

AIM

To implement numerical operations using MS-EXCEL.

ALGORITHM

Step 1: Start Ms Excel application in Ms- office.

Step 2: Create datasheet for student marks in Ms Excel application.

Step 3: Calculate the Maximum of the given marks using max function.

Step 4: Calculate the Minimum of the given marks using MIN function.

Step 5: Calculate the average of the given marks using average function.

Step 6: Calculate the sum of the given marks using sum function.

Step 7: Calculate the square root of the given mark using SQRT function.

Step 8: Calculate the Round of the given mark using Roundup function.

Step 9: Display the desired output of all numerical operation in neat format.

Step 10: Save the excel file and Close the Ms Excel application.

OUTPUT

| Numerical Operations (MAX, MIN, AVG, SUM, SQRT, ROUND) | | | | | | | | |
|---|--------------|---------------------|----------------------------------|--------------------------|--|------------------------------|-------------------------------------|--|
| Sno | Regno | Name of the Student | MA8551 Algebra and Number Theory | CS8591 Computer Networks | EC8691 Microprocessor and Microcontrollers | CS8501 Theory of Computation | CS8592 Object Oriented Analysis and | OMD551 Basic of Biomedical Instrumentation |
| 1 | 212619104001 | ABIRAMIN | 92 | 87 | 80 | 87 | 84 | 87 |
| 2 | 212619104002 | DAISY DEEPIKA N | 87 | 80 | 87 | 80 | 87 | 80 |
| 3 | 212619104003 | DEEPAK S | 80 | 72 | 77 | 87 | 80 | 87 |
| 4 | 212619104004 | HARISH G | 80 | 87 | 87 | 80 | 80 | 80 |
| 5 | 212619104005 | JAIGANESH K | 34 | 80 | 80 | 90 | 75 | 87 |
| 6 | 212619104006 | JAYA LAKSHMI T | 71 | 92 | AB | 80 | AB | 80 |
| | | MAX MARKS | =MAX(D6:D11) | | | | | |
| | | MIN MARKS | | | | | | |
| | | AVGERAGE MARKS | | | | | | |
| | | SUM OF THE MARKS | | | | | | |
| | | SQRT OF ANY | | | | | | |
| | | ROUND OF THE MARKS | | | | | | |

| Numerical Operations (MAX, MIN, AVG, SUM, SQRT, ROