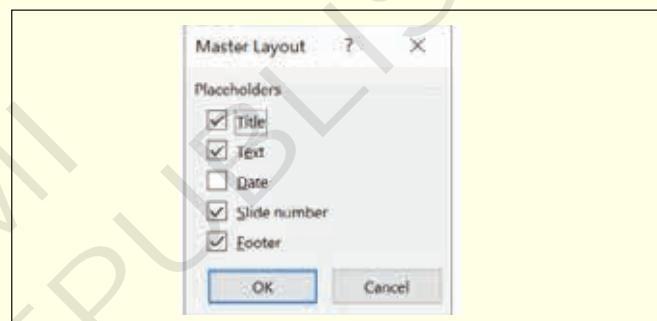
- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

**PROCEDURE****TASK 1: Change the slide master theme or background**

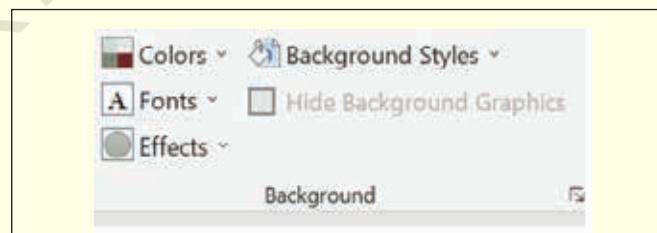
- 1 On the View tab, click Slide Master. In Slide Master view, the slide master appears at the top of the thumbnail pane with related layouts beneath it.

**Title Slide:****Title and Content Slide:**

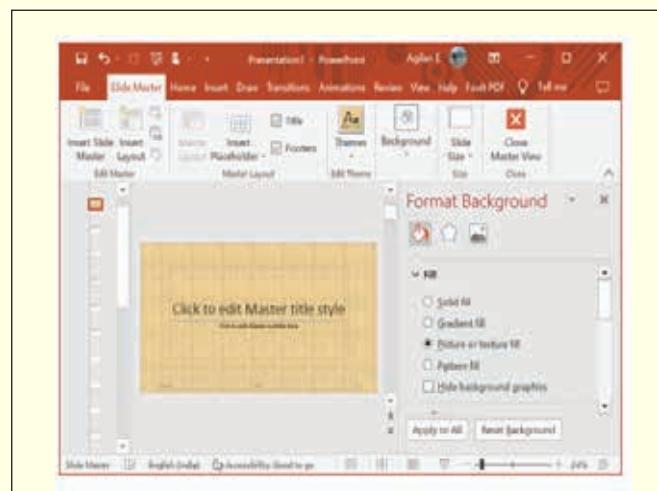
- 2 Click to select the master slide, and then click Master Layout on the Slide Master tab.
- 3 To show or hide the title, text, date, slide numbers, or footer placeholders on the slide master, check the boxes to show, or clear the boxes to hide the placeholders.



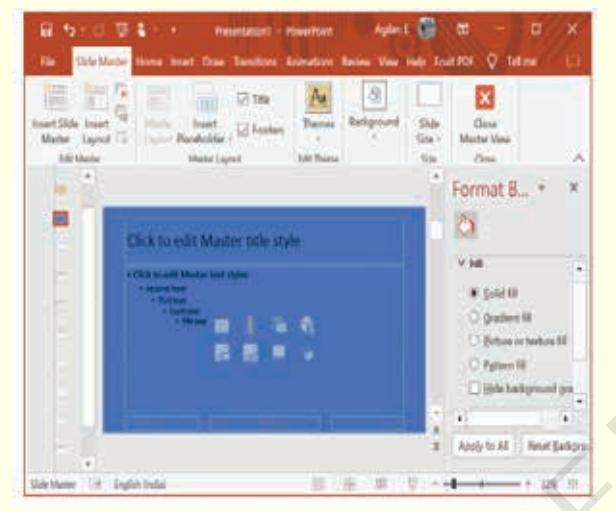
- 4 To change the background style, click Background Styles, and then choose a background style.



- 5 Choose format background to modify the fill of the background.



- 6 On the Slide Master tab, click Close Master View.



## TASK 2: Modify slide master content

### Change the slide master

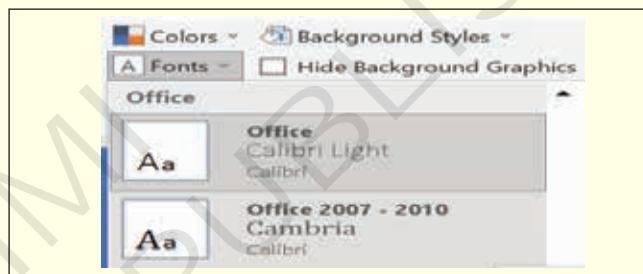
- 1 Select View > Slide Master.
- 2 Make the text, color, and alignment changes you want.

If you want to use a predefined theme, select that first by clicking Themes on the Slide Master tab. Then proceed with selecting Colors, Fonts, Effects, and Background Styles.

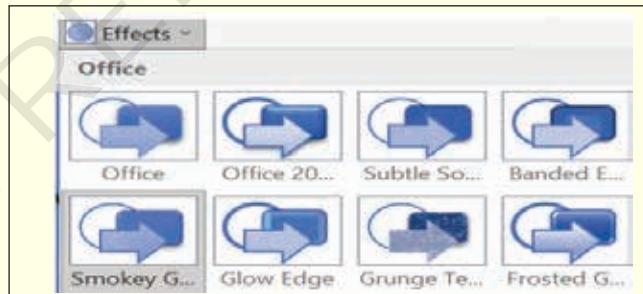
Color:



Fonts:



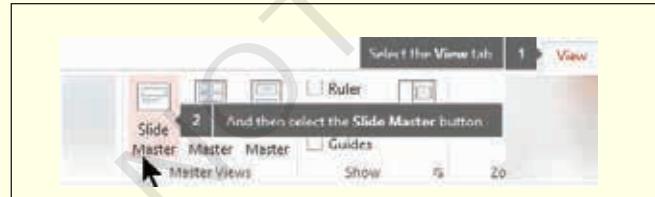
Effect:



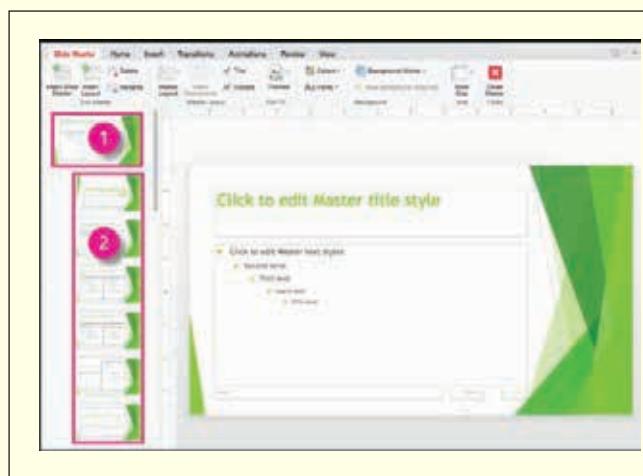
- 3 When you're done, select Close Master View

## TASK 3: Modify slide layouts

- 1 Open Slide Master view, on the **View** tab, select **Slide Master**:



- 2 Slide master > Layout masters > Choose Layout and Insert or Modify.



## COPA - Power Point Presentations

### Change presentation options and views

**Objectives:** At the end of this exercise you shall be able to

- change slide size
- display presentations in different views.

#### Requirements

##### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

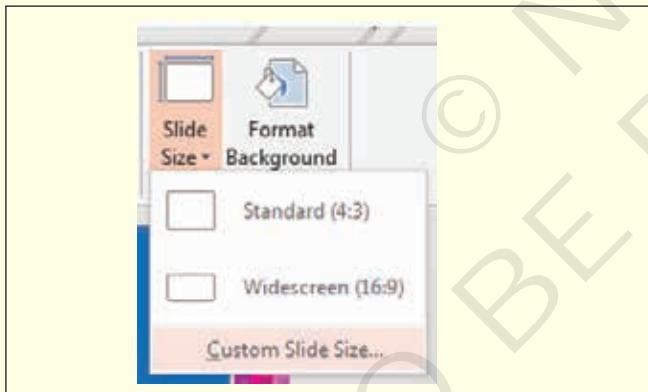
#### TASK 1: Change slide size

##### Change the slide size

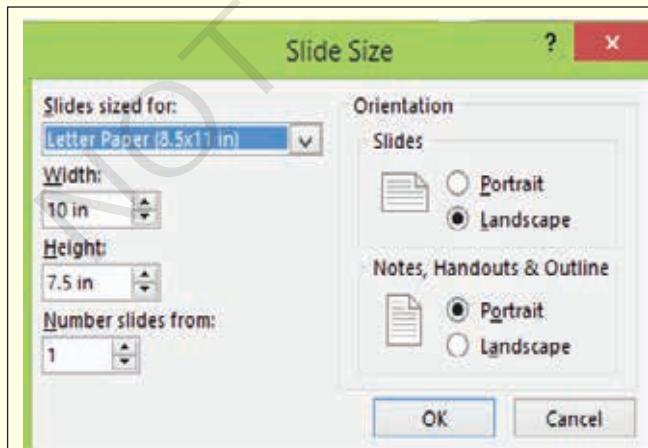
- 1 On the Design tab, in the Customize group at the far right end, click Slide Size.



- 2 Click Custom Slide Size.



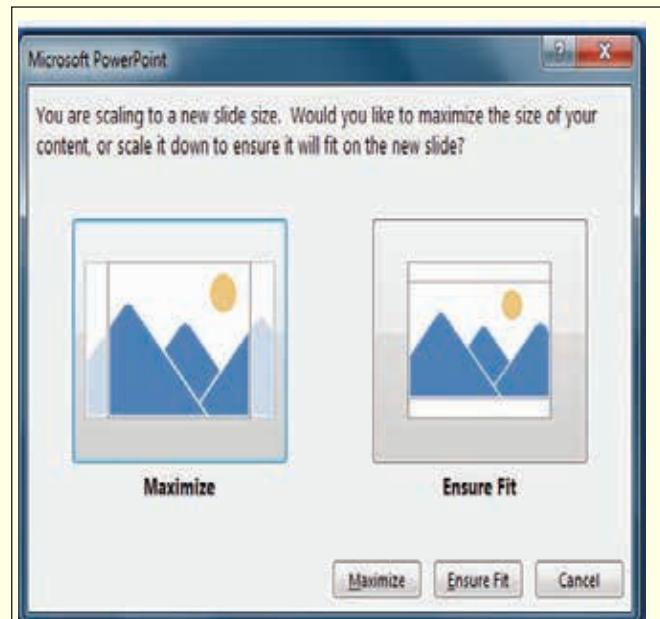
- 3 In the Slides sized for list, click the size you want to use, or use the Width and Height boxes to select custom sizes.



- 4 Click OK.

- 5 PowerPoint now asks you to choose between maximizing the size of your content on the new layout (to do this, click Maximize) or scaling it down so that all of the content fits into the new layout (to do this, click Ensure Fit).

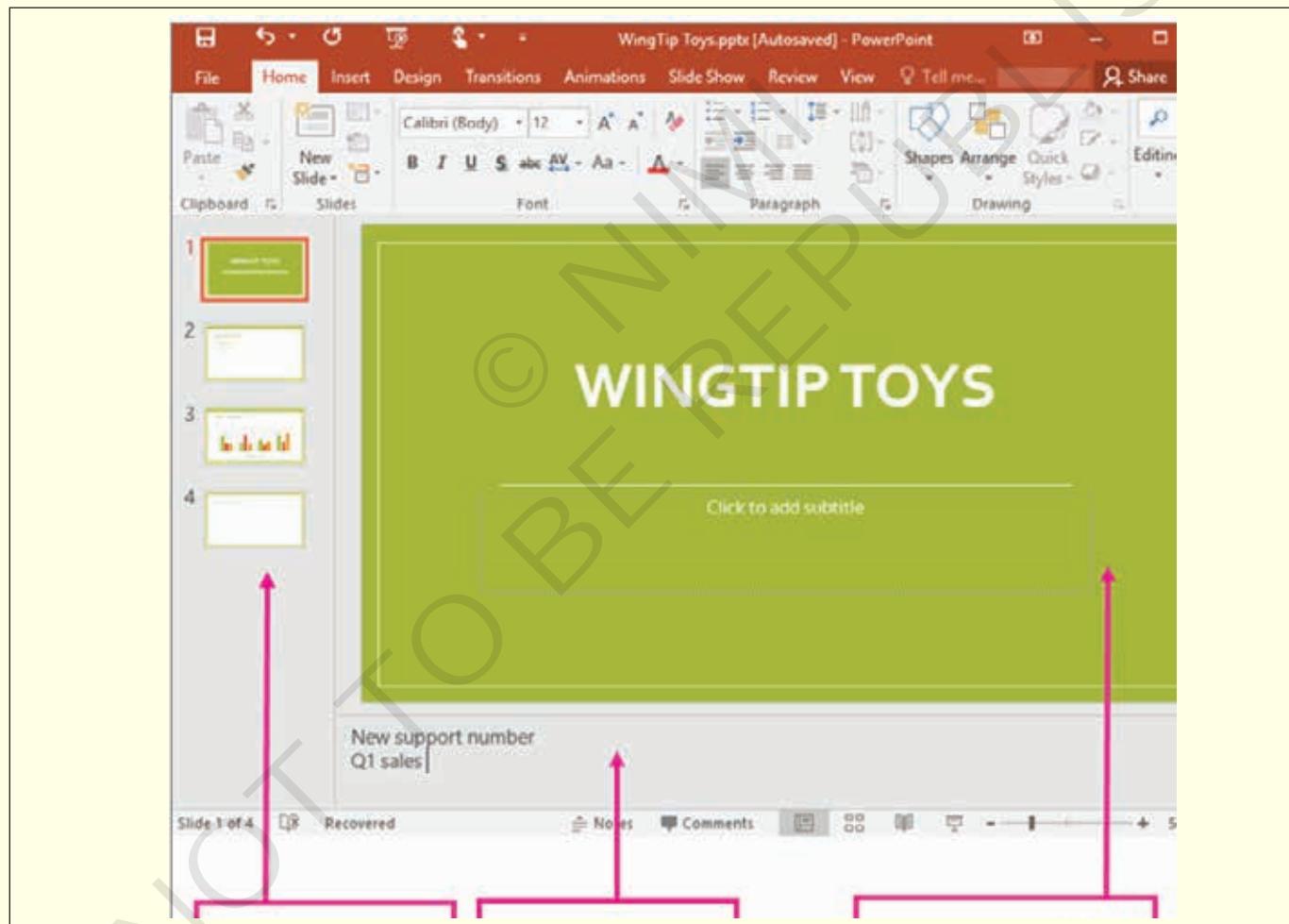
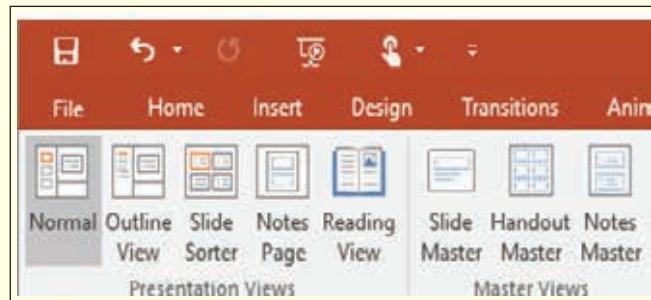
**Note:** If you choose to maximize, some content might fall outside the print margins.



## TASK 2: Display presentations in different views

You can view your PowerPoint file in a variety of ways. Some views are helpful when you're creating your presentation, and some are most helpful for delivering your presentation.

You can find the different PowerPoint view options on the View tab, as shown below.



### Slide Sorter view

You can get to Slide Sorter view from the task bar at the bottom of the slide window, or from the View tab on the ribbon.

You can also find the most frequently used views on the task bar at the bottom right of the slide window, as shown below.

### Views for creating your presentation

#### Normal view

You can get to Normal view from the task bar at the bottom of the slide window, or from the View tab on the ribbon.

Normal view is the editing mode where you'll work most frequently to create your slides. Below, Normal view displays slide thumbnails on the left, a large window showing the current slide, and a section below the current slide where you can type your speaker notes for that slide.



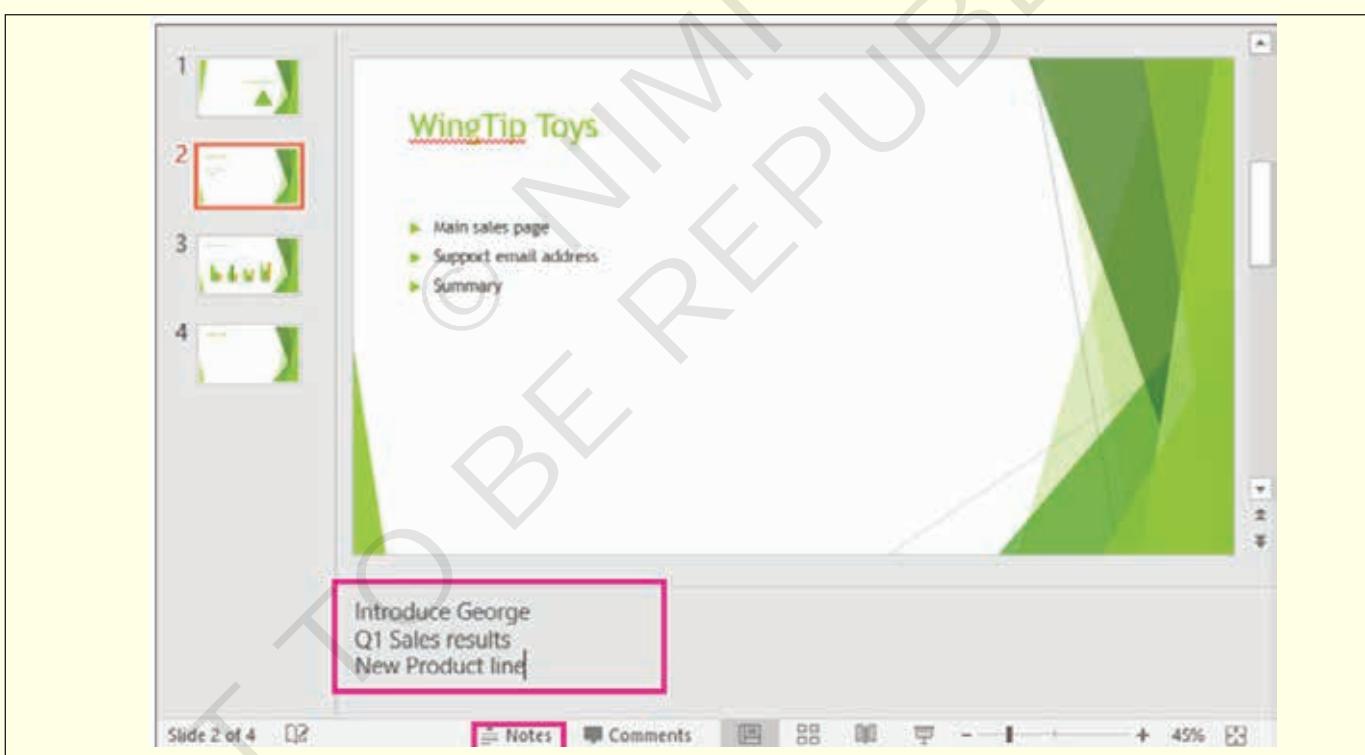
Slide Sorter view (below) displays all the slides in your presentation in horizontally sequenced, thumbnails. Slide show view is helpful if you need to reorganize your slides—you can just click and drag your slides to a new location, or add sections to organize your slides into meaningful groups.



### Notes Page view

You can show or hide your speakers notes with the Notes button  at the bottom of the slide window, or you can get to Notes Page view from the View tab on the ribbon.

The Notes pane is located beneath the slide window. You can print your notes or include the notes in a presentation that you send to the audience, or just use them as cues for yourself while you're presenting.



### Outline view

You can get to Outline view from the View tab on the ribbon. (In PowerPoint 2013 and later, you can no longer get to Outline view from Normal view. You have to get to it from the View tab.)

Use Outline view to create an outline or storyboard for your presentation. It displays only the text on your slides, not pictures or other graphical items.

## 1 Contoso Pharmaceuticals

Health Care Division

## 2 Agenda

- Current Situation
- Fabrikam, Inc.

## 3 Current Situation

- High demand forecast for next 2 quarters
- Brand leadership – equity
- High investment in R&D
- Low depreciation of fixed assets

## 4 Fabrikam, Inc.

### Master views

To get to a master view, on the View tab, in the Master Views group, choose the master view that you want.

Master views include, Slide, Handout, and Notes. The key benefit to working in a master view is that you can make universal style changes to every slide, notes page, or handout associated with your presentation.

Views for delivering and viewing a presentation

### Slide Show view

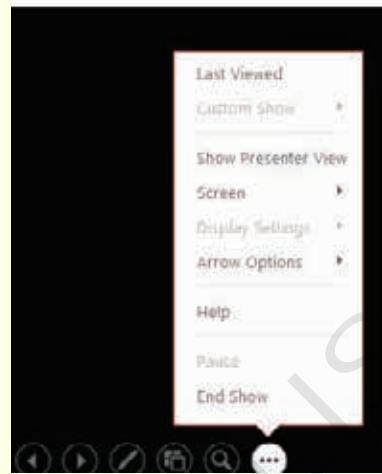
You can get to SlideShow view from the task bar  at the bottom of the slide window.

Use Slide Show view to deliver your presentation to your audience. Slide Show view occupies the full computer screen, exactly the way your presentation will look on a big screen when your audience sees it.

### Presenter view

To get to Presenter view, in Slide Show view, in the lower left corner of the screen, click  , and then click Show Presenter View (as shown below).

Use Presenter view to view your notes while delivering your presentation. In Presenter view, your audience cannot see your notes.



### Reading view

You can get to Reading view from the task bar  at the bottom of the slide window.

Most people reviewing a PowerPoint presentation without a presenter will want to use Reading view. It displays the presentation in a full screen like Slide Show view, and it includes a few simple controls to make it easy to flip through the slides.

## COPA - Power Point Presentations

### Save and share PowerPoint Presentations

**Objectives:** At the end of this exercise you shall be able to

- save presentations in alternative file formats
- configure different Print settings
- share presentations electronically.

#### Requirements

##### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

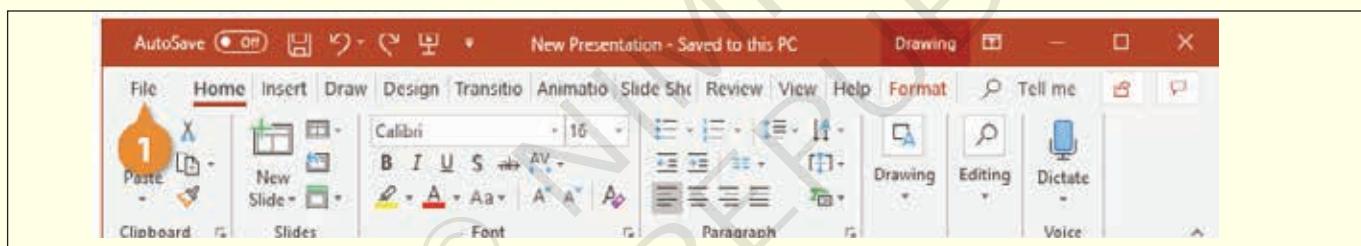
#### TASK 1: Save presentations in alternative file formats

##### Save to Different File Formats

PowerPoint files are normally saved as PowerPoint Presentations, but you can save the information to other file formats as well. For example, you may want to save

your file as a **PDF** so that someone who doesn't have PowerPoint can view the presentation.

- 1 Click the File tab.



- 2 Click Save As.

- 3 Choose where you want to save your file.

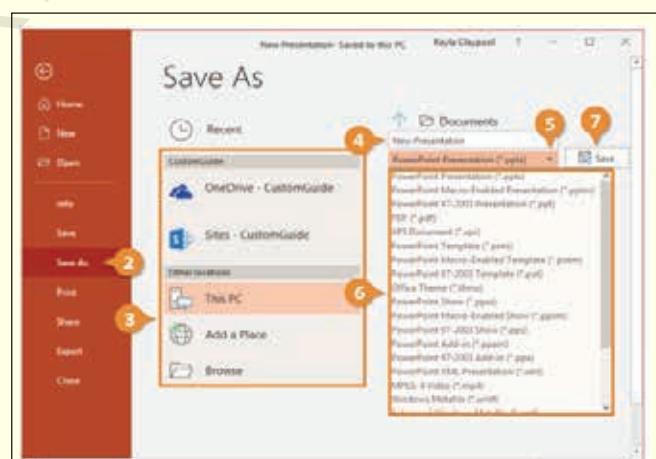
- 4 (Optional) Enter a new File name.

- 5 Click the Save as type list arrow.

You can choose to save your presentation as any of the file types in the drop-down list.

- 6 Select a file format.

- 7 Click Save.

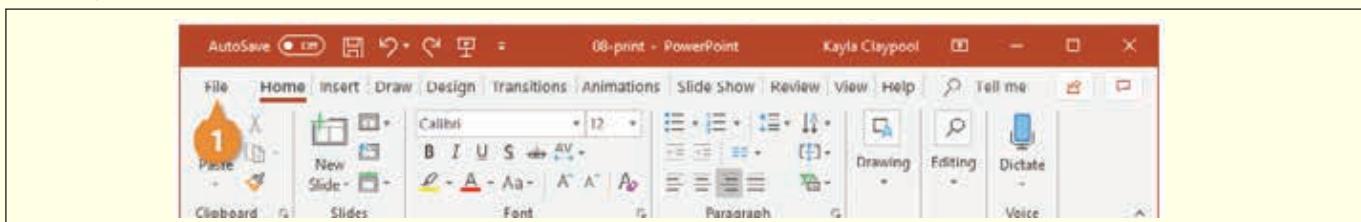


#### TASK 2: Configure different Print settings

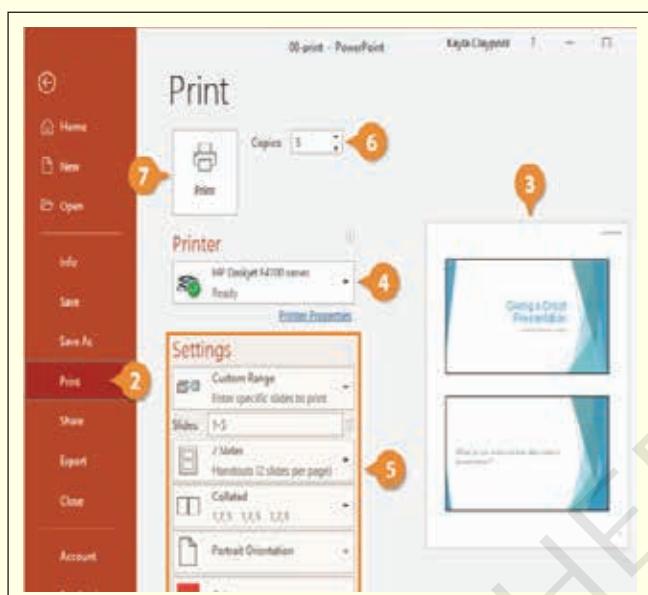
Once you have created a presentation, and your computer is connected to a printer, you can print a copy.

Before you do this, it's a good idea to preview how it's going to look.

- 1 Click the File tab.



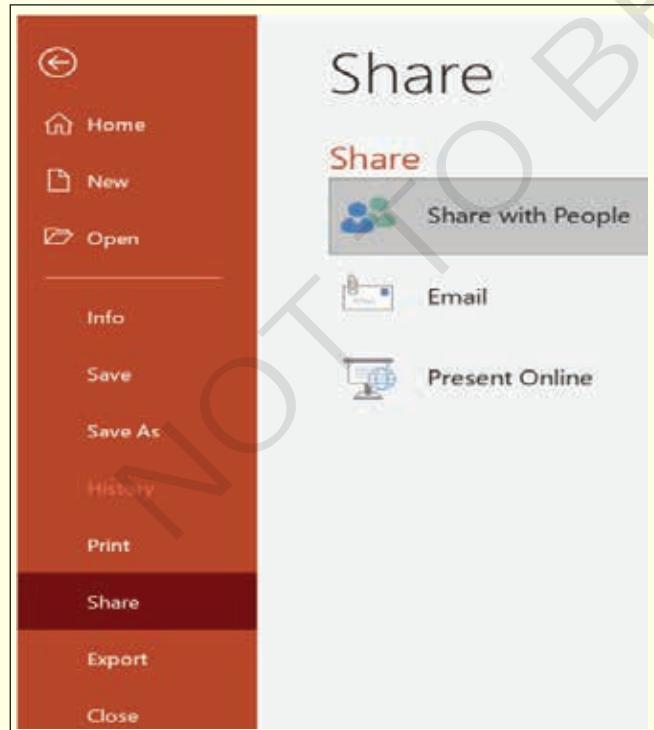
- Select Print.
- Press **Ctrl + P**.
- Examine the print preview on the right side of the screen, making sure that the preview looks the way you want it.
- Select the correct printer by clicking the Printer list arrow and selecting it from the list.
- Adjust the printer settings using the options below the printer, described in the table below.
- Choose the number of copies in the Copies text field.
- Click Print.



| Print Settings |                                                                                                                                                                                          |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Print Range    | Print the whole presentation, a selection, a certain slide range, a single slide, or a custom range.                                                                                     |
| Print Layout   | Determine what you want to print on each page. You can print a single slide, multiple sides, slide notes, handouts, and more.                                                            |
| Collate        | Collating prints multiple copies of the presentation all the way through (1, 2, 3; 1, 2, 3), while printing uncollated prints multiple copies of each slide together (1, 1; 2, 2; 3, 3). |
| Orientation    | Changes the page orientation of the printed page, portrait or landscape.                                                                                                                 |
| Color          | Select whether to print the presentation in full color, grayscale, or pure black and white.                                                                                              |

### TASK 3: Share presentations electronically

- Click File > Share.
- You Can share the document by Share with people or Email or Present Online or Post Blog.



- If you want to choose the option of Share with People then Save your document in OneDrive Cloud, if it's not already there.
- The Share window displays if your document is not currently saved in OneDrive. Select the OneDrive option, then name your document and select OK.

**Note:** Before Sharing, please ensure that Sender and receiver must have Microsoft Outlook Email Account or Microsoft O365 subscribed organization email account.

- Enter email addresses of the people you want to share with and make choices for permission you want to allow.
- Type a message if you want, and select Send.

The people you're sharing with will get mail from you, with a link to your document.

## COPA - Power Point Presentations

### Configure and present slide shows

**Objectives:** At the end of this exercise you shall be able to

- hide unwanted slides while presenting
- configure slide show options
- present slide shows by using Presenter View.

#### Requirements

##### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

#### TASK 1: Hide unwanted slides while presenting

##### Hide a Slide

If you don't want a slide to be included in the final slide show, you can hide it from your audience. It won't show up when you play the slide show, but you will still see it in the editing views so you can bring it back in the future.

1 Select the slide you want to hide.

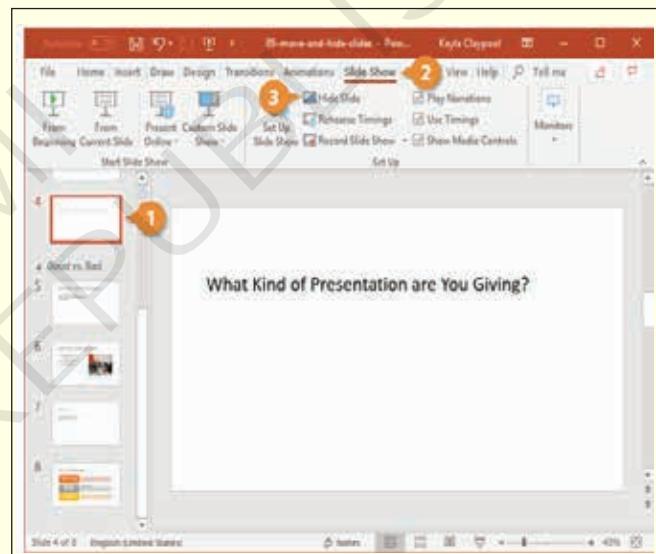
2 Click the Slide Show tab.

3 Click Hide Slide.

Right-click the slide and select Hide Slide.

The slide number is crossed out, indicating that it is hidden.

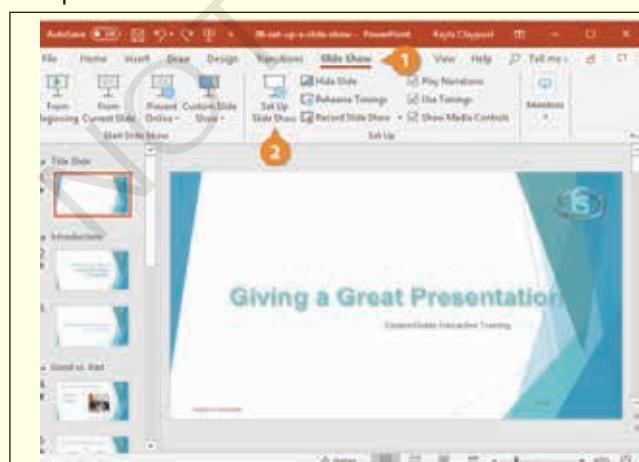
To unhide a slide, select it and then click Hide Slide again.



#### TASK 2: Configure slide show options

##### Set Up Slide Shows

- 1 Click the Slide Show tab on the ribbon.
- 2 Click the Set Up Slide Show button to view more options.

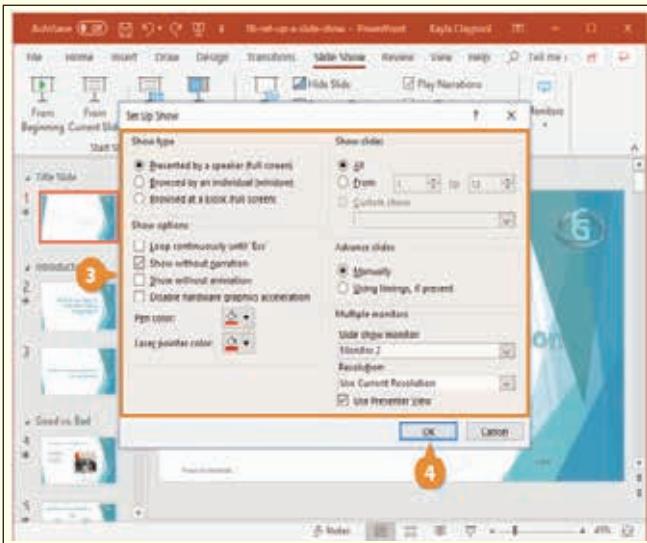


3 Make any desired changes to the settings.

- Show Type: Select the type of presentation you are giving.
- Show Options: Adjust looping, narration, animation, graphics, pen, and laser options.
- Show Slides: Select which slides to show in the presentation.
- Advance Slides: Choose to advance slides manually or automatically.
- Multiple Monitors: Set up for presenting using multiple monitors.

4. Click OK.

Now the slide show will play according to the settings you chose



### TASK 3: Present slide shows by using Presenter View

PowerPoint Presenter View shows you the current slide, the next slide, and your speaker notes, to help you focus while presenting and connect with your audience.

- 1 Select the Slide Show tab.
- 2 Select the Use Presenter View checkbox.



- 3 Select which monitor to display Presenter View on.
- 4 Select From Beginning or press F5.

**In Presenter View, you can:**

- See your current slide, next slide, and speaker notes.
- Select the arrows next to the slide number to go between slides.
- Select the pause button or reset button to pause or reset the slide timer in the upper left.
- See the current time to help you pace your presentation.

- Select the font icons to make the speaker notes larger or smaller.
- Select the annotations pen icon to draw on the screen in real time, or select a laser pointer.
- Select the thumbnail icon to see all the slides in your presentation and quickly jump to another slide.
- Select the magnifying glass icon to zoom in on a particular part of a slide.
- The screen icon let's you make the screen temporarily black to focus the attention on you.
- Select END SLIDESHOW when you're done presenting.

## COPA - Power Point Presentations

### Prepare presentations for collaboration

**Objectives:** At the end of this exercise you shall be able to

- protect presentations by using passwords
- export presentations to other formats.

#### Requirements

##### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

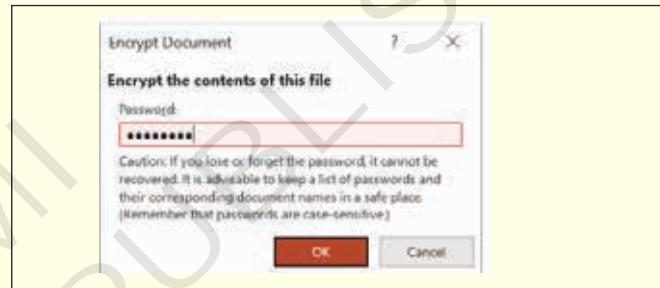
#### TASK 1: Protect presentations by using passwords

##### Add password protection to a file

- 1 Select File > Info.
- 2 Select Protect Presentation > Encrypt with Password.



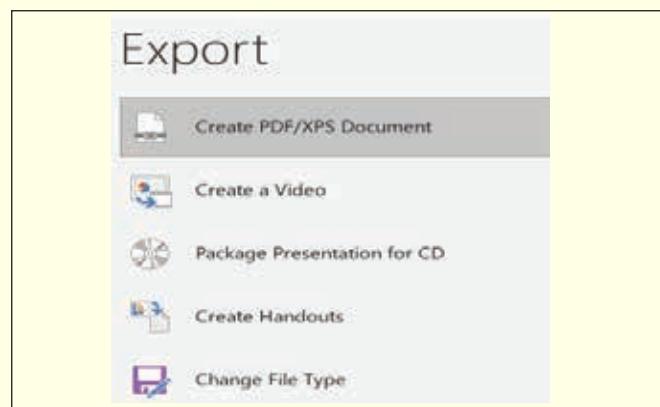
- 3 In the Password box, enter the password you'd like to use. Select OK.



- 4 PowerPoint prompts you to confirm the password by entering it once more.
  - 5 Save the file to ensure the password takes effect.
- Password protection isn't supported in PowerPoint for ODP (Open Document Presentation) files.
- Remove a password from a file
- Removing a password from a document is a simple process, but you have to know the original password.
- 1 Open the presentation whose password you want to remove.
  - 2 Select File > Info.
  - 3 Select Protect Presentation > Encrypt with Password.
  - 4 Clear or remove the password in the Password box, and then click OK.

#### TASK 2: Export presentations to other formats

- 1 File > Export helps you change your presentation into a different format, such as PDF, video, or Word-based handouts. All these options are covered below.
- 2 If you simply want to "export" a file (in its current .pptx format) to a different storage system, such as a flash drive, plug that flash drive into your computer and use File > Save As (or Save a Copy) to save to that new location.



## COPA - Format Presentations

### Insert text and paragraphs

**Objectives:** At the end of this exercise you shall be able to

- find and replace text
- insert symbols and special characters

### Requirements

#### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

#### TASK 1: Find and replace text

##### Find Text

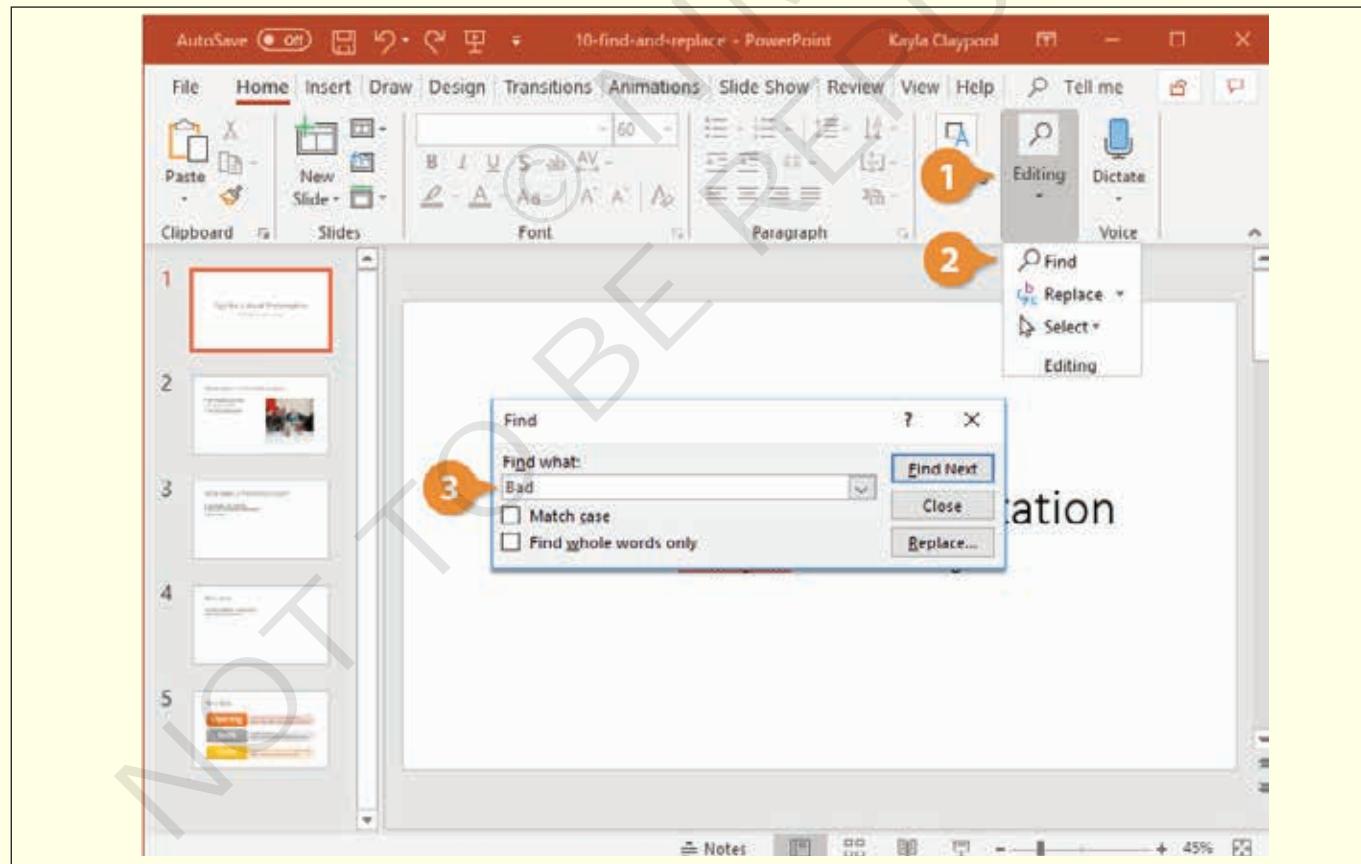
Find makes it very easy to find specific words and phrases in a presentation.

- 1 If necessary, expand the Editing group on the Home tab.
- 2 Click the Find button.

Press **Ctrl + F**.

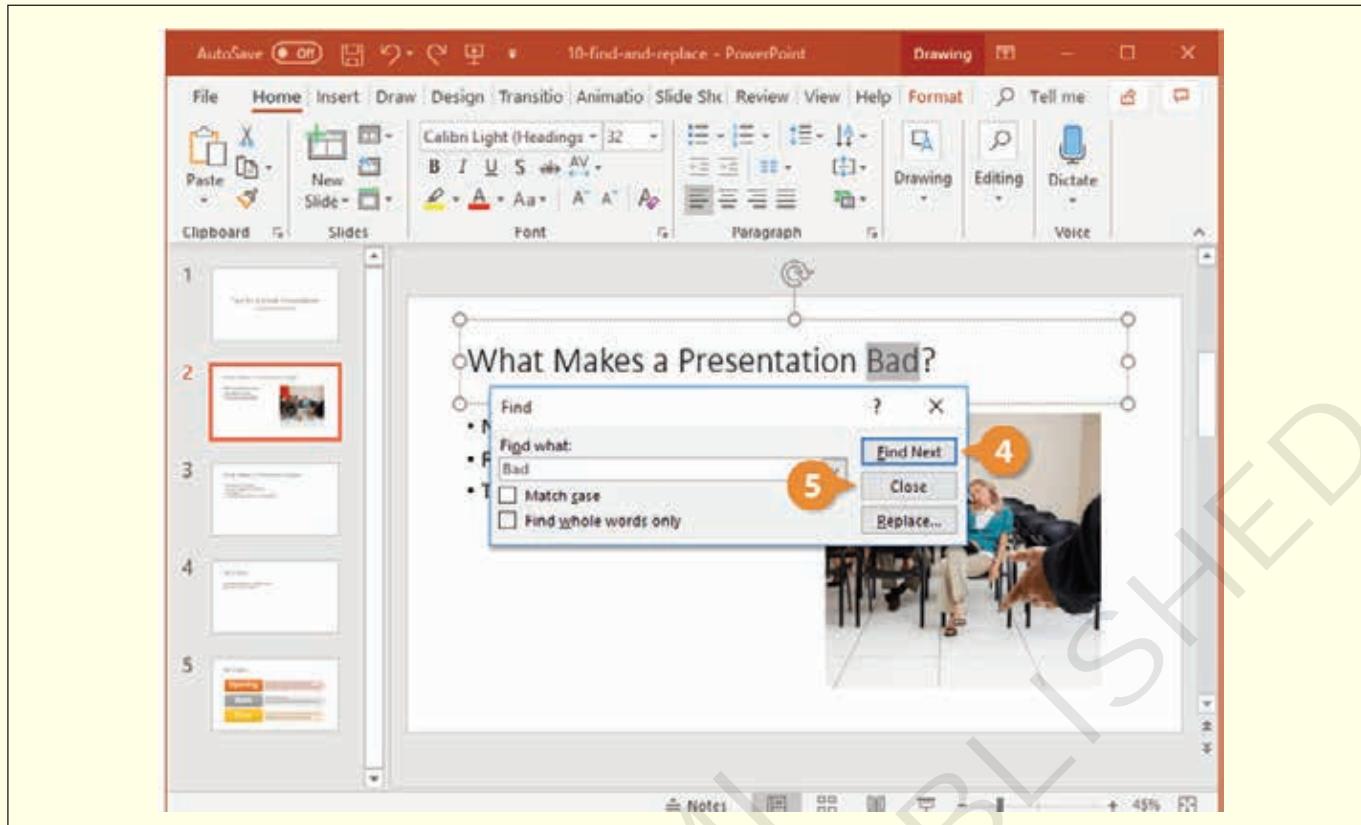
- 3 Type the text you want to locate in the Find what text box.

If you want to search for a specific case or only whole words, select the check boxes located below the text field.



- 4 Click Find Next until you find what you need.

- 5 Click Close when you're finished.

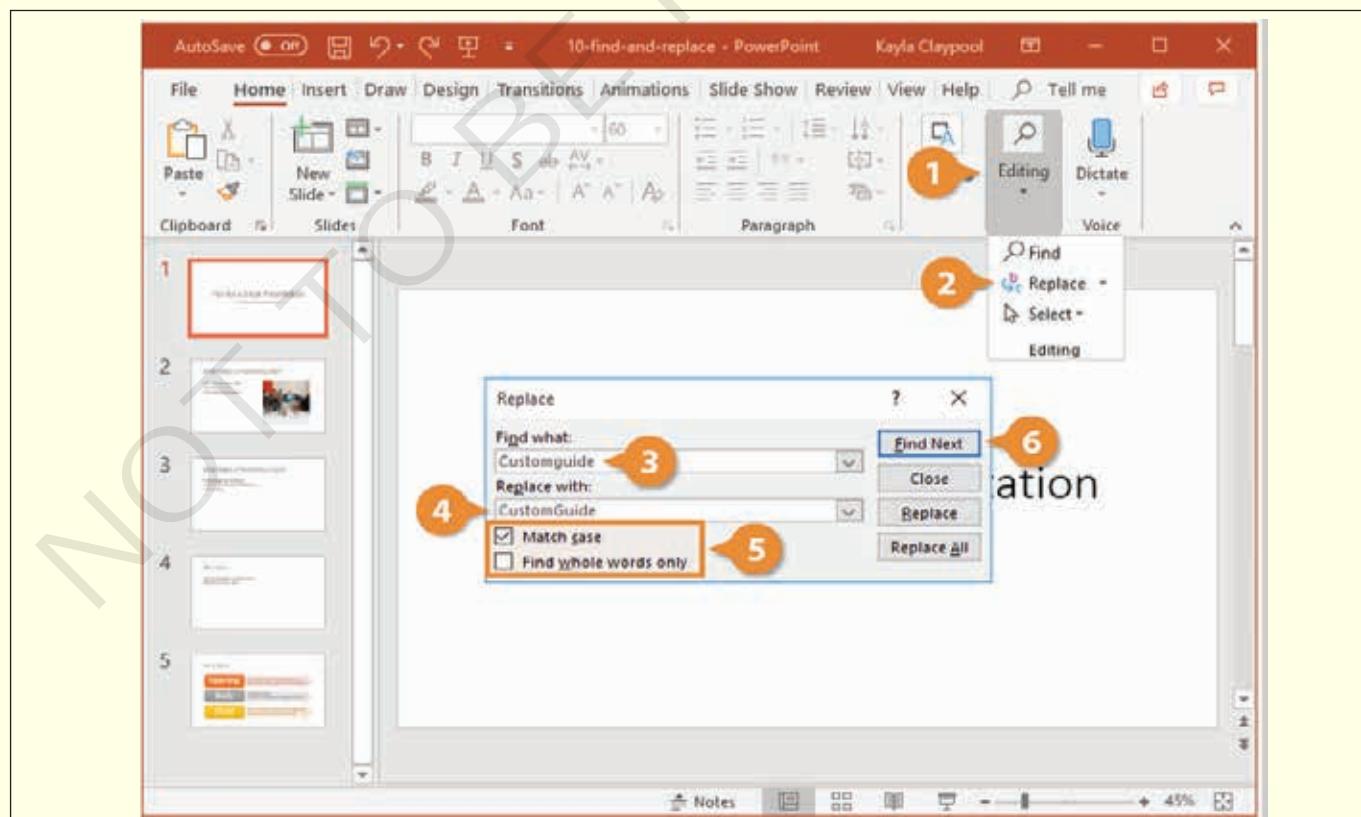


## Replace Text

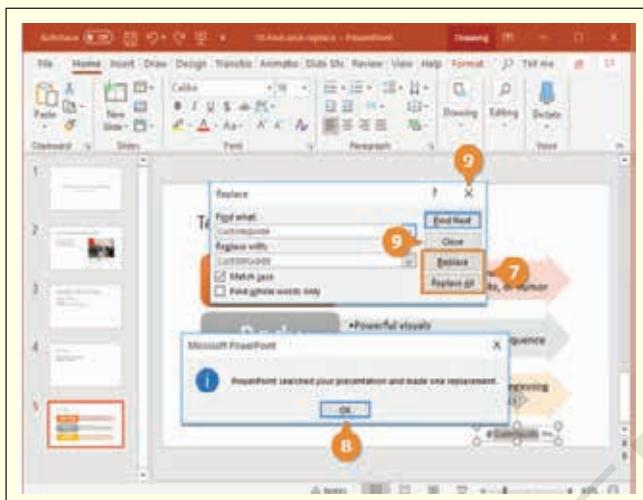
The Replace tool finds specific words and phrases, and then replaces them with something else.

- 1 If necessary, expand the Editing group on the Home tab.
- 2 Click the Replace button.

- 3 Type the word you need to replace in the Find what text box.
- 4 Enter the replacement word in the Replace with text box.
- 5 If necessary, select a search option.
- 6 Click Find Next to find the first instance.

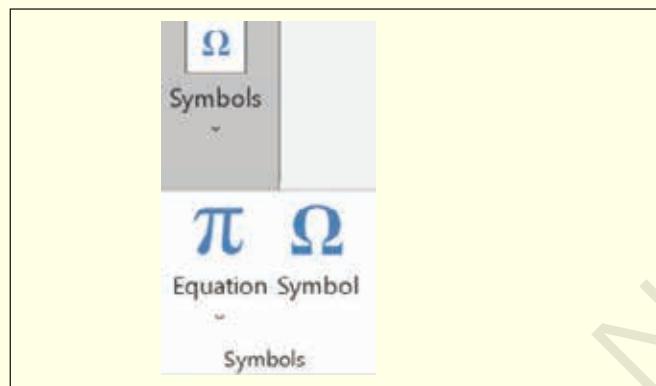


- Select a replacement option.
  - Replace: Replaces one instance at a time.
  - Replace All: Replaces every instance at once.
- (Optional) If you chose Replace All, click OK when the dialog box appears.
- Click Close when you're done.

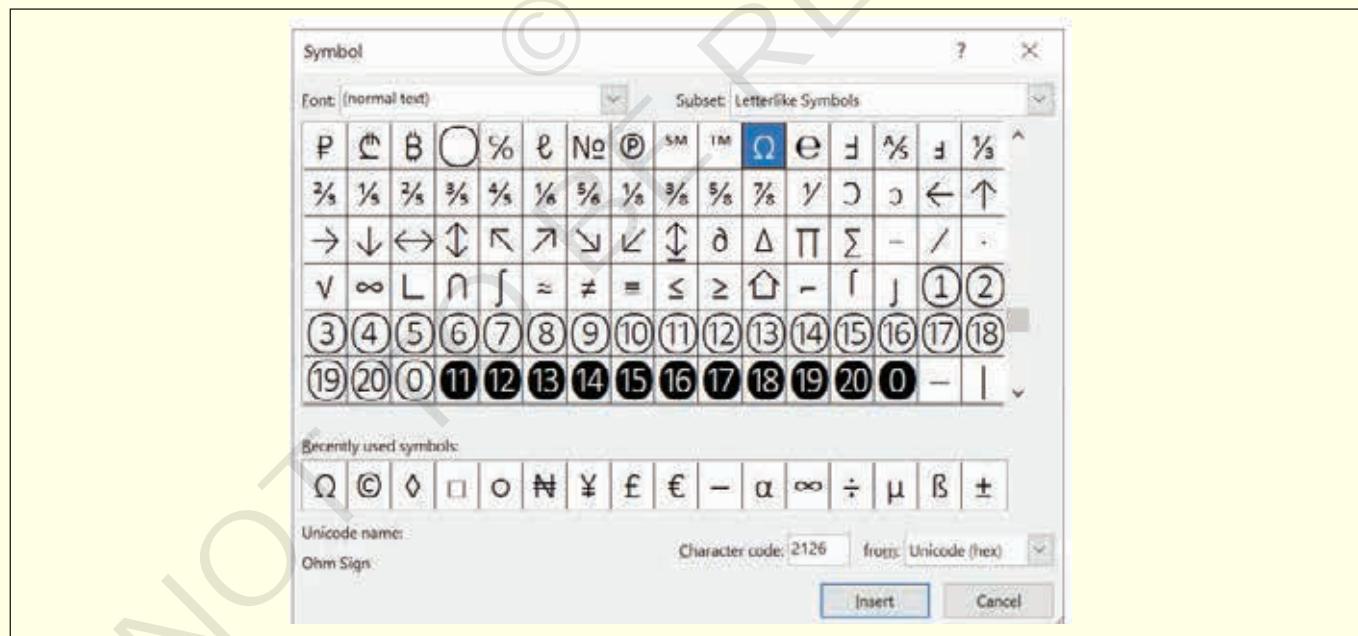


## TASK 2: Insert symbols and special characters

- Go to Insert > Symbol.



- Pick a symbol, or choose More Symbols.
- Choose the Symbol and Scroll up or down to find what you want to insert.
- When you find the symbol or special character you want, double-click it or choose Insert then symbol will be inserted in your file.
- Select Close.



## COPA - Format Presentations

### Format text and paragraphs

**Objectives:** At the end of this exercise you shall be able to

- apply text effects
- apply formatting by using Format Painter
- set line and paragraph spacing and indentation
- apply built-in styles to text

### Requirements

#### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

#### TASK 1: Apply text effects

##### Change Font Type

One way to emphasize text in a presentation is by changing its font type. A font type is a set of characters with the same design and shape.

- 1 Select the text you want to change.

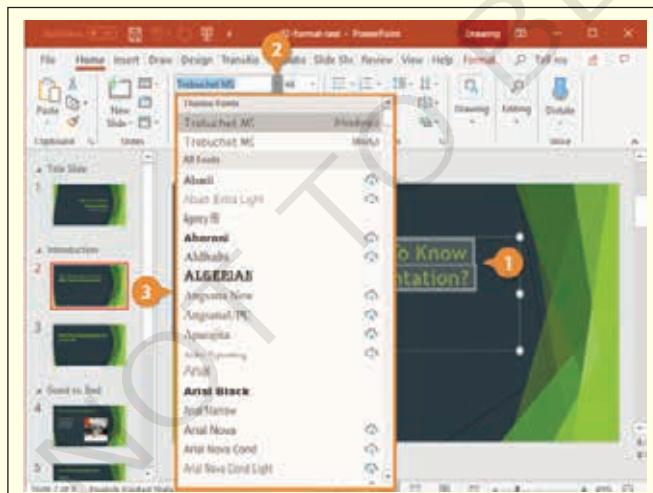
If you want all of text in a text box to change, you can just select the text box.

- 2 Click the Font list arrow.

Preview a font by hovering over it in the menu.

- 3 Select a new font.

Use the Font list arrow on the Mini Toolbar that appears near the mouse when you have selected text.



##### Change Font Size

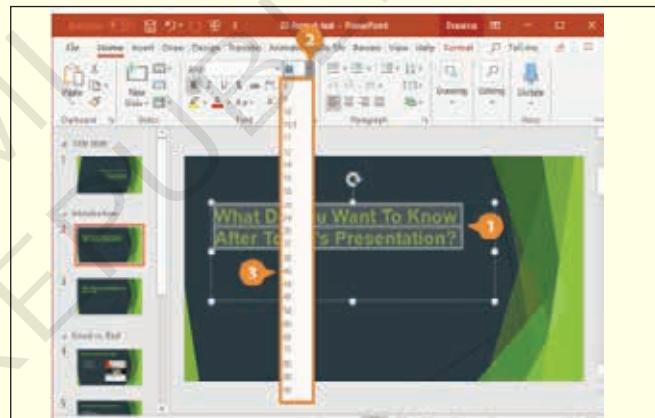
- 1 Select the text you want to change.

- 2 Click the Font Size list arrow.

Preview a font size by hovering over it in the menu.

- 3 Select a font size.

Use the Font Size list arrow on the Mini Toolbar.



##### Change Font Color

Changing font color is yet another way to emphasize text in a presentation.

- 1 Select the text you want to change.

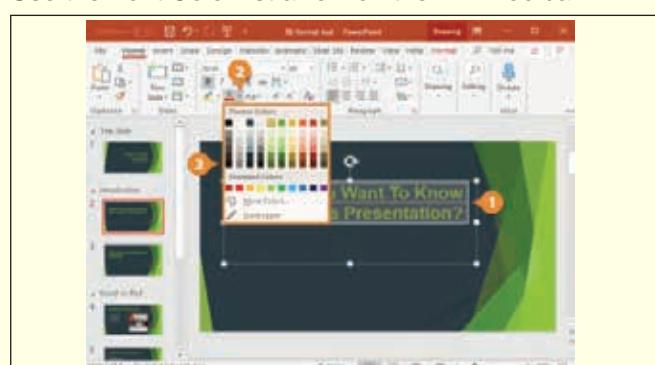
- 2 Click Font Color list arrow.

The colors that appear at the top coordinate with your current presentation theme.

Preview a font color by hovering over it in the menu.

- 3 Select a new color.

Use the Font Color list arrow on the Mini Toolbar.



The Font Color button always displays the color that was used most recently. To quickly apply this color to other selected text, simply click the Font Color button instead of the list arrow.

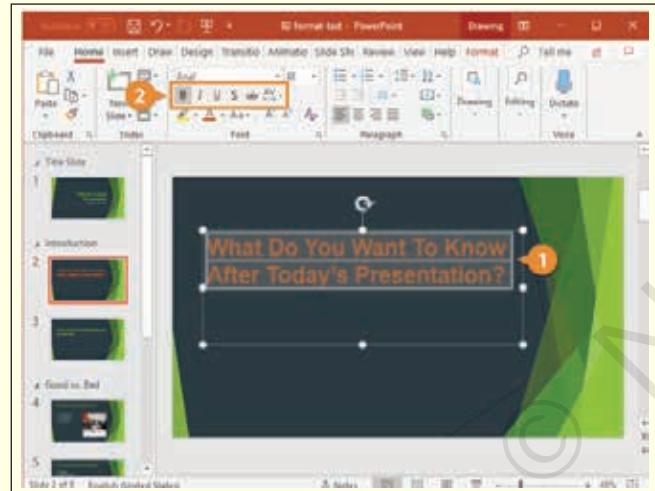
## Apply Text Effects

In addition to changing font type, size, and color, you can also emphasize the text in a presentation by changing the text effects. The most common and popular styles are bold, italic, and underline, but other styles such as shadow and strikethrough are also useful.

- 1 Select the text you want to change.
- 2 Select a font style like Bold, Italic, or Underline.

## Shortcuts

- To bold, **Ctrl + B**.
- To italicize, **Ctrl + I**.
- To underline, **Ctrl + U**.



To remove a font style from selected text, simply click the style button again, or use the Clear All Formatting button.

## Change the Case

If you want to change the letter case for an entire block of text, it's simple to switch to lowercase, uppercase, sentence case, or capitalize each word without manually changing each letter. You can also reverse the case of selected text with the toggle case option.

## TASK 2: Apply formatting by using Format Painter

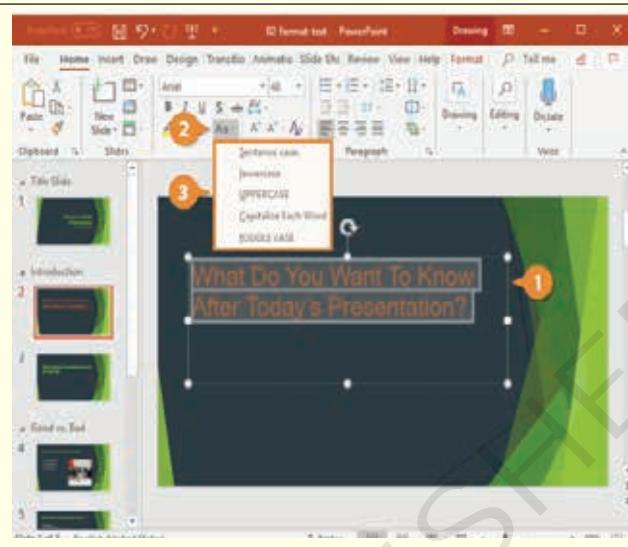
- 1 Select the text or graphic that has the formatting that you want to copy.

**Note:** If you want to copy text formatting, select a portion of a paragraph. If you want to copy text and paragraph formatting, select an entire paragraph, including the paragraph mark.

- 2 To choose Format Painter:

On the Home tab, select Format Painter in the Clipboard group.

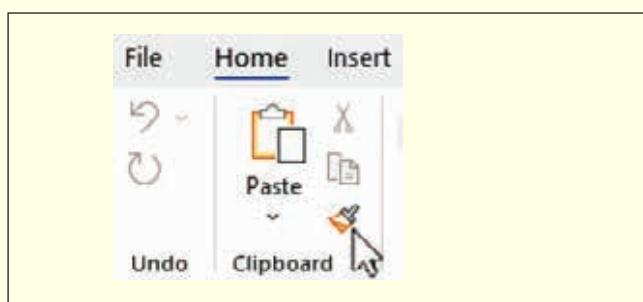
- 1 Select the text.
- 2 Click the Change Case button.
- 3 Select a case option.



## Align Text

There are a couple of different ways to align the text in a text box. You can select from both horizontal and vertical alignment options.

- 1 Select the text.
- 2 Select a horizontal alignment option.
- 3 Select a vertical alignment option.



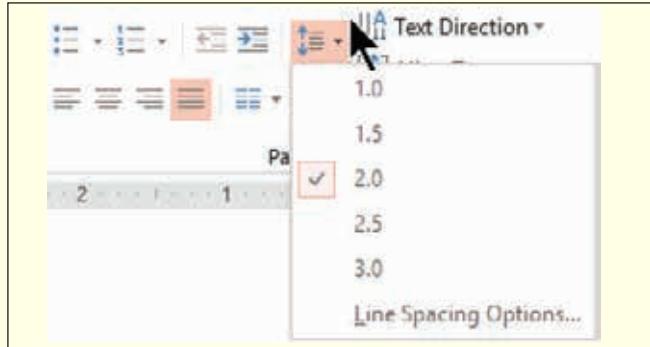
- The cursor changes to a paintbrush icon.
- Use the brush to paint over a selection of text or graphics to apply the formatting. This only works

once. To change the format of multiple selections in your document, you must first double-click Format Painter.

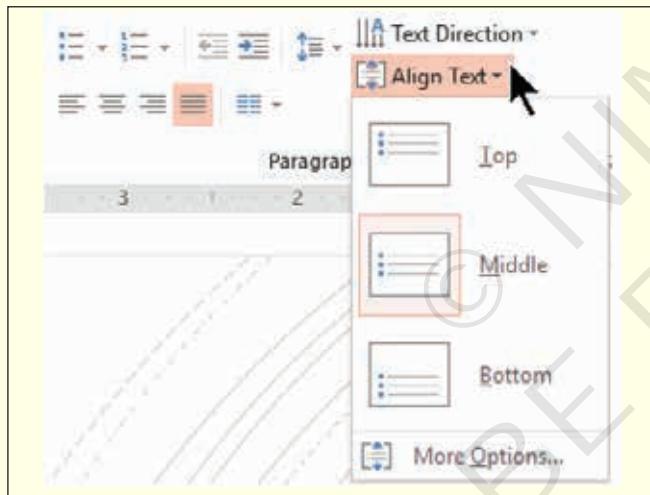
- To stop formatting, press ESC

### TASK 3: Set line and paragraph spacing and indentation

Line spacing (single-space, double-space, and so on) and vertical alignment (top, bottom, or middle) are available from menu buttons on the Home tab of the Ribbon, in the Paragraph group:



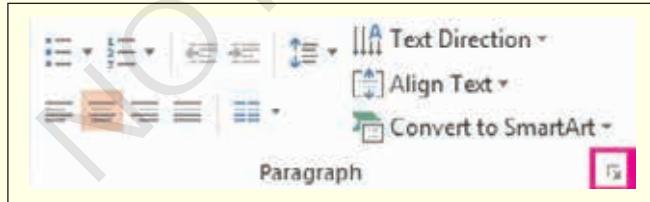
**Figure 1: Line spacing**



**Figure 2: Vertical alignment**

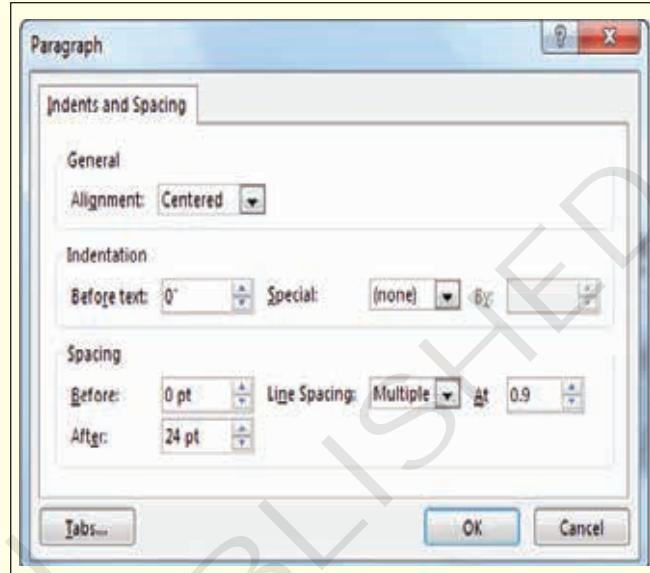
There are more detailed spacing options available in the Paragraph dialog box:

- On the slide, select the text that you want to change.
- Click Home, and in the Paragraph group, click the dialog box launcher.



**The Paragraph dialog box appears:**

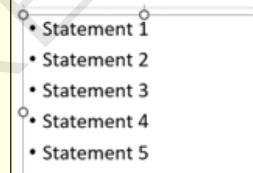
Here are the options available in the dialog box:



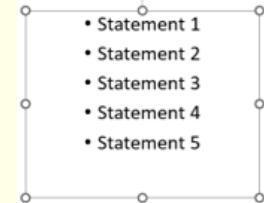
#### Alignment

- To change the horizontal placement of text, in the Alignment box, choose Left, Center, Right, Justified, or Distributed.

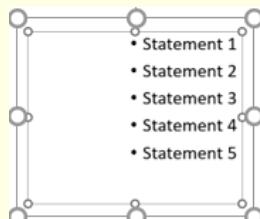
##### Left:



##### Center:

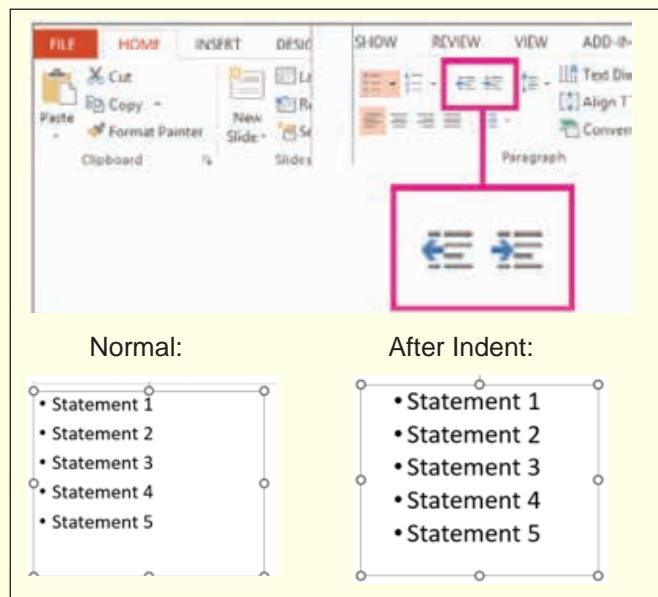


##### Right:

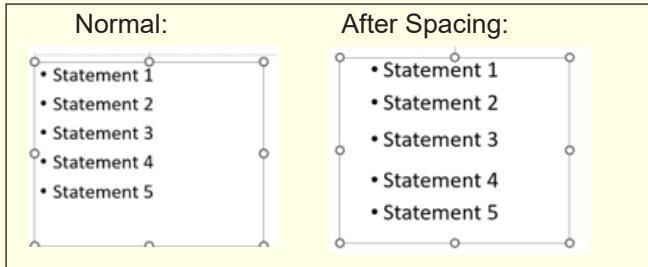


#### Indentation

- To add indentation or change the amount of indentation before text.
- Select the text you want to change, then do one of the following:
- To increase or decrease the left indent of the whole paragraph, on the Home tab, in the Paragraph group, click Increase List Level or Decrease List Level.



- To change the spacing above and within a paragraph, use the Line Spacing options: Single, 1.5 Lines, or Double. Or select Exactly and then add a point value (between 0 and 1584) in the At box.



**Note:** If you keep adding lines until you run out of room in a placeholder, AutoFit adjusts line spacing and font size to fit all list items in the placeholder. When this happens, the AutoFit Options control appears. To turn off AutoFit, click AutoFit Options, and then click Stop Fitting Text to This Placeholder.

## Spacing

- To change the spacing above or below a paragraph, type or click the arrows next to Before or After. This number can be any whole number or a decimal, such as 6.5.

## TASK 4: Apply built-in styles to text

### Insert WordArt

- Click the Insert tab.
- Expand the Text group on the ribbon.
- Click WordArt.
- A gallery of WordArt options appears.
- Choose a WordArt style.



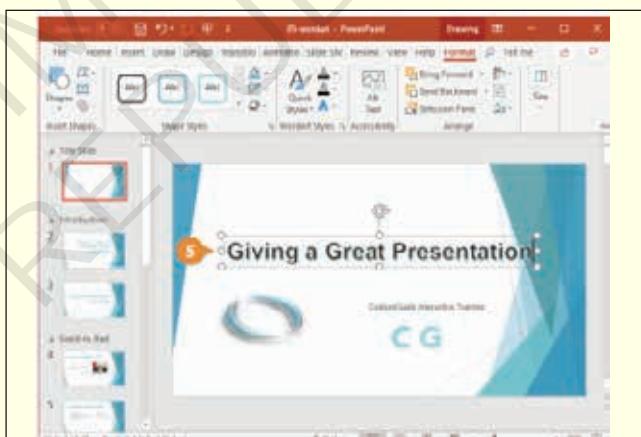
To change the WordArt style of selected text, click the Format tab, select Quick Styles, and make a selection.

- Type to replace the placeholder text.

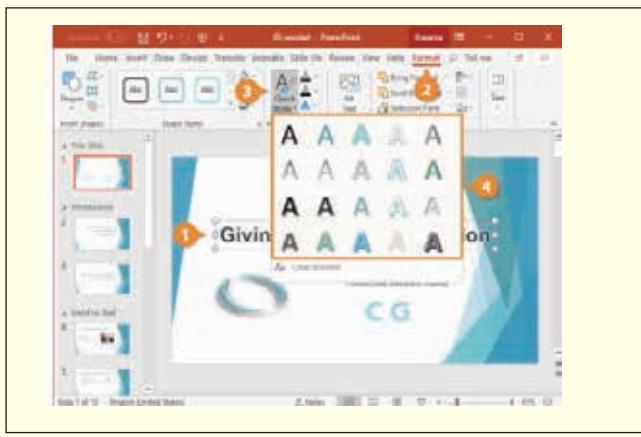
You can also modify your WordArt text using the options in the Font group on the Home tab.

### Format WordArt

You can also format WordArt after it has been inserted. For example, you can change the text fill and outline color, choose a new WordArt style, or apply a text effect.



- Select the WordArt.
- Click the Format tab.
- In the WordArt Styles group, click Quick Styles.
- Select another style.



- 5 Click the Text Fill list arrow and select an option to change the fill.

You can fill WordArt with pictures, gradients, and textures, or you can simply pick a solid color.

- 6 Click the Text Outline list arrow and select an option to change the outline.

- 7 Click the Shape Effects button and select an option to add a shape effect.

You can apply as many effects as you want, but a simple look usually works best.



## COPA - Format Presentations

### Create and configure sections

**Objectives:** At the end of this exercise you shall be able to

- format text in multiple columns
- text and image presentation styles
- clear formatting

### Requirements

#### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

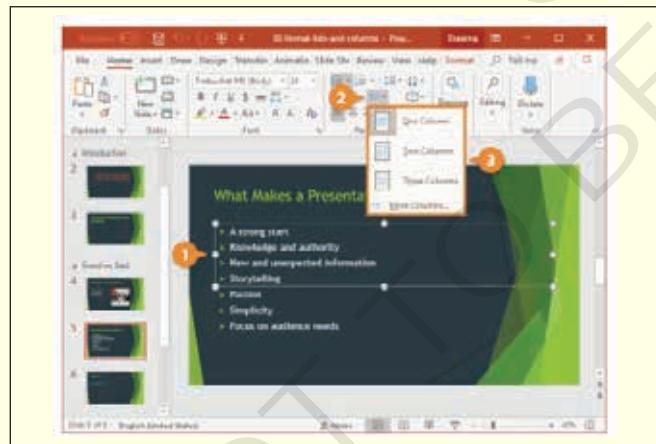
### PROCEDURE

#### TASK 1: Format text in multiple columns

##### Add Multiple Columns

When you have text on a slide, PowerPoint automatically puts it in one column, but you can break it into multiple columns if that's more fitting.

- 1 Select the text box with items you wish to convert to columns.
- Even if text flows outside of a text box, it doesn't automatically break into columns.
- 2 Click the Add or Remove Columns button on the Home tab.
- 3 Select a column option.



##### Numbered and Bulleted Lists

Use bulleted lists when the order of items in a list doesn't matter, such as listing items you need to buy. When the sequence of items in a list does matter, such as to present step-by-step instructions, use a numbered list instead.

- 1 Select the text box with the items you wish to convert to a list.
- 2 Click the Numbering button or the Bullets button.

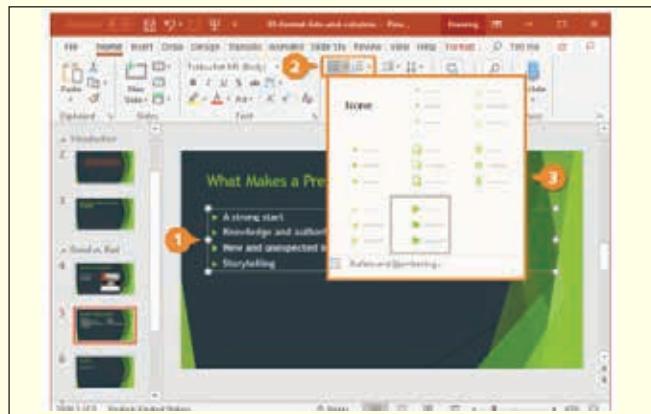


To remove bullets and numbering from a list, select the list and click the Bullets or Numbering button in the Paragraph group.

##### Change the List Style

If you don't like the bullet character or number style that has been assigned to your list by default, you can always change it.

- 1 Select the items with the style you wish to change.
- 2 Click the Numbering or Bullets button list arrow.
- 3 Select a new style.



The new bullet character or number style is applied to the selected paragraph(s).

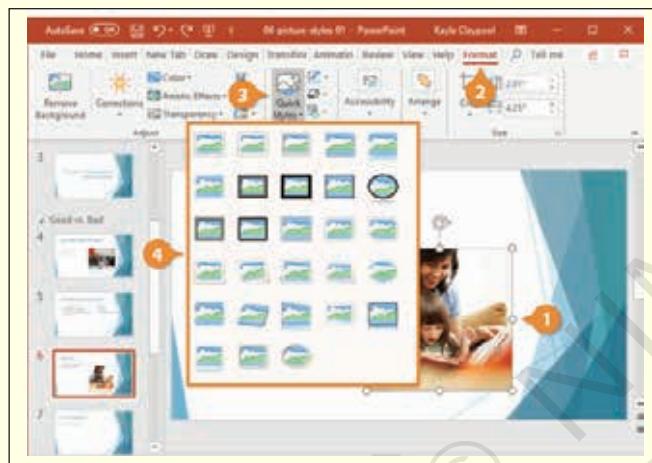
### Keyboard Shortcuts for Working with Lists

| Keystroke | Action                                                                |
|-----------|-----------------------------------------------------------------------|
| Enter     | Inserts a new paragraph with the same formatting as the previous one. |

## TASK 2: Text and image presentation styles

### Choose a image Style

- Select the picture.
- Click the Format tab on the ribbon.
- Click the Quick Styles button in the Picture Style group.
- Select a style.



### Modify a Style

After a style has been applied, modify different elements of the preset style for a more customized look.

- Select the picture.
- Click the Format tab on the ribbon.
- Use the tools in the Picture Styles group to edit the picture style.
  - Picture Border:** Adjust the border color and thickness.
  - Picture Effects:** Add or remove complicated effects like glow and bevel.
  - Picture Layout:** Add text and reshape the picture to create SmartArt.

### Change the Picture

You can swap one picture for another while keeping any of the picture style options that are already applied.

## TASK 3: Clear formatting

Undo formatting

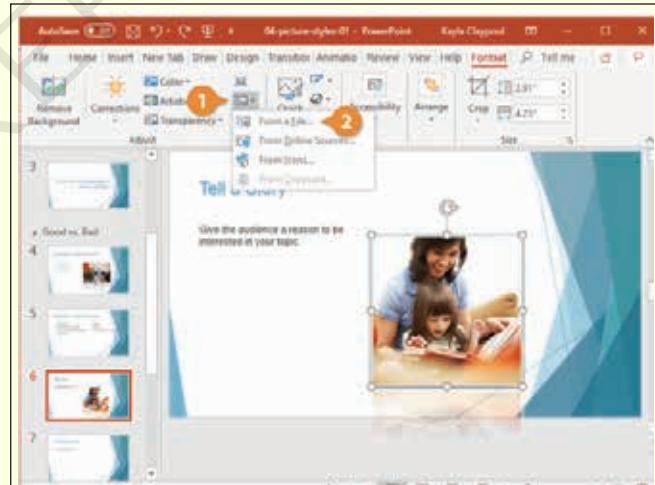
Select Undo to undo the last formatting change.

Clear All Formatting

|             |                                   |
|-------------|-----------------------------------|
| Tab         | Demotes the paragraph one level.  |
| Shift + Tab | Promotes the paragraph one level. |



- With the picture selected, click the Change Picture button in the Adjust group on the Format tab.
- Select the type of picture you want to insert.



- Navigate to and select a new picture.
- Click Open or Insert.

The picture is swapped out, but the style remains the same.

- Select the text with the formatting you want to clear.
- Select Home > Clear All Formatting or press Ctrl + Spacebar.

## COPA - Manage Tables and Bulleted Text

### Create tables

**Objectives:** At the end of this exercise you shall be able to

- insert tables in PowerPoint
- apply built-in table styles
- create tables by specifying rows and columns

### Requirements

#### Tools/Equipment/Machines

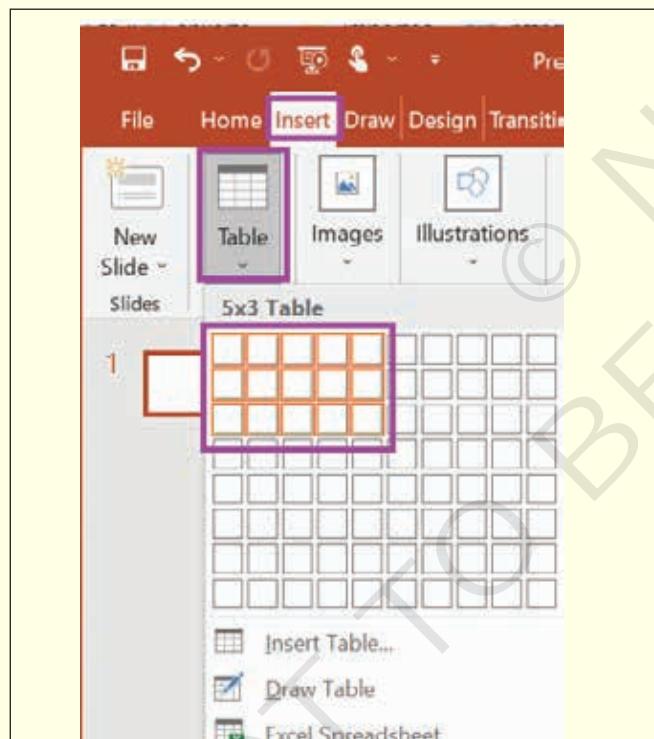
- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

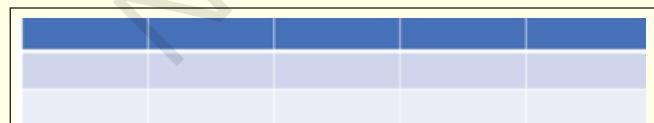
#### TASK 1: Insert tables in PowerPoint

##### Create a table of up to 10 columns and 8 rows

- 1 Select the slide that you want to add a table to.
- 2 On the Insert tab, select Table.

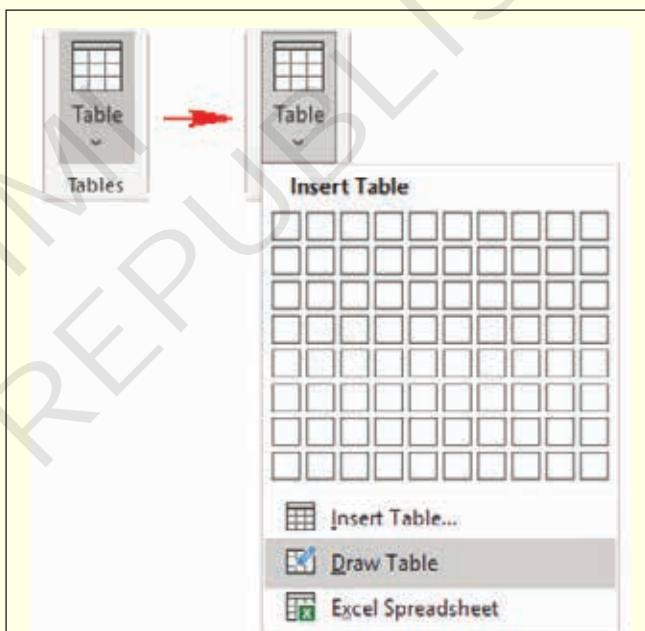


- 3 Move or drag the cursor right (to select columns) and down (to select rows) the grid to select as many cells as you need (5 X 3) to create the table.



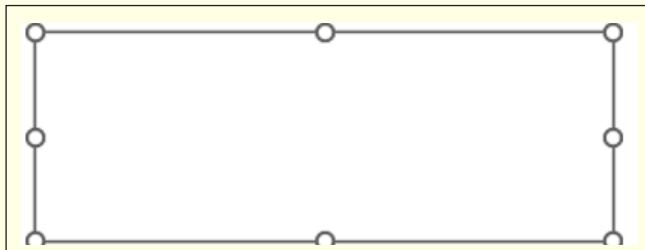
#### Draw a table

To manually create an empty table, on the Inserts tab, in the Tables group, click the Table button, then select Draw Table from the dropdown list:



The cursor changes to the pencil that allows drawing cells directly on the slide:

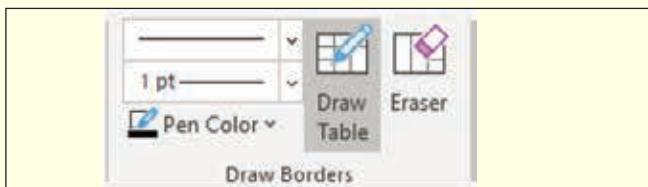
- 1 Hold the mouse button and move the pencil cursor to draw a rectangle that will be the outer frame of a new table:



After releasing the mouse button, the outer frame of a new table appears, and PowerPoint displays the Table Design and Layout tabs:

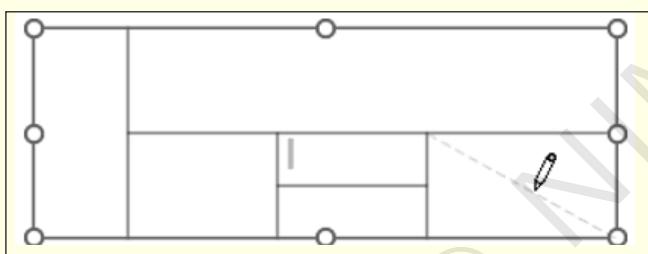


- 2 On the Table Design tab, in the Draw Borders group, click the Draw Table button to re-enable the drawing if it is not already enabled:

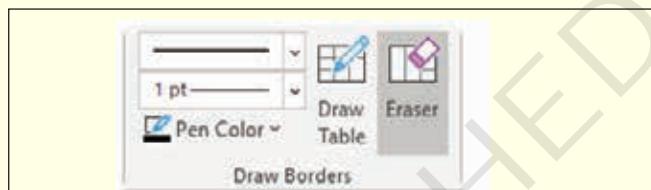


- 3 Press the mouse button and move the pencil cursor to draw the desired rows and columns.

When you start moving the cursor vertically or horizontally, PowerPoint tries to keep the line straight and exactly vertical or horizontal, or diagonal between two corners of existing cells.



**Note:** If you draw a line in the wrong way, click the Eraser button in the Draw Borders group of the Table Design tab to remove it:



- 4 To stop drawing, do one of the following:

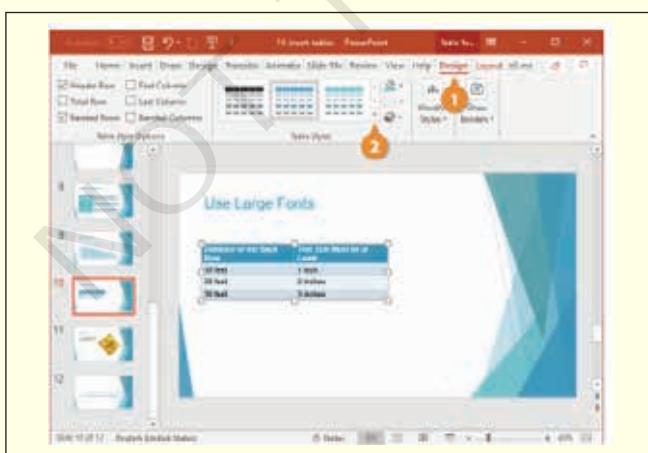
- Click the Draw Table button again,
- Click anywhere on a slide outside the table,
- Press Esc

## TASK 2: Apply built-in table styles

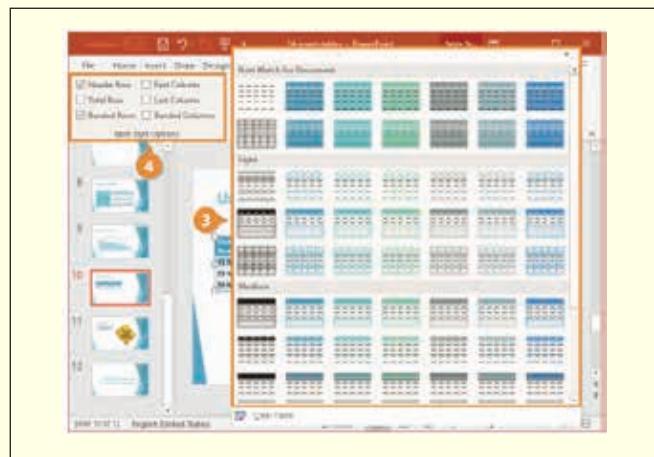
### Format Table

Formatting a table is an easy way to spice up its appearance. A table style is a set of different formatting commands that can be applied to a table in a single step.

- 1 With the table selected, click the Design tab under Table Tools.
- 2 Click the Table Styles gallery More button.



- 3 Select a new table style.
- 4 Click an option in the Table Style Options group:
  - **Header Row:** Specifically formats the top row of the table to stand out from the other table rows.
  - **Total Row:** Displays special formatting for the last row of the table.
  - **Banded Rows:** Formats even rows differently than odd rows to make the table data easier to read.
  - **First Column:** Displays special formatting for the first column of the table.
  - **Last Column:** Displays special formatting for the last column of the table.
  - **Banded Columns:** Formats even columns differently than odd columns to make the table data easier to read.



If you want to further customize the table formatting, select specific cells or cell ranges and use the Shading, Borders, and Effects buttons in the Table Styles group.

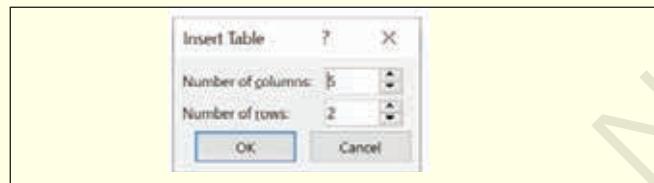
### TASK 3: Create tables by specifying rows and columns

#### Insert a Table

- 1 Click the Insert Table content placeholder.

You can also insert a table by clicking the Insert tab on the ribbon and then the Table button.

- 2 Specify the number of columns and rows.



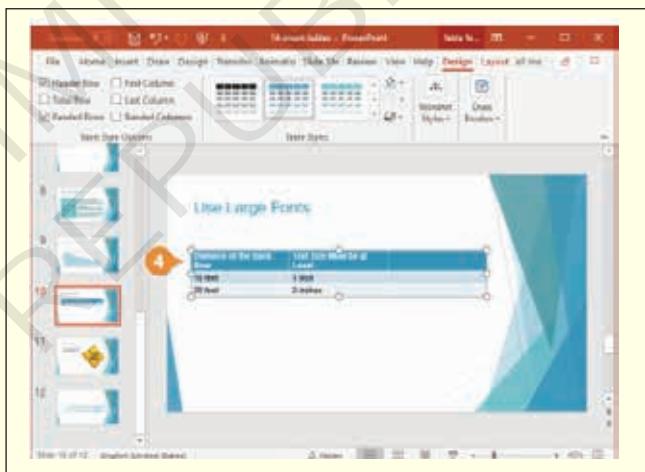
- 3 Click OK.



- 4 Click in a cell and type in your information.

#### Navigation shortcuts:

- Press the Tab key to move to the next adjacent cell.
- Use arrow keys to move one cell at a time.



## COPA - Manage Tables and Bulleted Text

### Modify tables

**Objectives:** At the end of this exercise you shall be able to

- insert and delete table rows and columns
- configure cell margins and spacing
- merge and split cells
- resize tables, rows, and columns.

### Requirements

#### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

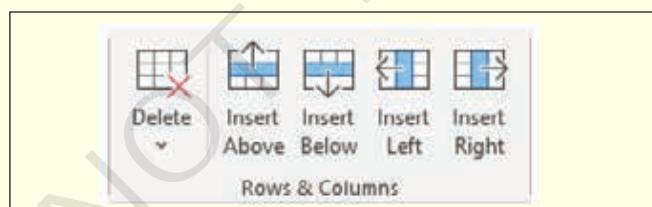
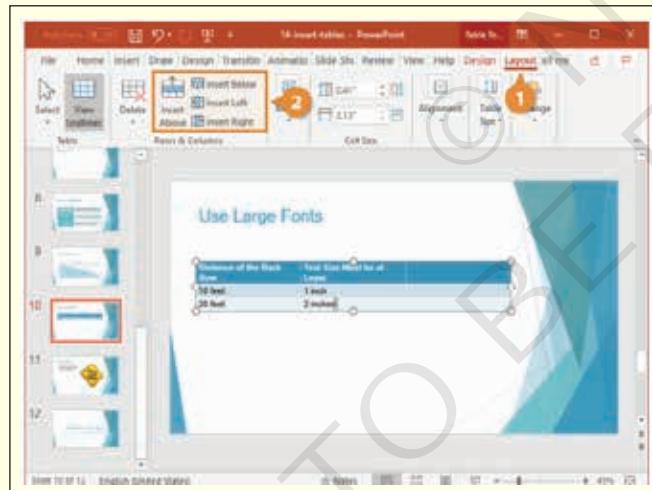
### PROCEDURE

#### TASK 1: Insert and delete table rows and columns

##### Add Rows or Columns

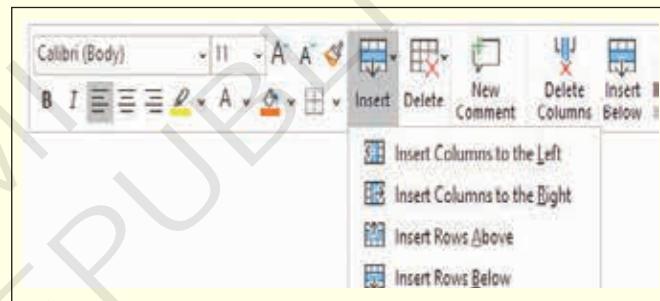
You can make a table larger by inserting rows and columns.

- 1 With the table selected, click the Layout tab.
- 2 Use the buttons in the Rows & Columns group to add additional table cells.



- 3 Or Right-click and select the Insert dropdown list in the Mini toolbar:

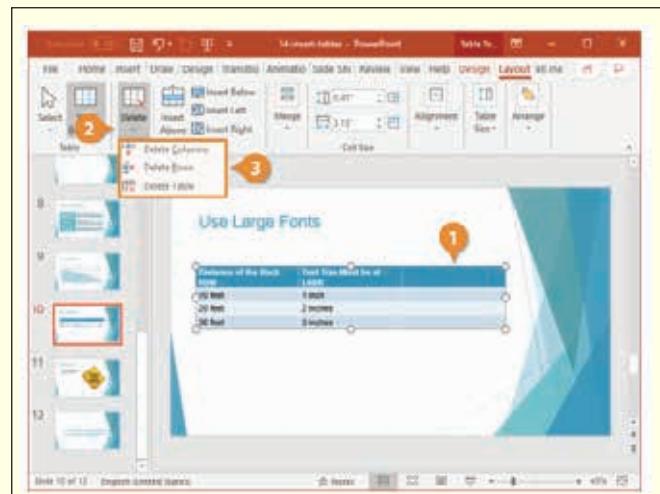
The new rows or columns are added based on the position of the cursor in the table.

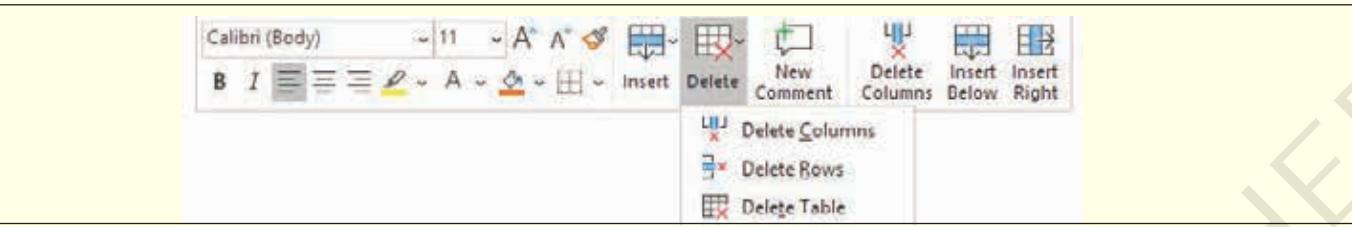
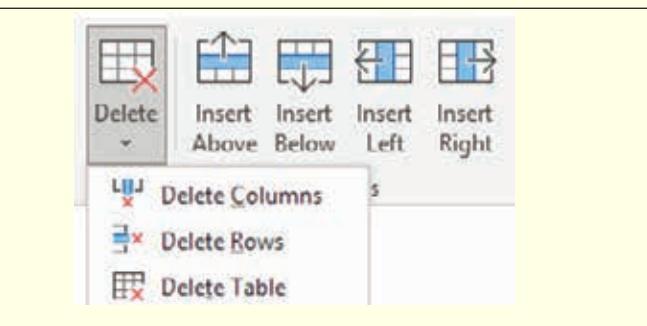


##### Delete Rows or Columns

You can make a table smaller by deleting rows and columns.

- 1 Click in the row or column you want to delete.
- 2 Click the Delete button on the Layout tab.
- 3 Choose a deletion option.



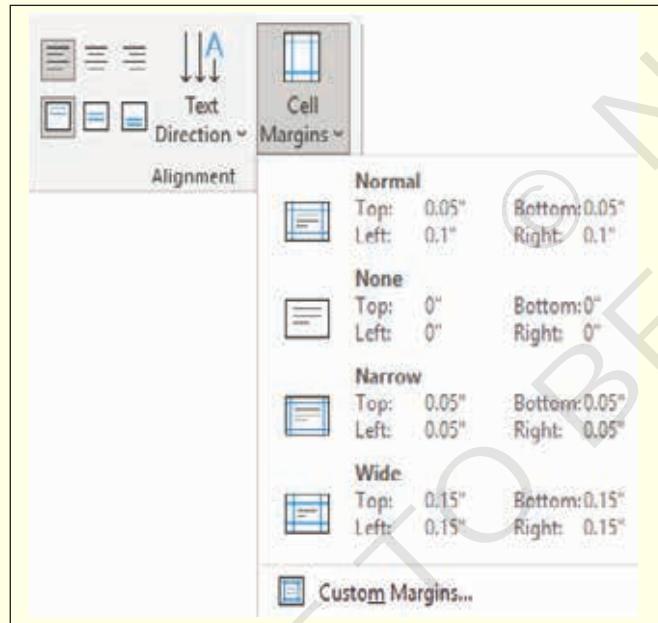


## TASK 2: Configure cell margins and spacing

### Change the cell margins

To change the cell spacing, select a cell or several cells, then do one of the following:

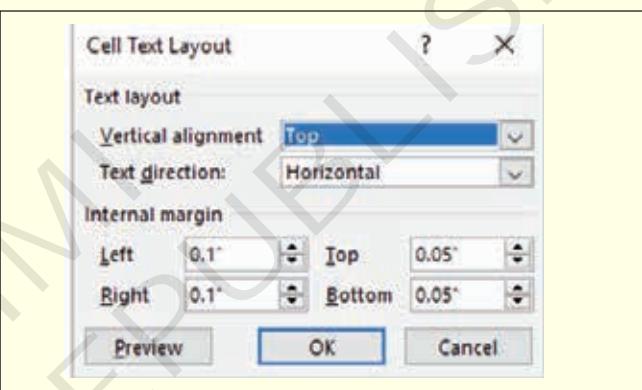
- On the Table Layout tab, in the Alignment group, click the Cell Margins dropdown list, and choose one of the following options:



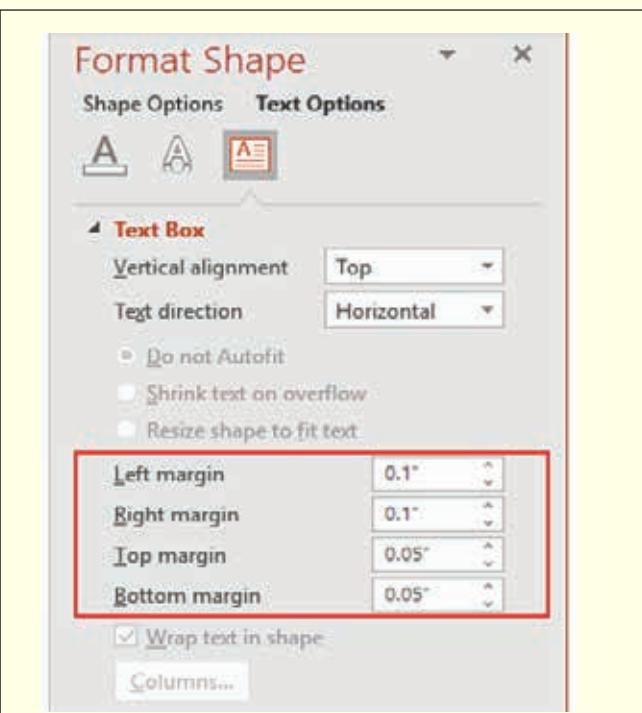
- Normal,
- None,
- Narrow,
- Wide,
- Click Custom Margins...

In the Cell Text Layout dialog box, in the Internal margin section, type or select values you prefer:

- Or Right-click and select the Delete dropdown list in the Mini toolbar:



- Right-click on the selection, then choose Format Shape... in the popup menu. On the Format Shape pane, on the Text Options tab, in the Textbox group, type or select the appropriate values in the Left margin, Right margin, Top margin, and Bottom margin fields:



For example:

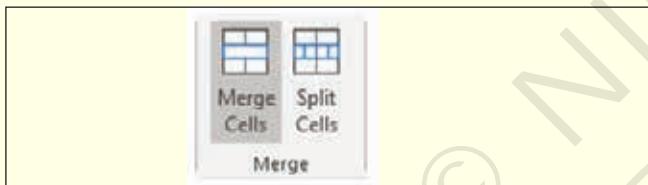
|                                                                                                                                                                                    |                                                                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Normal</b> margins: <ul style="list-style-type: none"><li>- Top – 0.05 inches</li><li>- Bottom – 0.05 inches</li><li>- Left – 0.1 inches</li><li>- Right – 0.1 inches</li></ul> | <b>Custom</b> margins: <ul style="list-style-type: none"><li>- Top – 0.3 inches</li><li>- Bottom – 0.3 inches</li><li>- Left – 0.3 inches</li><li>- Right – 0.3 inches</li></ul> |
| <b>Wide</b> margins: <ul style="list-style-type: none"><li>- Top – 0.15 inches</li><li>- Bottom – 0.15 inches</li><li>- Left – 0.15 inches</li><li>- Right – 0.15 inches</li></ul> | <b>None</b> margins: <ul style="list-style-type: none"><li>- Top – 0 inches</li><li>- Bottom – 0 inches</li><li>- Left – 0 inches</li><li>- Right – 0 inches</li></ul>           |

### TASK 3: Merge and split cells

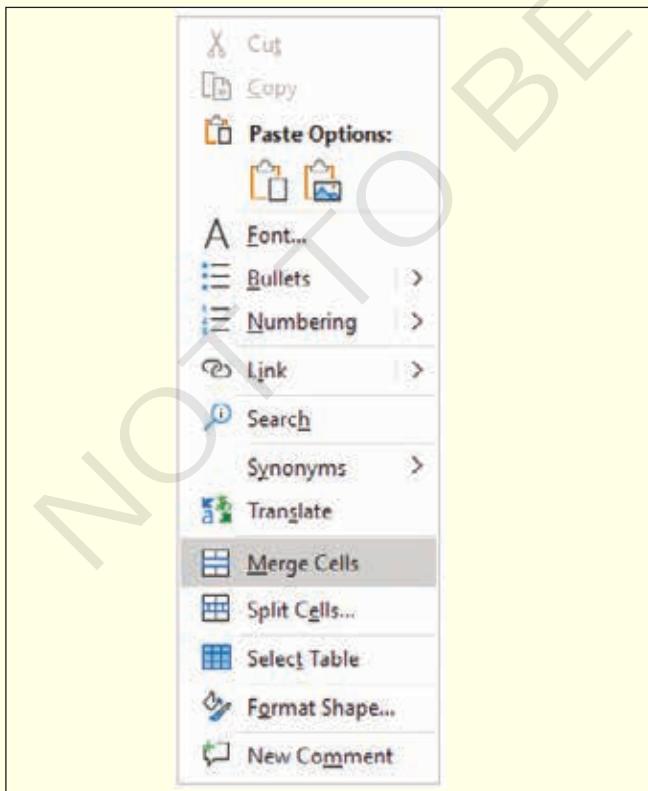
#### Merge cells

To combine multiple table cells into one cell, do the following:

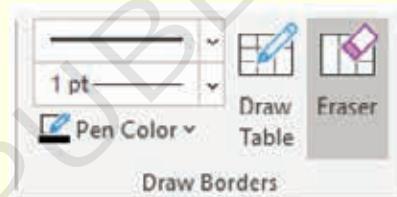
- 1 Select the cells that you want to combine.
- 2 Do one of the following:
  - On the Table Layout tab, in the Merge group, click the Merge Cells button:



- Right-click and select Merge Cells in the popup menu:



Note: You can also use the drawing tools: activate the table, then on the Table Design tab, in the Draw Borders group, click the Eraser button

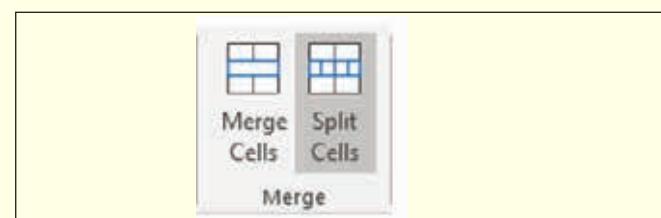


When the cursor changes to an eraser, click the border you no more need to merge cells. After finishing, click the Eraser button again or press the Esc key

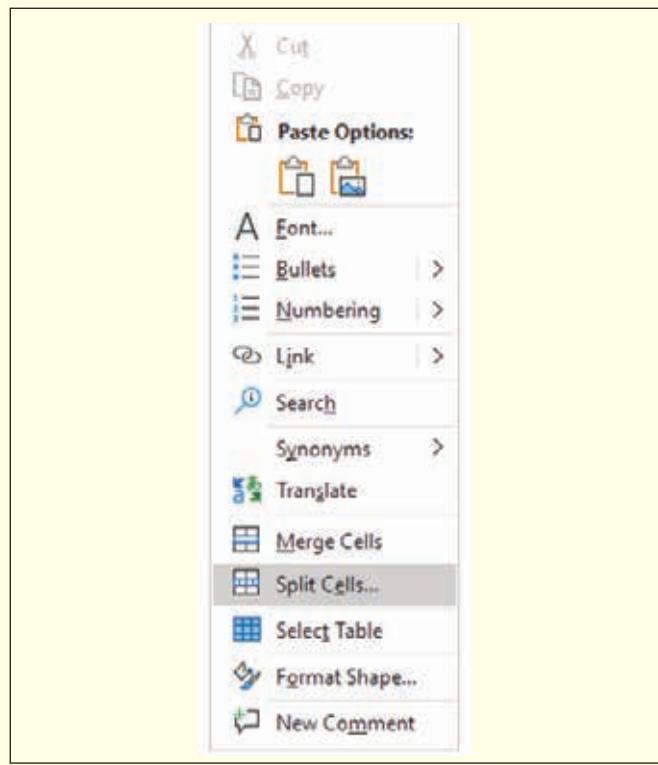
#### Split cells

To split the table cell or cells into multiple cells, do the following:

- 1 Activate or select the cell or cells you want to split.
- 2 Do one of the following:
  - On the Table Layout tab, in the Merge group, click the Split Cells button:

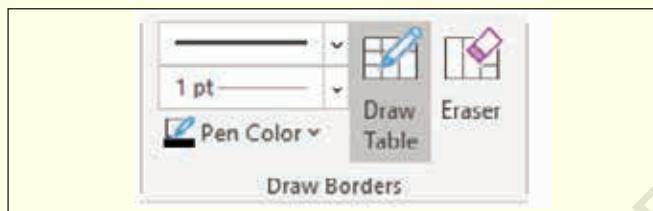


- Right-click and select Split Cells in the popup menu:



Every cell in the selection will be split into the specified number of columns and rows.

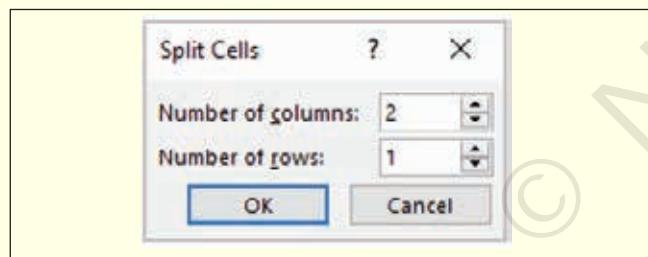
**Note:** You can also use the drawing tools: activate the table, then on the Table Design tab, in the Draw Borders group, click the Draw button:



When the cursor changes to a pencil, drag from the point from the cell border at which you want to start the split down to the cell border at which you want to stop it. A dashed line indicates the split location while you're drawing. When you release the cursor, a border of the currently selected line style, width, and color replaces the dashed line:

After finishing, click the Draw button again, click anywhere outside the table, or press the Esc key to stop drawing mode.

- In the Split Cells dialog box, enter or choose the number of columns and rows to which you need to split the selection:

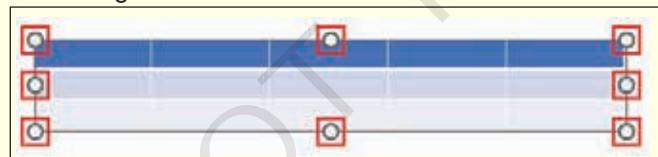


#### TASK 4: Resize tables, rows, and columns

##### Resize a table and table elements

To change the size of a table, activate the table (click anywhere in the table to see the Table Design and Layout tabs), and then do any of the following:

- Drag the sizing handles to change the height, width, or height and width of the table:



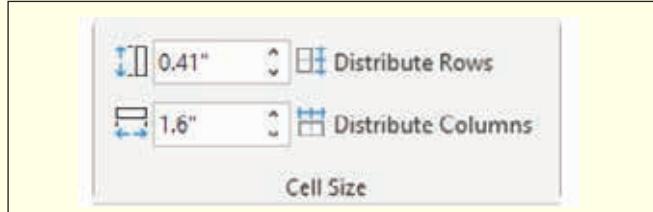
- On the Table Layout tab, in the Table Size group, set the Height and Width to specific dimensions:



**Note:** On the Table Layout tab, in the Table Size group, select the Lock Aspect Ratio checkbox before changing the table size if you don't want to change the table shape.

To change the width or height of the table elements, do one of the following:

- Select the table element or elements (cell or cells, column or columns, row or rows) you want to change, then do one of the following:
  - On the Table Layout tab, in the Cell Size group:



- To change the width of the selection, enter a new number in the Width field, then press Enter.
- To change the height of the selection, enter a new number in the Height field, then press Enter.

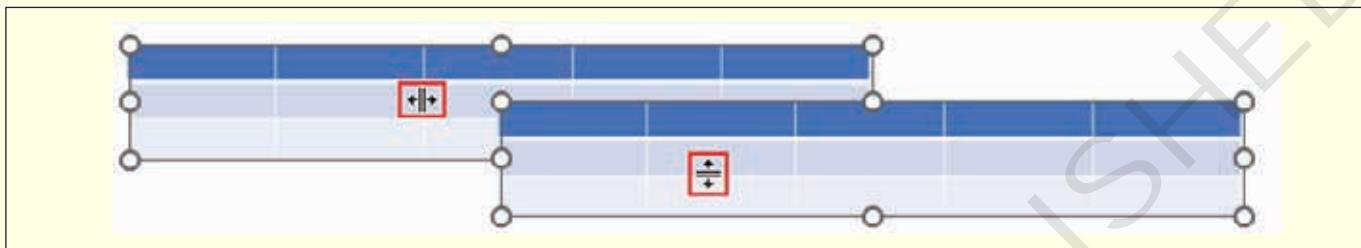
**Note:** You can click the arrows at the right of the appropriate field to increase or decrease the value by one unit at a time.

- Click the Distribute Rows button to make the rows equal width within the selection.
- Click the Distribute Columns button to make the columns equal width within the selection.

- Double-click the right border of a column or the bottom border of a row to size them to fit its widest or longest content.

#### Notes:

- 1 Setting the width of a column to less than is necessary to display the content of a cell wraps the content within the cell.
- 2 Setting the height of a row to less than is necessary to display its content sets the height to the minimum.
  - Point to the inner border of any cell. After the cursor changes to a double-headed arrow, drag the border as you desire:



## COPA - Manage Tables and Bulleted Text

### Create and modify bulleted text

**Objectives:** At the end of this exercise you shall be able to

- format paragraphs as numbered and bulleted lists
- change bullet characters and number formats
- increase and decrease list indents
- set starting number values
- restart and continue list numbering on different slides.

#### Requirements

##### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

#### TASK 1: Format paragraphs as numbered and bulleted lists

**Refer Ex.1.9.39. Create and modify lists - Task 1**

#### TASK 2: Change bullet characters and number formats

**Refer Ex.1.9.39. Create and modify lists - Task 2**

#### TASK 3: Increase and decrease list indents

**Refer Ex.1.9.39. Create and modify lists - Task 4**

#### TASK 4: Set starting number values

**Refer Ex.1.9.39. Create and modify lists - Task 6**

#### TASK 5: Restart and continue list numbering on different slides

**Refer Ex.1.9.39. Create and modify lists - Task 5**

**COPA - Manage Tables and Bulleted Text****Create and manage reference elements (hyperlinks)**

**Objectives:** At the end of this exercise you shall be able to

- create hyperlinks within presentations
- create hyperlinks in presentations for files and other sources.

**Requirements****Tools/Equipment/Machines**

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

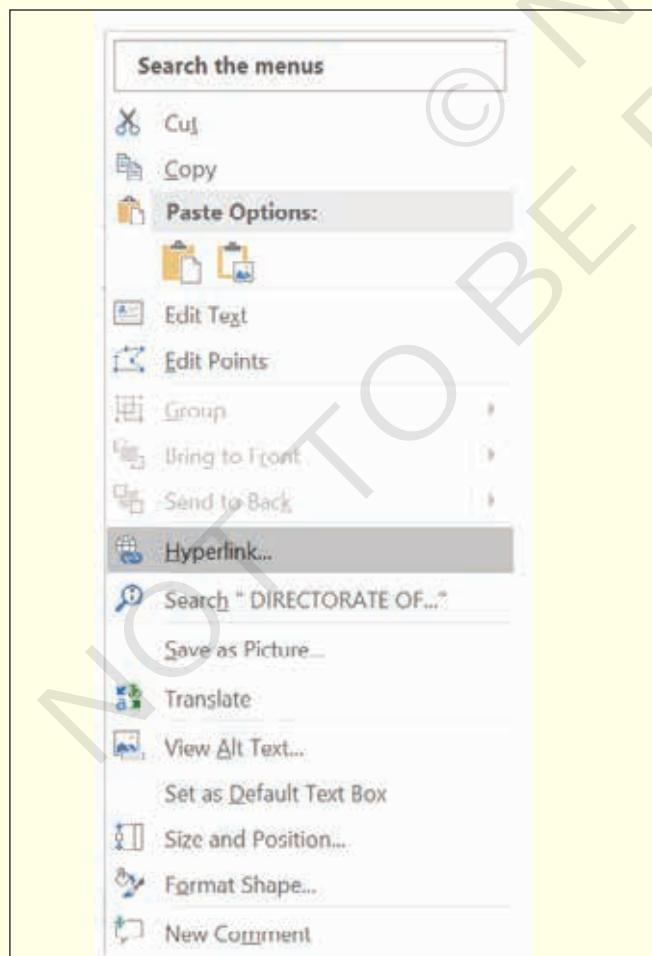
**PROCEDURE****TASK 1: Create hyperlinks within presentations**

To add a hyperlink to your presentation, do the following:

- 1 Choose any shape or a textbox or Picture on the slide:

**Directorate of Employment & Training  
(Training wing)**

- 2 Select the text, right-click on it and then select the Hyperlink list and then Insert Link... in the popup menu:



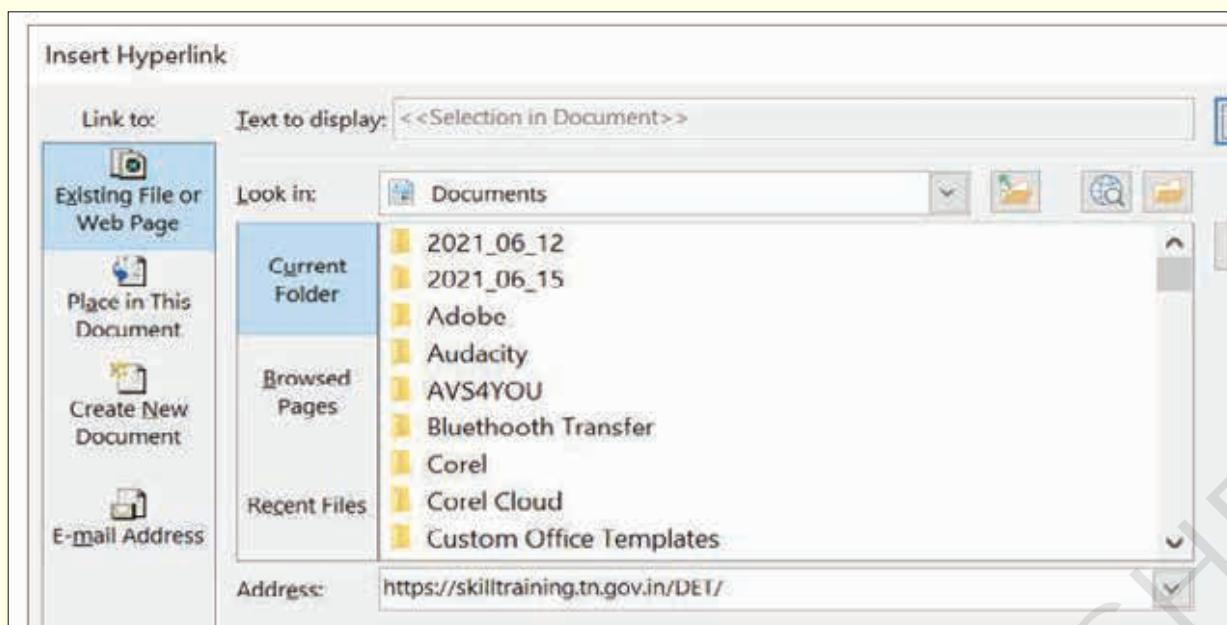
- 3 Or Insert tab Select Link from the links group to Insert Hyperlink



- 4 To enter the address of some web site:

- Select Existing File or Web Page in the Link to list,
- Insert hyperlink address by:
  - Typing it in the Address textbox
  - Or Selecting the website using the Browse the Web button - ,
  - Optionally, change the text for the link in the Text to display textbox,
  - Optionally, enter the screen tip using the ScreenTip... button,
  - Click OK.

Result: While Presentation Click option will be enabled on the hyperlinked Text. So Single click direct to open the website link by default browser.



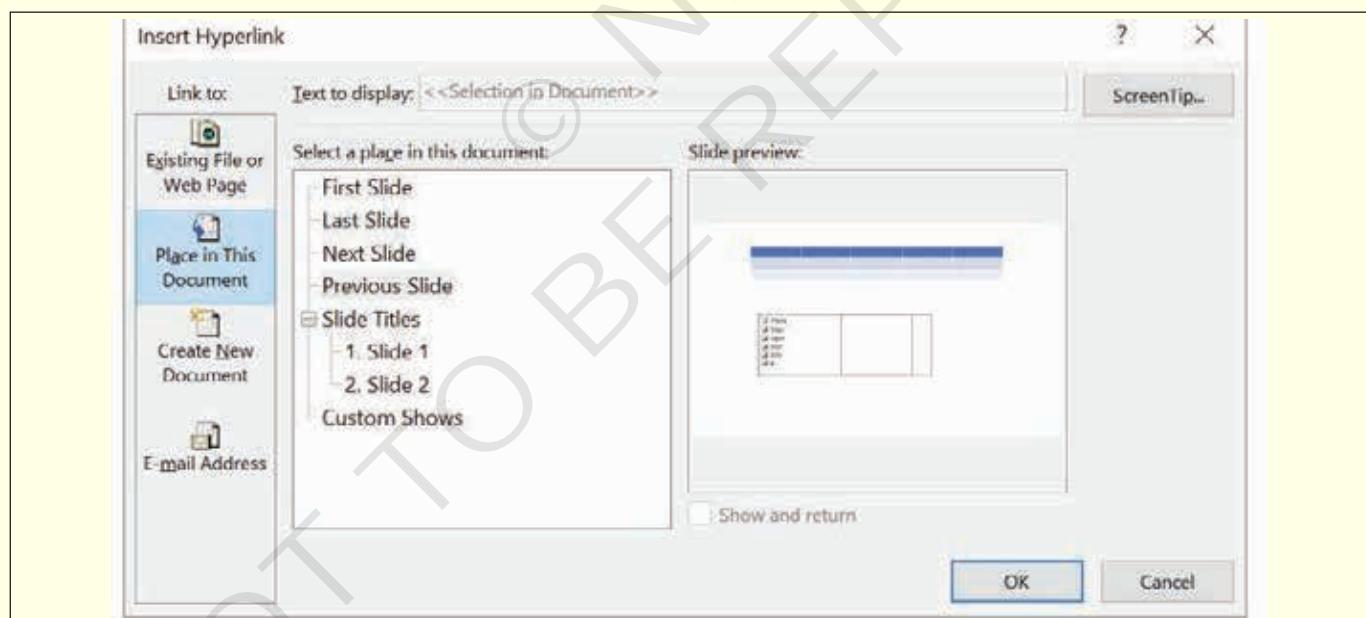
## DIRECTORATE OF EMPLOYMENT & TRAINING (TRAINING WING)

<https://skilltraining.tn.gov.in/DET/>

### TASK 2: Create hyperlinks in presentations for files and other sources

Repeat the step from 1 to 3

To enter the hyperlink to the Place with in this PPT:



1 Select Existing Slide from

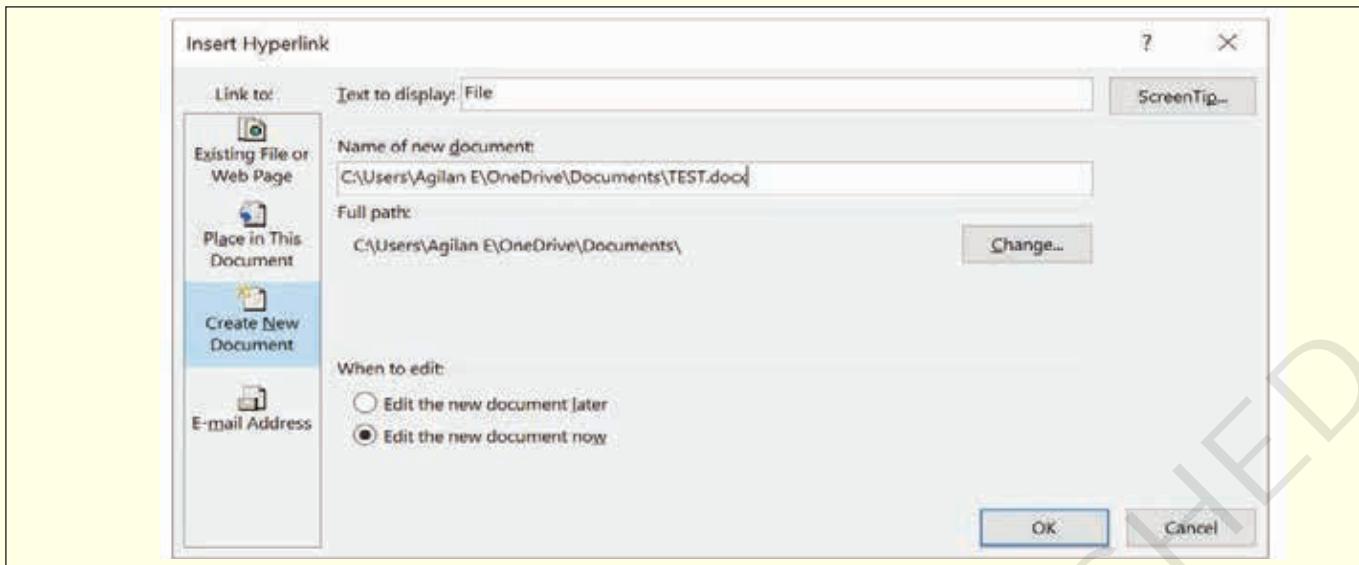
- First Slide
- Last Slide
- Next Slide
- Previous Slide
- Or Slide Titles ---- from all the available slide

**Result:** While Presentation Click option will be enabled on the hyperlinked Text. So Single click direct to open the Slide.

Slide 1  
Ctrl+Click to follow link

2 Click OK.

**2 To enter the hyperlink to the Create New Document:**

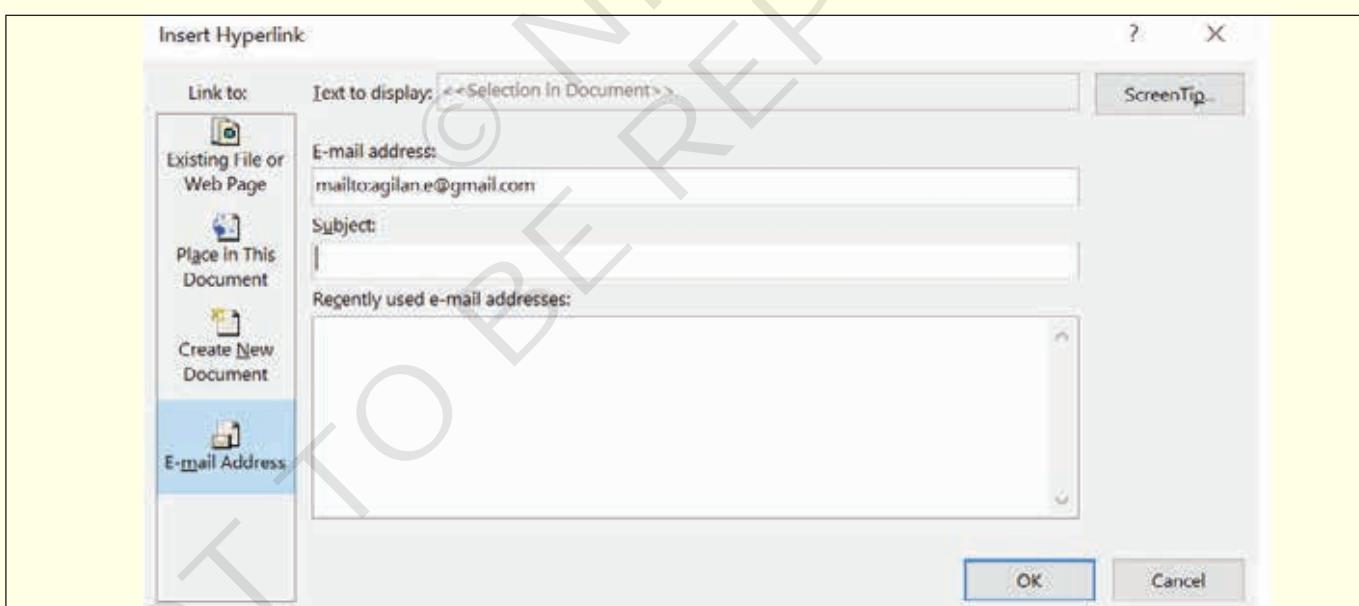


- Click Change to browse file located in Local PC or Type the document full path with name of the file including extension
- Click OK

**Result:** While Presentation Click option will be enabled on the hyperlinked Text. So Single click direct to open the Slide.



To enter the hyperlink the e-mail address:



- Select E-mail Address in the Link to list,
- Enter the e-mail address in the E-mail address textbox,
- Optionally:
  - change the text for the link in the Text to display textbox,
  - enter the screen tip using the ScreenTip... button,
  - insert the subject for e-mails in the Subject textbox,

- Click OK

**Result:** While Presentation Click option will be enabled on the hyperlinked Text. So Single click direct to send the mail by Email Agent (Outlook) configured on your computer.



## COPA - Manage Graphic Elements

### Insert illustrations and text boxes

**Objectives:** At the end of this exercise you shall be able to

- insert shapes
- insert pictures
- insert SmartArt graphics
- insert screenshots and screen clippings

### Requirements

#### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

#### TASK 1: Insert shapes

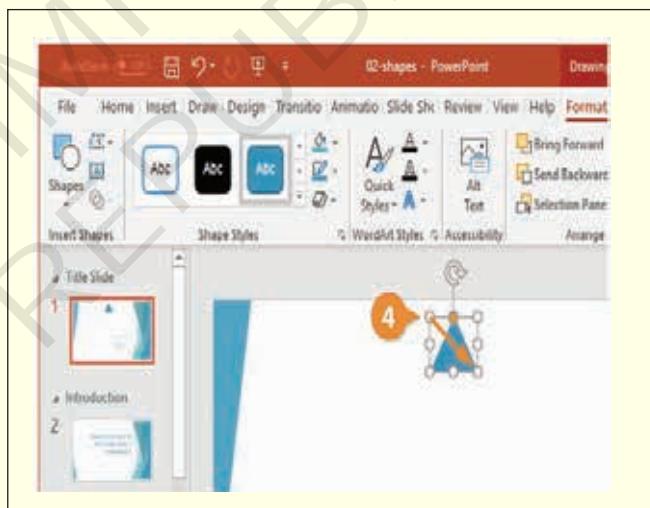
##### Insert a Shape

- 1 Click the Insert tab.
- 2 Click Shapes.
- A menu appears showing all available shapes.
- 3 Select the shape you want to insert.

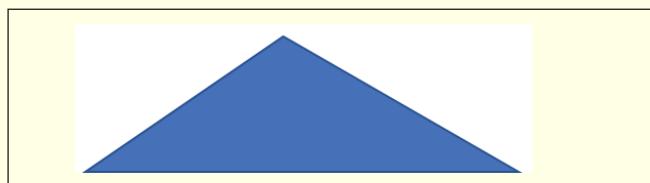


- 4 Click where you want to place the shape, or click and drag to "draw" the shape onto the screen.

To draw a straight line, perfect square or circle, or to constrain the dimensions of other shapes, press and hold the Shift key as you drag.



The shape is inserted onto the slide and the Format contextual tab appears on the ribbon under Drawing Tools.

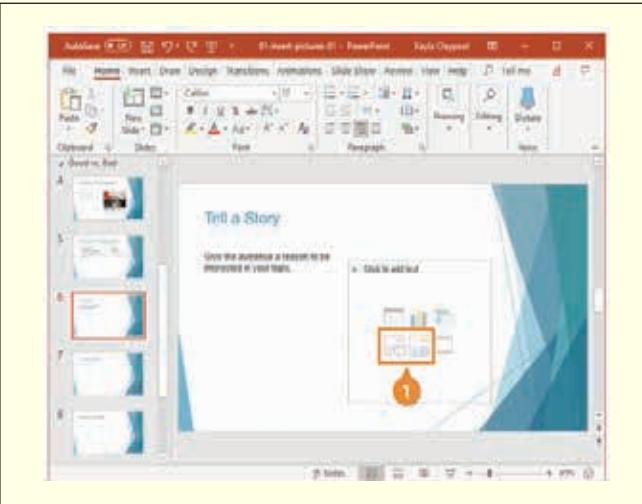


#### TASK 2: Insert pictures

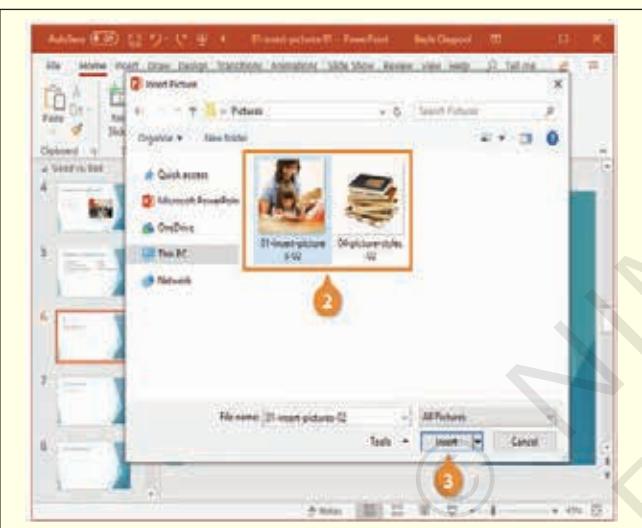
##### Insert Pictures with Placeholders

The quickest way to insert a picture is to use a content placeholder that is already on your slide.

- 1 Click the content placeholder's Pictures or Online Pictures button.



- 2 Navigate to the picture you want to use and select it.
- 3 Click Insert.



The picture is inserted, and the Format tab appears on the ribbon.

To remove an image, just select it and press the Delete key.

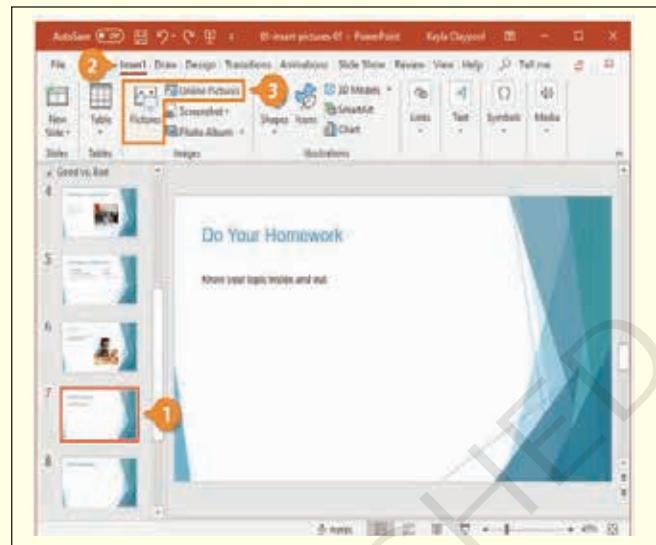
### Insert Pictures with the Ribbon

You can also use the ribbon to insert pictures if there are no content placeholders available.

- 1 Select the slide where you want to add a picture.

2 Click the Insert tab.

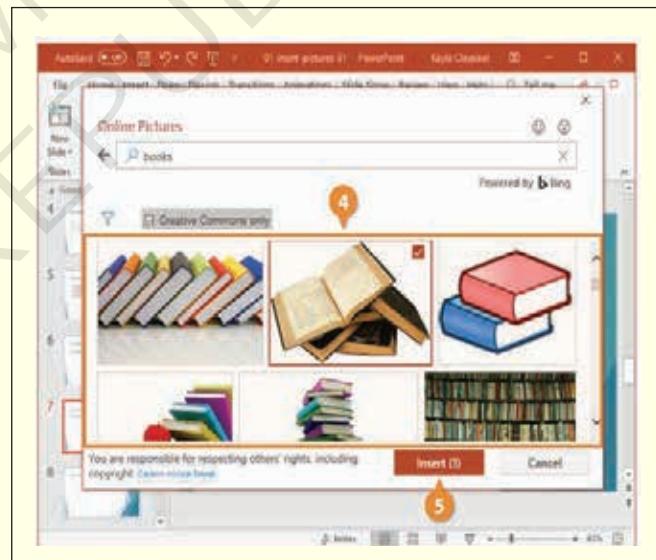
3 Click Pictures or Online Pictures.



- 4 Navigate to or search for the picture you want to use and select it.

To insert more than one picture at a time, press and hold down Ctrl as you click each image.

- 5 Click Insert.



### TASK 3: Insert SmartArt graphics

#### Insert SmartArt

The SmartArt feature lets you create and customize designer-quality diagrams. You can even convert bulleted lists into a diagram using the SmartArt diagram tools.

- 1 Click the Insert tab.
- 2 Click the SmartArt button on the ribbon.

You can also click the SmartArt icon in a content placeholder.

- 3 Select a category.

- 4 Select a graphic.

A preview and a description appear on the right.

- 5 Click OK.



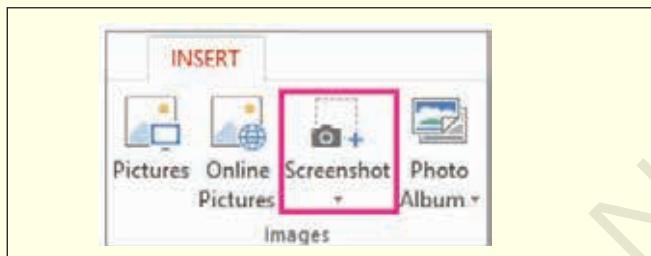
The SmartArt graphic is inserted into the presentation.

### SmartArt Graphic Types

|              |                                                                                  |
|--------------|----------------------------------------------------------------------------------|
| List         | Show non-sequential information.                                                 |
| Process      | Show steps in a process or timeline.                                             |
| Cycle        | Show a continual process.                                                        |
| Hierarchy    | Create an organization chart or decision tree.                                   |
| Relationship | Illustrate connections.                                                          |
| Matrix       | Show how parts relate to a whole.                                                |
| Pyramid      | Show proportional relationships with the largest component on the top or bottom. |
| Picture      | Create a SmartArt graphic that incorporates pictures.                            |

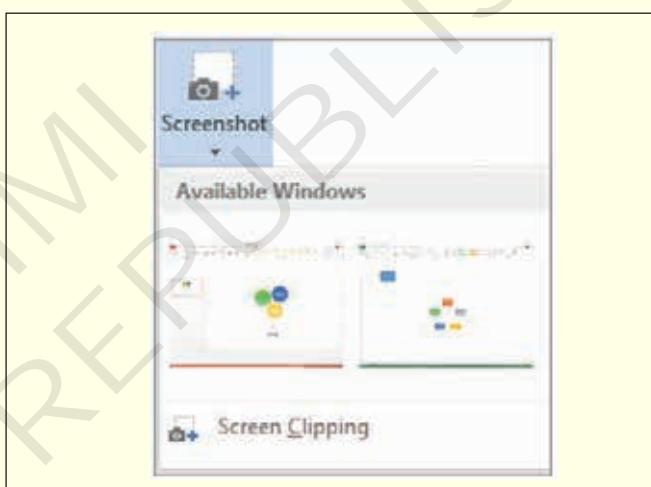
### TASK 4: Insert screenshots and screen clippings

- 1 In PowerPoint: On the Insert tab, in the Images group, click Screenshot.



- 2 The Available Windows gallery appears, showing you all the windows that you currently have open. Do one of the following:

- To insert a screenshot of an entire window into your document, click the thumbnail image of that window.
- To add a selected portion of the first window shown in the Available Windows gallery, click Screen Clipping; when the screen turns white and the pointer becomes a cross, press and hold the left mouse button and drag to select the part of the screen that you want to capture.



- 3 The window or portion of the screen you selected is automatically added to your document. You can use the tools on the Picture Tools tab to edit and enhance the screenshot.

## COPA - Manage Graphic Elements

### Format illustrations and text boxes

**Objectives:** At the end of this exercise you shall be able to

- apply artistic effects
- apply picture effects and picture styles
- remove picture backgrounds
- crop images
- format graphic elements
- format SmartArt graphics

### Requirements

#### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

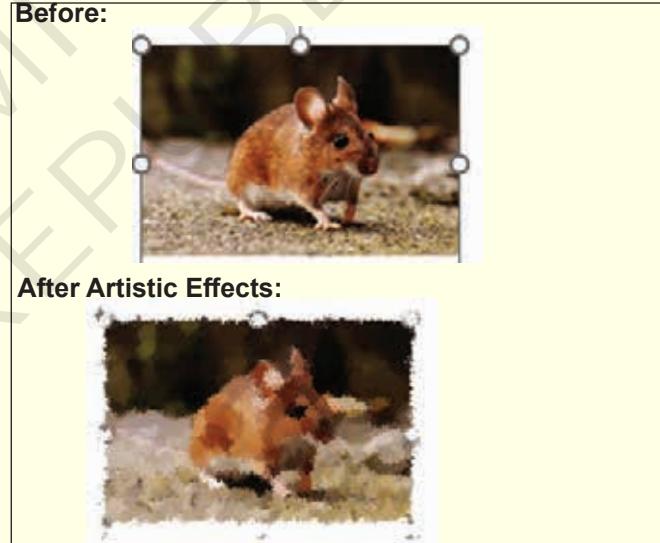
### PROCEDURE

#### TASK 1: Apply artistic effects

##### Insert a Shape

##### Apply Artistic Effects

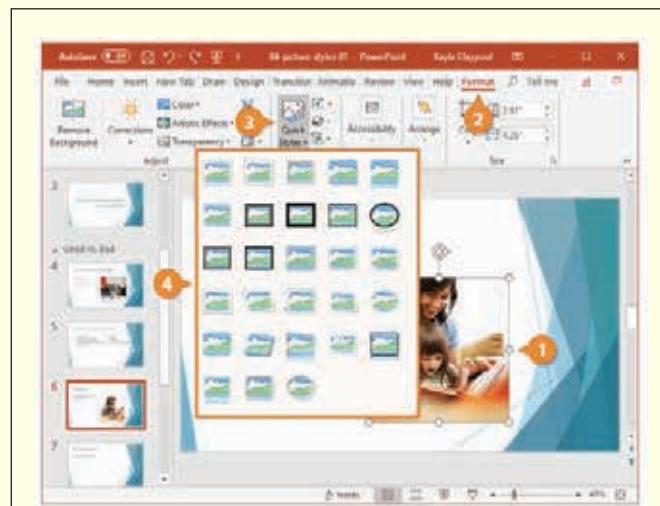
- 1 Select the picture.
- 2 Select Picture Tools > Format and select Artistic Effects.
- 3 Hover over the options to preview them and select the one you want.



#### TASK 2: Apply picture effects and picture styles

##### Choose a Style

- 1 Select the picture.
- 2 Click the Format tab on the ribbon.
- 3 Click the Quick Styles button in the Picture Style group.
- 4 Select a style.



### Before:



### After:



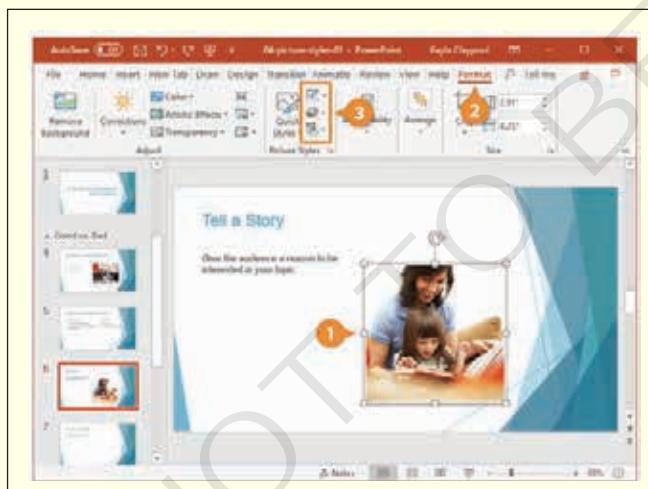
### After:



## Modify a Style

After a style has been applied, modify different elements of the preset style for a more customized look.

- 1 Select the picture.
- 2 Click the Format tab on the ribbon.
- 3 Use the tools in the Picture Styles group to edit the picture style.
  - **Picture Border:** Adjust the border color and thickness.
  - **Picture Effects:** Add or remove complicated effects like glow and bevel.
  - **Picture Layout:** Add text and reshape the picture to create SmartArt.



### Before:



## Change the Picture

You can swap one picture for another while keeping any of the picture style options that are already applied.

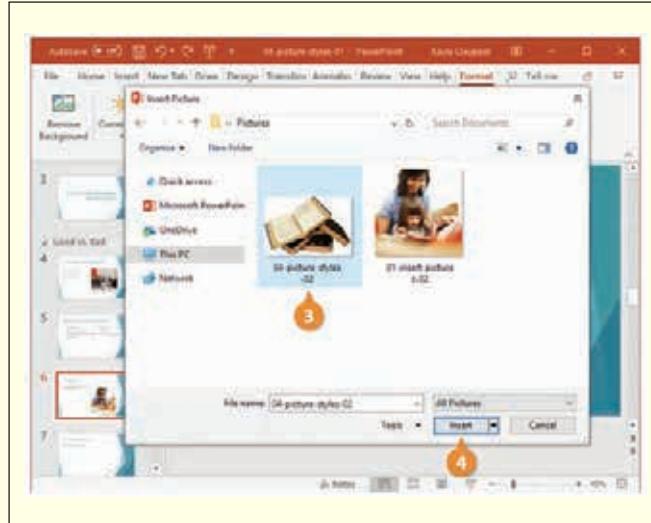
- 1 With the picture selected, click the Change Picture button in the Adjust group on the Format tab.
- 2 Select the type of picture you want to insert.



- 3 Navigate to and select a new picture.

- 4 Click Open or Insert.

The picture is swapped out, but the style remains the same.

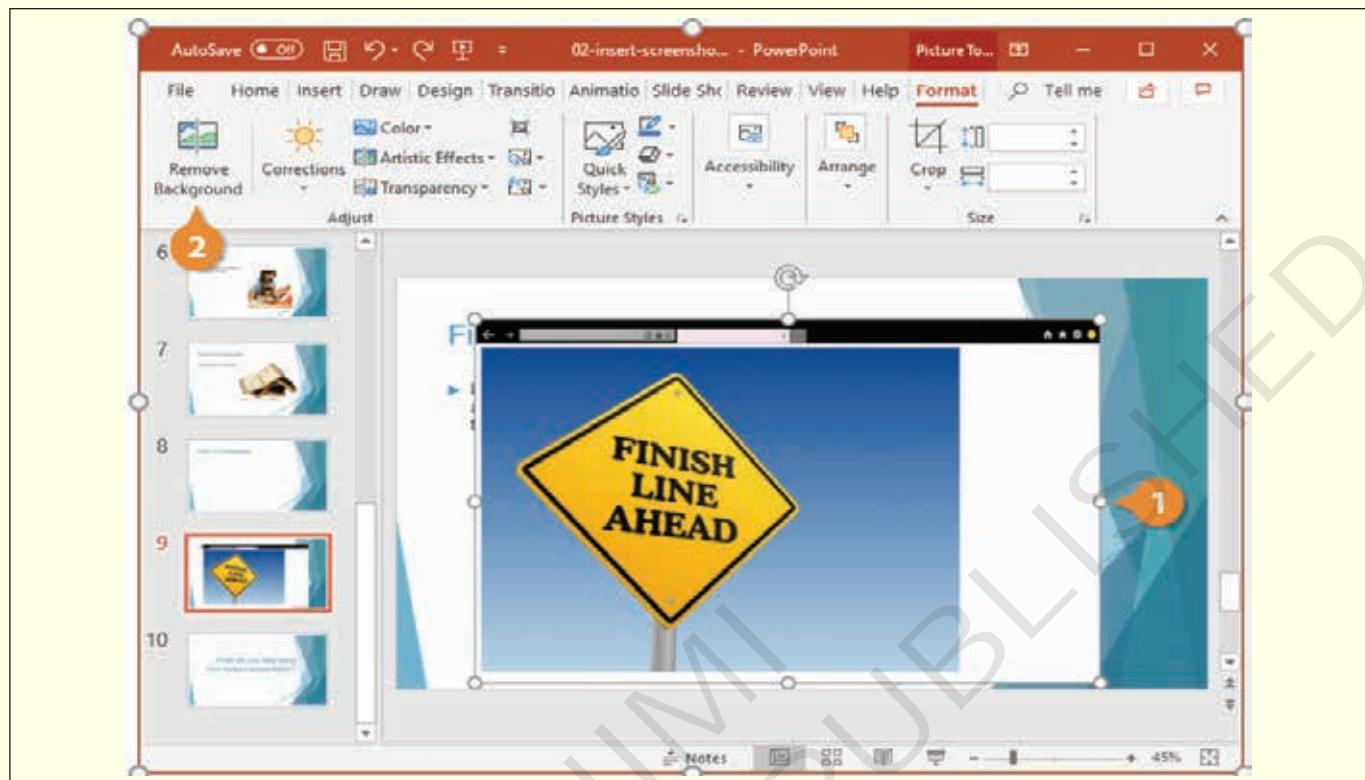


### TASK 3: Remove picture backgrounds

#### Remove a Background

You can remove the background of any screenshot, picture, or graphic in your presentation.

- 1 Select the picture with a background you want to remove.
- 2 Click Remove Background on the Format tab.



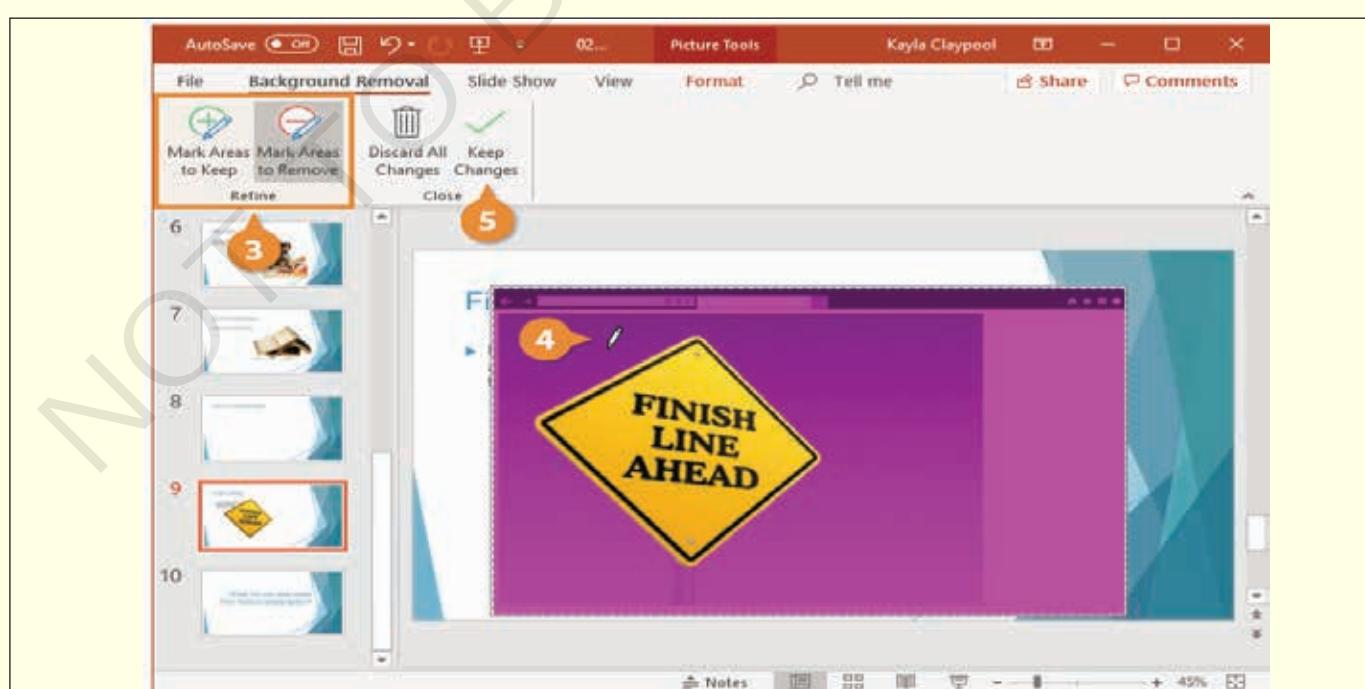
A new tab appears on the ribbon, and the picture is highlighted with a bright magenta color. Any magenta areas will be removed.

Click and drag the box around what you want to keep.

- 3 Click a Mark Areas button in the Refine group:

- Mark Areas to Keep: Draw lines over the areas of a picture you want to keep.

- Mark Areas to Remove: Draw lines over the areas of a picture you want to remove.
- 4 Click and drag over a section of the picture to either add or remove it.
- 5 Click Keep Changes.



To restore the background, select the image, click the Remove Background button, and click Discard All Changes.

### Result:



#### TASK 4: Crop images

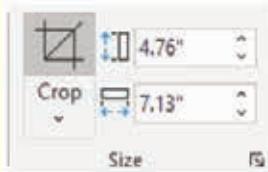
##### Crop a picture by handles

To use the simplest way to crop a picture by using the cropping handles, do the following:

- 1 Click on the picture to select it.

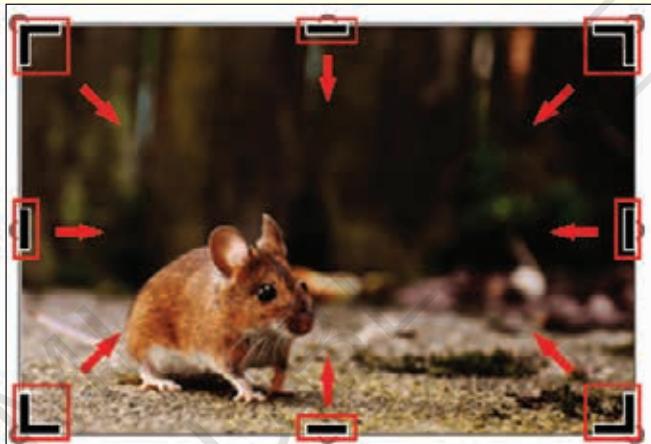
**Note: You can't crop multiple pictures at once.**

- 2 On the Picture Format tab, in the Size group, click the Crop button:



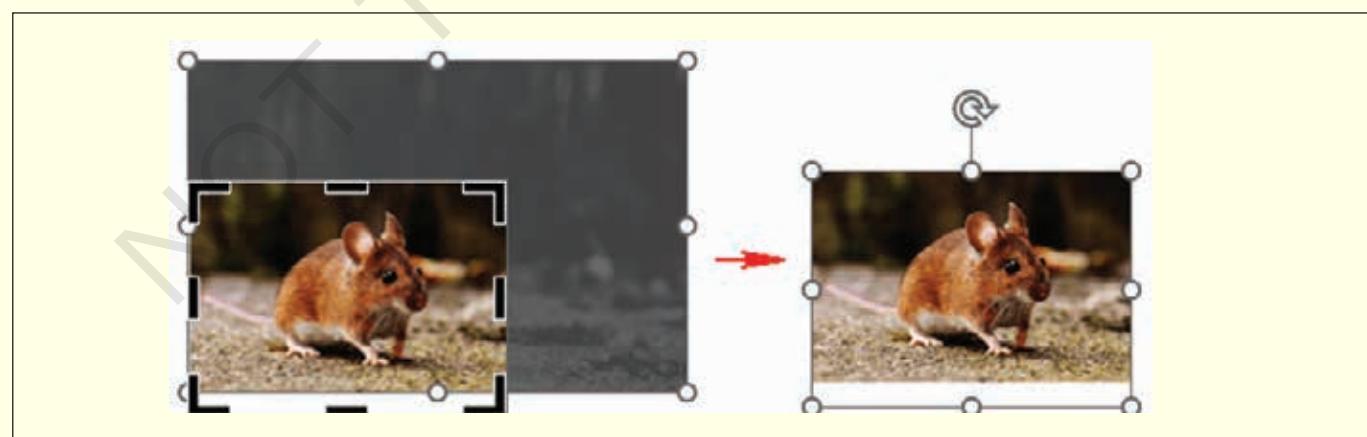
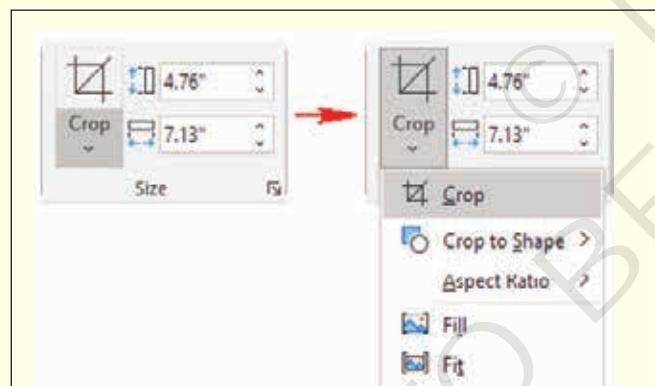
**Note: You can also open the Crop dropdown list and choose the Crop command:**

- 3 Drag the black handles that appear in corners and on the sides of the image to crop unneeded areas:



Areas that will be excluded from the cropped picture are shaded:

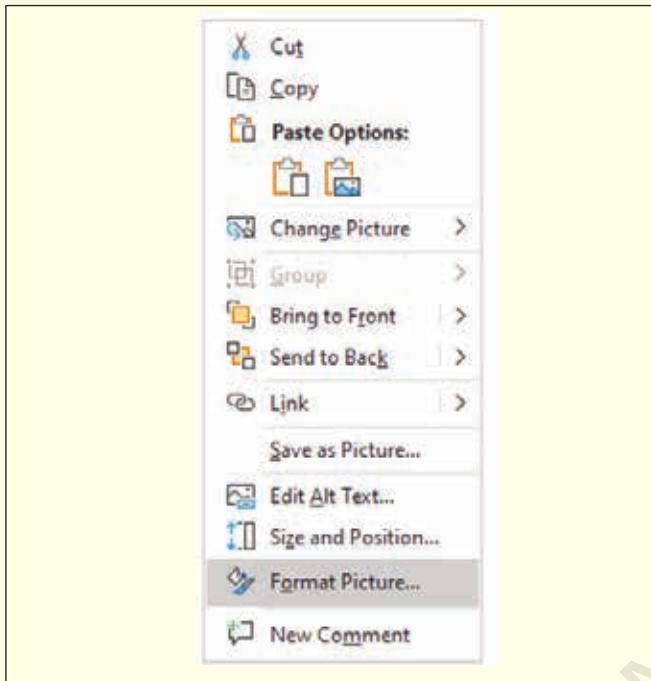
- 4 Repeat until all unnecessary areas of the image have been removed. When you finish, click outside the picture boundaries or click the Crop button again to apply the crop effect.



## Crop a picture “by the numbers”

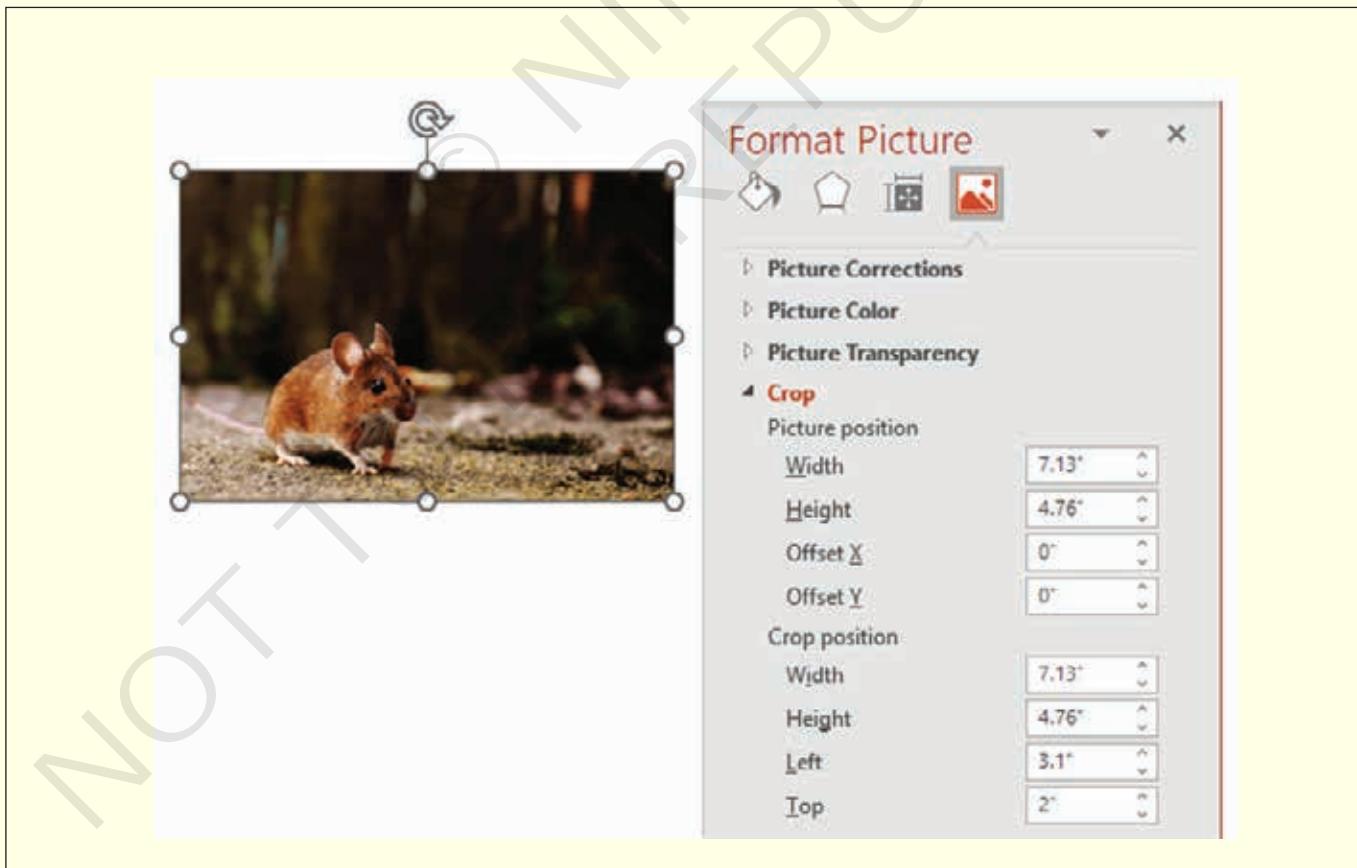
To crop a picture “by the numbers” by using the Crop settings on the Format Picture pane, do the following:

- 1 Right-click the picture and choose Format Picture... in the popup menu:



- 2 On the Format Picture pane, in the Picture group, in the Crop section:

- Under Picture position:
  - Select or enter values in the Width and Height fields to resize the picture and keep the frame dimensions,
  - Select or enter desired values in the Offset X and Offset Y fields:
- Under Crop positions:
  - Decrease the value in the Width field to crop the picture from the right,
  - Decrease the value in the Height field to crop the picture from the bottom,
  - Choose or type values in the Left and Top fields to crop the picture from those sides, respectively:

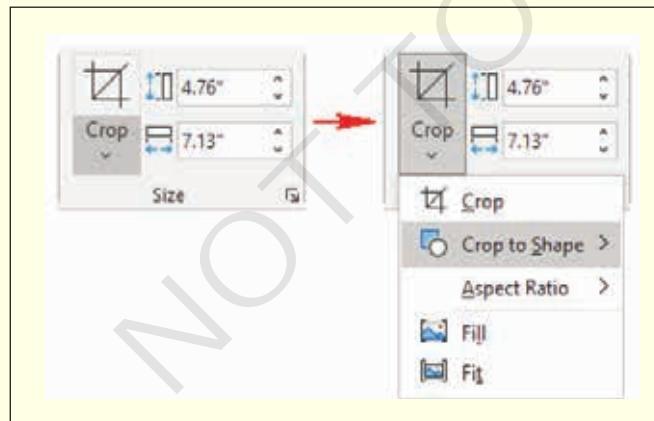




### Crop a picture to a shape

To crop a picture to a shape, do the following:

- 1 Click on the picture to select it.
- 2 On the Picture Format tab, in the Size group, click the Crop button and then choose Crop to Shape from the dropdown list:

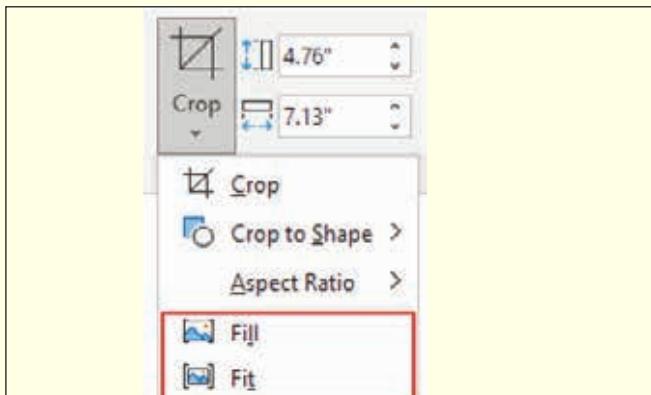


- 3 Select the shape from the gallery that opens:

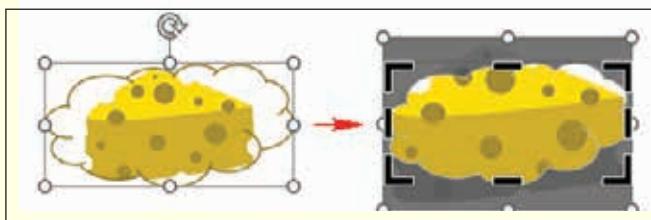


## Fill or fit an image in the shape

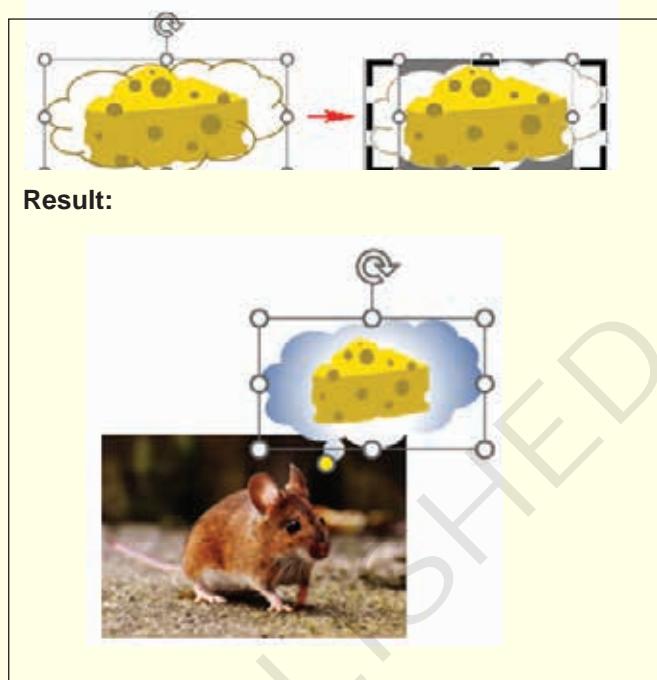
PowerPoint offers two features for images that can help to position them in shape:



- The Fill option adjusts the image size to match the shape's height or width, whichever is bigger:



- The Fit option adjusts the image size so that both the height and width match the shape:



## Apply Picture Effects

- Select the picture.
- Select Picture Tools > Format and select Corrections.
- Hover over the options to preview them and select the one you want.

### Apply Artistic Effects

- Select the picture.
- Select Picture Tools > Format and select Artistic Effects.
- Hover over the options to preview them and select the one you want.

### Change the color

- Select the picture.
- Select Picture Tools > Format and select Color.
- Hover over the options to preview them and select the one you want.

### Add a border

- Select the picture.
- Select Picture Tools > Format and select a border.

### Compress the picture

- Select the picture.
- Select Picture Tools > Format and select Compress Pictures.
- Select the options you want and select OK.

### Reset the picture

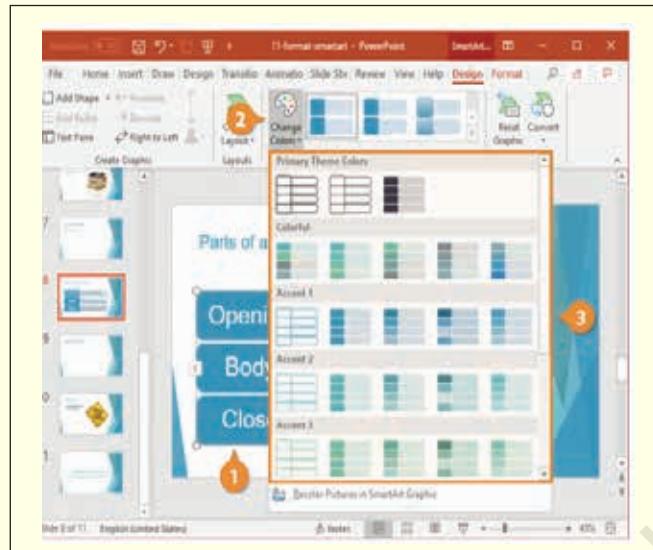
- Select the picture.
- Select Picture Tools > Format and select Reset picture

## TASK 6: Format SmartArt graphics

### Format SmartArt

PowerPoint has a variety of SmartArt layouts and styles that allow you to format your SmartArt graphics with the click of a button.

- 1 Select the SmartArt graphic.
- 2 Click the Change Colors button on the SmartArt Tools Design tab.
- 3 Select a color from the menu.



- 4 Click the More button for the SmartArt Styles gallery.

Even though there are some pretty wild styles available, it's best to keep it simple.

- 5 Select a style.



## COPA - Manage Graphic Elements

### Add and modify text in graphic elements

**Objectives:** At the end of this exercise you shall be able to

- add and modify text in text boxes
- add and modify text in shapes
- add and modify SmartArt graphic text
- create, insert and modify charts

#### Requirements

##### Tools/Equipment/Machines

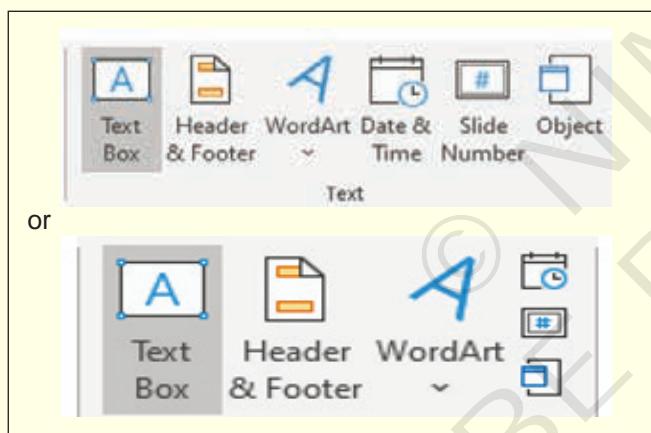
- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

#### TASK 1: Add and modify text in text boxes

Insert a text box on a slide

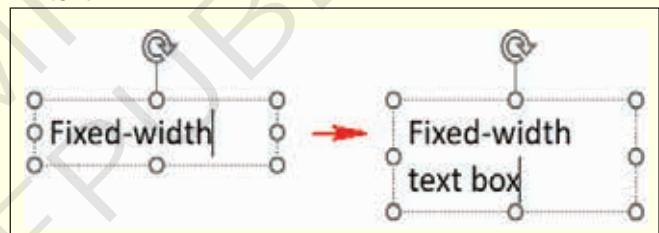
To insert a text box, on the Insert tab, in the Text group, click the Text Box button:



- To create a text box that expands to fit whatever you type on one line, just click the slide where you want the text box to be placed and then enter the text:



- To create a fixed-width text box, drag a box to where you want the text box to be placed and then enter the text:



The text field adjusts to fit the height of one line but retains the width you specify. When the text reaches the right border of the field, a new line is automatically added, and the text wraps. As the text is entered, the width of the box stays the same, but the height increases as needed to accommodate all the text.

##### Delete text in a slide

To delete only one or a few characters, do the following:

- 1 Position the cursor immediately to the left (right) of the text you want to delete.
- 2 Press the Delete (Backspace) key once for each character you want to delete.

To delete any amount of text, select the text you want to delete, then press the Delete key or the Backspace key.

#### TASK 2: Add and modify text in shapes

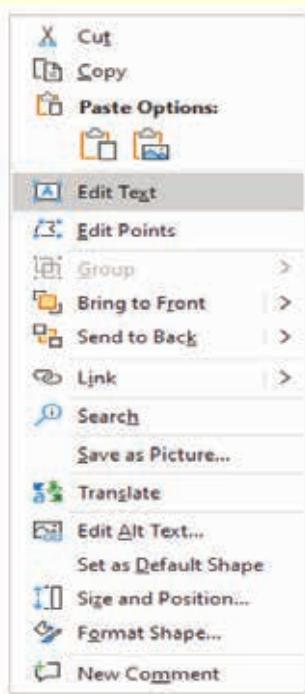
To insert a shape on the slide, on the Insert tab, in the Illustrations group, click the Shapes button, and then select the shape you want to insert from the Shapes dropdown list:

To add text directly into shapes, do one of the following:

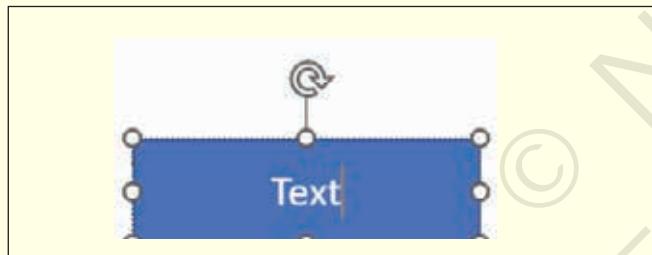
- Select a shape, then enter the text you want to display on the shape.



- Right-click a shape and choose Edit Text in the popup menu:

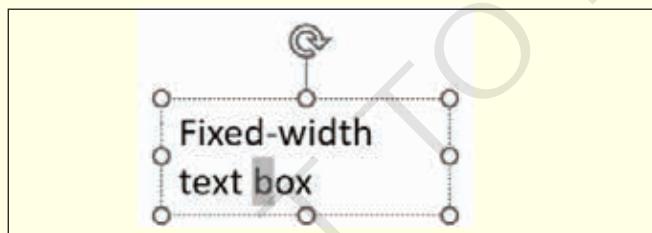


- Double-click the shape - the cursor appears to indicate the location of the text; start typing.



### Select text

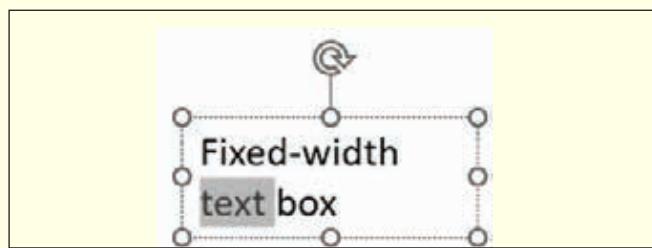
- To select one character in the PowerPoint presentation slide, do one of the following:



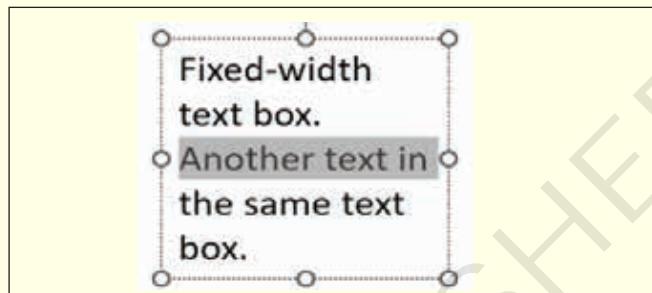
- Using the keyboard:** place the cursor at the beginning of the text (at the end of the text) and then press Shift+ the right arrow (the left arrow) to select a character/word/line
- Using the mouse:** click in front of the character/ word/ line (after the character/word/ line) and hold while you drag your cursor to select it.

- To select a single word in the PowerPoint presentation slide, do one of the following:

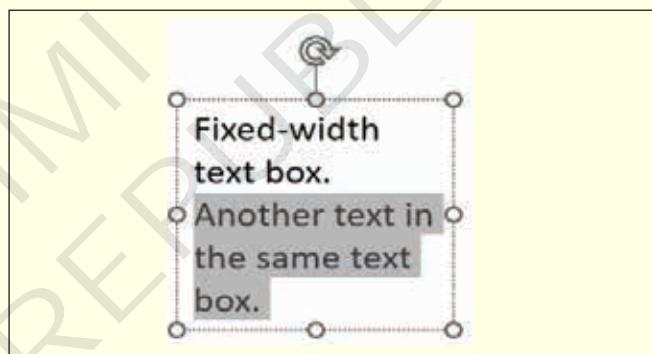
- To select a line in the PowerPoint presentation slide, do one of the following:



To select a paragraph in the PowerPoint presentation slide, do one of the following:



To select a fragment in the PowerPoint presentation slide, do one of the following:



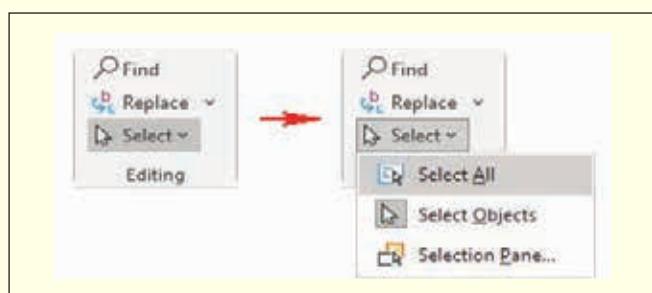
- Using the keyboard: place the cursor at the beginning of the fragment you want to select (at the end), and press Shift+ the right arrow (the left arrow).

- To select the line, press Shift+ the arrow down (the arrow up).

- Using the mouse: click in front of the fragment's first letter (after the fragment's last letter), hold Shift, and then click after the last letter of the fragment you want to select (in front of the first letter of the fragment).

- To select all the content in the current placeholder, do one of the following:

- On the Home tab, in the Editing group, click the Select button, and then click Select All:
- Press **Ctrl+A**.

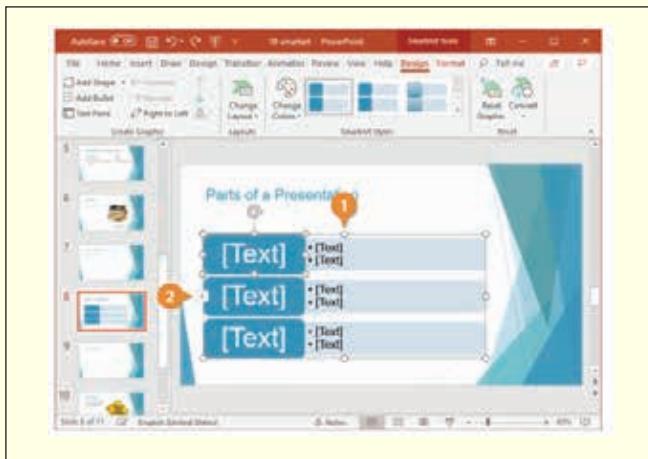


## TASK 3: Add and modify SmartArt graphic text

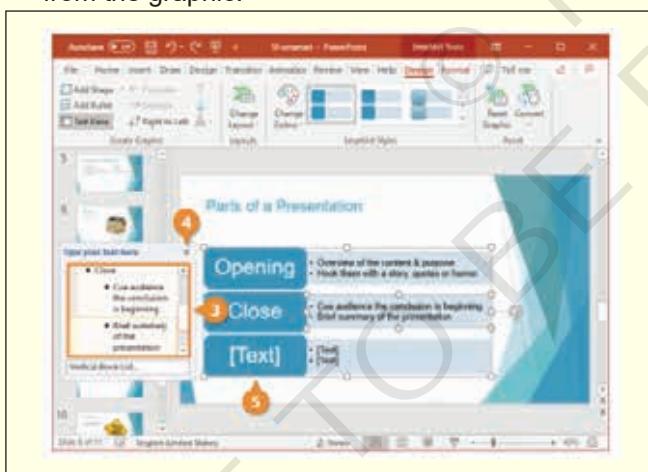
### Populate SmartArt Graphics

There are two ways to add text to a SmartArt graphic: using the Text pane or the graphic itself.

- 1 Select the SmartArt Diagram.
- 2 Click the arrow at the left edge of the SmartArt graphic.

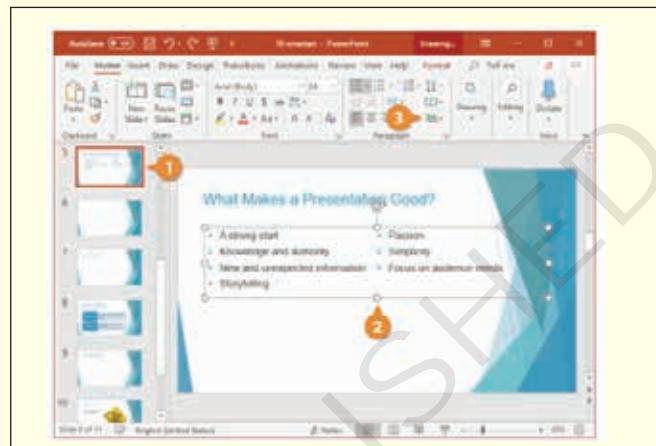


- 3 Type text for each bullet in the Text pane.
- 4 Click the Text pane's Close button or click outside the SmartArt diagram.
- 5 Select any unused shapes in the graphic.
- 6 Press the Backspace or Delete key to remove them from the graphic.

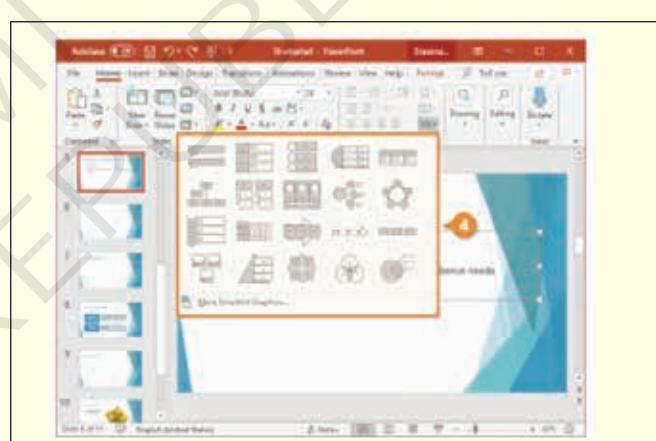


### Convert a List to a SmartArt Graphic

- 1 Select the slide with the list you want to convert to SmartArt.
- 2 Select the list text box.
- 3 Click the Convert to SmartArt Graphic button on the Home tab.



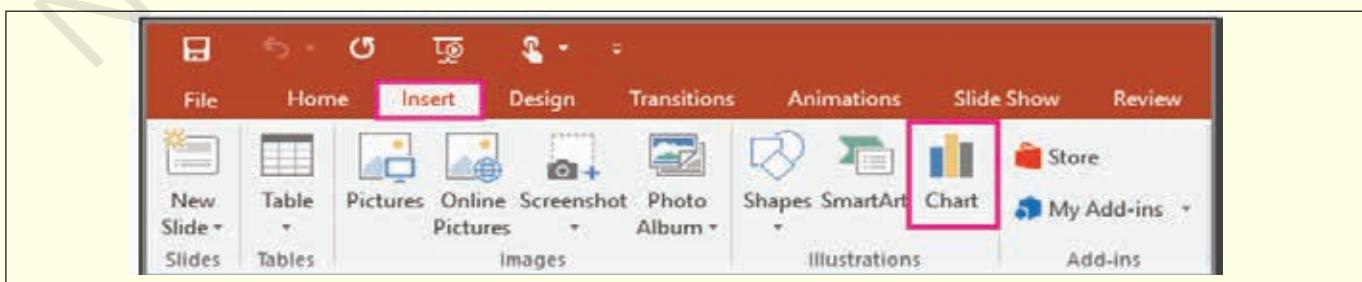
- 4 Select a SmartArt style.



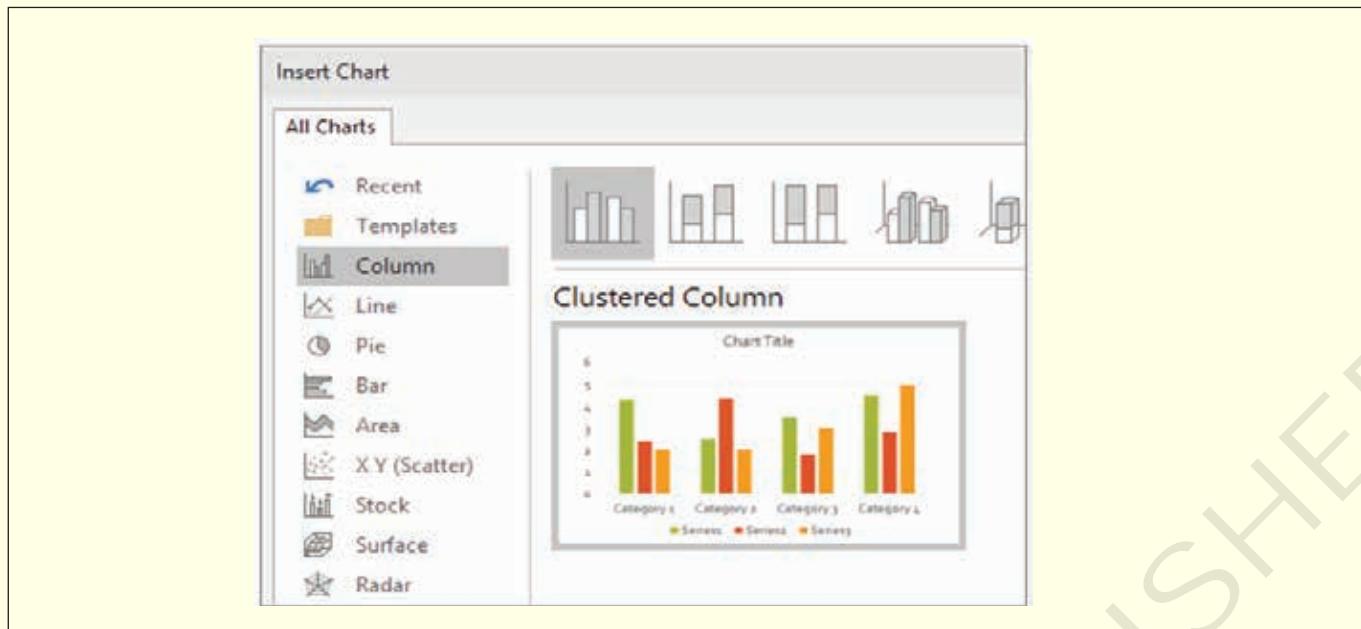
- 5 Resize and position the graphic as needed.

## TASK 4: Create, insert and modify charts

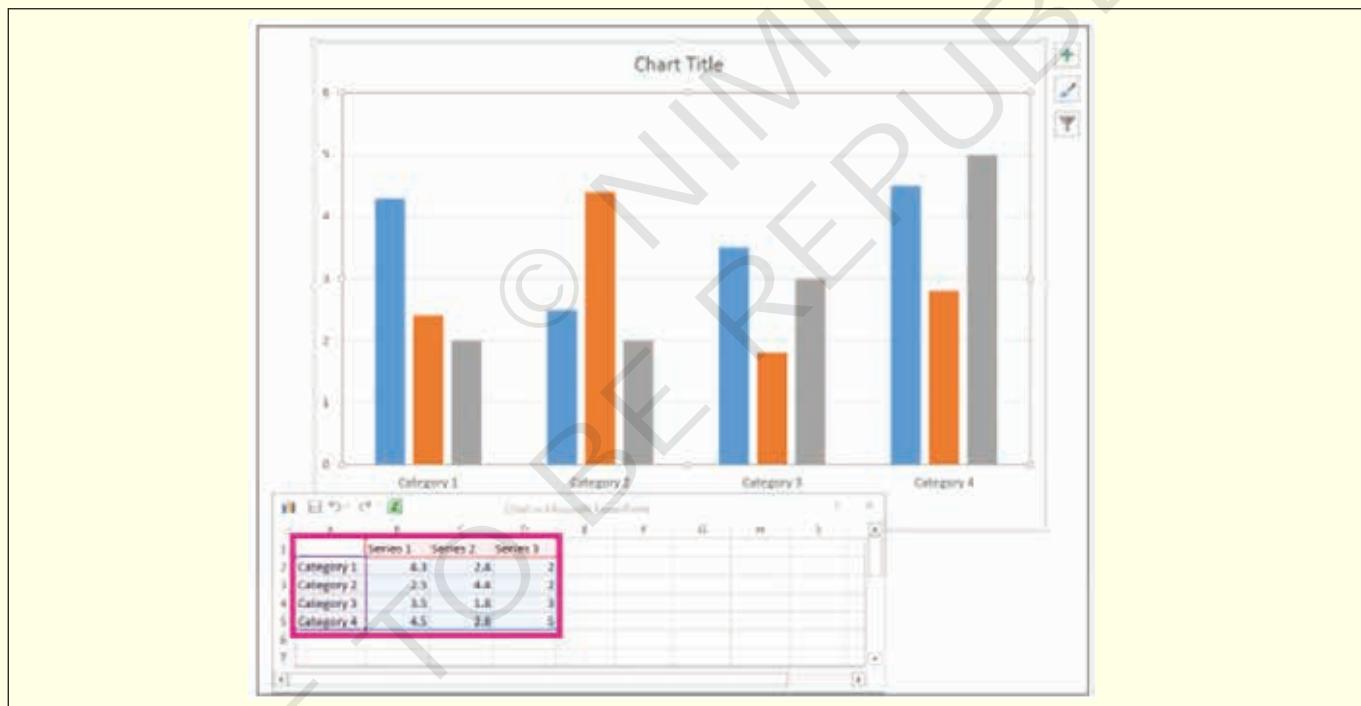
- 1 Click Insert > Chart.



- 2 Click the chart type and then double-click the chart you want.



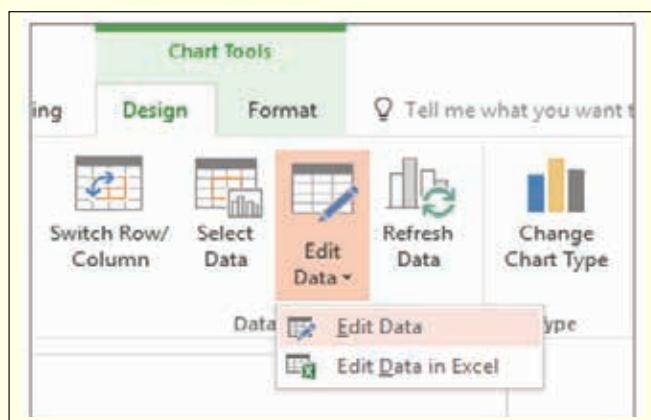
- 3 In the worksheet that appears, replace the placeholder data with your own information.



- 4 When you insert a chart, small buttons appear next to its upper-right corner. Use the Chart Elements button to show, hide, or format things like axis titles or data labels. Or use the Chart Styles button to quickly change the color or style of the chart.

#### Change chart data on a slide

- On the slide, select the chart that you want to change. The Chart Design Tools contextual tab appears at the top of the PowerPoint window.
- Under Chart Tools, on the Chart Design tab, in the Data group, click Edit Data.



3 Done one of the following:

- To edit data in PowerPoint, click Edit Data. This will open a window from your spreadsheet.
- To edit data directly in Excel, click Edit Data in Excel.

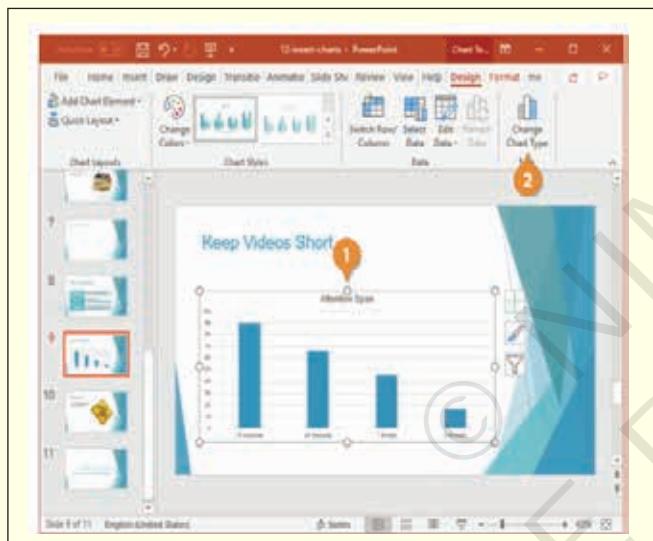
4 Make the changes you want. They will be reflected in the chart in PowerPoint.

### Change the Chart Type

Different types of charts are better for presenting different types of information. For example, a column chart is great for comparing values of different items, but not for illustrating trends or relationships. If you find that a chart you've created isn't the best fit for your data, you can switch to a different chart type.

1 Select the chart.

2 Click the Change Chart Type button on the Chart Tools Design tab.

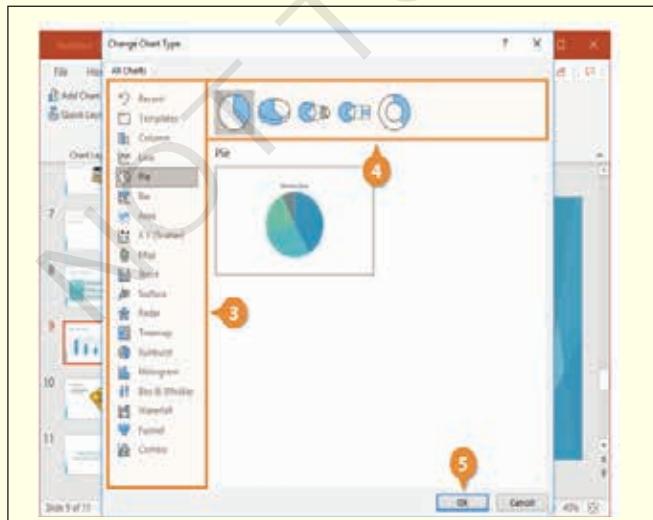


You see all available categories at the left.

3 Choose a category.

4 Select a chart type.

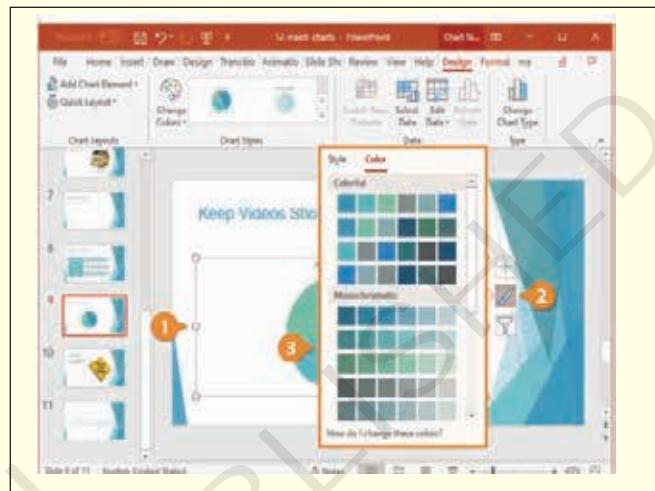
5 Click OK.



### Format a Chart

There are a number of formatting tools available to change the look of your chart and modify elements for the chart type you chose. The options to format are available on the Chart Tools Design and Format tabs, but you can also use the Chart Tools shortcuts that appear to the right of a chart when it's selected.

1 Select a chart or chart element.



2 Click the Chart Styles button.

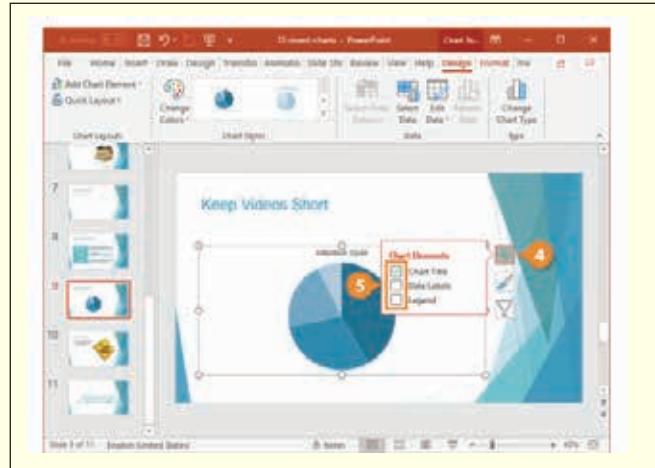
3 Select a style or color option.

- Chart Styles: Change the overall visual style of the chart.
- Chart Colors: Select from an array of color schemes designed to coordinate with the current presentation theme.

4 Click the Chart Elements button.

This is where you add or remove things like titles, labels, and the legend. What you see here will vary depending on the type of chart you have inserted.

5 Turn the chart elements on or off.



## COPA - Manage Audio & Video Elements

### Add Audio elements

**Objectives:** At the end of this exercise you shall be able to

- import audio files in presentations
- configure audio playback options.

### Requirements

#### Tools/Equipment/Machines

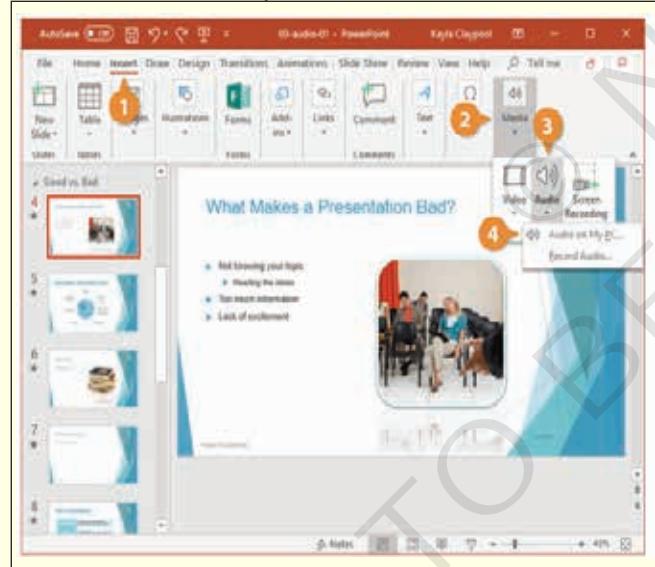
- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

#### TASK 1: Import audio files in presentations

##### Add Audio to a Slide

- 1 Click the Insert tab on the ribbon.
- 2 If necessary, click to expand the Media group.
- 3 Click Audio.
- 4 Select Audio on My PC.



- 5 Navigate to and select a sound clip.

- 6 Click Insert.

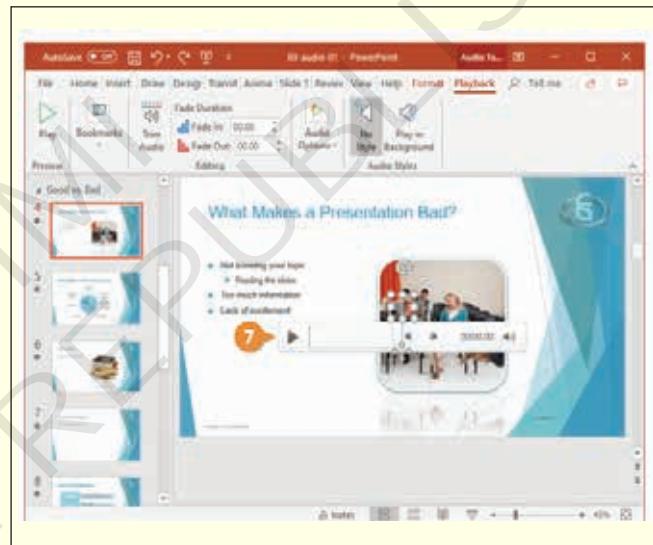
A sound icon appears on the slide and Audio Tools tabs appear on the ribbon where you can adjust the audio.

- 7 Click Play to test your audio.

##### Record Audio

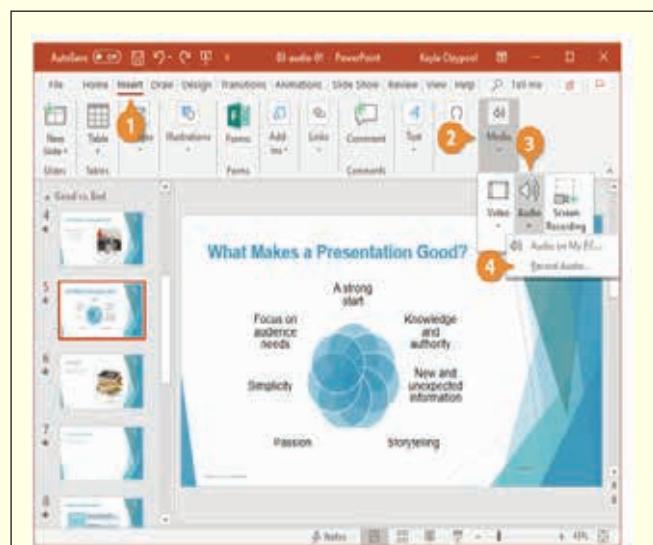
If you need a very specific sound that you can't find online or that isn't already saved to your computer, you can record a sound yourself instead.

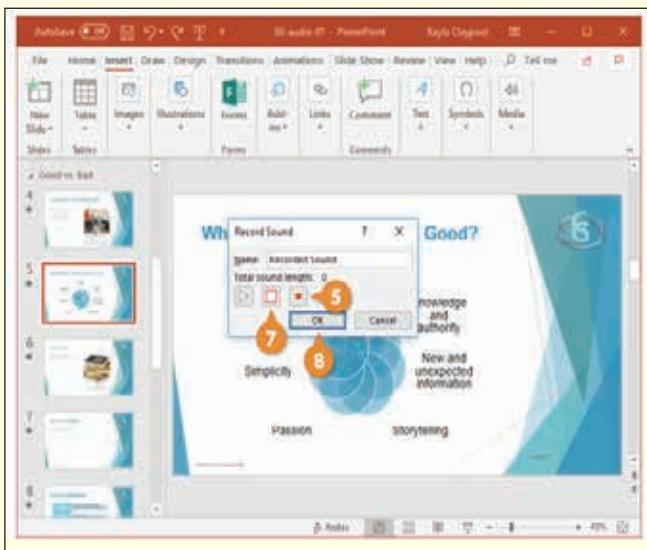
- 1 Click the Insert tab on the ribbon.
- 2 Click to expand the Media group.



- 3 Click Audio.

- 4 Select Record Audio.



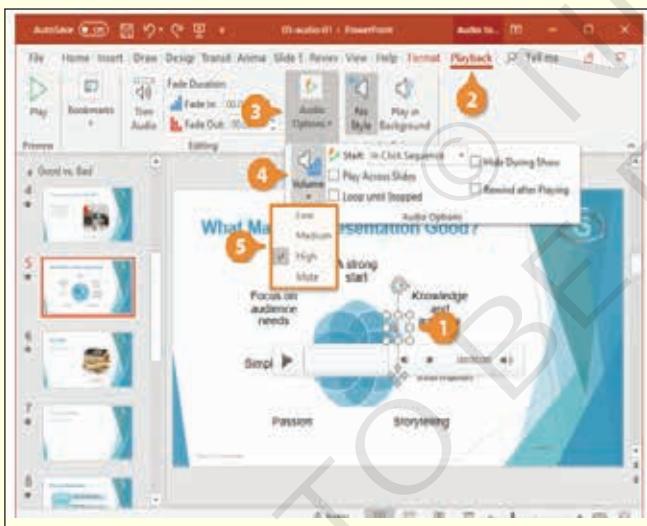


- 5 Click Record.
- 6 Record your audio.
- 7 Click the Stop button.
- 8 Click OK to save it.

## TASK 2: Configure audio playback options

### Audio Options

- 1 Select the audio clip.
- 2 Click the Playback tab.
- 3 Expand the Audio Options group.
- 4 Click the Volume button.
- 5 Select a volume option.



- 6 Click the Start list arrow and select an option.
  - **Automatically:** Audio begins when you enter the slide.
  - **On Click:** Audio is paused until you click the mouse.
- 7 Use the check boxes in the Audio Options group to adjust any other settings.
  - **Play Across Slides:** The audio will continue to play as you switch to the next slides.

- **Loop until Stopped:** The audio will replay in a loop while you remain on this slide during the presentation.
- **Hide During Show:** The audio icon will be hidden during the presentation.
- **Rewind after Playing:** The audio will play once and then automatically rewind.



There are additional useful options on the Playback tab, such as setting the audio to fade in or out, trimming the audio down, or inserting a bookmark.

To remove audio, just select the sound icon and press the Delete key on your keyboard.

## COPA - Manage Audio & Video Elements

### Add video elements

**Objectives:** At the end of this exercise you shall be able to

- import video files in presentations
- resize video to fit slide
- configure video playback options.

### Requirements

#### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

#### TASK 1: Import video files in presentations

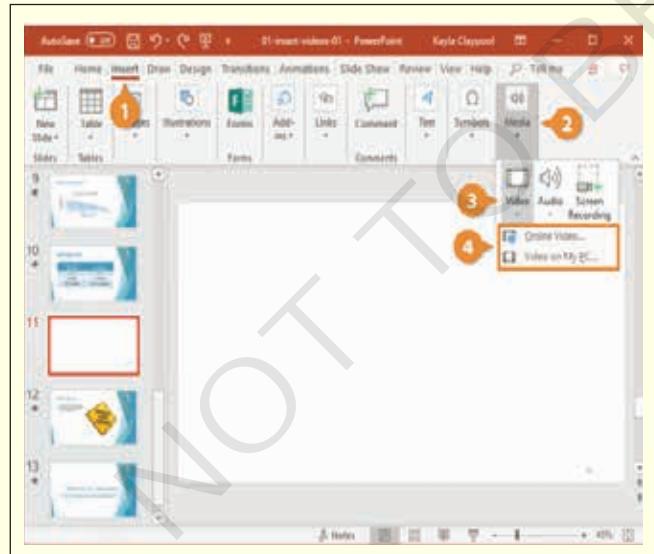
##### Add Video to a Slide

###### Insert a Video from Your Computer

Videos that are inserted from a file are embedded directly into the PowerPoint presentation, so the presentation file size will increase when videos are inserted.

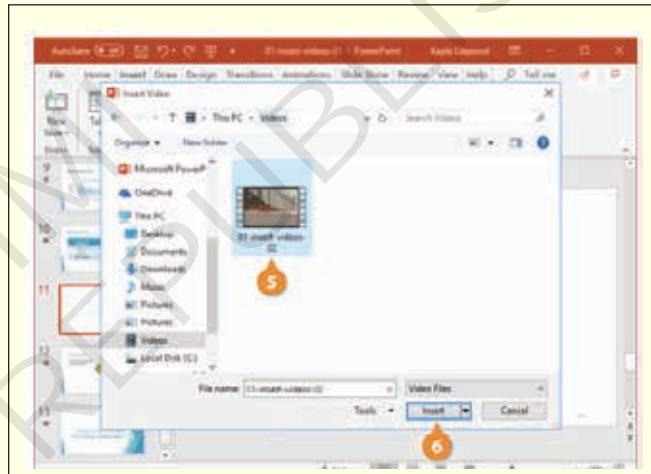
- 1 Click the Insert tab on the ribbon.
- 2 Click to expand the Media group.
- 3 Click Video.
- 4 Select Video on My PC.

If you don't have a video saved to your computer, you can also choose Online Video to add a video from YouTube or use an embed code.



- 5 Navigate to and select the video.

- 6 Click Insert.

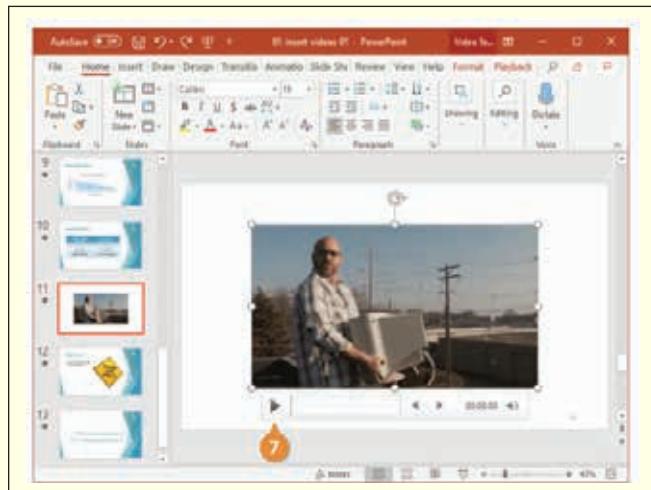


The video is inserted into the slide.

Just like with other objects, you can click and drag to resize or move the video.

- 7 Click Play to preview your video.

To delete a video, select the video and press the Delete key on your keyboard.



## TASK 2: Resize video to fit slide

### Video Size

If the video isn't quite the right size, you can change that too, just like you would a picture.

- 1 Drag the size handles or adjust the value in the size field.

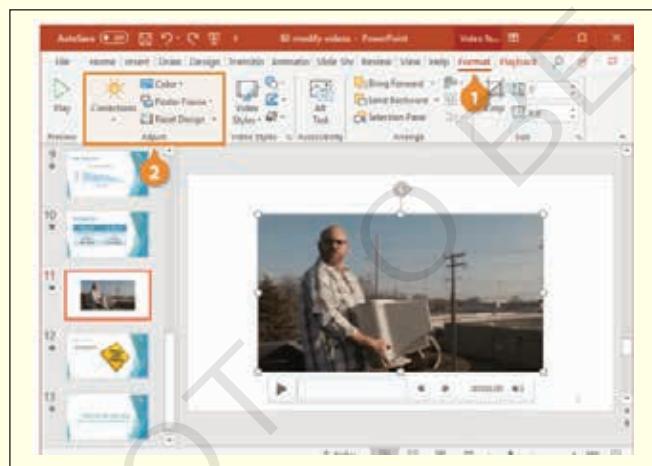


## TASK 3: Configure video playback options

### Video Appearance Options

The Adjust group of the Format tab contains all the options you'll need to modify the video's appearance.

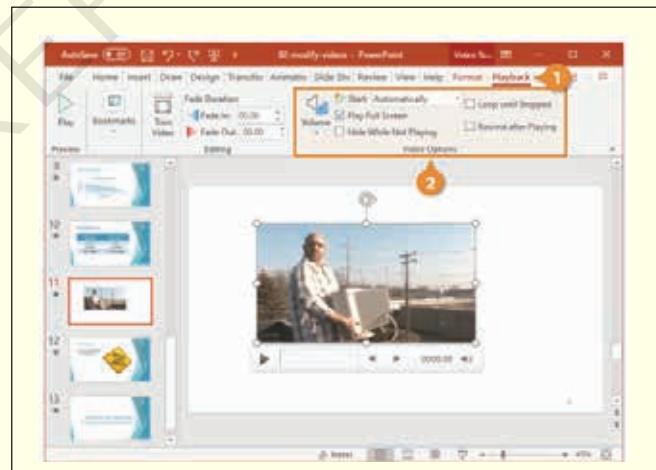
- 1 Click the Video Tools Format tab.
- 2 Select an adjustment option.
  - **Corrections:** Modify the brightness or contrast of the video.
  - **Color:** Apply a style effect, such as a color or grayscale.
  - **Poster Frame:** Set the video's preview image.
  - **Reset Design:** Discard all formatting changes applied to the video.



### Video Playback Options

- 1 Click the Playback tab.
- 2 Adjust the settings in the Video Options group.
  - **Volume:** Adjusts the volume for the video clip's audio.
  - **Start:** Determines when the video clip will play. The default setting is "On Click", but you can adjust the setting so the video starts automatically.

- **Play Full Screen:** Expands the video to play full screen while the presentation is running.
- **Hide While Not Playing:** Hides the video frame when it is not playing.
- **Loop until Stopped:** Repeats the video until it is manually paused or the presentation moves on to the next slide.
- **Rewind after Playing:** Returns the video clip to the starting position after playback ends.

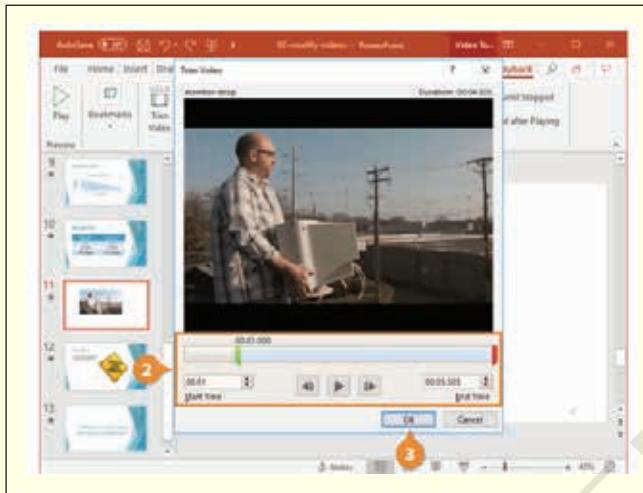
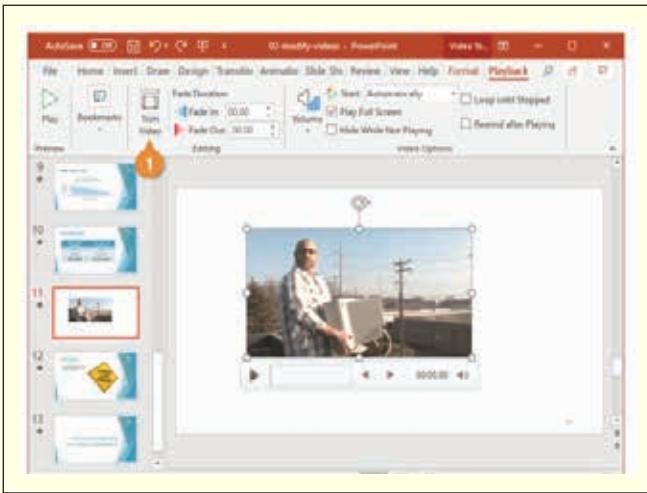


### Set Video Start and End Point

The Trim Video option allows you to cut off portions of the beginning or end of a video to make it shorter.

- 1 Click the Trim Video button.
- 2 Adjust the start and end points.

You can either type specific values into the Start Time and End Time fields or click and drag the start and end handles in the timeline below the video.
- 3 Click OK.



## COPA - Manage Transitions and Animations

### Add slide transitions

**Objectives:** At the end of this exercise you shall be able to

- add same slide transition for all slides
- set transition effect duration
- configure transition start and finish options
- customize select slide transitions

### Requirements

#### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

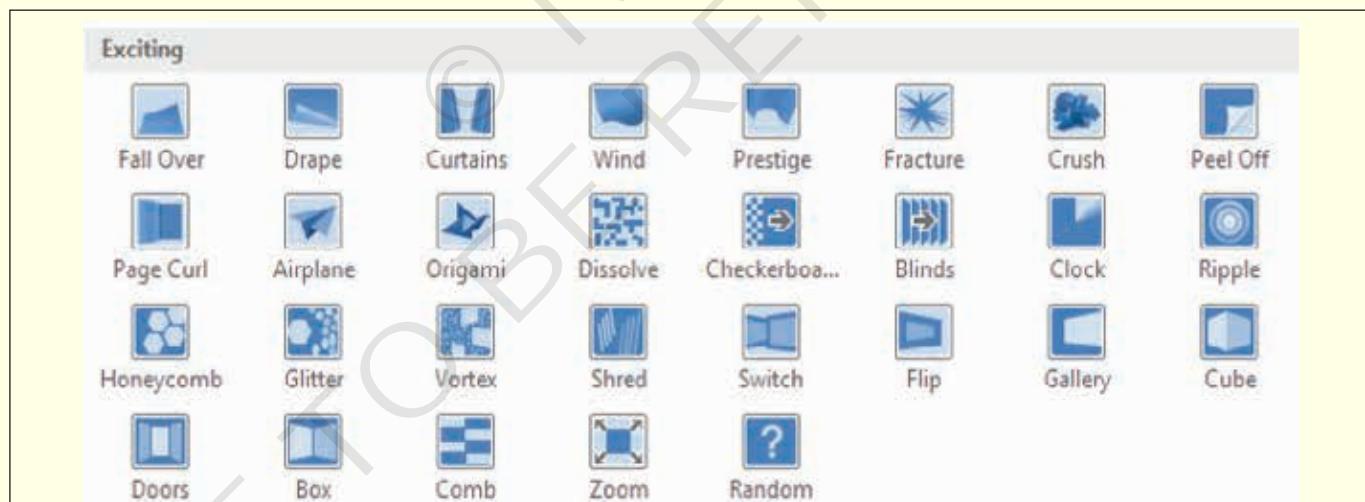
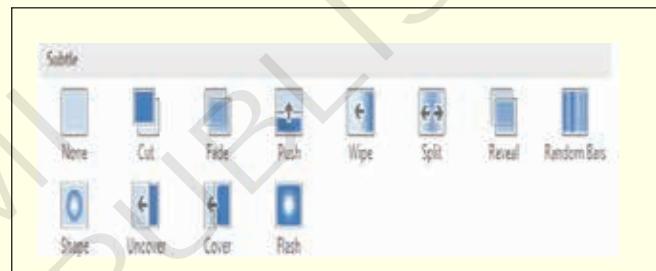
### PROCEDURE

#### TASK 1: Add same slide transition for all slides

##### About transitions

There are three categories of unique transitions to choose from, all of which can be found on the Transitions tab.

- **Subtle:** These are the most basic types of transitions. They use simple animations to move between slides.
- **Exciting:** These use more complex animations to transition between slides.



- **Dynamic Content:** If you're transitioning between two slides that use similar slide layouts, dynamic

transitions will move only the placeholders, not the slides themselves..



Transitions are best used in moderation. Adding too many transitions can make your presentation look a little silly and can even be distracting to your audience. Consider using mostly subtle transitions, or not using transitions at all.

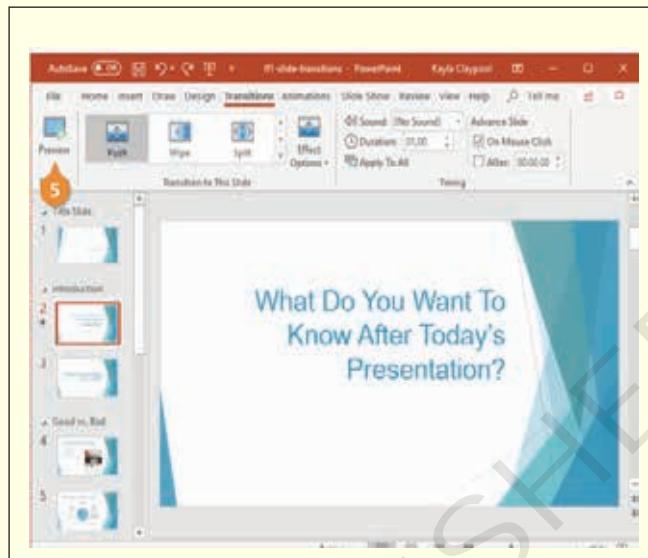
##### Apply a Transition

- 1 Select the slide that you want to apply a transition to. To select multiple slides, hold down Ctrl as you select each slide.



### To preview a transition:

- (Optional) To test the transition after it's applied, click the Preview button.



You can preview the transition for a selected slide at any time using one of these two methods:

- Click the Preview command on the Transitions tab.

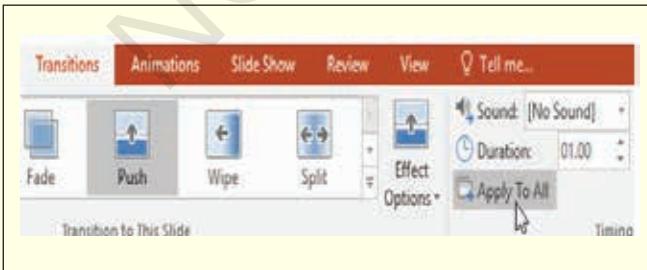
- Click the Transitions tab.
- Click the Slide Transitions More button.



- Select the transition you want to use.

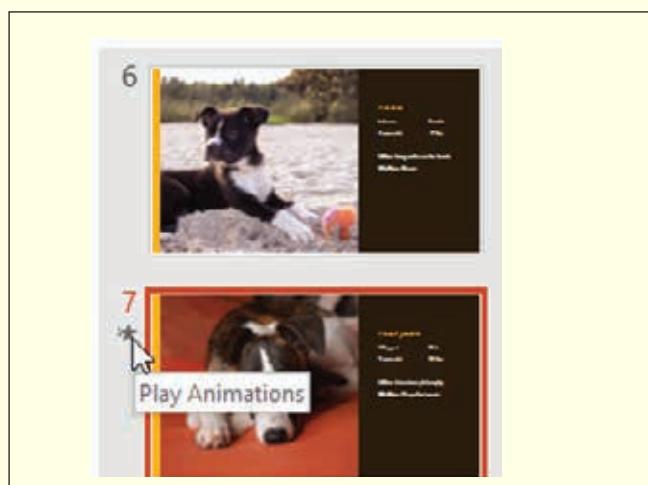


The transition is applied to just the selected slide. To apply the transition to all slides in the presentation, click the Apply to All button on the Transitions tab.



- Click the Play Animations command in the Slide Navigation pane.

- To remove a transition, select None in the Slide Transitions gallery.

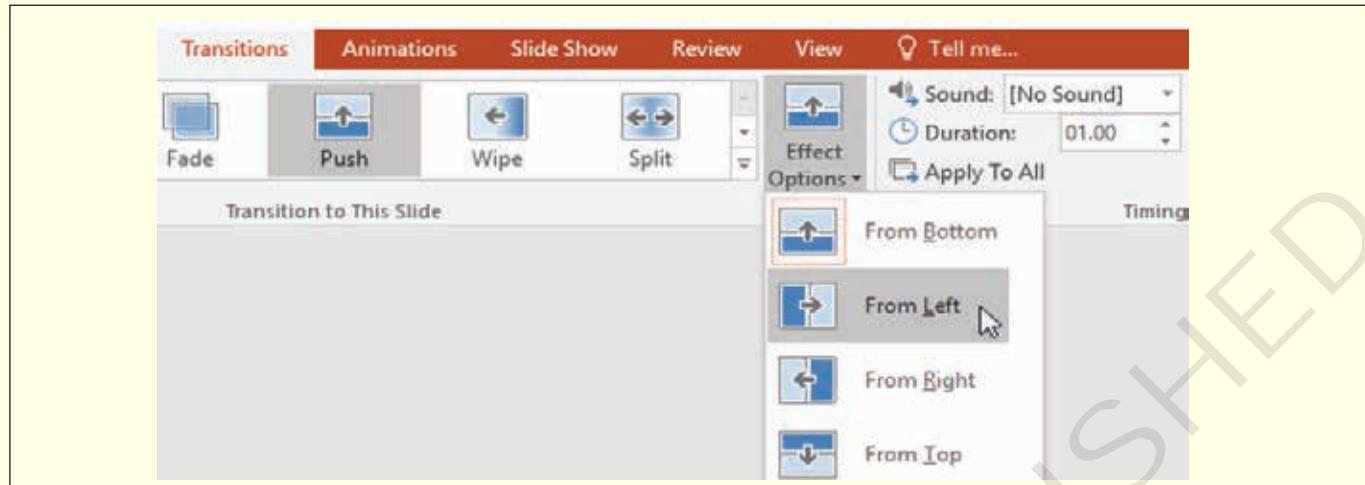


## TASK 2: Set transition effect duration

### To Set the transition effect:

You can quickly customize the look of a transition by changing its direction.

- 1 Select the slide with the transition you want to modify.

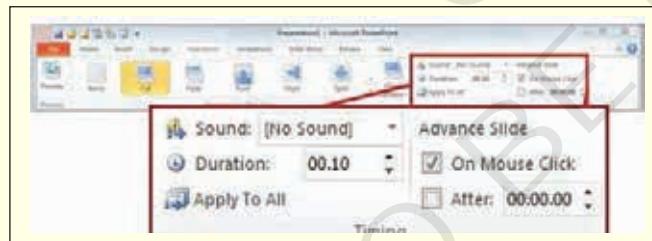


- 3 The transition will be modified, and a preview of the transition will appear.

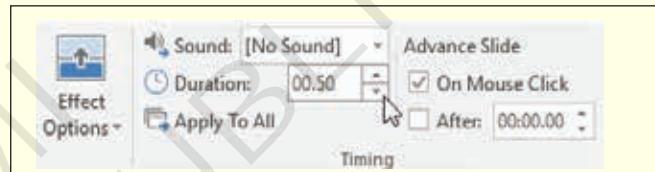
Some transitions do not allow you to modify the direction.

### To modify the transition duration:

- 1 Select the slide with the transition you want to modify.
- 2 On the Transitions tab, in the Timing group, In the Duration field in the Timing group, enter the desired time for the transition. In this example, we'll decrease the time to half a second—or 00.50—to make the transition faster.



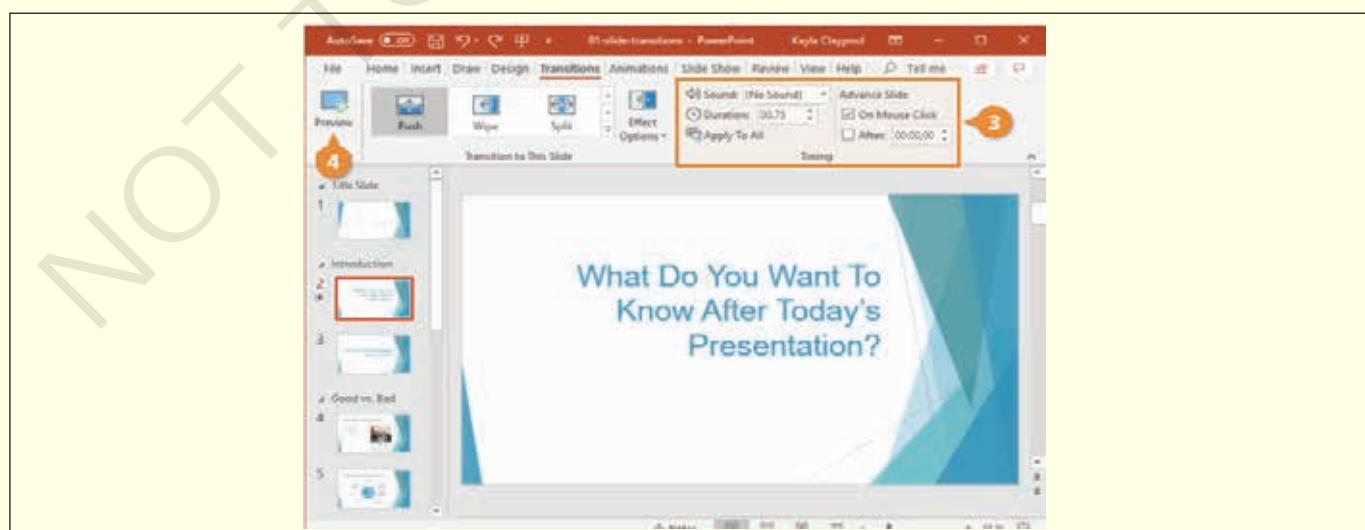
- 2 Click the Effect Options command and choose the desired option. These options will vary depending on the selected transition.



- 3 Select additional modification options in the Timing group:

- **Sound:** Pick a sound to play in unison with the slide transition.
- **Duration:** Specify the length of the transition.
- **Apply To All:** Apply the current slide's transition, effects, and timing settings to the entire presentation.
- **On Mouse Click:** Select this option to have the slide advance when the mouse is clicked.
- **After:** Select this option to have the slide advance after the amount of time you specify.

- 4 Click Preview to see how your transition looks with the modifications applied.



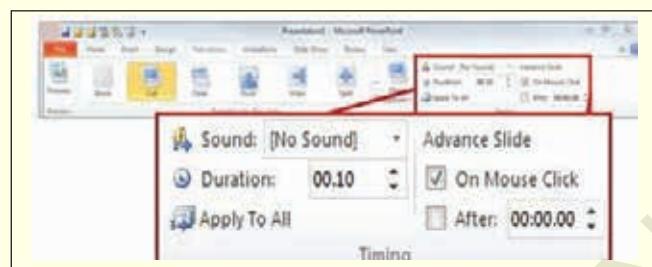
## TASK 3: Configure transition start and finish options

### Advancing slides

Normally, in Slide Show view you would advance to the next slide by clicking your mouse or by pressing the spacebar or arrow keys on your keyboard. The Advance Slides setting in the Timing group allows the presentation to advance on its own and display each slide for a specific amount of time. This feature is especially useful for unattended presentations, such as those at a trade show booth.

#### To advance slides automatically:

- 1 Select the slide you want to modify.
- 2 Locate the Timing group on the Transitions tab. Under Advance Slide, uncheck the box next to On Mouse Click.
- 3 In the After field, enter the amount of time you want to display the slide. In this example, we will advance the slide automatically after 1 minute and 15 seconds, or 01:15:00.



## TASK 4: Customize select slide transitions

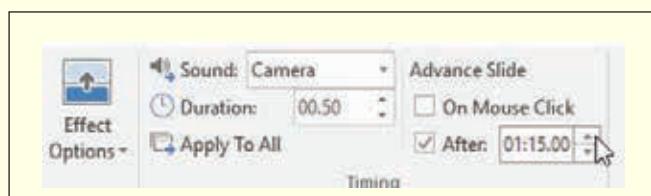
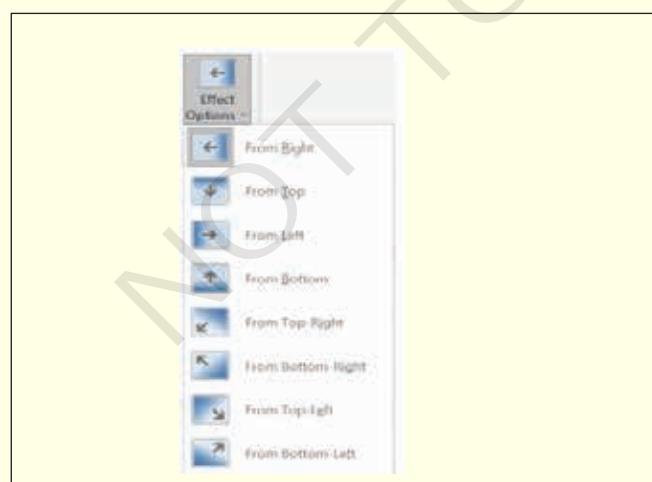
### Customize a Transition

You can customize a transition effect to meet your needs, including adjusting its speed or duration and adding sound.

- 1 Click the Effect Options button.

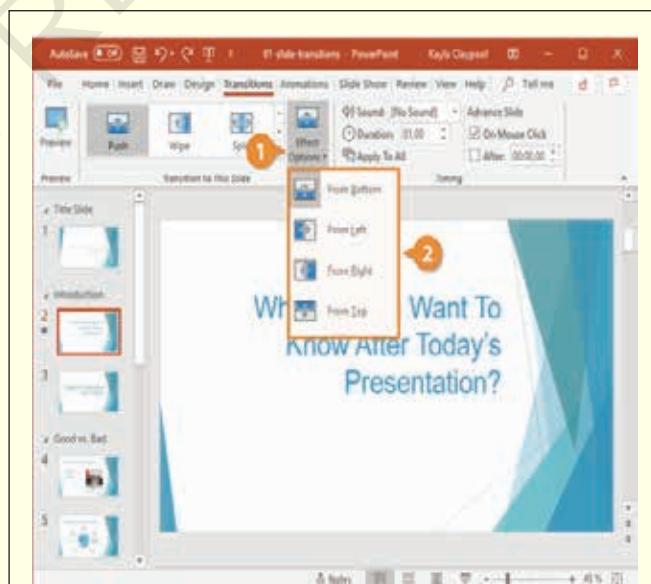
The options available here will change based on which transition you've applied.

- 2 Select an effect option.



- To make the slide advance to the next slide when you click the mouse, select the On Mouse Click check box.
- To make the slide advance automatically, select the After check box, and then enter the number of minutes or seconds that you want. The timer starts when the final animation or other effect on the slide finishes.
- To enable both the mouse and automatic advance, select both the On Mouse Click check box and the After check box. Then, at After, enter the number of minutes or seconds that you want. The slide will advance automatically, but you can advance it more quickly by clicking the mouse.

Select another slide and repeat the process until all slides have the desired timing. You can also click the Apply to All command to apply the same timing to all slides.



- 3 Select additional modification options in the Timing group:

- **Sound:** Pick a sound to play in unison with the slide transition.
- **Duration:** Specify the length of the transition.
- **Apply To All:** Apply the current slide's transition, effects, and timing settings to the entire presentation.

- **On Mouse Click:** Select this option to have the slide advance when the mouse is clicked.
- **After:** Select this option to have the slide advance after the amount of time you specify.

#### To add sound:

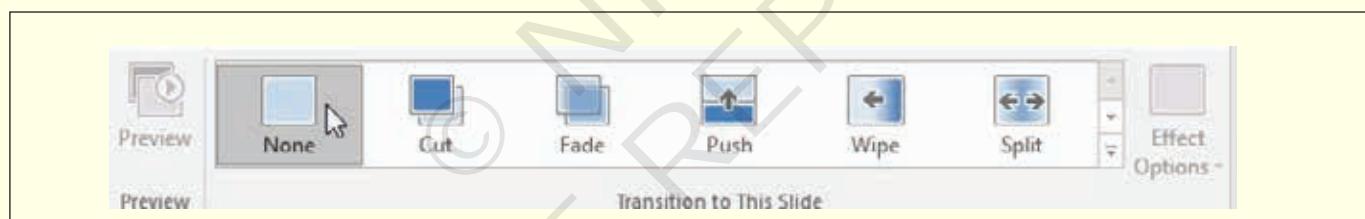
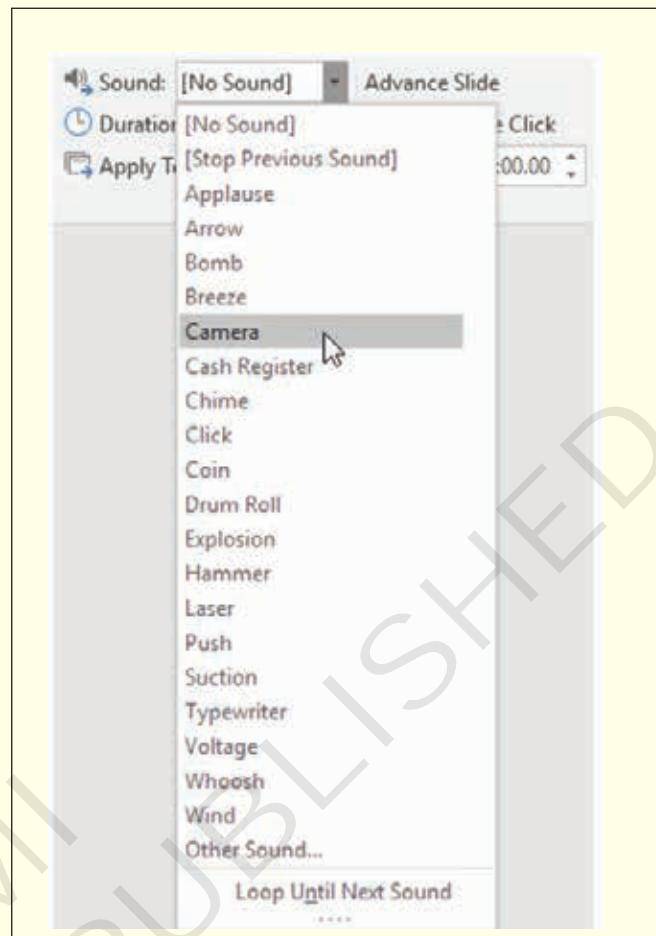
- 1 Select the slide with the transition you want to modify.
- 2 Click the Sound drop-down menu in the Timing group.
- 3 Click a sound to apply it to the selected slide, then preview the transition to hear the sound.

Sounds are best used in moderation. Applying a sound between every slide could become overwhelming or even annoying to an audience when presenting your slide show.

#### To remove a transition:

- 1 Select the slide with the transition you want to remove.
- 2 Choose None from the Transition to This Slide group. The transition will be removed.

To remove transitions from all slides, apply the None transition to a slide, then click the Apply to All command.



## COPA - Manage Transitions and Animations

### Add Animations

**Objectives:** At the end of this exercise you shall be able to

- animate text and graphic elements
- order shapes, images, and text boxes
- group shapes, images, and text boxes
- configure animation effects
- configure animation paths
- reorder animations on a slide

### Requirements

#### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

### PROCEDURE

#### TASK 1: Animate text and graphic elements

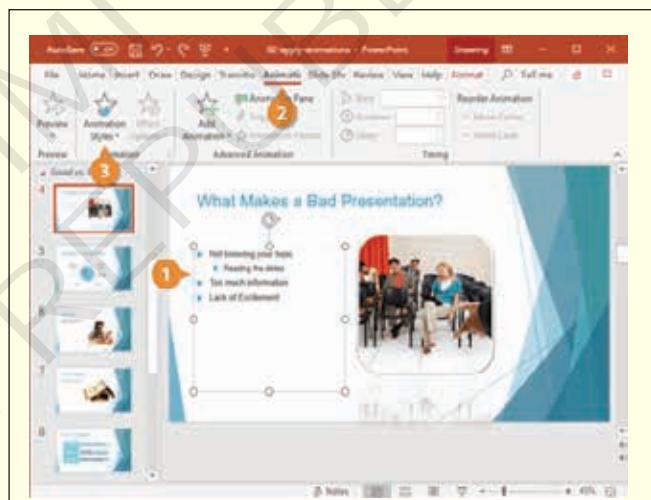
##### Animate Text or Object:

**Note:** Animating objects on a slide is really no different than animating text. However, you'll notice the available effect options will differ depending on what's being animated.

- 1 Select the text or Object you want to animate.
- 2 Click the Animations tab.



- 3 Click the Animation Styles button in the Animation group. A drop-down menu of animation effects will appear. Select the desired effect.



- 4 From here, you can see all the available animations. They're grouped by Entrance, Exit, and Emphasis effects.
  - **Entrance:** These control how the object enters the slide.



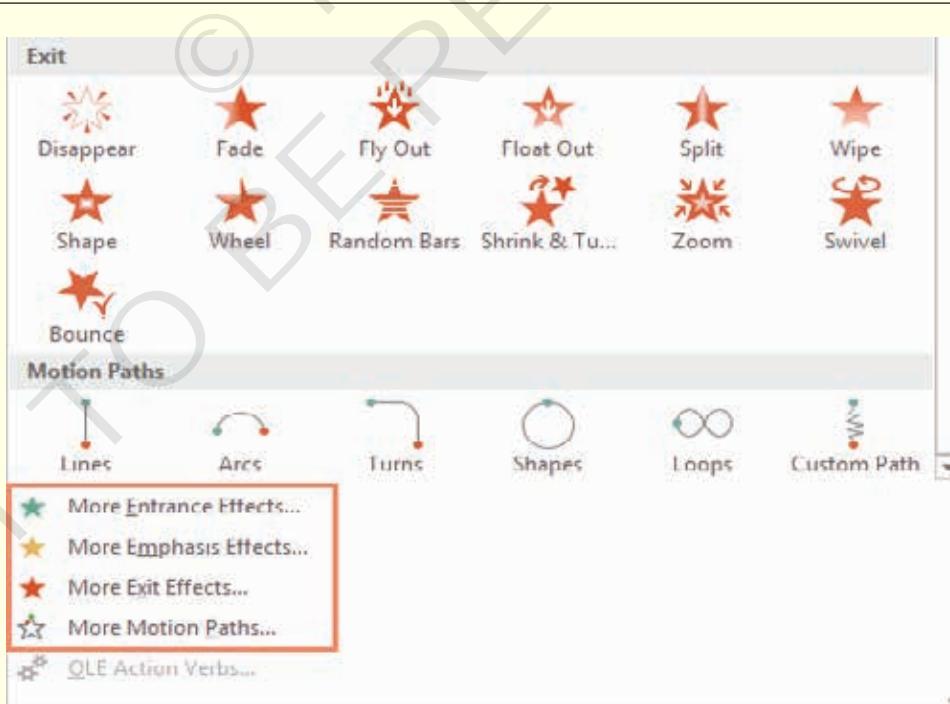
- **Exit:** These control how the object exits the slide.



- **Emphasis:** These animations occur while the object is on the slide, often triggered by a mouse click.



- At the bottom of the menu, you can access additional effects.



Don't get too crazy with your animations. Animation effects should be used to call attention to the main points of your slide. Too many effects can detract from your presentation.

The preset animation is applied to the text or object and a preview of the effect is displayed. A number appears next to the object showing the order in which the animation will be displayed.

6 The effect will apply to the object. The object will have a small number next to it to show that it has an

animation. In the Slide pane, a star symbol also will appear next to the slide.



#### To preview animations:

Any animation effects you have applied will show up when you play the slide show. However, you can also quickly preview the animations for the current slide without viewing the slide show.

- 1 Navigate to the slide you want to preview.
- 2 From the Animations tab, click the Preview command. The animations for the current slide will play.

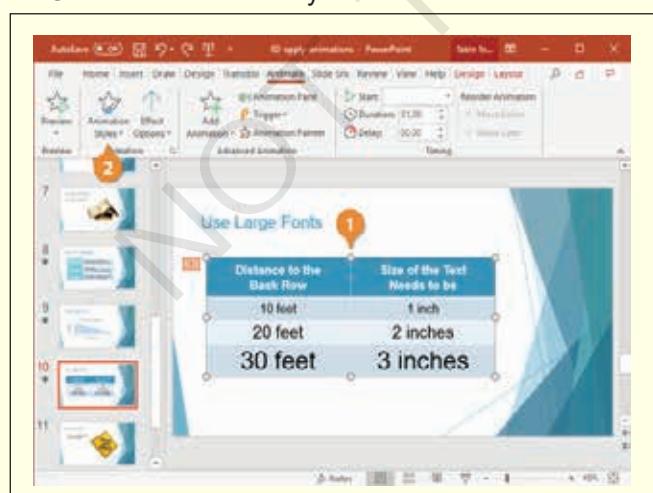


#### Remove an Animation Effect

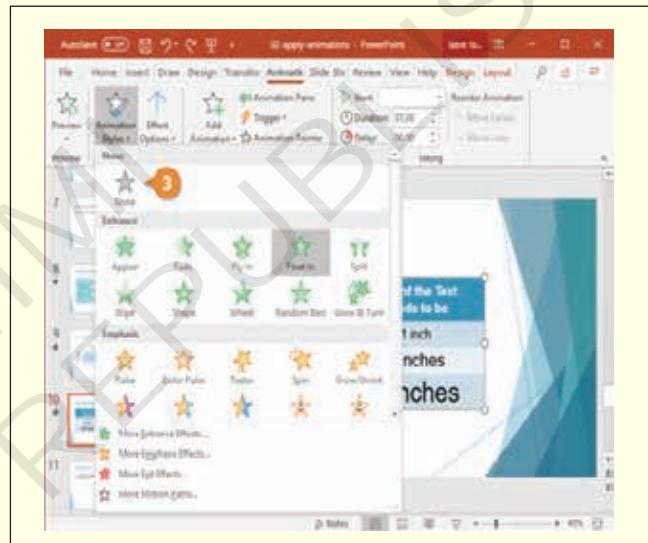
An animation effect can quickly be removed if you decide you don't like it.

##### Option1:

- 1 Select the text or object with the animation you want to remove.
- 2 Click the Animation Styles button.



#### 3 Select None.

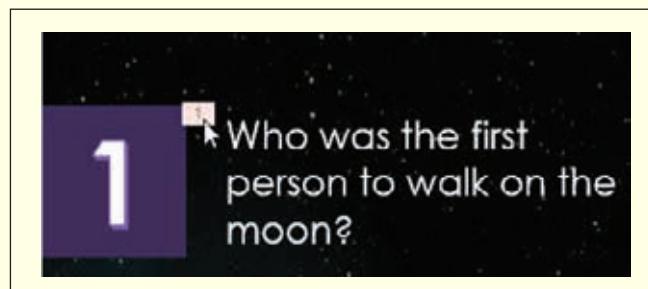


The animation effect is removed from the text or object.

##### Option2:

#### To remove an animation:

- 1 Select the small number located next to the animated object.
- 2 Press the Delete key. The animation will be deleted.



## TASK 2: Order shapes, images, and text boxes

### Aligning objects

When you move objects in PowerPoint, alignment guides and spacing guides will appear as dashed orange lines and arrows around the objects to help you align them. However, if you have several objects on

a slide, it may be difficult and time consuming to get them perfectly aligned. Luckily, PowerPoint has several alignment commands that allow you to easily arrange and position objects.

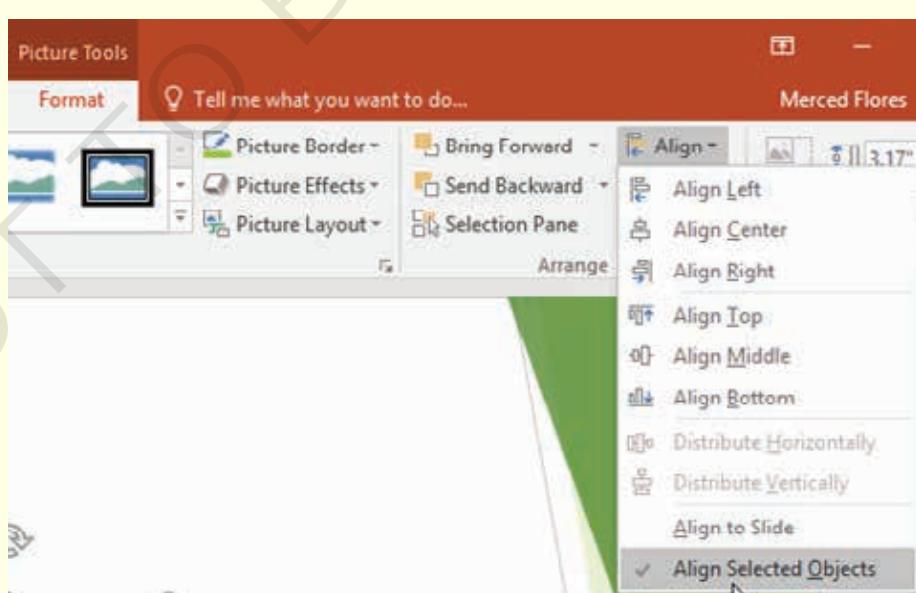


#### To align two or more objects:

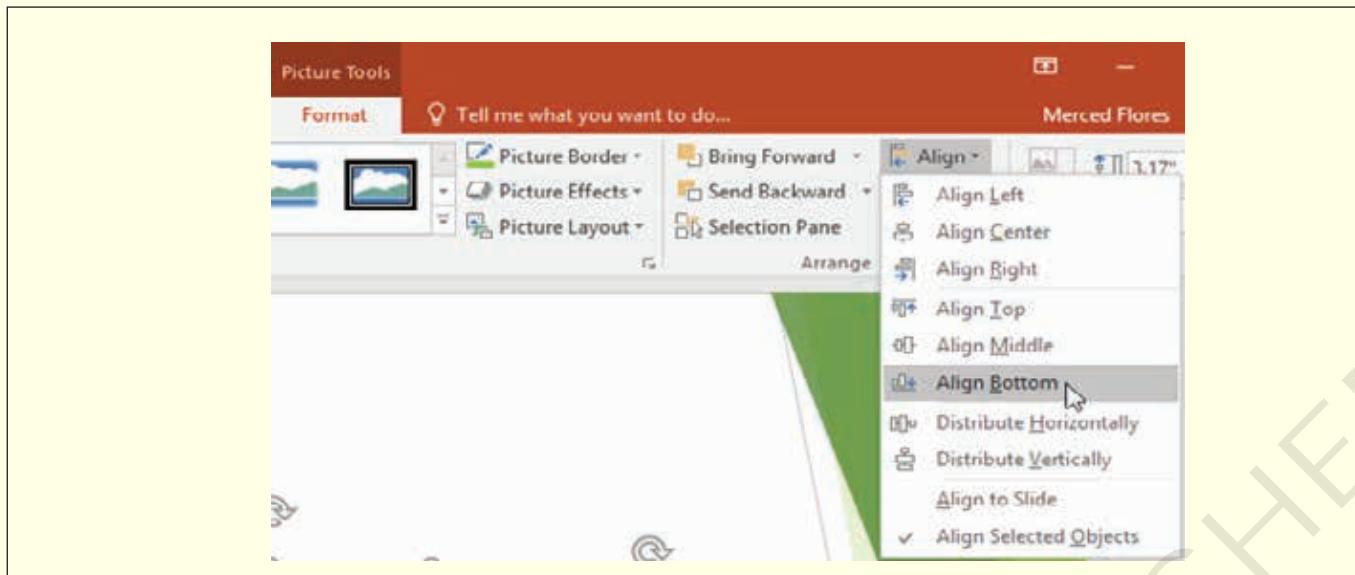
- 1 Select the objects you want to align. To select multiple objects at once, hold the Shift key while you click. The Format tab will appear.



- 2 From the Format tab, click the Align command, then select Align Selected Objects.



- 3 Click the Align command again, then select one of the six alignment options.



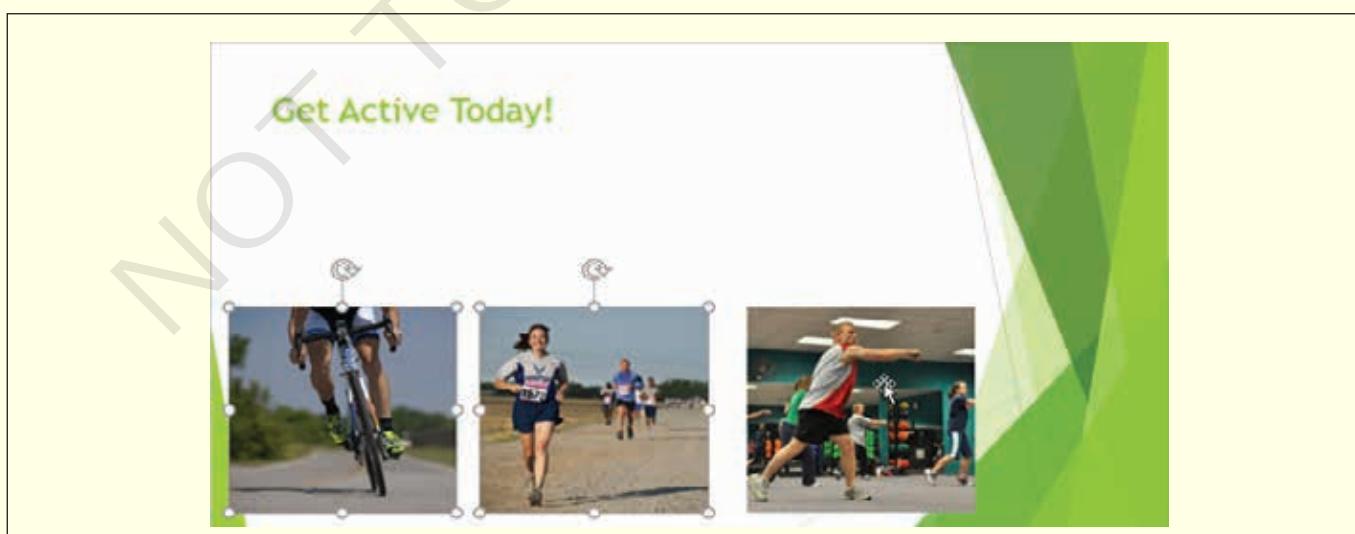
- 4 The objects will align based on the option you selected.



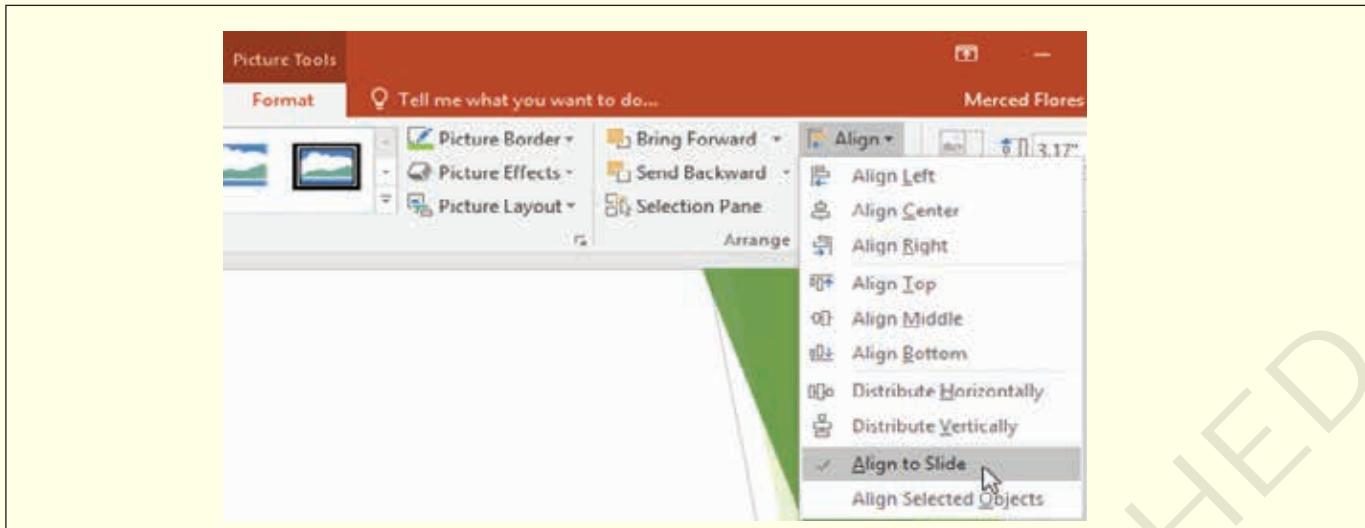
#### To align objects to the slide:

Sometimes you may want to align one or more objects to a specific location within the slide, such as at the top or bottom. You can do this by selecting the Align to Slide option before aligning the objects.

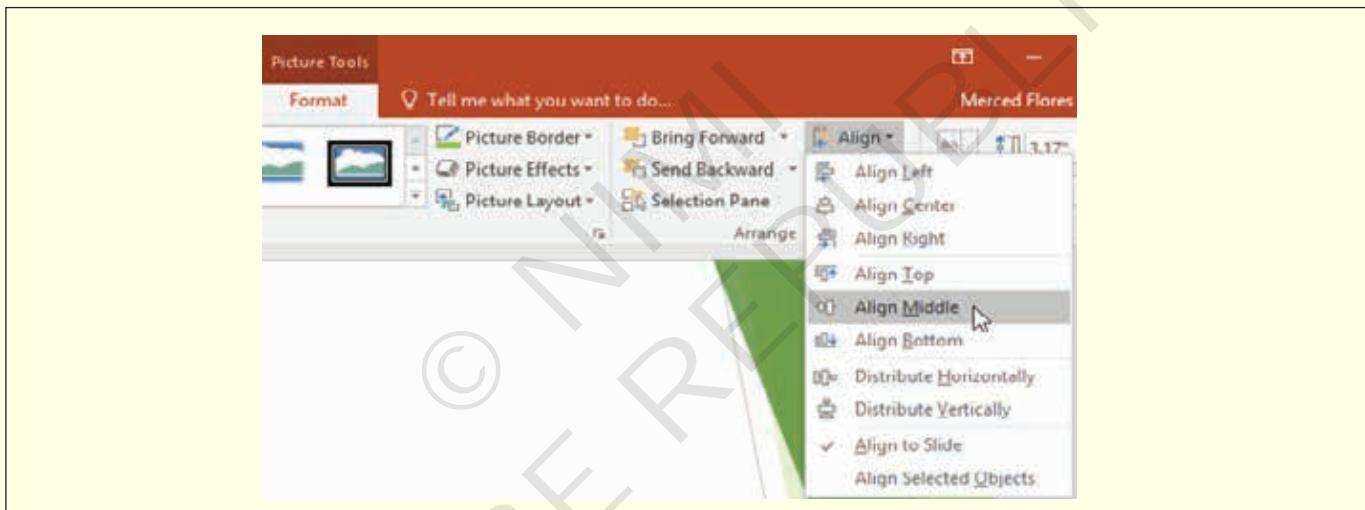
- 1 Select the objects you want to align. To select multiple objects at once, hold the Shift key while you click.



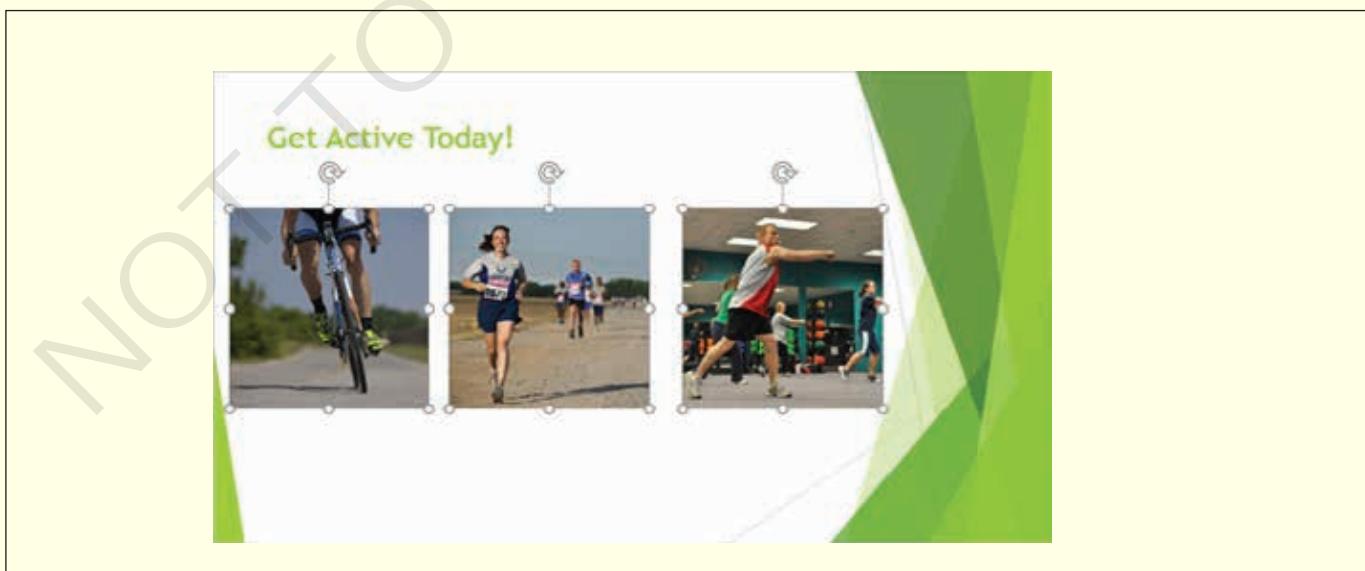
- 2 From the Format tab, click the Align command, then select Align to Slide.



- 3 Click the Align command again, then select one of the six alignment options.



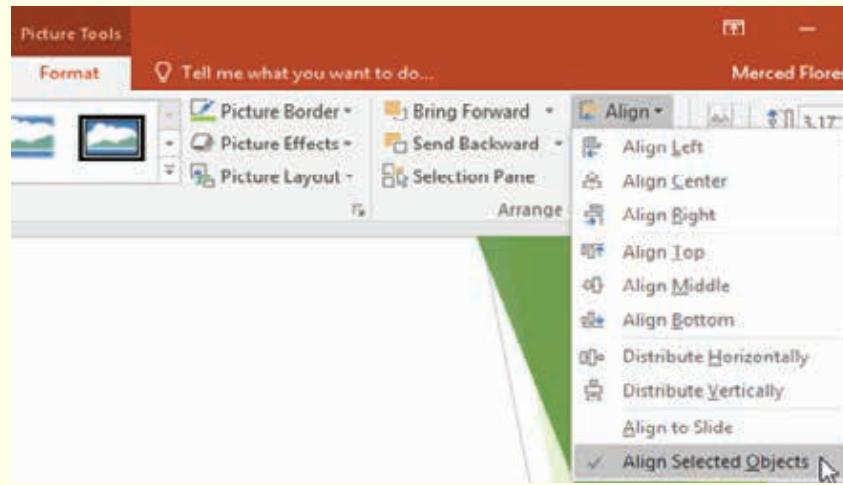
- 4 The objects will align based on the option you selected.



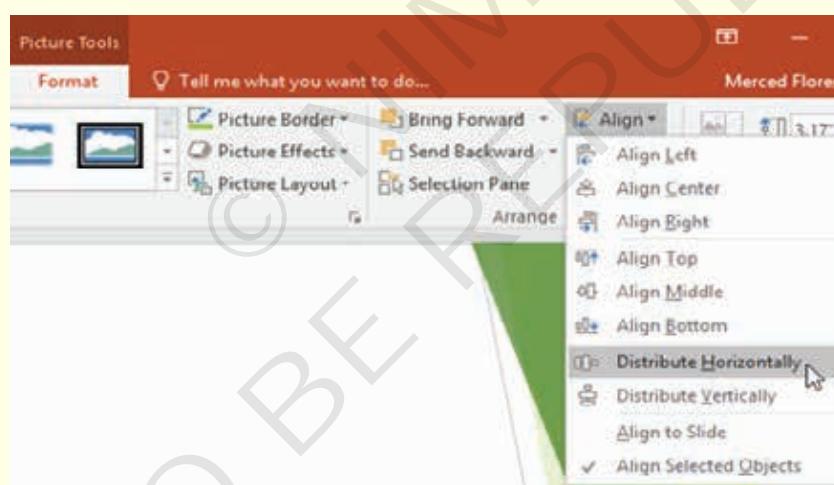
### To distribute objects evenly:

If you have arranged objects in a row or column, you may want them to be an equal distance from one another for a neater appearance. You can do this by distributing the objects horizontally or vertically.

- 1 Select the objects you want to align. To select multiple objects at once, hold the Shift key while you click.
- 2 From the Format tab, click the Align command, then select Align to Slide or Align Selected Objects.



- 3 Click the Align command again, then select Distribute Horizontally or Distribute Vertically from the drop-down menu that appears.



- 4 The objects will distribute evenly.

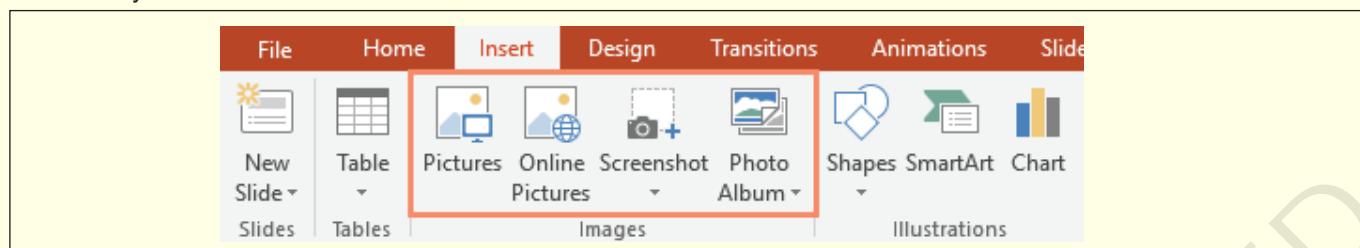


## TASK 3: Group shapes, images, and text boxes

### Grouping objects

You may want to group multiple objects into one object so they will stay together if they are moved or resized. This is often easier than selecting all of the objects each time you want to move them.

Pictures, shapes, clip art, and text boxes can all be grouped; however, placeholders cannot be grouped. If you will be grouping pictures, use one of the commands in the Images group on the Insert tab to insert pictures instead of the picture icon inside the placeholder.

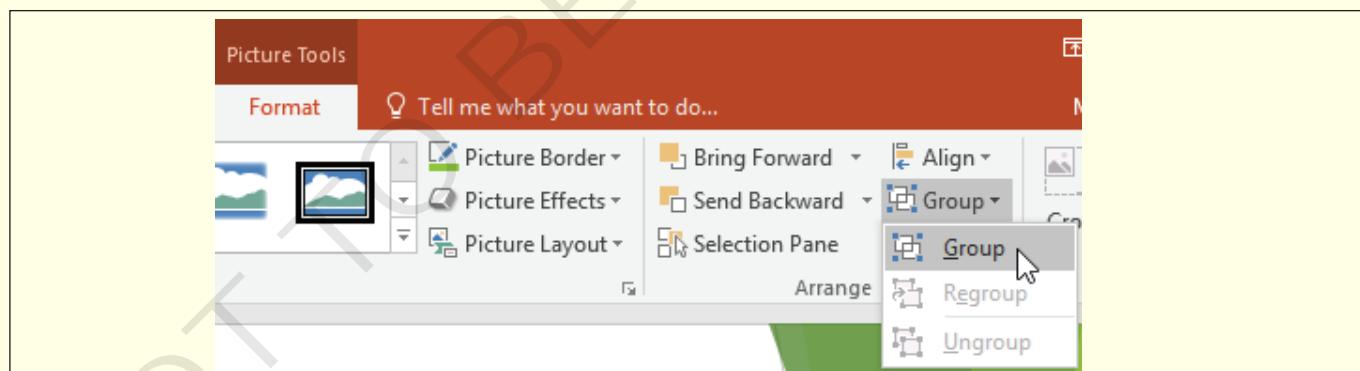


#### To group objects:

- 1 Select the objects you want to align. To select multiple objects at once, hold the Shift key while you click. The Format tab will appear.



- 2 From the Format tab, click the Group command, then select Group.



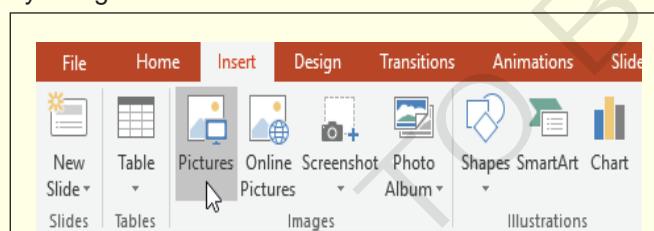
- 3 The selected objects will now be grouped. There will be a single box with sizing handles around the entire group to show that they are one group. You can now move or resize all of the objects at once.



If you want to edit or move one of the objects in the group, double-click to select the object. You can then edit it or move it to the desired location.

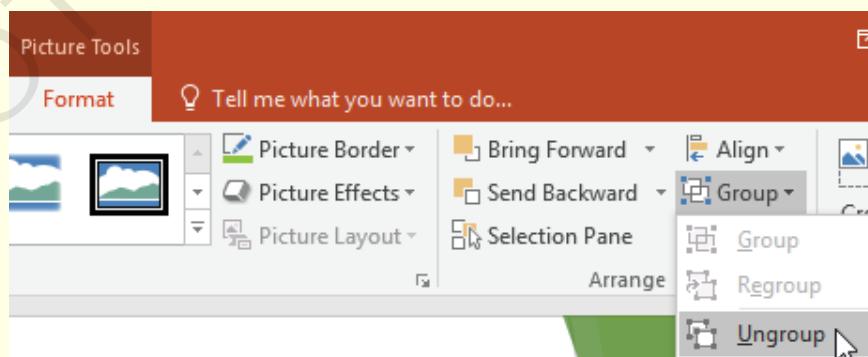


If you select the objects and the Group command is disabled, it may be because one of the objects is inside a placeholder. If this happens, try reinserting the images by using the Pictures command on the Insert tab.



#### To ungroup objects:

- 1 Select the object group you want to ungroup.
- 2 From the Format tab, click the Group command, then select Ungroup.



- 3 The objects will be ungrouped.



### Ordering objects

In addition to aligning objects, PowerPoint gives you the ability to arrange objects in a specific order. The ordering is important when two or more objects overlap because it will determine which objects are in the front or the back.

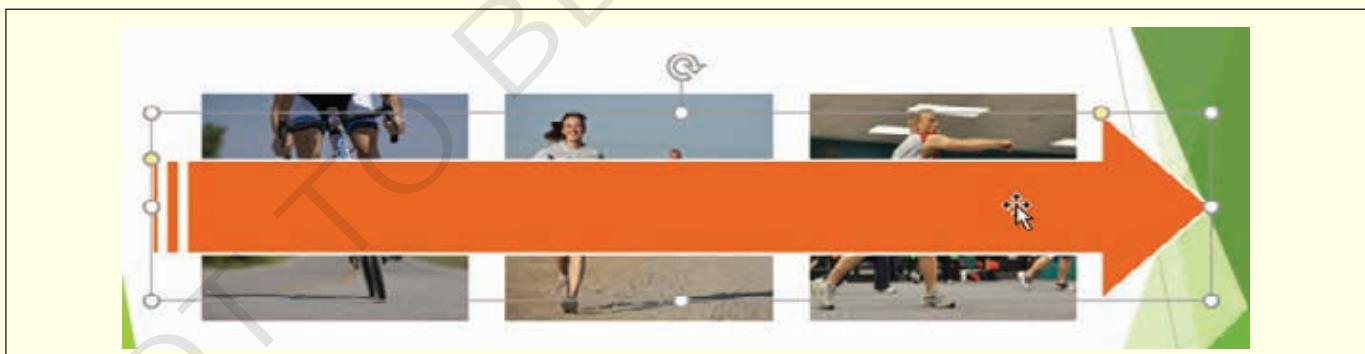
### Understanding levels

When objects are inserted into a slide, they are placed on levels according to the order in which they were inserted into the slide. In our example, we've drawn an arrow on the top level, but we can change the level to put it behind the other objects.



### To change the ordering by one level:

- 1 Select an object. The Format tab will appear.



- 2 From the Format tab, click the Bring Forward or Send Backward command to change the object's ordering by one level. If there are multiple objects

on the slide, you may need to click the command several times to achieve the desired ordering.

A screenshot of the Microsoft PowerPoint ribbon. The 'Format' tab is selected. On the right side, the 'Arrange' tab is open, showing various commands like 'Bring Forward', 'Send Backward', 'Align', 'Group', etc. The 'Send Backward' button is highlighted with a yellow box. The status bar at the bottom right shows 'Merced Flores'.

3 The objects will reorder.

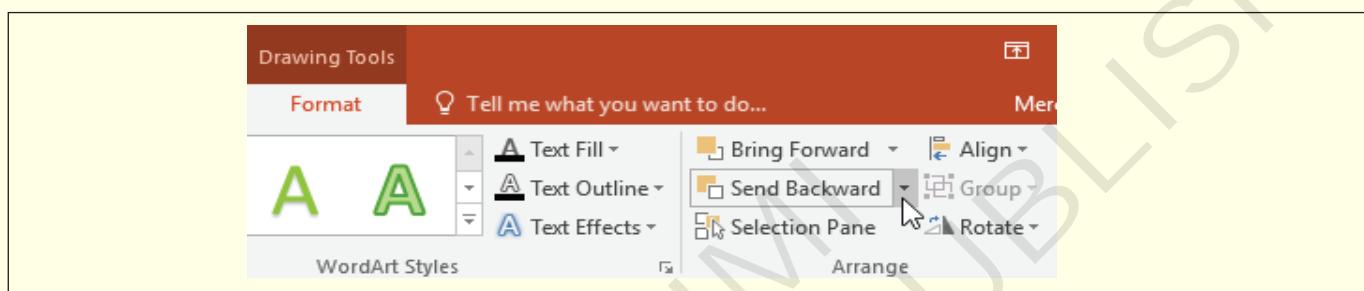


**To bring an object to the front or back:**

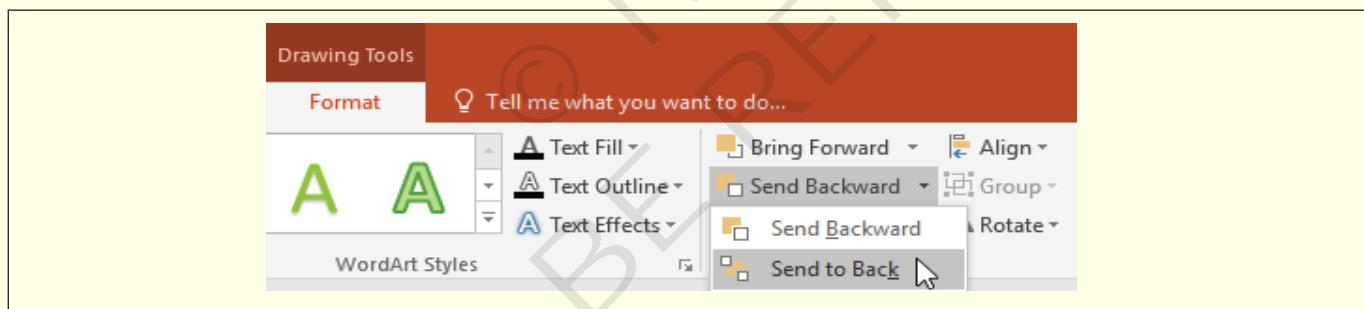
If you want to move an object behind or in front of several objects, it's usually faster to bring it to front or send it to back instead of clicking the ordering commands multiple times.

1 Select an object.

2 From the Format tab, click the Bring Forward or Send Backward drop-down arrow.



3 From the drop-down menu, select Bring to Front or Send to Back.

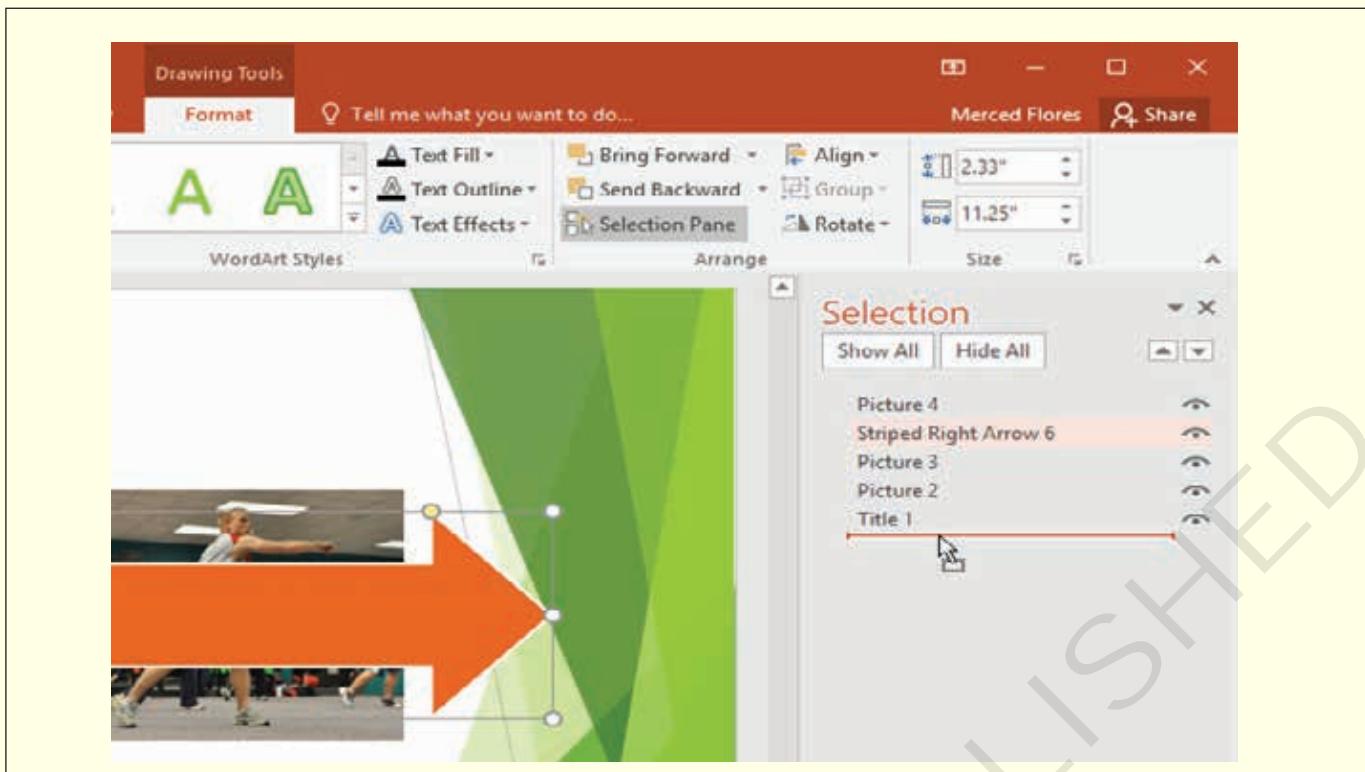


4 The objects will reorder.



If you have several objects placed on top of each other, it may be difficult to select an individual object. The Selection pane allows you to easily drag an object

to a new location. To access the Selection pane, click Selection Pane on the Format Tab.



## Rotating objects

If you need to turn an object so it faces a different direction, you can rotate it to the left or right or flip it horizontally or vertically.

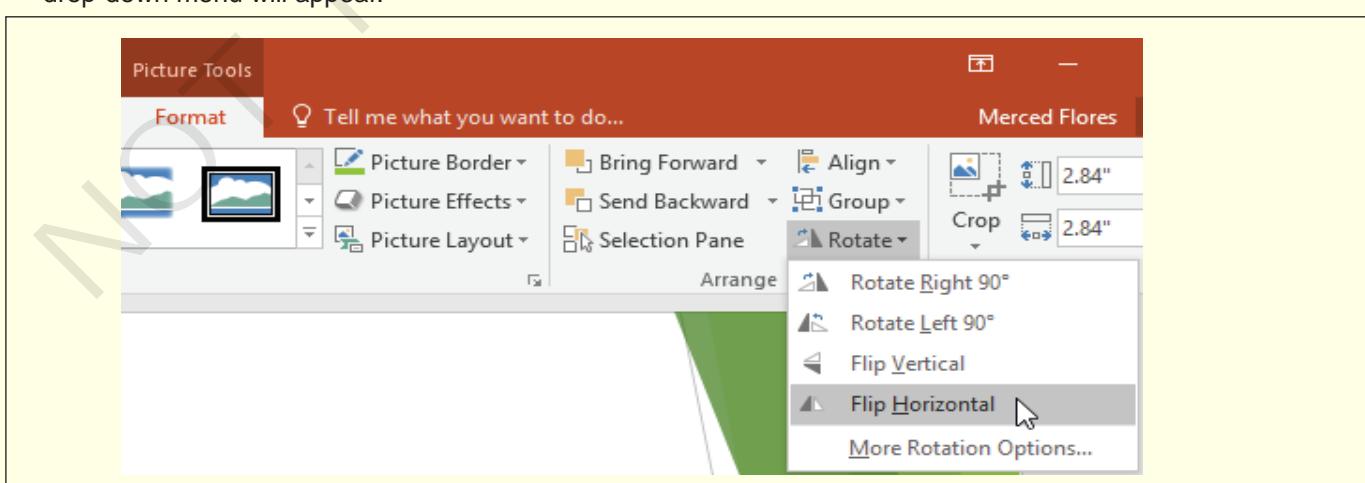
### To rotate an object:

1 Select an object. The Format tab will appear.



2 From the Format tab, click the Rotate command. A drop-down menu will appear.

3 Select the desired rotation option.



4 The object will rotate.



#### TASK 4: Configure animation effects

Customize an Animation

- 1 Select an object with an animation applied.
- 2 Click the Animations tab.
- 3 Click the Effect Options button.

Screenshot of the Microsoft PowerPoint ribbon showing the 'Format' tab selected. The 'Effect Options' dropdown menu is open, displaying options for 'Direction' such as 'From Bottom', 'From Left', and 'From Top'. The 'From Left' option is highlighted with a mouse cursor.

The options available in the menu will vary based on the animation you're using and the object you're animating.

- 4 Select an effect option.

Screenshot of the Microsoft PowerPoint ribbon showing the 'Animations' tab selected. The 'Effect Options' dropdown menu is open, and the 'From Left' direction is selected. A callout bubble labeled '4' points to the 'From Left' option. The slide content shows a bulleted list under the heading 'Parts of a Presentation'.

#### To copy animations with the Animation Painter:

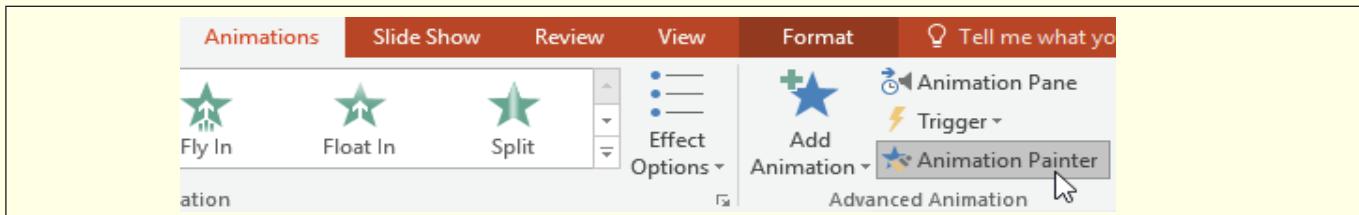
In some cases, you may want to apply the same effects to more than one object. You can do this by copying the effects from one object to another using the Animation Painter. In our example, we want to copy an animation from one slide to another because they have similar layouts.

- 1 Click the object that has the effects you want to copy. In our example, we'll click our answer text.

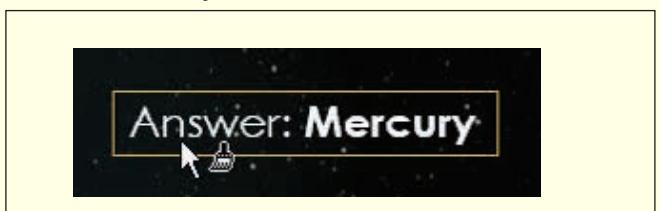
Screenshot of the Microsoft PowerPoint ribbon showing the 'Animations' tab selected. The 'Animation Painter' icon is highlighted with a callout bubble labeled '1'. The slide content shows a bulleted list under the heading 'Parts of a Presentation'.

Screenshot of a slide titled 'Answer: Neil Armstrong'. The text 'Neil Armstrong' is selected, indicated by a callout bubble labeled '3'.

- From the Animations tab, click the Animation Painter command.



- Click the object you want to copy the effects to. In our example, we'll click the answer text on the next slide. Both objects now have the same effect.

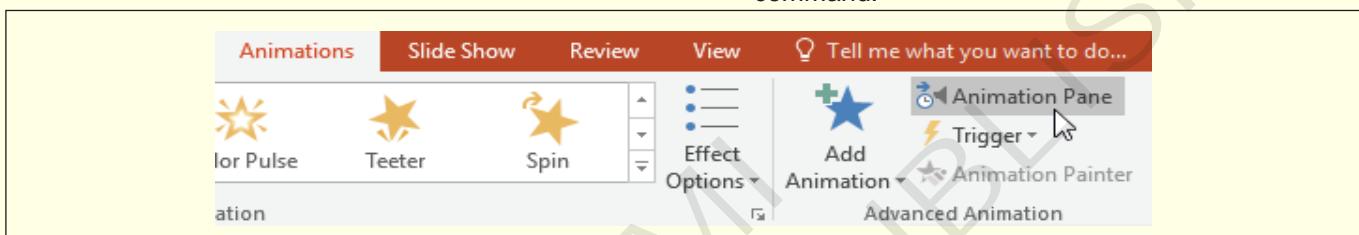


### The Animation Pane

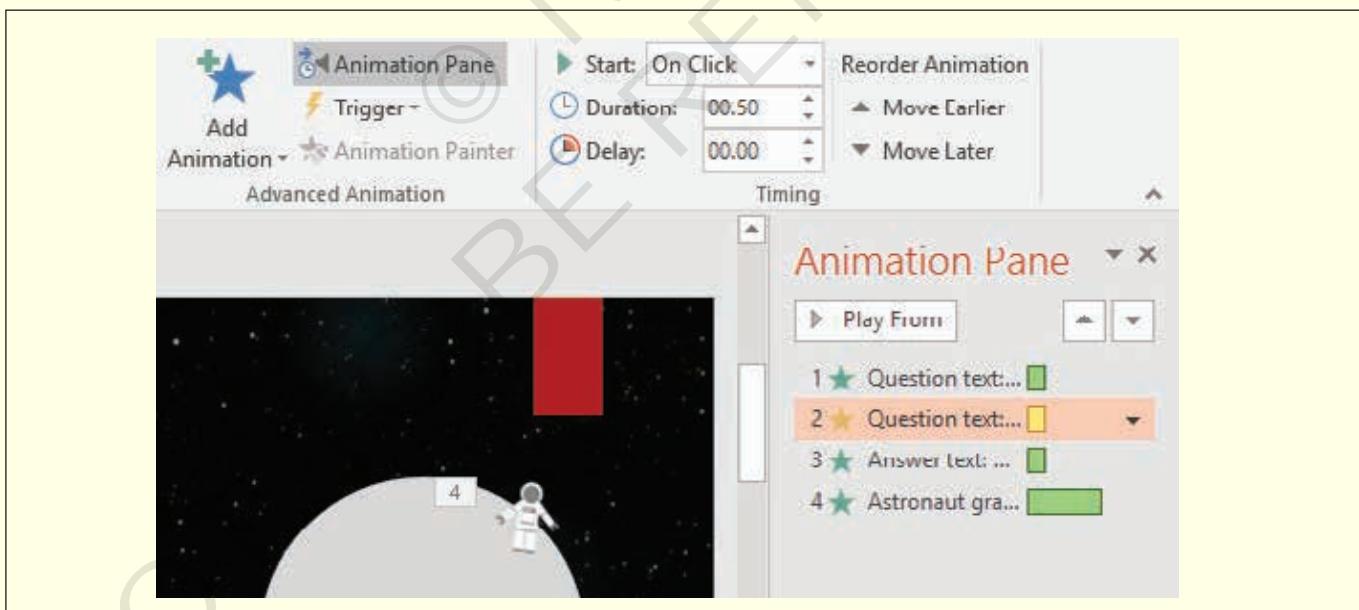
The Animation Pane allows you to view and manage all of the effects that are on the current slide. You can modify and reorder effects directly from the Animation Pane, which is especially useful when you have several effects.

#### To open the Animation Pane:

- From the Animations tab, click the Animation Pane command.

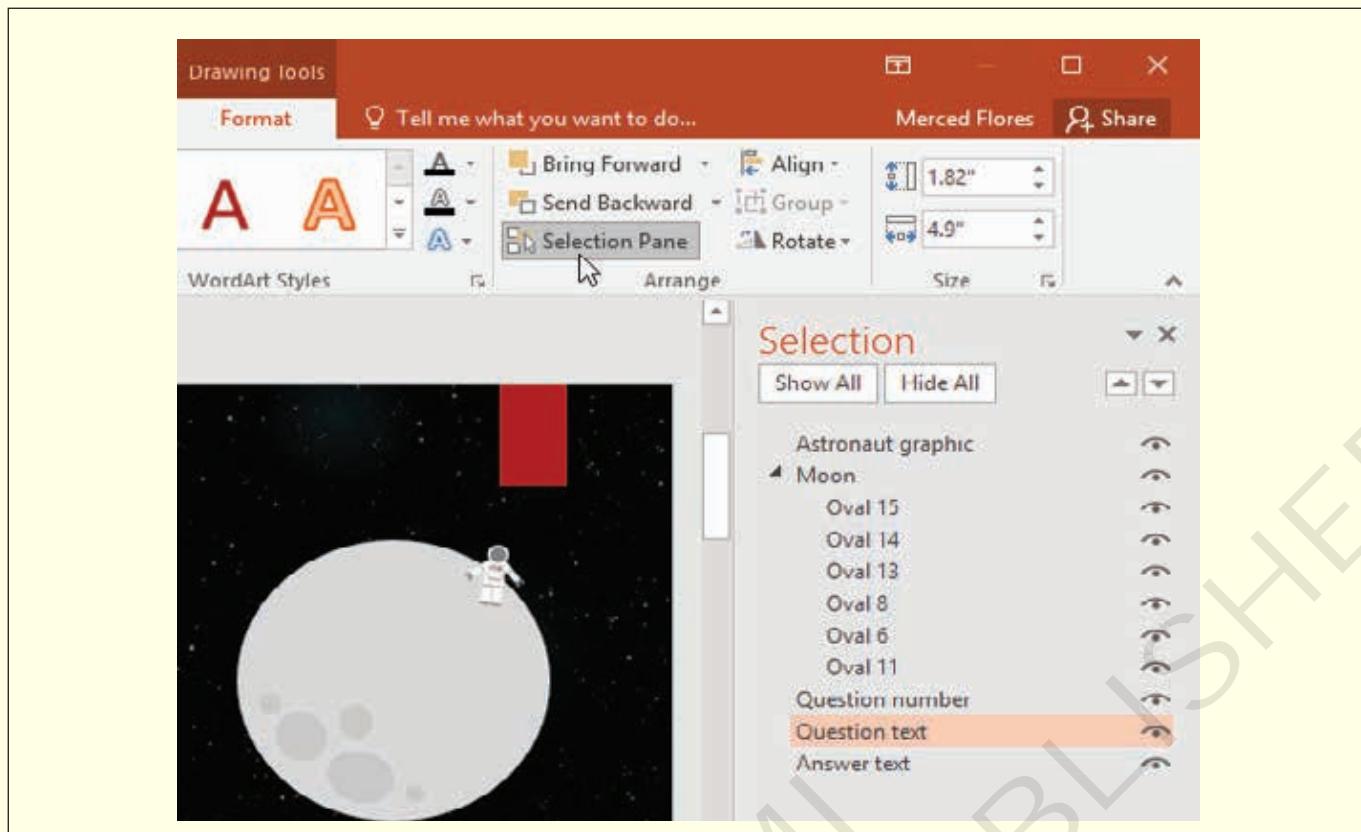


- The Animation Pane will open on the right side of the window. It will show all of the effects for the current slide in the order in which they will appear.



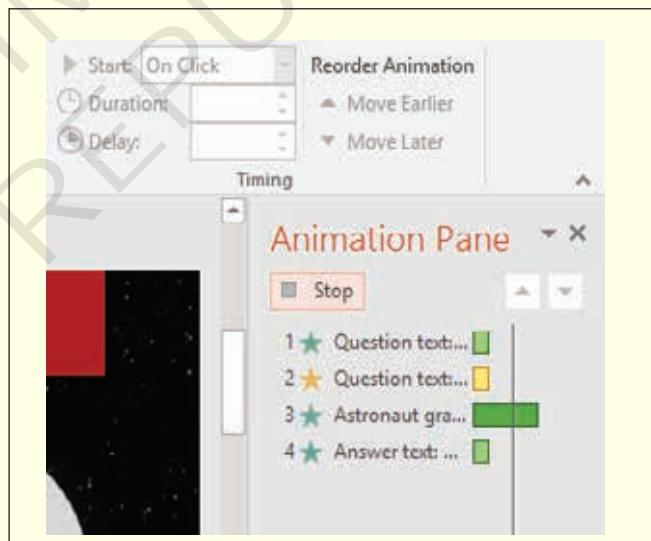
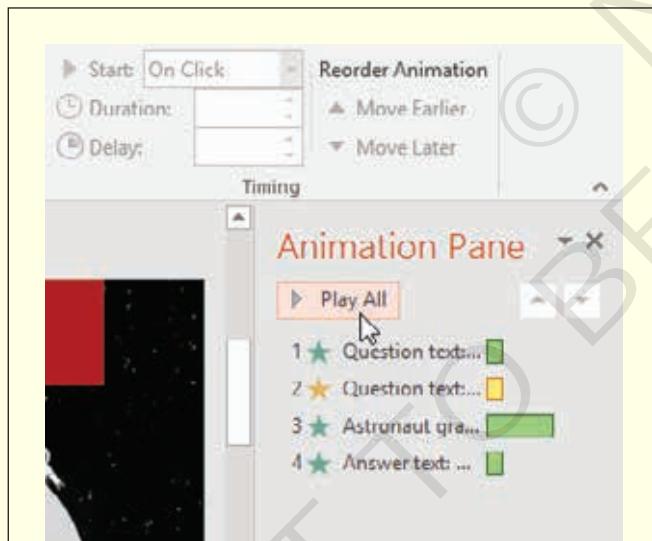
If you have several animated objects, it may help to rename them before reordering them in the Animation Pane. You can rename them in the Selection pane.

To open the Selection Pane, click an object, then from the Format tab click Selection pane. Double-click the name of an object to rename it.



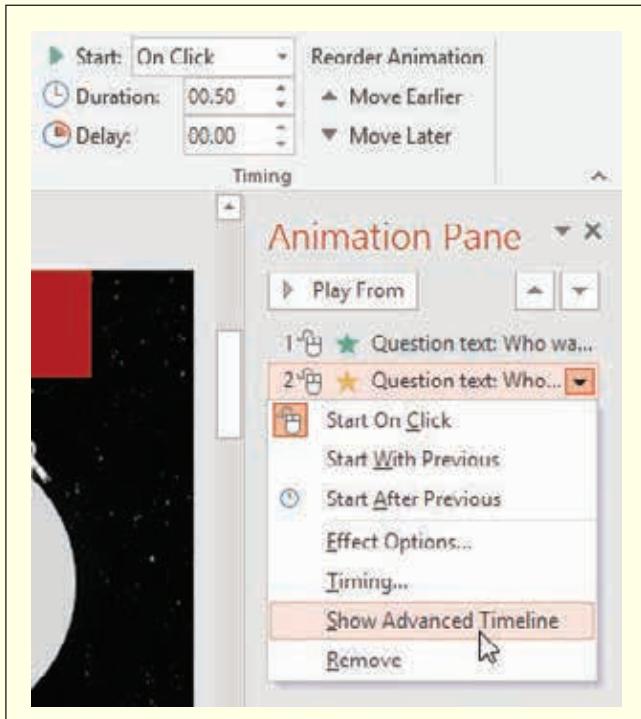
#### To preview effects from the Animation Pane:

- From the Animation Pane, click the Play button.



If the timeline is not visible, click the drop-down arrow for an effect, then select Show Advanced Timeline.

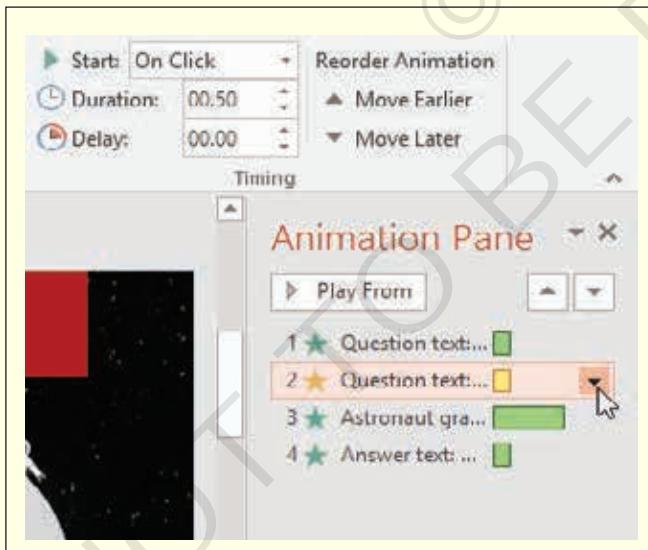
- The effects for the current slide will play. On the right side of the Animation Pane, you will be able to see a timeline that shows the progress through each effect.



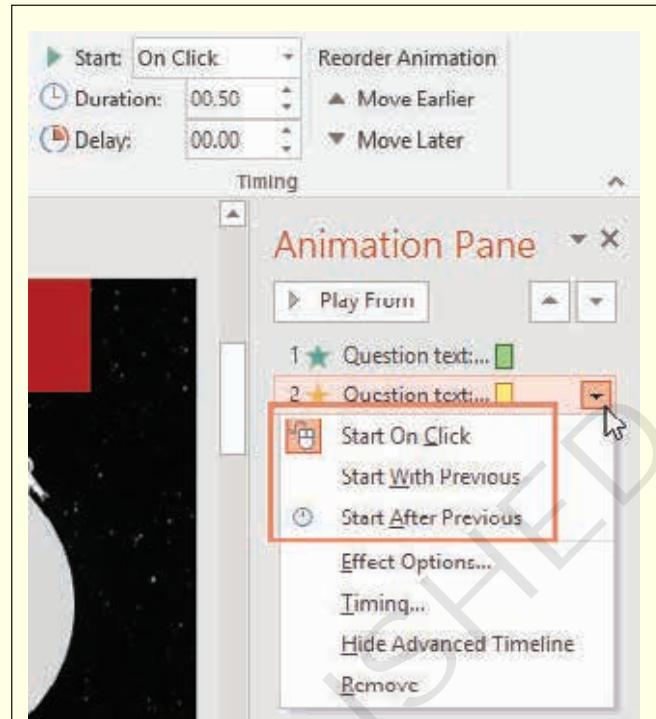
#### To change an effect's start option:

By default, an effect starts playing when you click the mouse during a slide show. If you have multiple effects, you will need to click multiple times to start each effect individually. However, by changing the start option for each effect, you can have effects that automatically play at the same time or one after the other.

- From the Animation Pane, select an effect. A drop-down arrow will appear next to the effect.



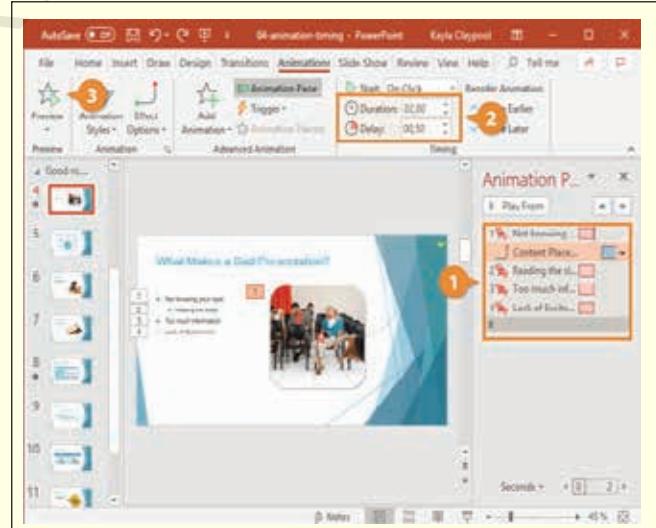
- Click the drop-down arrow and select one of the three desired start options.
  - Start on Click will start the effect when the mouse is clicked,
  - Start With Previous will start the effect at the same time as the previous effect, and
  - Start After Previous will start the effect when the previous effect ends.



When you preview the animations, all of the effects will play through automatically. To test effects that are set to Start on Click, you will need to play the slide show.

#### Change the Duration and Delay of an Animation

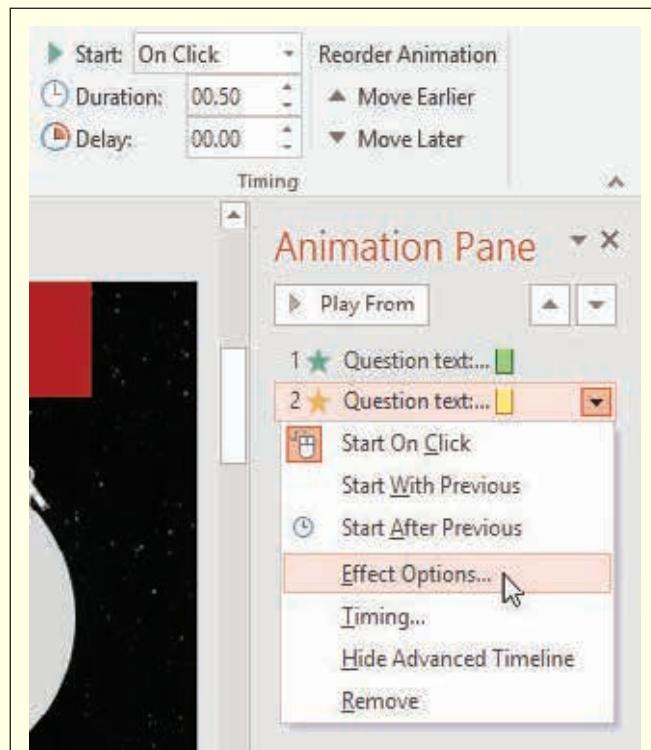
- Select the animation you want to modify.
- Click the Up and Down arrows in the Duration and Delay fields to adjust the timing.
- Click Preview.



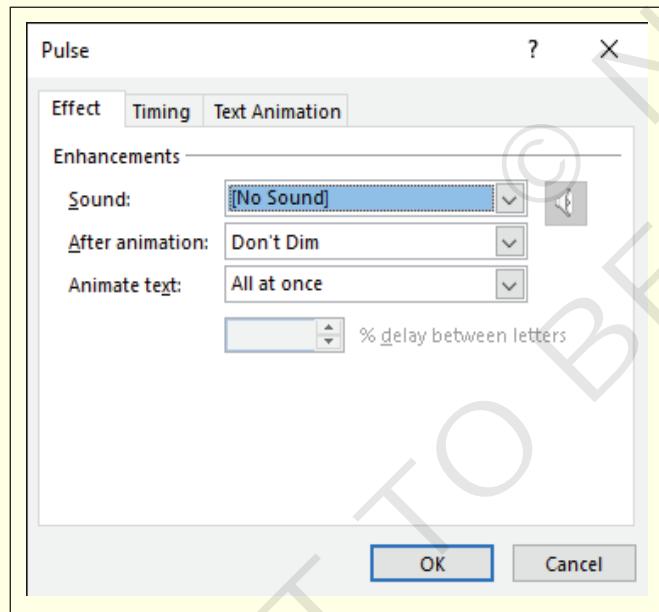
**The Effect Options dialog box :** From the Animation Pane, you can access the Effect Options dialog box, which contains more advanced options you can use to adjust your animations.

#### To open the Effect Options dialog box:

- From the Animation Pane, select an effect. A drop-down arrow will appear next to the effect.
- Click the drop-down arrow, then select Effect Options...



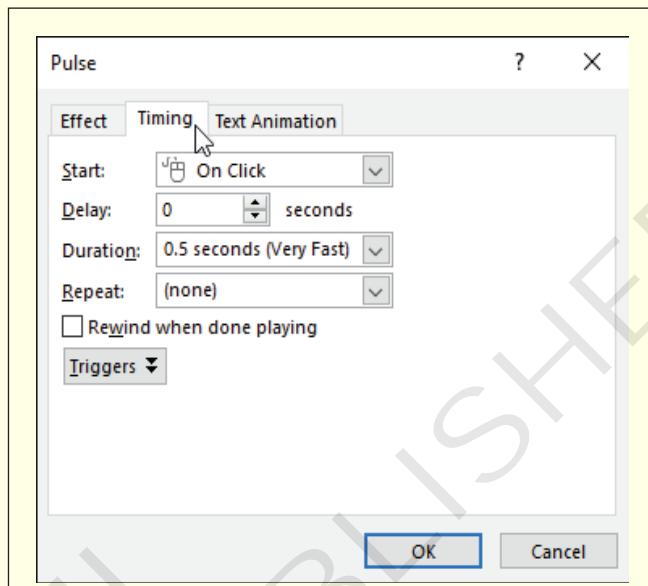
- 3 The Effect Options dialog box will appear. Click the drop-down menus and select the desired enhancement. You can add a sound to the animation, add an effect after the animation is over, or animate text in a different sequence.



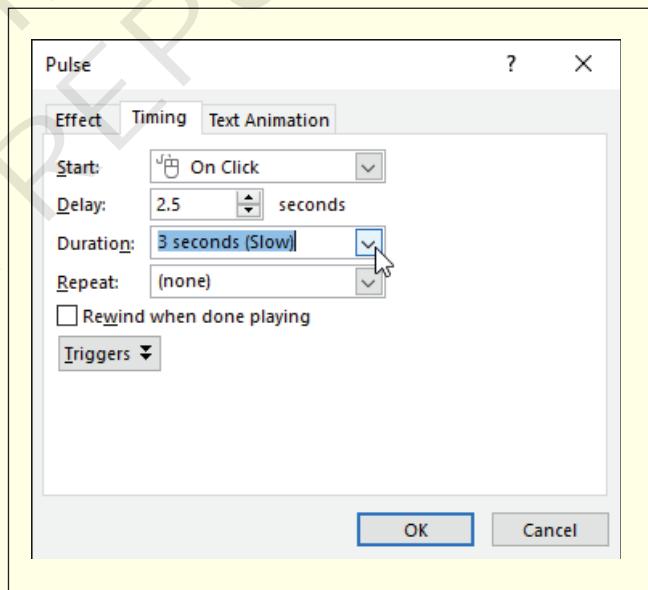
Some effects have additional options you can change. These will vary depending on which effect you have selected.

#### To change the effect timing:

- 1 From the Effect Options dialog box, select the Timing tab.



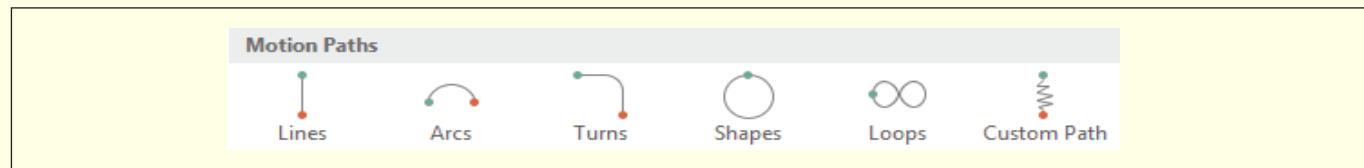
- 2 From here, you can add a delay before the effect starts, change the duration of the effect, and control whether the effect repeats.



## TASK 5: Configure animation paths

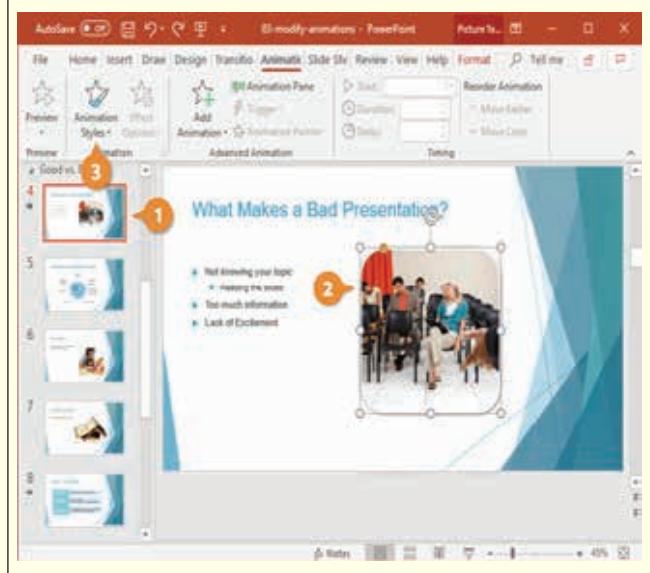
### Motion Paths

- a Motion Path: These are similar to Emphasis effects, except the object moves within the slide along a predetermined path, like a circle.

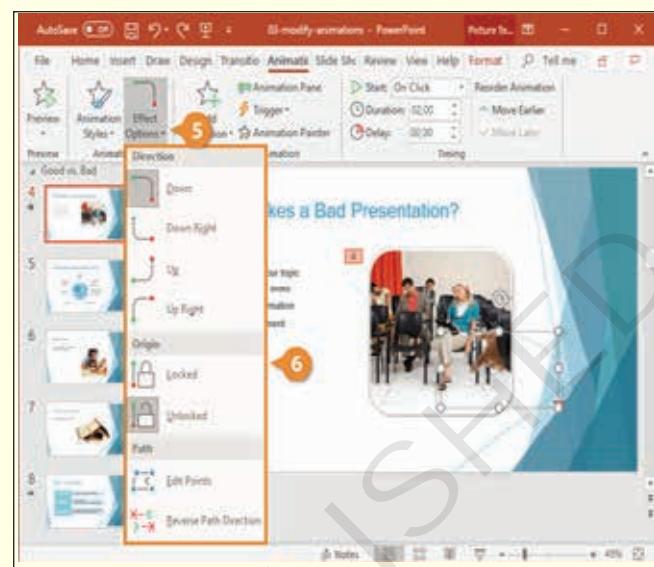


If you don't like the standard animations PowerPoint has, you can create and customize your own motion path instead.

- 1 Select the slide with the object you want to animate.
- 2 Select the object you want to animate.
- 3 Click the Animation Styles button on the Animations tab.



- 4 Select a motion path.
- 5 Click the Effect Options button.
- 6 Select an effect option.
- 7 Customize the effect as needed.



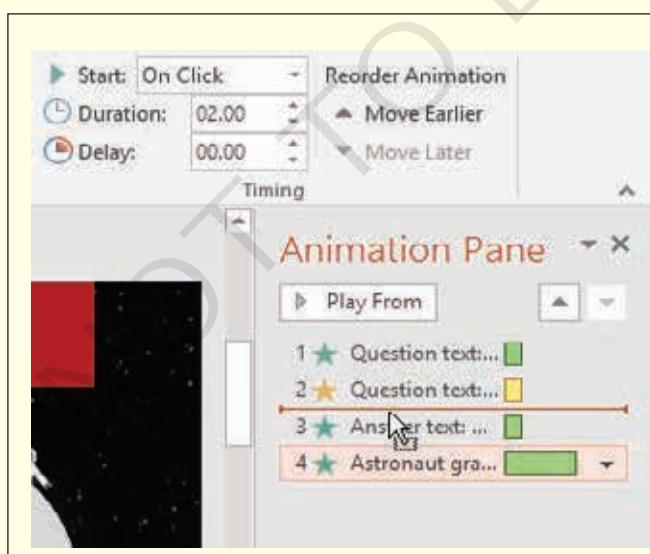
## TASK 6: Reorder animations on a slide

### Reorder Animations

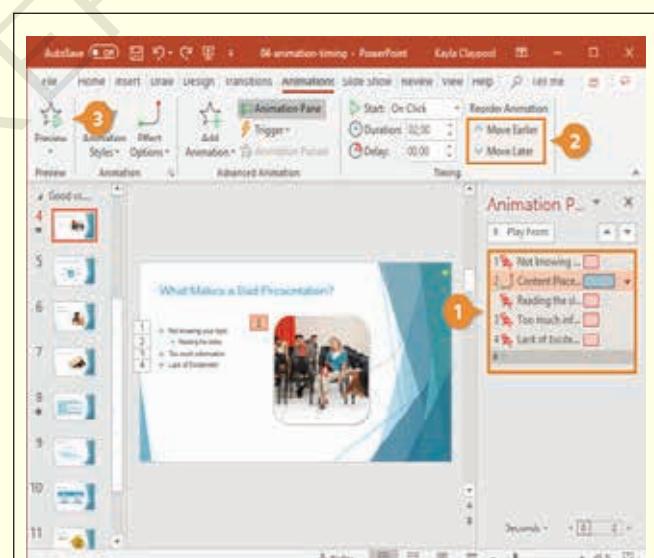
If you want to adjust the order in which animation effects play, you can simply resequence them. You'll notice that each animation is numbered, both on the slide and in the Animation pane. This is the order that they'll animate.

- 1 Select the animation you want to reorder.
- 2 Click Move Earlier or Move Later in the Timing group.

You can also reorder animations by clicking and dragging them in the Animation pane.



- 3 Click Preview.



## COPA - Manage Collaboration

### Add and manage comments

**Objectives:** At the end of this exercise you shall be able to

- add comments
- review and reply to comments

#### Requirements

##### Tools/Equipment/Machines

- A Working PC with Windows 10 OS - 1 No.
- MS Office 2019 / Latest - 1 No.

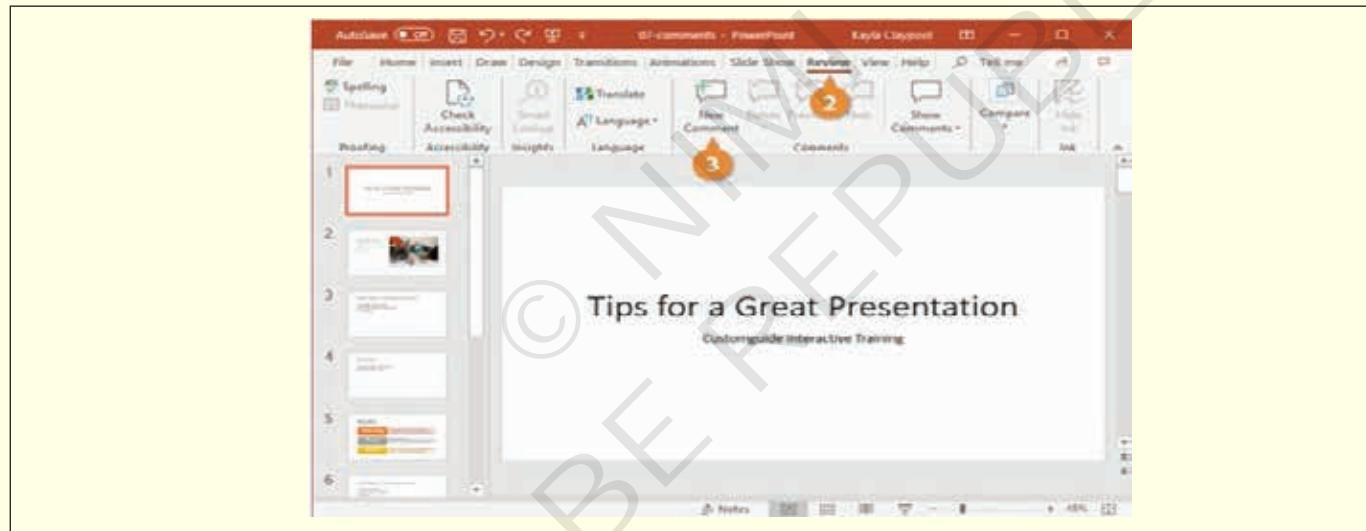
### PROCEDURE

#### TASK 1: Add comments

##### Insert a Comment

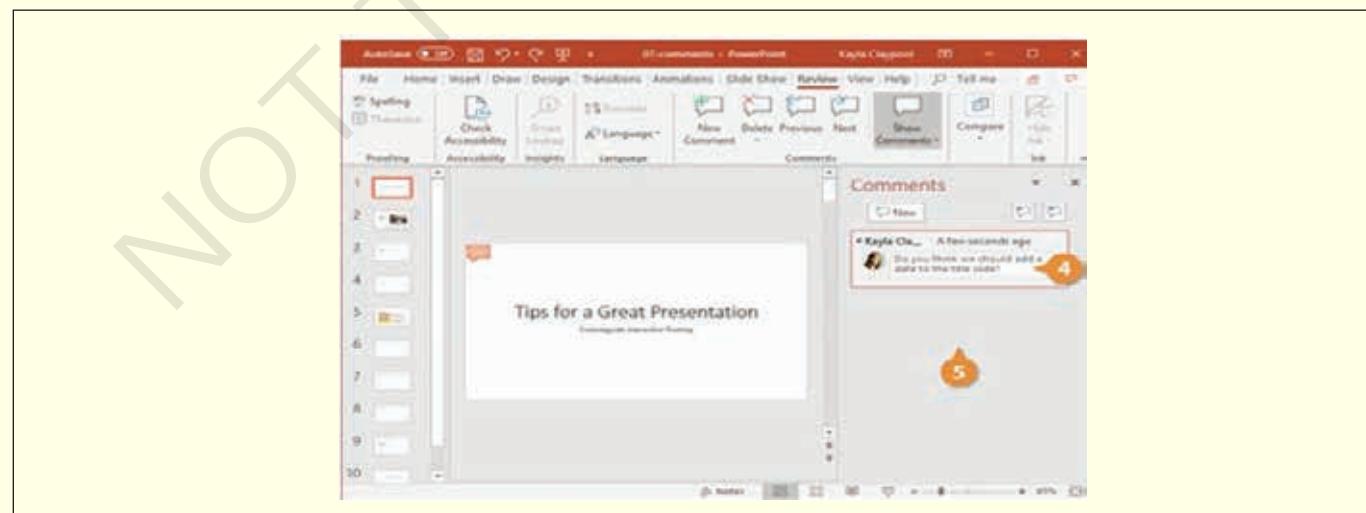
- 1 Click where you want to attach your comment.
- 2 Click the Review tab.

- 3 Click New Comment.



The Comments pane appears at the right with a new empty comment ready for you to type in.

- 4 Type your comment.
- 5 Click outside the comment to save it.



To edit a comment, simply click in the comment balloon and edit the text.

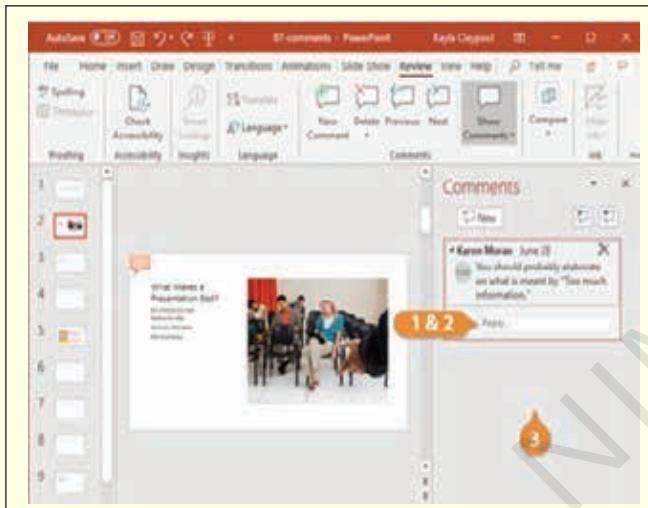
To jump between comments, use the Next and Previous buttons in the Comments group on the ribbon or in the Comments pane.

## TASK 2: Review and reply to comments

### Reply to a Comment

In addition to making your own comments, you can have a conversation by replying to comments made by other people.

- 1 Click in the Reply field for the comment you are replying to.
- 2 Type your response.
- 3 Click outside the reply to save it.

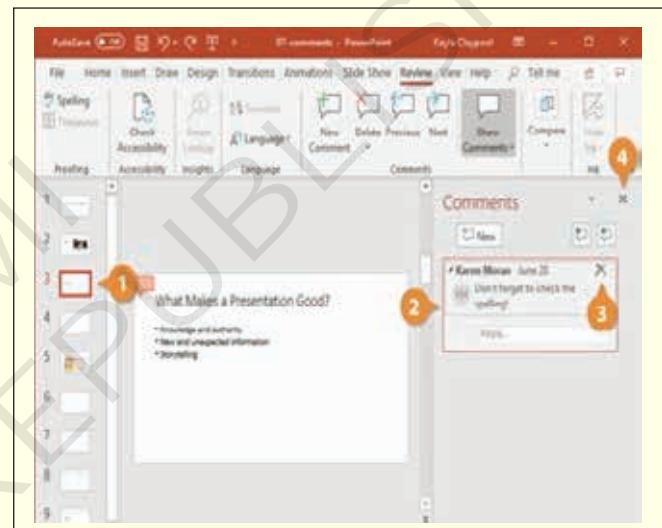


### Delete a Comment

If you no longer need a comment, delete it from the presentation.

- 1 Navigate to a slide with a comment to delete.
- 2 Select a comment.
- 3 Click the Delete button.
- 4 Click the Close button on the Comments pane.

To delete all comments, click the Delete button list arrow on the Review tab and select Delete All Comments and Ink in This Presentation.



## COPA - Demonstrate on MySQL

### Installation of MySQL

**Objectives:** At the end of this exercise you shall be able to

- install MySQL server, to create and use database.
- create, design and modifying a table in MySQL also data integrity rules in MySQL.
- creation data base and use data base
- creating a table
- altering a table
- add value to table.

### Requirements

#### Tools/Equipment/Machines

- A working PC with Text Editor (Notepad) & Browser, MySQL server Connection - 1 No.

### PROCEDURE

#### TASK 1: Install MySQL

**Step 1:** Open browser and google google.com.

**Step 2:** Login to your Google account.

**Step 3:** Download the MySQL Installer from dev.mysql.com. (Fig 1)

**NOTE:** The two download options are a web-community version and a full version. The full installer will download the server and all the recommended additional applications. (It asks to create a user account, but we skip this part by scrolling down to the bottom and clicking "No thanks, just start my download")

Fig 1

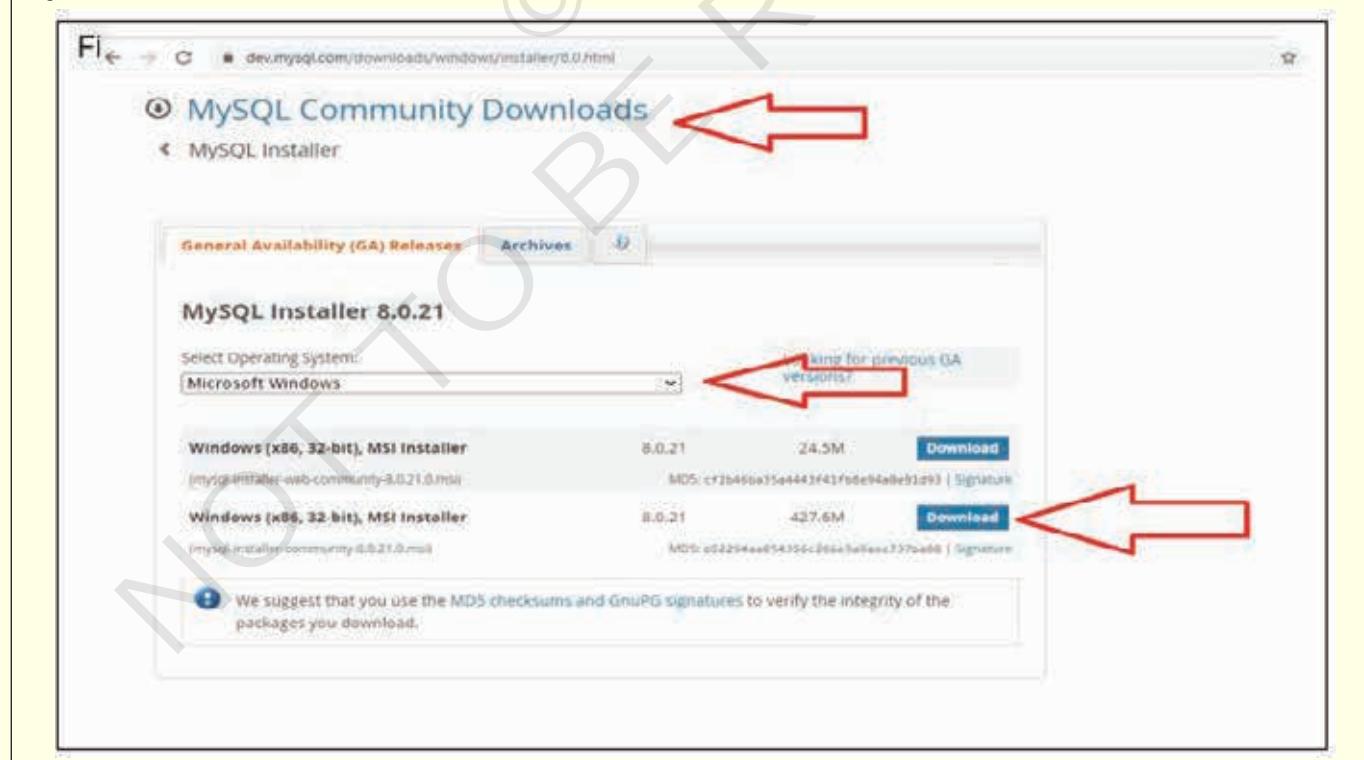


Fig 2

The screenshot shows the MySQL Community Downloads page. At the top, there are 'Login Now' and 'Sign Up' buttons. Below them, a message states: 'MySQL.com is using Oracle SSO for authentication. If you already have an Oracle Web account, click the Login link. Otherwise, you can signup for a free account by clicking the Sign Up link and following the instructions.' A red arrow points to the 'No thanks, just start my download.' link at the bottom left.

**Login »**  
using my Oracle Web account

**Sign Up »**  
for an Oracle Web account

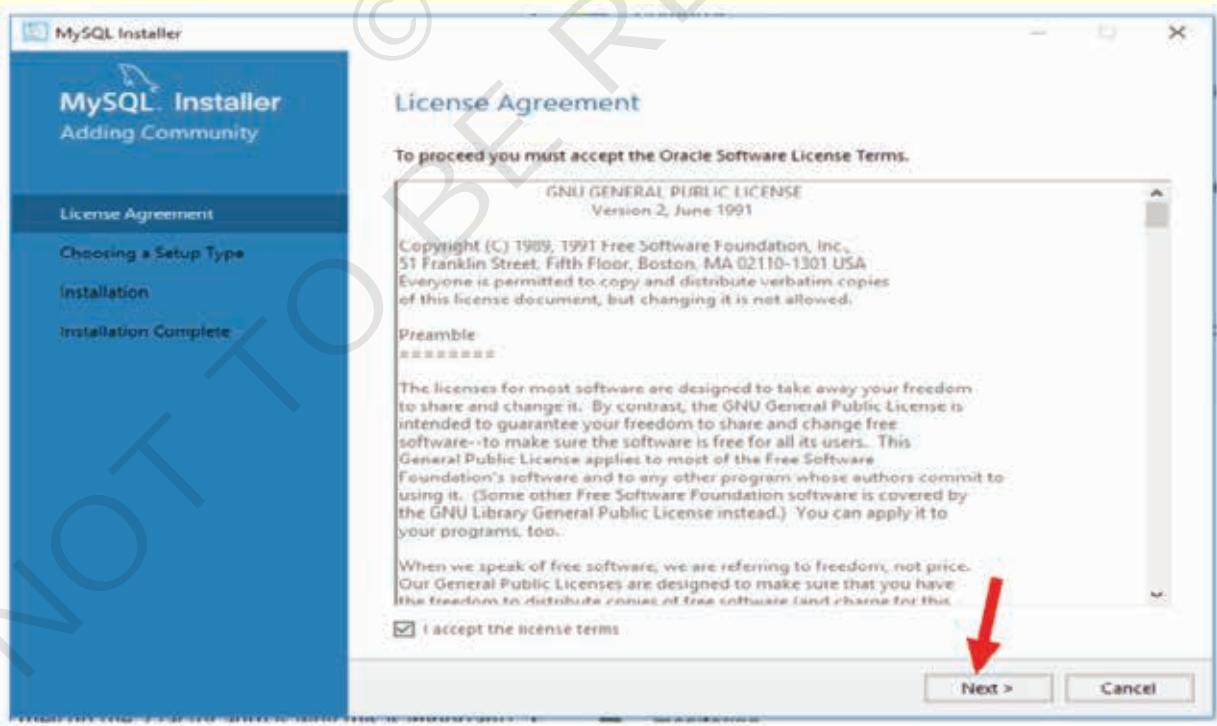
No thanks, just start my download.

ORACLE © 2020, Oracle Corporation and/or its affiliates  
Legal Policies | Your Privacy Rights | Terms of Use | Trademark Policy | Contributor Agreement | Cookie Preferences

**Step 4:** Then run the installer that you downloaded from its location on your server, generally by double-clicking. Then clicked to NEXT. (Fig 3)

**Step 5:** Next choose the Developer Default and click next to move forward the process. (Fig 4)

Fig 3



**Step 6:** Next go to Installation Complete tab and clicked on FINISH. (Fig 5)

Finally, its ready to work. (Fig 6)

**Open MySQL command Prompt**

**METHOD 1:** Click on START menu button then search MySQL Command Line Client.

Fig 4

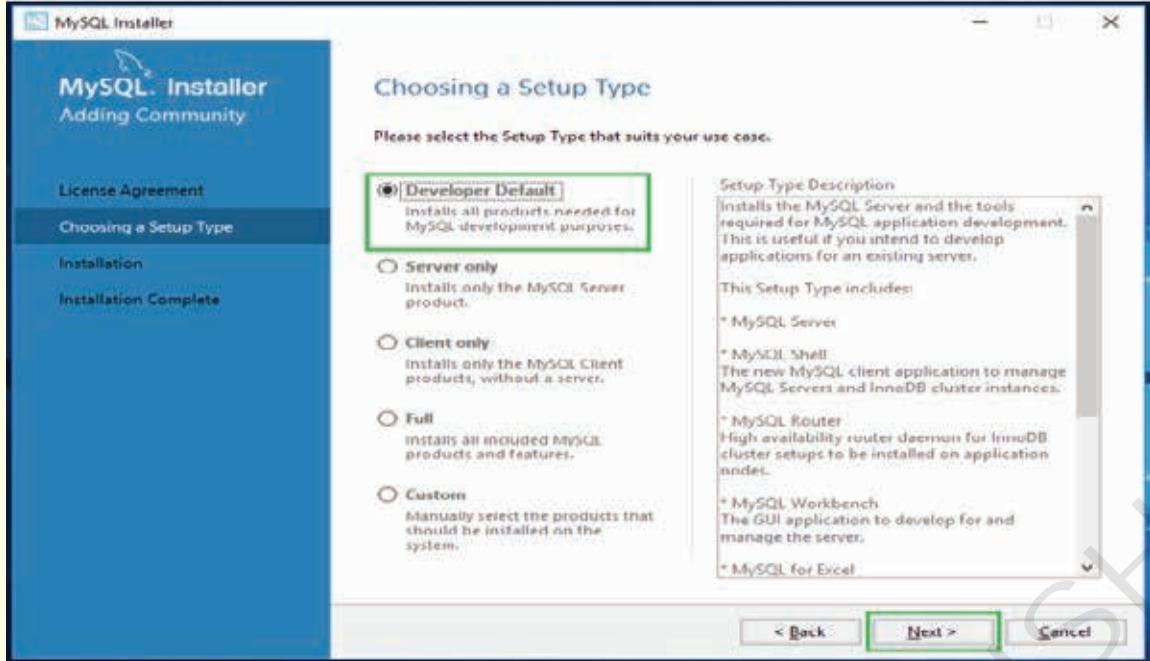


Fig 5

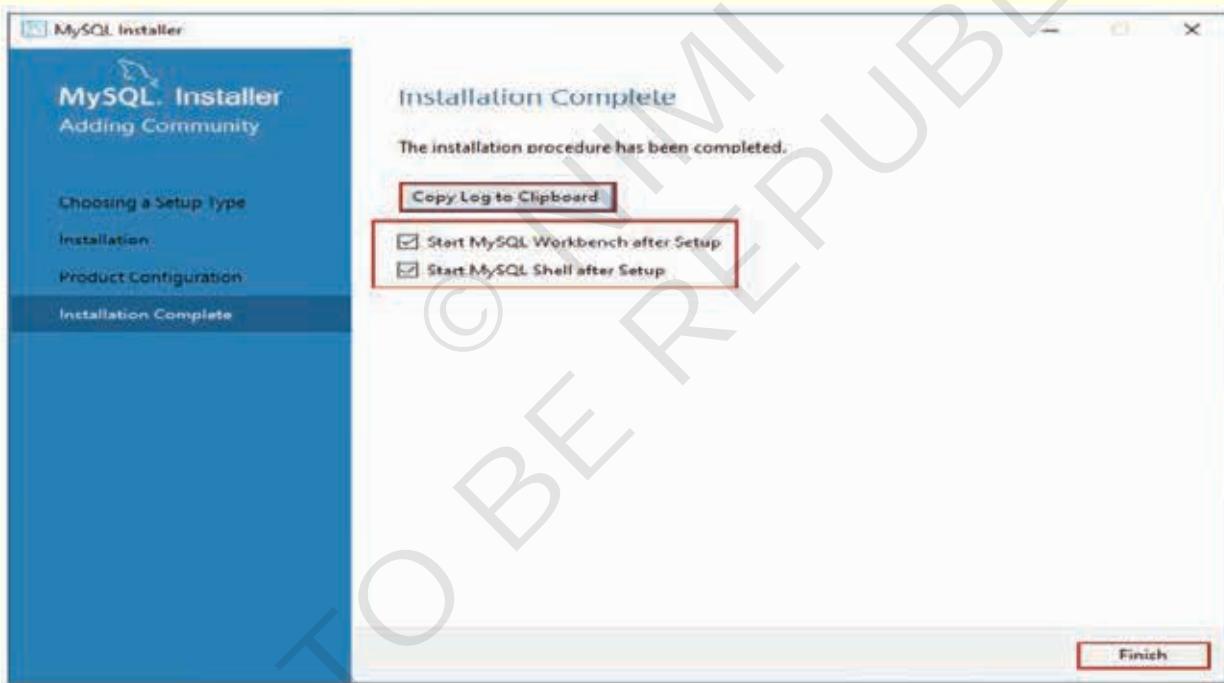


Fig 6

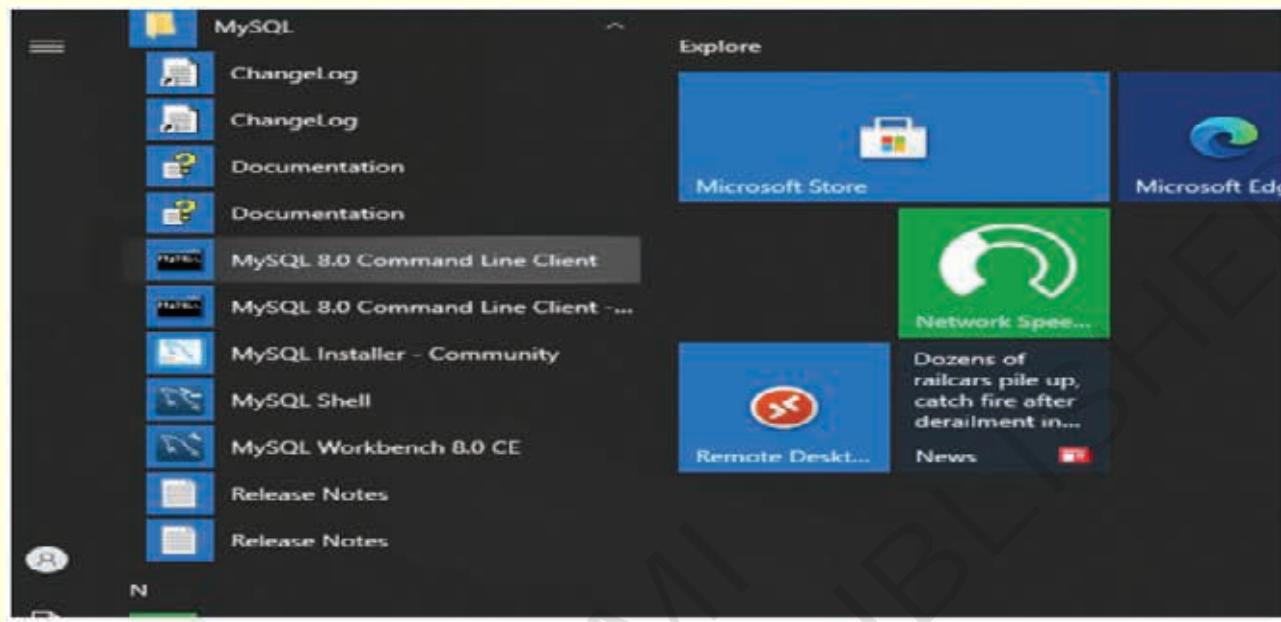


**NOTE: It is usually comes with MySQL Server installation pack. It is installed in two versions – with the support for UTF-8 and without it. You can run the console client right from the START menu.**

**Step 1:** To create a new MySQL database first run the client. (Fig 7)

**Step 2:** Then enter the password, if there is no password simply press the Enter key.

Fig 7



#### METHOD - 2:

**Step 1:** Click on START menu button then search Command prompt and then open the Command Prompt. (Fig 8)

**Step 2:** Change the directory to MySQL where MySQL is installed.(Fig 9)

**Step 3:** Run the command mysql -u <username> -p <password>. (Fig 10)

**NOTE:** Here the default username is root and if there is no password then leave it blank and simply click Enter.

Fig 8

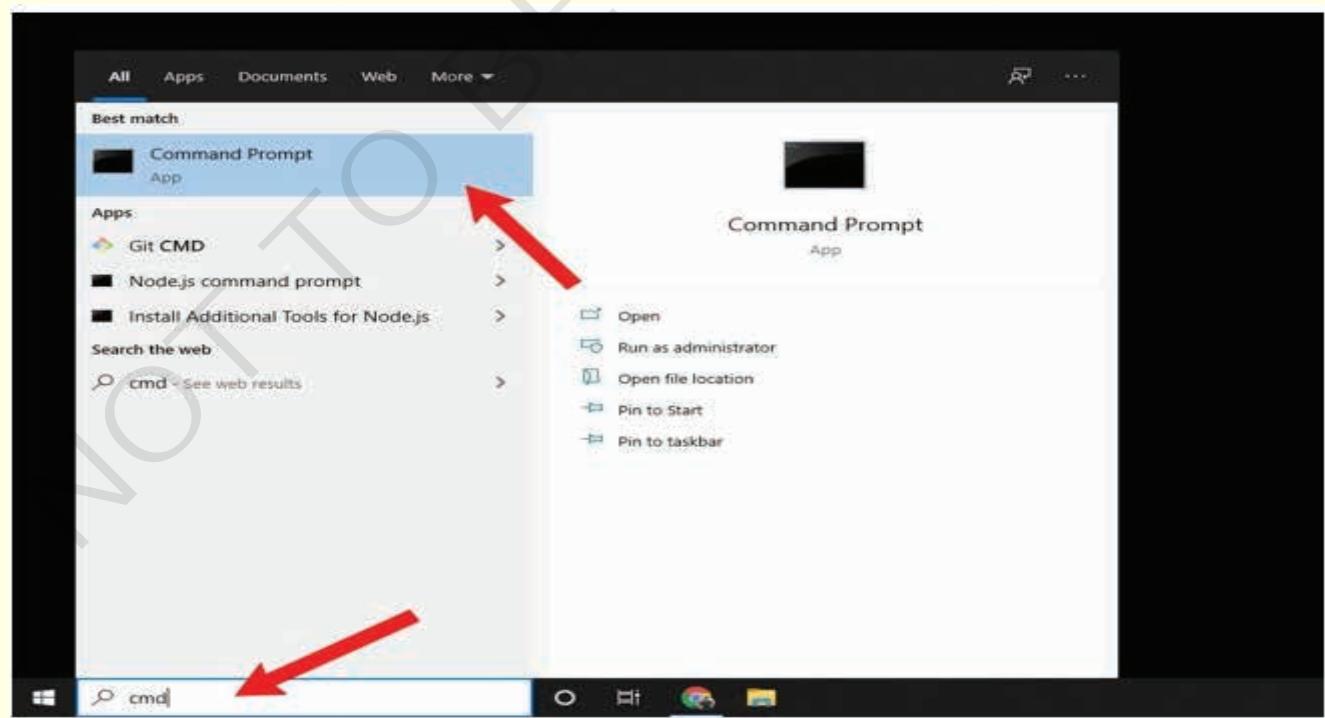


Fig 9

```
Administrator: Command Prompt - mysql -u root -p
Microsoft Windows [Version 6.1.7601]
Copyright <c> 2009 Microsoft Corporation. All rights reserved.

C:\Users\Admin>cd\

C:\>cd ProgramData

C:\ProgramData>cd MySQL

C:\ProgramData\MySQL>cd "MySQL Server 5.1"

C:\ProgramData\MySQL\MySQL Server 5.1>cd data
```

Fig 10

```
Administrator: Command Prompt - mysql -u root -p
Microsoft Windows [Version 6.1.7601]
Copyright <c> 2009 Microsoft Corporation. All rights reserved.

C:\Users\Admin>cd\

C:\>cd ProgramData

C:\ProgramData>cd MySQL

C:\ProgramData\MySQL>cd "MySQL Server 5.1"

C:\ProgramData\MySQL\MySQL Server 5.1>cd data

C:\ProgramData\MySQL\MySQL Server 5.1\data>mysql -u root -p
Enter password: *****
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 216667
Server version: 5.1.63-community MySQL Community Server <GPL>

Copyright (c) 2000, 2011, Oracle and/or its affiliates. All rights reserved.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.
```

## COPA - Demonstrate on MySQL

### Troubleshooting basic installation issues

**Objectives:** At the end of this exercise you shall be able to

- troubleshooting basic installation issues.

#### Requirements

##### Tools/Equipment/Machines

- A working PC with Text Editor (Notepad) & Browser, MySQL server Connection - 1 No.

### PROCEDURE

#### TASK 1: Troubleshooting basic installation issues

##### MySQL installation failure

- 1 The MySQL installer for MySQL 5.6.20 may not always work on Windows installations, usually due to the installer erroneously attempting to grab a different version of the application than the installer can handle.
- 2 In this case, we recommend the following procedure to address the issue and obtain a working installation.
- 3 If at any time you have questions or difficulty with this process, please feel free to stop by the TechDeck for assistance.

##### Remove MySQL Components

- 1 Uninstall all present MySQL components on the system via the Control Panel's Programs and Features menu.

- 2 If you are on Windows 10, go to the Start menu and start typing "Control Panel" to access this menu.

##### Download another version of MySQL

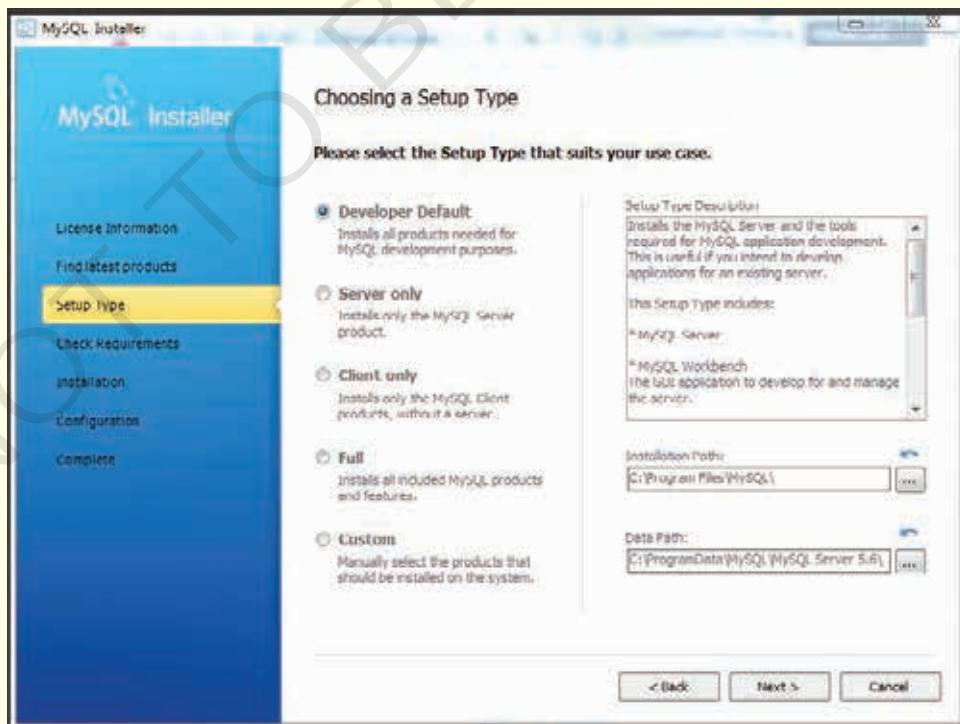
- 1 After removing the failed installation of MySQL 5.6.20, please download another version – we recommend either 5.6.19, or 5.6.21.
- 2 When downloading from Oracle's website, you will want to choose the larger of the two files, which should be over 200MB in size.

##### Run the Installer

- 1 You will need to run the installer after download. While installing, follow the instructions provided by your instructor, which should recommend using the Developer Default.

You can skip the check for updates while doing the initial installation. (Fig 1)

Fig 1

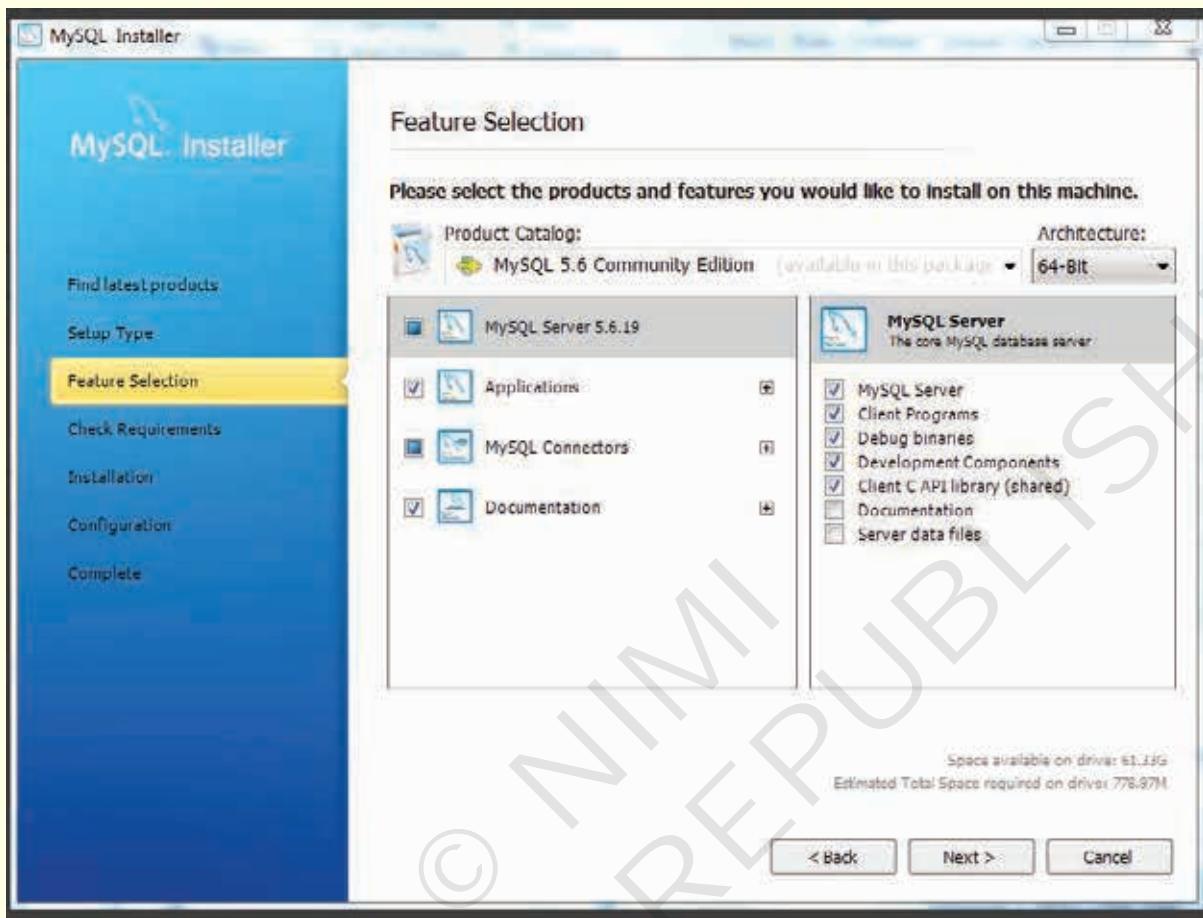


## Re-run Installer From Start Menu

- Once the installer has completed, if the original attempt to install MySQL has failed, go to your Start Menu and look for an application called "MySQL installer". (Fig 2)

When you run the Application, you may be able to choose your configuration. If not, cancel the installer and proceed to the next step.

Fig 2



## Obtain MySQL files

- For whichever version of MySQL you installed, you'll need to obtain the zip file from Oracle.
- Unzip the files, and copy them to C:\Program Files\MySQL\MySQL Server 5.6\

If the directory exists, just overwrite the existing files with what is in the zip file. If it does not exist, create a folder called "MySQL Server 5.6", and place the files into it.

## Register MySQL as a Service

- Open the command prompt as an administrator. Run the following command (quotation marks are necessary):

```
"C:\Program Files\MySQL\MySQL Server 5.6\bin\mysqld.exe" --install
```

This should install the service, allowing MySQL to automatically start.

- Go to the start menu, type services.msc and hit enter. The window that comes up with should show a list of services. Look for the MySQL56 service and start it.

- Once it starts, open the MySQL Workbench and connect to the local database server. If it shows the service as online, you're good to go!

### ODBC Installation Failures

Occasionally, the installation for the ODBC driver will fail. While this is not necessary for the server to run, it may be necessary to connect to some components of Microsoft Office through MySQL.

To resolve this, you'll need to download the Visual Studio 2010 C++ Runtime, as well as the ODBC Driver from Oracle directly.

- After downloaded, you can install. This may prompt for administrator credentials.

After installation, please reboot your PC.

- ODBC Driver :** Download the appropriate MSI file for your system. If, for some reason, this fails to install after the C++ Package has been installed, please stop by the TechDeck for assistance.

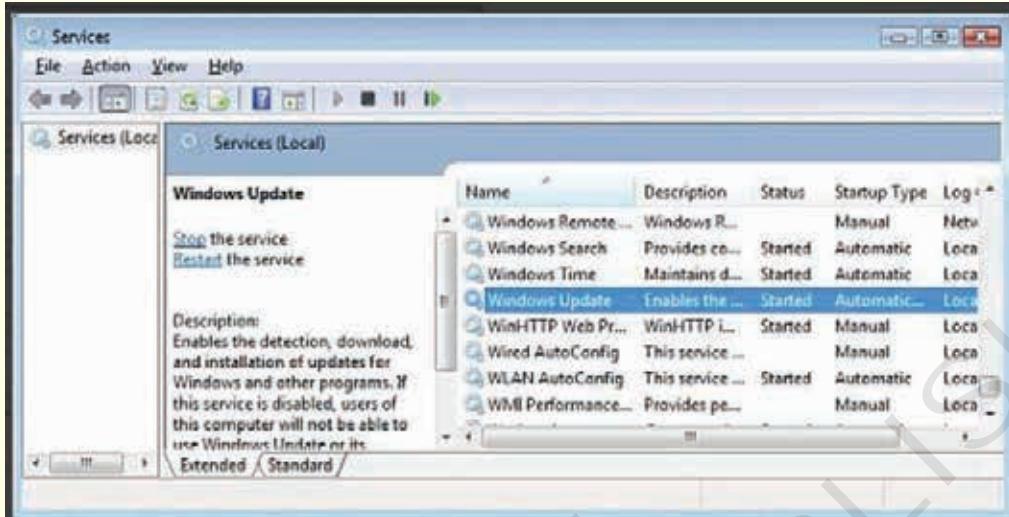
### .Net Framework 4.0 Installation Hang

- 1 Occasionally the .Net Framework redistributable hangs during installation.
- 2 To solve this problem you need to disable the Windows Update Service and kill the WUSA.exe process.

3 Start the service manager by typing "services.msc" and pressing Enter at the Start menu.

4 Locate Windows Update (Fig 3)

Fig 3



- 5 Right Click and choose Properties
- 6 Set the Startup Type to Disabled and Stop the service (Fig 4).
- 7 Setting the startup type
- 8 Now launch the Windows Task Manager
- 9 Ensure you show processes for all users (Fig 5)

10 Windows task manager processes

11 Select the WUSA.exe process and End Process

12 Perform the .NET Framework Install

13 When completed, reenable the Windows Update Service

Fig 4

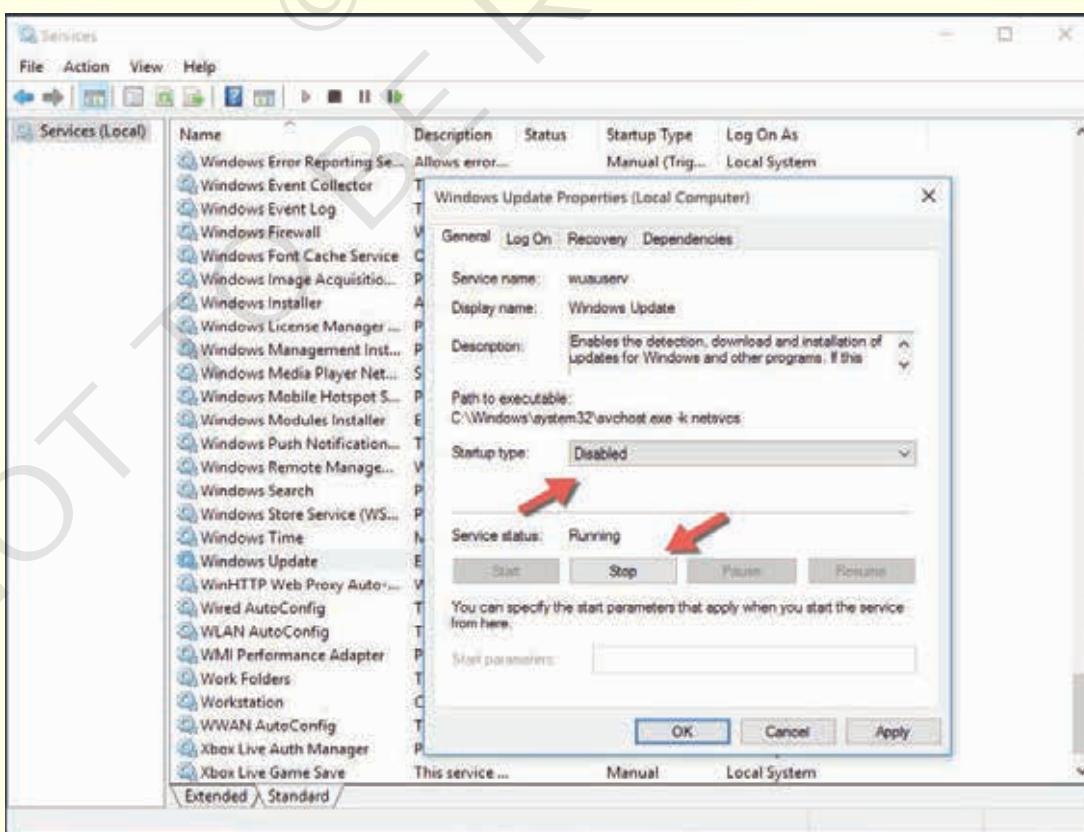
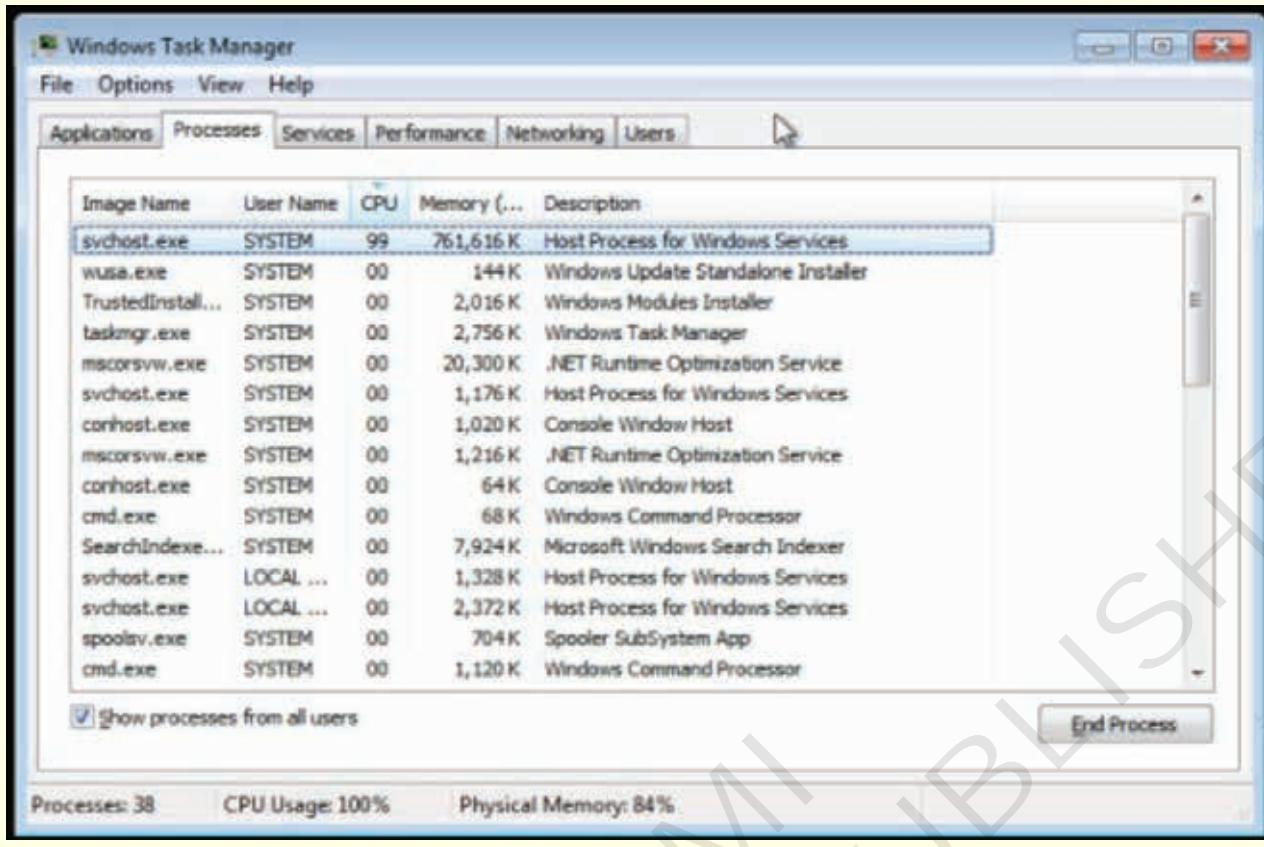


Fig 5



## COPA - Demonstrate on MySQL

### Creation and uses of MySQL

**Objectives:** At the end of this exercise you shall be able to

- creating a database
- using database.

#### Requirements

##### Tools/Equipment/Machines

- A working PC with Text Editor (Notepad)
- & Browser, MySQL server Connection - 1 No.

### PROCEDURE

#### TASK 1: Creation and uses of MySQL

**Step 1:** Use create database <database-name>; command.(Fig 1)

**Step 2:** To use created database, give use <database name>; command.(Fig 2)

Fig 1

The screenshot shows a terminal window titled 'c:\wamp\bin\mysql\mysql5.5.24\bin\mysql.exe'. The MySQL monitor is running, displaying its welcome message and copyright information. In the command line, the user has entered the SQL command 'CREATE DATABASE sample;'. The output shows 'Query OK, 1 row affected (0.00 sec)', indicating the database was successfully created. The entire command and its output are highlighted with a red rectangle.

```
c:\wamp\bin\mysql\mysql5.5.24\bin\mysql.exe

Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 32
Server version: 5.5.24-log MySQL Community Server <GPL>

Copyright (c) 2000, 2011, Oracle and/or its affiliates. All rights reserved.

Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> CREATE DATABASE sample;
Query OK, 1 row affected (0.00 sec)

mysql>
```

Fig 2

The screenshot shows a terminal window with a black background. The MySQL monitor is running, and the user has entered the SQL command 'use sales;'. The output shows 'Database changed', indicating the database has been successfully selected. The command 'use sales;' is highlighted with a red rectangle.

```
mysql> create database sales;
Query OK, 1 row affected (0.05 sec)

mysql> use sales;
Database changed
```

## COPA - Demonstrate on MySQL

## Designing of tables

**Objectives:** At the end of this exercise you shall be able to

- creating a table
- altering a table
- add value to table.

## Requirements

## Tools/Equipment/Machines

- A working PC with Text Editor (Notepad) & Browser, MySQL server Connection - 1 No.

## PROCEDURE

## TASK 1: Creating, altering and adding value to a table

## Creating table

To use create table, run **create table<table-name>;** command. (Fig 1)

**NOTE:** Here we are using a primary key as detailed. If we want to access the two or more tables this primary key is used and it act as a foreign key of another table. The primary key value is always not null and it should be an auto increment value.

## Add value to table

## Syntax:

Insert into table\_name(fieldname) values ( field\_value ) ; (Fig 3)

If field value is string it means use “ ” or digit means use ‘ ’;

Example: “tommy” is a string value so we used “ ” and ‘3’ is a digit so we used ‘ ’;

## Alter table

## Syntax:

alter table table\_name column\_name; (Fig 2)

Fig 1

```
mysql> use Pet;
Database changed
mysql> create table tbldetail(
-> detailid int not null auto_increment,
-> petname varchar<100> null,
-> pettype varchar<100> null,
-> petage int null,
-> ownername key <detailid>);
Query OK, 0 rows affected (0.20 sec)

mysql> _
```

choose a database which one is you want to create a table

Fig 2

```
mysql> alter table tbldetail add ownername varchar<100>;
Query OK, 0 rows affected (0.00 sec)
Records: 0 Duplicates: 0 Warnings: 0
mysql> show columns from tbldetail;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
detailid	int<11>	NO	PRI	NULL	auto_increment
petname	varchar<100>	YES	NULL	NULL	NULL
pettype	varchar<100>	YES	NULL	NULL	NULL
petage	int<11>	YES	NULL	NULL	NULL
ownername	varchar<100>	YES	NULL	NULL	NULL
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> _
```

to show the column values in tbldetail

Fig 3

```
mysql> insert into tbldetail<petname, pettype, petage, ownername>
-> values
-> ('tommy', 'puppydog', '3', 'John');
Query OK, 1 row affected (0.00 sec)

mysql> select * from tbldetail;
+-----+-----+-----+-----+-----+
| detailid | petname | pettype | petage | ownername |
+-----+-----+-----+-----+-----+
| 1 | tommy | puppydog | 3 | John |
| 2 | tommy | puppydog | 3 | John |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> _
```

**COPA - Demonstrate on MySQL****Applying data integrity rules**

**Objectives:** At the end of this exercise you shall be able to

- learning to apply data integrity rules.

**Requirements****Tools/Equipment/Machines**

- A working PC with Text Editor (Notepad) & Browser, MySQL server Connection - 1 No.

**PROCEDURE****TASK 1: Applying data integrity rules****Data Integrity rules**

- MySQL CONSTRAINT is used to define rules to allow or restrict what values can be stored in columns. The purpose of inducing constraints is to enforce the integrity of a database.
- MySQL CONSTRAINTS are used to limit the type of data that can be inserted into a table.
- MySQL CONSTRAINTS can be classified into two types - column level and table level.

**MySQL CONSTRAINTs are:**

- NOT NULL

- UNIQUE
- PRIMARY KEY
- FOREIGN KEY
- CHECK
- DEFAULT

**MySQL CREATE TABLE with NULL CONSTRAINT**

- Here we want to create a table 'newauthor' where no columns are allowed to store NULL VALUES, to do that we are using following statement. (Fig 1)

Fig 1

```
CREATE TABLE IF NOT EXISTS newauthor
(aut_id varchar(8) NOT NULL,
aut_name varchar(50) NOT NULL,
country varchar(25) NOT NULL,
home_city varchar(25) NOT NULL);
```

Here in the above statement the constraint 'NOT NULL' have been used to exclude the NULL VALUE.

The following picture shows that the columns will not accept the NULL values. (Fig 2)

Fig 2

| Field     | Type        | Collation         | Attributes | Null | Default | Extra |
|-----------|-------------|-------------------|------------|------|---------|-------|
| aut_id    | varchar(8)  | latin1_swedish_ci |            | No   | None    |       |
| aut_name  | varchar(50) | latin1_swedish_ci |            | No   | None    |       |
| country   | varchar(25) | latin1_swedish_ci |            | No   | None    |       |
| home_city | varchar(25) | latin1_swedish_ci |            | No   | None    |       |

**MySQL UNIQUE CONSTRAINT**

The MySQL statement stated below will create a table 'newauthor' with a column 'aut\_id' which will store unique values only since UNIQUE (aut\_id) is used. (Fig 3)

The picture below shows the structure of the table (Fig 4)

Fig 3

```
CREATE TABLE IF NOT EXISTS
newauthor(aut_id varchar(8) NOT NULL ,
aut_name varchar(50)
NOT NULL,
country varchar(25) NOT NULL,
home_city varchar(25)
NOT NULL,
UNIQUE (aut_id));
```



Fig 4

| Field     | Type        | Collation         | Attributes | Null | Default | Extra | Action |
|-----------|-------------|-------------------|------------|------|---------|-------|--------|
| aut_id    | varchar(8)  | latin1_swedish_ci |            | No   | None    |       |        |
| aut_name  | varchar(50) | latin1_swedish_ci |            | No   | None    |       |        |
| country   | varchar(25) | latin1_swedish_ci |            | No   | None    |       |        |
| home_city | varchar(25) | latin1_swedish_ci |            | No   | None    |       |        |

**Indexes:**

| Action | Keyname | Type  | Unique | Packed | Field  | Cardinality | Collation | Null | Comment |
|--------|---------|-------|--------|--------|--------|-------------|-----------|------|---------|
|        | aut_id  | BTREE | Yes    | No     | aut_id | 0           | A         |      |         |

## COPA - Demonstrate on MySQL

### Using DDL, DCL and DML statements

**Objectives:** At the end of this exercise you shall be able to

- learn to use and difference between DDL, DML & DCL statements.

#### Requirements

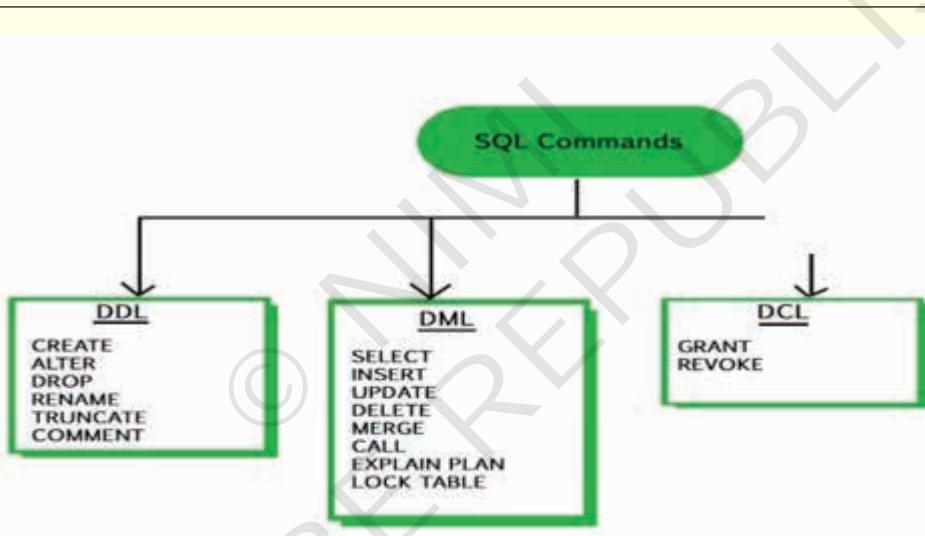
##### Tools/Equipment/Machines

- A working PC with Text Editor (Notepad)  
& Browser, MySQL server Connection - 1 No.

### PROCEDURE

#### TASK 1: Using DDL, DCL and DML statements

Using DDL statements (create, drop, rename etc.)  
(Figs 1 & 2)



```
mysql> performance_schema
mysql> test
mysql> wikihow
+-----+
5 rows in set (0.01 sec)

mysql> use wikihow
Database changed
mysql> CREATE TABLE employees (id INT NOT NULL PRIMARY KEY
 name VARCHAR(20), firstname VARCHAR(20), phone VARCHAR(20),
 -> ;
Query OK, 0 rows affected (0.00 sec)

mysql>
```

## Drop database

To drop a database use **drop database <database-name>**; command. (Fig 3)

```
mysql> CREATE DATABASE deleteme;
Query OK, 1 row affected (0.00 sec)

mysql> show databases;
+--------------------+
| Database |
+--------------------+
| information_schema|
| auth |
| cdccl |
| deleteme |
| example |
| lr |
| malex |
| mysql |
| performance_schema|
| phpa |
| phpmyadmin |
| social |
| webauth |
| website |
+--------------------+
14 rows in set (0.00 sec)

mysql> DROP DATABASE deleteme;
Query OK, 0 rows affected (0.01 sec)
```

## Drop table

To drop a table use **drop table <table-name>**; command.

## Rename table

Use **alter table <old-table-name> rename <new-table-name>**; command. (Fig 4)

## Using DML statements (select, insert, delete, update etc.)

### Select

- Select command is used to fetch data from the MySQL database.
- To do that we used the **select \* from <table-name>**; command.(Fig 5)

### Insert

- The **INSERT INTO** statement is used to insert new records in a table.
- To insert values in a table here we use this **INSERT INTO <table-name> (column1, column2, column3, ...)VALUES (value1, value2, value3, ...);** command.(Fig 6)

## Using DCL statements (grant, revoke etc.)

### Grant

**Syntax:** GRANT <privileges\_names> ON <object> TO user; (Fig 7)

```
mysql> use phpdirector;
Database changed
mysql> show tables;
+-----+
| Tables_in_phpdirector |
+-----+
| PP_categories |
| PP_config |
| PP_config_new |
| PP_files |
| PP_rating |
+-----+
5 rows in set (0.00 sec)

mysql> ALTER TABLE pp_config_new rename pp_config_BACKUP;
Query OK, 0 rows affected (0.20 sec)

mysql> show tables;
+-----+
| Tables_in_phpdirector |
+-----+
| PP_categories |
| PP_config |
| PP_config_BACKUP |
| PP_files |
| PP_rating |
+-----+
5 rows in set (0.00 sec)

mysql> |
```

```
mysql> SELECT * FROM weather;
+-----+-----+-----+-----+-----+
| windspeed | maxwind | temperature | humidity | stamp |
+-----+-----+-----+-----+-----+
0	0	72.14	51.7	2015-10-16 17:07:26
0	7.89	73.4	50.5	2015-10-16 17:17:31
0	0	73.22	50.4	2015-10-16 17:27:37
0	0	73.22	50.4	2015-10-16 17:37:44
0	4.82	69.8	52.5	2015-10-16 23:12:21
+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

```
mysql> insert into tbldetail(petname, pettype, petage, ownername)
-> values
-> ("tommy","puppydog",'3','John');
Query OK, 1 row affected (0.00 sec)

mysql> select * from tbldetail;
+-----+-----+-----+-----+
| detailid | petname | pettype | petage | ownername |
+-----+-----+-----+-----+
| 1 | tommy | puppydog | 3 | John |
| 2 | tommy | puppydog | 3 | John |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> _
```

```
MySQL 8.0 Command Line Client

mysql> GRANT ALL ON mystudentdb.* TO john@localhost;
Query OK, 0 rows affected (0.19 sec)

mysql> SHOW GRANTS FOR john@localhost;
+-----+
| Grants for john@localhost |
+-----+
| GRANT USAGE ON *.* TO `john`@`localhost` |
| GRANT ALL PRIVILEGES ON `mystudentdb`.* TO `john`@`localhost` |
+-----+
```

## COPA - Demonstrate on MySQL

## Enforcing constraints, primary key and foreign key

**Objectives:** At the end of this exercise you shall be able to

- learning to use enforcing constraints, primary key and foreign key.

## Requirements

## Tools/Equipment/Machines

- A working PC with Text Editor (Notepad) & Browser, MySQL server Connection - 1 No.

## PROCEDURE

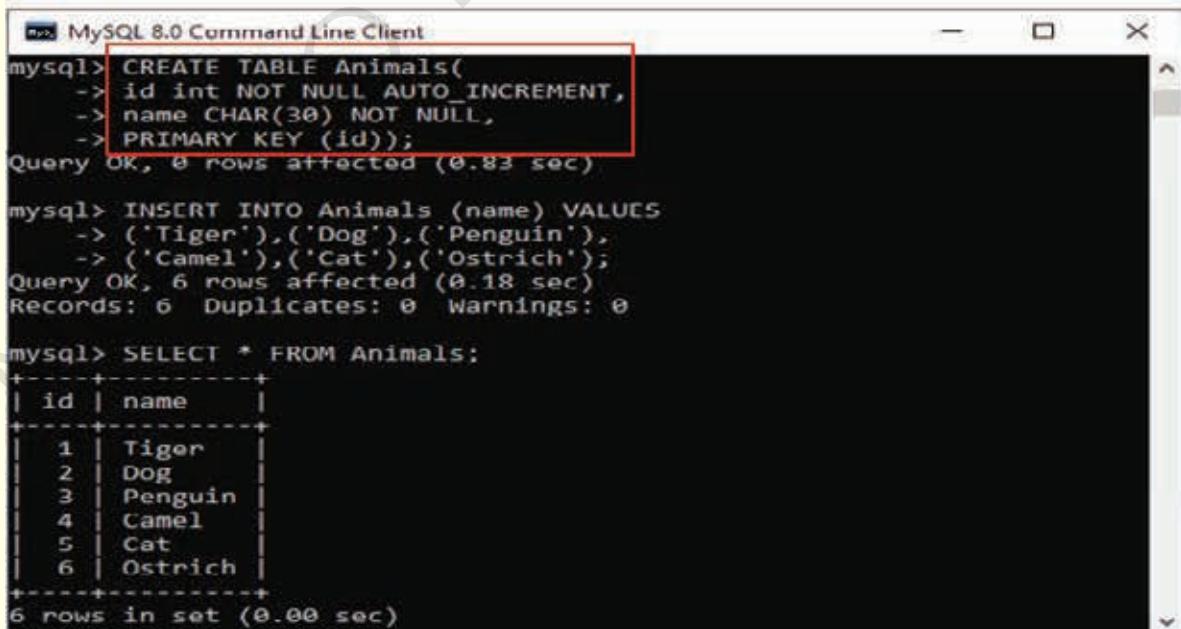
## TASK 1: Enforcing constraints, primary key and foreign key

## Enforcing constraints, primary key

- Constraints are the rules enforced on the data columns of a table. These are used to limit the type of data that can go into a table. This ensures the accuracy and reliability of the data in the database.
- Constraints could be either on a column level or a table level. The column level constraints are applied only to one column, whereas the table level constraints are applied to the whole table.
- Constraints can be specified when a table is created with the CREATE TABLE statement or you can use the ALTER TABLE statement to create constraints even after the table is created.
- NOT NULL Constraint – Ensures that a column cannot have NULL value.
- DEFAULT Constraint – Provides a default value for a column when none is specified.

- UNIQUE Constraint – Ensures that all values in a column are different.
- PRIMARY Key – Uniquely identifies each row/record in a database table.
- FOREIGN Key – Uniquely identifies a row/record in any of the given database table.
- CHECK Constraint – The CHECK constraint ensures that all the values in a column satisfies certain conditions.
- INDEX – Used to create and retrieve data from the database very quickly.

Use NOT NULL and PRIMARY KEY constraints for the id in table animals, which make the id unique and that id column cannot have null value. See the below figure. (Fig 1)



```

MySQL 8.0 Command Line Client
mysql> CREATE TABLE Animals(
-> id int NOT NULL AUTO_INCREMENT,
-> name CHAR(30) NOT NULL,
-> PRIMARY KEY (id));
Query OK, 0 rows affected (0.83 sec)

mysql> INSERT INTO Animals (name) VALUES
-> ('Tiger'), ('Dog'), ('Penguin'),
-> ('Camel'), ('Cat'), ('Ostrich');
Query OK, 6 rows affected (0.18 sec)
Records: 6 Duplicates: 0 Warnings: 0

mysql> SELECT * FROM Animals;
+---+-----+
| id | name |
+---+-----+
1	Tiger
2	Dog
3	Penguin
4	Camel
5	Cat
6	Ostrich
+---+-----+
6 rows in set (0.00 sec)

```

## Foreign key

The FOREIGN KEY constraint is used to prevent actions that would destroy links between tables. A FOREIGN KEY is a field (or collection of fields) in one table, that refers to the PRIMARY KEY in another table. (Fig 2)

Notice that the "PersonID" column in the "Orders" table points to the "PersonID" column in the "Persons" table.

The "PersonID" column in the "Persons" table is the PRIMARY KEY in the "Persons" table.

The "PersonID" column in the "Orders" table is a FOREIGN KEY in the "Orders" table.

- In the below picture, first, createtable "Persons", give PRIMARY KEY constrain to "PersonID" column
- Next, create a second table "Orders", make the "PersonID" column of table "Persons" to foreign key in table "Orders"

## SYNTAX: (Fig 3)

Persons Table

| PersonID | LastName  | FirstName | Age |
|----------|-----------|-----------|-----|
| 1        | Hansen    | Ola       | 30  |
| 2        | Svendson  | Tove      | 23  |
| 3        | Pettersen | Kari      | 20  |

Orders Table

| OrderID | OrderNumber | PersonID |
|---------|-------------|----------|
| 1       | 77895       | 3        |
| 2       | 44678       | 3        |
| 3       | 22456       | 2        |
| 4       | 24562       | 1        |

```
CREATE TABLE Orders (
 OrderID int NOT NULL,
 OrderNumber int NOT NULL,
 PersonID int,
 PRIMARY KEY (OrderID),
 FOREIGN KEY (PersonID) REFERENCES Persons(PersonID)
);
```

**COPA - Demonstrate on MySQL****Adding indices to tables**

**Objectives:** At the end of this exercise you shall be able to

- learn how to add index in a table, using **SELECT statement**, add new values in a table.

**Requirements****Tools/Equipment/Machines**

- A working PC with Text Editor (Notepad) & Browser, MySQL server Connection - 1 No.

**PROCEDURE****TASK 1: Adding indices to Tables****Adding indices to Tables**

Indexing makes columns faster to query by creating pointers to where data is stored within a database.

(Fig 1)

To create index use the below command:-

```
CREATETABLE friends (id INTPRIMARYKEY,
name VARCHAR, city VARCHAR);
```

**NOTE:** The clustered index will be automatically created when the primary key is defined.

**NOTE:** The created table, “friends”, will have a clustered index automatically created, organized around the Primary Key “id” called “friends\_pkay”. (Fig 2)

SELECT \* FROM friends WHERE name = ‘Zack’;

| friends     |             |                |
|-------------|-------------|----------------|
| <b>id</b>   | <b>name</b> | <b>city</b>    |
| 1           | Matt        | San Francisco  |
| 2           | Dave        | Oakland        |
| 3           | Andrew      | Blacksburg     |
| 4           | Todd        | Chicago        |
| 5           | Blake       | Atlanta        |
| 6           | Evan        | Detroit        |
| 7           | Nick        | New York City  |
| <b>Zack</b> | <b>Zack</b> | <b>Seattle</b> |



**COPA - Demonstrate on queries****Simple select queries**

**Objectives:** At the end of this exercise you shall be able to

- explain about simple select queries.

**Requirements****Tools/Equipment/Machines**

- A working PC with Text Editor (Notepad) & Browser, MySQL server Connection - 1 No.

**PROCEDURE****TASK 1: Simple select queries****Demonstrate on Simple select queries**

- The SELECT statement is used to select data from a database. The data returned is stored in a result table, called the result-set.

**SYNTAX :**

```
SELECT column1, column2, ...
 FROM table_name;
```

Here, column1, column2, ... are the field names of the table you want to select data from. If you want to select

all the fields available in the table, use the following syntax:

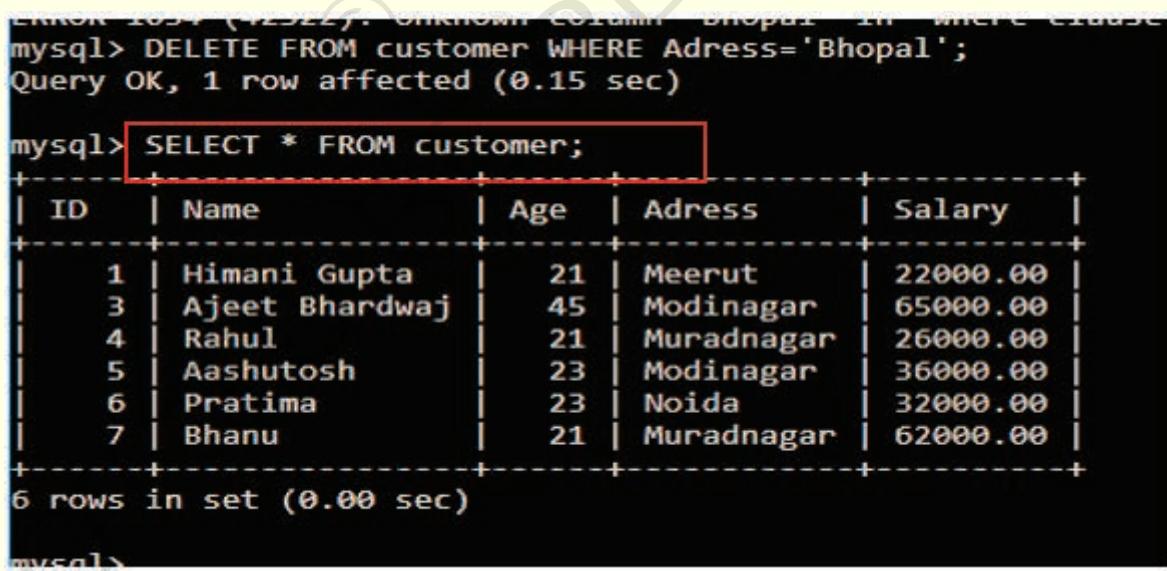
**SYNTAX :**

```
SELECT * FROM table_name;
```

This will show the whole table data. (Fig 1)

Here with the help of SELECT statement we are fetching the whole data of "customer" table.

Fig 1



The screenshot shows a terminal window with the MySQL command-line interface. It displays the following commands and their results:

```

ERROR 1054 (42S22): UNKNOWN column 'Bhopal' in 'where' clause
mysql> DELETE FROM customer WHERE Adress='Bhopal';
Query OK, 1 row affected (0.15 sec)

mysql> SELECT * FROM customer;
+----+-----+-----+-----+-----+
| ID | Name | Age | Adress | Salary |
+----+-----+-----+-----+-----+
1	Himani Gupta	21	Meerut	22000.00
3	Ajeet Bhardwaj	45	Modinagar	65000.00
4	Rahul	21	Muradnagar	26000.00
5	Aashutosh	23	Modinagar	36000.00
6	Pratima	23	Noida	32000.00
7	Bhanu	21	Muradnagar	62000.00
+----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql>

```

The first command attempts to delete a row from the 'customer' table where the 'Adress' is 'Bhopal', but it fails because 'Bhopal' is not a valid column name. The second command successfully executes a SELECT \* query on the 'customer' table, displaying all 6 rows of data.

## COPA - Demonstrate on queries

### Insert and delete queries update queries

**Objectives:** At the end of this exercise you shall be able to

- explain about insert queries
- explain about delete queries
- explain about update queries.

#### Requirements

##### Tools/Equipment/Machines

- A working PC with Text Editor (Notepad) & Browser, MySQL server Connection - 1 No.

### PROCEDURE

#### TASK 1: Insert queries

##### Insert queries

The INSERT INTO statement is used to insert new records in a table. (Fig 1)

- As per the above image, there are two ways to use insert query. First one, will add values for all columns of the table, that's why no need to specifying column names.

Fig 1

The screenshot shows the MySQL 8.0 Command Line Client interface. It displays the creation of a 'People' table with columns: id (auto-increment), name (varchar(45)), occupation (varchar(35)), and age (int). The primary key is defined as 'id'. Three different insertion methods are shown:

- Method 1 (highlighted with a red box and arrow 1): An 'INSERT INTO People' statement with multiple values. It includes 'VALUES (101, 'Peter', 'Engineer', 32);' followed by another line starting with 'VALUES'.
- Method 2 (highlighted with a red box and arrow 2): An 'INSERT INTO People VALUES' statement with three rows: '(102, 'Joseph', 'Developer', 30), (103, 'Mike', 'Leader', 28), (104, 'Stephen', 'Scientist', 45);'.
- Method 3 (highlighted with a red box at the bottom): An 'INSERT INTO People (name, occupation)' statement, which is incomplete.

Output from the client shows 'Query OK' responses and row counts for each method. The final command is incomplete.

- In the second way, that query will add value for "name" and "occupation" columns only.

##### Delete queries

- 1 To delete the database, use `DROP DATABASE <database-name>` (Fig 2)
- 2 To delete a table, use `DROP TABLE <table-name>` (Fig 3)

##### Update queries

There may be a requirement where the existing data in a MySQL table needs to be modified. You can do so by using the SQL UPDATE command. This will modify any field value of any MySQL table.

##### Syntax:

`UPDATE table_name SET field1 = new-value1, field2 = new-value2`

##### [WHERE Clause]

- You can update one or more field altogether.
- You can specify any condition using the WHERE clause.
- You can update the values in a single table at a time.
- The WHERE clause is very useful when you want to update the selected rows in a table. (Fig 4)

Fig 2

```

XAMPP for Windows - mysql -u root
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> CREATE DATABASE student;
Query OK, 1 row affected (0.00 sec)

mysql> SHOW DATABASES;
+-----+
| Database |
+-----+
| information_schema |
| cdeol |
| mysql |
| phpmyadmin |
| student |
| test |
| uangindosss |
+-----+
2 rows in set (0.00 sec)

mysql> USE student;
Database changed
mysql> DROP DATABASE student;

```

Fig 3

```

MySQL 5.6 Command Line Client
mysql>
mysql>
mysql>
mysql> Show Tables;
+-----+
| Tables_in_school |
+-----+
| department |
| teacher |
+-----+
2 rows in set (0.00 sec)

mysql> Drop Table Department;
ERROR 1217 (23000): Cannot delete or update a parent row: a foreign key constraint fails
mysql> Drop Table Department CASCADE;
ERROR 1217 (23000): Cannot delete or update a parent row: a foreign key constraint fails
mysql> Drop Table Teacher;
Query OK, 0 rows affected (0.14 sec)

mysql> Drop Table Department;
Query OK, 0 rows affected (0.11 sec)

mysql> Show Tables;
Empty set (0.00 sec)

mysql> _

```

Fig 4

```

MySQL 8.0 Command Line Client
mysql> UPDATE trainer
 -> SET email = 'mike@tutorialandexamples.com'
 -> WHERE course_name = 'Java';
Query OK, 1 row affected (0.26 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> SELECT * FROM trainer;
+-----+-----+-----+
| course_name | trainer | email
+-----+-----+-----+
Java	Mike	mike@tutorialandexamples.com
Python	James	james@javatpoint.com
Android	Robin	robin@javatpoint.com
Hadoop	Stephen	stephen@javatpoint.com
Testing	Micheal	micheal@javatpoint.com
+-----+-----+-----+

```

**COPA - Demonstrate on functions****Using the Number, Date and Character functions, Joins and Functions**

**Objectives:** At the end of this exercise you shall be able to

- explain about number, date and character functions.

**Requirements****Tools/Equipment/Machines**

- A working PC with Text Editor (Notepad) & Browser, MySQL server Connection - 1 No.

**PROCEDURE****TASK 1: Using the Number, Date and Character functions, Joins and Functions****Number function****ABS(x)**

To check absolute value, use this function. (Fig 1)

Fig 1

```
SQL> SELECT ABS(2);
+-----+
| ABS(2) |
+-----+
| 2 |
+-----+
1 row in set (0.00 sec)
```

**ACOS(x)**

This function returns the arccosine of X. The value of X must range between -1 and 1 or NULL will be returned (Fig 2)

Fig 2

```
SQL> SELECT ACOS(1);
+-----+
| ACOS(1) |
+-----+
| 0.000000 |
+-----+
1 row in set (0.00 sec)
```

**Some other functions****SIN()**

Return the sine of numeric expression given in radians.

**SQRT()**

Returns the non-negative square root of numeric expression.

**STD()**

Returns the standard deviation of the numeric expression.

**STDDEV()**

Returns the standard deviation of the numeric expression.

**TAN()**

Return the tangent of numeric expression expressed in radians.

**TRUNCATE()**

Return numeric exp1 truncated to exp2 decimal places. If exp2 is 0, then the result will have no decimal point.

**DEGREES()**

Returns numeric expression converted from radians degrees.

**EXP()**

Returns the base of the natural logarithm (e) raised to the power of passed numeric expression.

**FLOOR()**

Returns the largest integer value that is not greater than passed numeric expression.

**GREATEST()**

Returns the largest value of the input expressions.

**INTERVAL()**

Take multiple expressions exp1 ,exp2, and exp3 so on.. and returns 0 if exp1 is less than exp2, returns 1 if exp 1 is less than exp3 and so on.

**LEAST()**

Returns the minimum-valued input when given two or more

**LOG()**

Returns the natural logarithm of the passed numeric expression.

**character function**

| Functions   | Description                                                                                                                                                       |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| lower()     | The SQL LOWER() function is used to convert all characters of string to lower case.                                                                               |
| upper()     | The SQL UPPER() function is used to convert all characters of a string to upper case.                                                                             |
| trim()      | The SQL TRIM() removes leading and trailing characters(or both) from a character string.                                                                          |
| Translate() | The SQL TRANSLATE() function replaces a sequence of character in a string with another sequence of character. The function replaces a single character at a time. |

**Date function**

| Date functions                                | Desc                                                                                | Return value Data Type                                              | None                                                                                  |
|-----------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Day (date or datetime)                        | Return the day of the week for a given date                                         | Integer like 1 -32                                                  |                                                                                       |
| Month (date or datetime)                      | Return the month of a given date                                                    | Integer like 1 - 12                                                 |                                                                                       |
| YEAR (date or datetime)                       | Return the year of a given date                                                     | Integer for year like 2021                                          |                                                                                       |
| DATEPART(date part, date or datetime)         | Return the date part specified in int format                                        | Integer like 1 -12 for month, 1 – 31 for day, or year like 2021     |                                                                                       |
| DATENAME (Date part, date or datetime)        | Return the date part specified character format                                     | Character like April, May, '1', '2', '2020' ,2021,                  |                                                                                       |
| EOMONTH (date months to add)                  | Returns the last day of the month with an optional parameter to add months (+ or -) | 01/31/2021                                                          | Introduced in SQL Server 2012                                                         |
| DATEDIFF (date part, units, date or datetime) | Return date math results                                                            | datetime                                                            |                                                                                       |
| DATEDIFF(date part, units, date or datetime)  | Give the difference between 2 dates in units specified by date part                 | Integer of date part units                                          |                                                                                       |
| DATEDIFF-BIG                                  | Give the difference between 2 dates in units specified by date part                 | Big integer of date part units                                      |                                                                                       |
| CONVERT (date type,value ,style)              | Used to convert date output to a specified mask                                     | Typically, a character datatype is specified when converting dates. | *To convert a valid date char string to date no function is needed! Implicit convert! |
| FORMAT (value,format, culture)                | Used to convert date output to a specified mask                                     | Returns a date formatted string based on the mask specified.        |                                                                                       |

## COPA - Demonstrate on functions

**Joins, Group by, Having, Sub query**

**Objectives:** At the end of this exercise you shall be able to

- learn how to join two table in different ways, also able to use group by and having clause in MySQL, create index for a table and optimizing those queries
- create procedure and also how to use stored procedures.

**Requirements****Tools/Equipment/Machines**

- A working PC with Text Editor (Notepad) & Browser, MySQL server Connection - 1 No.

**PROCEDURE****TASK 1: Learning to Joins, Group by, Having, Sub query****Joins**

- MySQL JOINS are used with SELECT statement. It is used to retrieve data from multiple tables. It is performed whenever you need to fetch records from two or more tables. There are three types of MySQL joins: (Fig 1)

- MySQL INNER JOIN (or sometimes called simple join)
- MySQL LEFT OUTER JOIN (or sometimes called LEFT JOIN)
- MySQL RIGHT OUTER JOIN (or sometimes called RIGHT JOIN)

**MySQL Inner JOIN (Simple Join)****Syntax:**

```
SELECT columns
FROM table1
INNER JOIN table2
ON table1.column = table2.column;
```

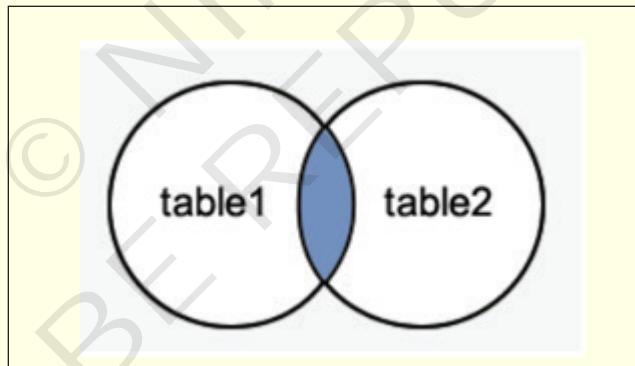


Fig 1

```
MySQL 5.5 Command Line Client
+-----+
4 rows in set <0.00 sec>

mysql> SELECT * FROM officers;
+-----+
| officer_id | officer_name | address |
+-----+
1	Ajeet	Mau
2	Deepika	Lucknow
3	Vinay	Faizabad
4	Rahul	Lucknow
+-----+
4 rows in set <0.00 sec>

mysql> SELECT * FROM students;
+-----+
| student_id | student_name | course_name |
+-----+
1	Aryan	Java
2	Rohini	Hadoop
3	Lallu	MongoDB
+-----+
3 rows in set <0.00 sec>

mysql> _
```

Consider two tables “officers” and “students”, having the following data.

Consider two tables “officers” and “students”, having the following data. (Fig 2)

Fig 2

```
MySQL 5.5 Command Line Client
mysql> SELECT officers.officer_name, officers.address, students.course_name
-> FROM officers
-> INNER JOIN students
-> ON officers.officer_id = students.student_id;
+-----+-----+-----+
| officer_name | address | course_name |
+-----+-----+-----+
Ajeet	Mau	Java
Deepika	Lucknow	Hadoop
Uinal	Faizabad	MongoDB
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>
```

#### MySQL Left Outer Join

- The LEFT OUTER JOIN returns all rows from the left hand table specified in the ON condition and

only those rows from the other table where the join condition is fulfilled. (Fig 3)

#### Syntax:

```
SELECT columns
FROM table1
LEFT [OUTER] JOIN table2
ON table1.column = table2.column;
```

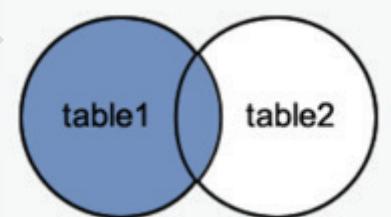


Fig 3

```
MySQL 5.5 Command Line Client
mysql> SELECT officers.officer_name, officers.address, students.course_name
-> FROM officers
-> LEFT JOIN students
-> ON officers.officer_id = students.student_id;
+-----+-----+-----+
| officer_name | address | course_name |
+-----+-----+-----+
Ajeet	Mau	Java
Deepika	Lucknow	Hadoop
Uinal	Faizabad	MongoDB
Rahul	Lucknow	NULL
+-----+-----+-----+
4 rows in set (0.01 sec)

mysql>
```

## MySQL Right Outer Join

- The MySQL Right Outer Join returns all rows from the RIGHT-hand table specified in the ON condition

### Syntax:

```
SELECT columns
FROM table1
RIGHT [OUTER] JOIN table2
ON table1.column = table2.column;
```

and only those rows from the other table where he join condition is fulfilled. (Fig 4)

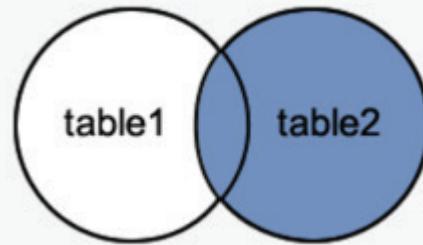


Fig 4

```
MySQL 5.5 Command Line Client
mysql> SELECT officers.officer_name, officers.address, students.course_name, students.student_name
 FROM officers
 RIGHT JOIN students
 ON officers.officer_id = students.student_id;
+-----+-----+-----+-----+
| officer_name | address | course_name | student_name |
+-----+-----+-----+-----+
Ajeet	Mau	Java	Aryan
Deepika	Lucknow	Hadoop	Rohini
Uinal	Faizabad	MongoDB	Lallu
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> _
```

## Group By

- The MySQL GROUP BY Clause is used to collect data from multiple records and group the result by one or more column. It is generally used in a SELECT statement.(Fig 5)

Fig 5

```
MySQL 5.5 Command Line Client
mysql> SELECT * FROM officers;
+-----+-----+-----+
| officer_id | officer_name | address |
+-----+-----+-----+
1	Ajeet	Mau
2	Deepika	Lucknow
3	Uinal	Faizabad
4	Rahul	Lucknow
+-----+-----+-----+
4 rows in set (0.01 sec)
```

- We can also use some aggregate functions like COUNT, SUM, MIN, MAX, AVG etc. on the grouped column.

### Syntax:

```
SELECT expression1, expression2, ... expression_n,
aggregate_function (expression)
```

FROM tables

[WHERE conditions]

GROUP BY expression1, expression2, ... expression\_n;

### MySQL GROUP BY Clause with COUNT function

Consider a table named “officers” table, having the following records. (Fig 6)

### Having

MySQL HAVING Clause is used with GROUP BY clause. It always returns the rows where condition is TRUE. (Fig 7)

Fig 6

```

MySQL 5.5 Command Line Client
+----+----+----+
| | 1: Ajeet | Mau
| | 2: Deepika | Lucknow
| | 3: Vimal | Faizabad
| | 4: Rahul | Lucknow
+----+----+----+
4 rows in set <0.01 sec>

mysql> SELECT address, COUNT(<*>)
-> FROM officers
-> GROUP BY address;
+----+----+
| address | COUNT(<*>) |
+----+----+
Faizabad	1
Lucknow	2
Mau	1
+----+----+
3 rows in set <0.04 sec>

mysql>

```

Fig 7

```

MySQL 5.5 Command Line Client
-> <3, 'Milan', '2015-01-25', 9>;
-> <1, 'Ajeet', '2015-01-26', 12>;
-> <3, 'Milan', '2015-01-26', 9>;
Query OK, 10 rows affected (0.06 sec)
Records: 10 Duplicates: 0 Warnings: 0

mysql>
mysql> SELECT * FROM employees;
+----+----+----+----+
| 1: emp_id | emp_name | working_date | working_hours |
+----+----+----+----+
1: Ajeet	2015-01-24		12
2: Ayan	2015-01-24		10
3: Milan	2015-01-24		9
4: Ruchi	2015-01-24		6
1: Ajeet	2015-01-25		12
2: Ayan	2015-01-25		10
4: Ruchi	2015-01-25		6
3: Milan	2015-01-25		9
1: Ajeet	2015-01-26		12
3: Milan	2015-01-26		9
+----+----+----+----+
10 rows in set (0.00 sec)

mysql>

```

**Syntax:**

**SELECT** expression1, expression2, ...expression\_n,  
aggregate\_function (expression)  
**FROM** tables  
[**WHERE** conditions]  
**GROUP BY** expression1, expression2,

... expression\_n;

HAVING condition;

**MySQL HAVING Clause with SUM function**

Here, we use the SUM function with the HAVING Clause to return the emp\_name and sum of their working hours. (Fig 8)

Fig 8

```

MySQL 5.5 Command Line Client
+----+----+
10 rows in set <0.00 sec>

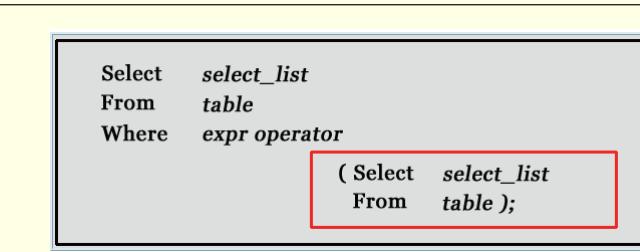
mysql> SELECT emp_name, SUM(working_hours) AS "Total working hours"
-> FROM employees
-> GROUP BY emp_name
-> HAVING SUM(working_hours) > 5;
+----+----+
| emp_name | Total working hours |
+----+----+
Ajeet	36
Ayan	20
Milan	22
Ruchi	12
+----+----+
4 rows in set <0.00 sec>

mysql> -

```

## Subqueries

- A subquery is a SQL query nested inside a larger query.
- A subquery may occur in:
  - A SELECT clause
  - A FROM clause
  - A WHERE clause
- In MySQL subquery can be nested inside a SELECT, INSERT, UPDATE, DELETE, SET, or DO statement or inside another subquery.
- A subquery is usually added within the WHERE Clause of another SQL SELECT statement.



Subquery syntax as specified by the SQL standard and supported in MySQL

```
DELETE FROM t1
WHERE s11 > ANY
(SELECT COUNT(*) /* no hint */ FROM t2
WHERE NOT EXISTS
(SELECT * FROM t3
WHERE ROW(5*t2.s1,77)=
(SELECT 50,11*s1 FROM t4 UNION SELECT
50,77 FROM
(SELECT * FROM t5) AS t5)));
```

- You can use the comparison operators, such as >, <, or =. The comparison operator can also be a multiple-row operator, such as IN, ANY, SOME, or ALL.
- A subquery can be treated as an inner query, which is a SQL query placed as a part of another query called as outer query.
- The inner query executes first before its parent query so that the results of the inner query can be passed to the outer query.

## Subquery Syntax :

The subquery (inner query) executes once before the main query (outer query) executes.

The main query (outer query) use the subquery result.

A subquery can return a scalar (a single value), a single row, a single column, or a table (one or more rows of one or more columns). These are called scalar, column, row, and table subqueries.

## MySQL Subquery Example:

Using a subquery, list the name of the employees, paid more than 'Alexander' from emp\_details . (Fig 9)

Fig 9

| EMPLOYEE_ID | FIRST_NAME | LAST_NAME | EMAIL    | PHONE_NUMBER | HIRE_DATE | JOB_ID  | SALARY | COMMISSION_PCT | MANAGER_ID |
|-------------|------------|-----------|----------|--------------|-----------|---------|--------|----------------|------------|
| 100         | Steven     | King      | SKING    | 515.123.4567 | 17-Jun-87 | AD_PRES | 24000  |                |            |
| 101         | Neena      | Kochhar   | NKOCHHAR | 515.123.4568 | 21-Sep-89 | AD_VP   | 17000  |                | 100        |
| 102         | Lex        | De Haan   | LDEHAAN  | 515.123.4569 | 13-Jan-93 | AD_VP   | 17000  |                | 100        |
| 103         | Alexander  | Hunold    | AHUNOLD  | 590.423.4567 | 3-Jan-90  | IT_PROG | 9000   |                | 102        |
| 104         | Bruce      | Ernst     | BERNST   | 590.423.4568 | 21-May-91 | IT_PROG | 6000   |                | 103        |
| 105         | David      | Austin    | DAUSTIN  | 590.423.4569 | 25-Jun-97 | IT_PROG | 4800   |                | 103        |

```
Select first_name, last_name, salary
From employees
Where salary > 9000
 (Select salary
 From employees
 Where first_name='Alexander');
```

```
mysql> SELECT first_name, last_name, salary FROM emp_details
 WHERE salary >(SELECT salary FROM emp_details
 WHERE first_name='Alexander')
+-----+-----+-----+
| first_name | last_name | salary |
+-----+-----+-----+
Steven	King	24000.00
Neena	Kochhar	17000.00
Lex	De Haan	17000.00
RABI	CHANDRA	15000.00
Ana	King	17000.00
+-----+-----+-----+
5 rows in set (0.00 sec)
```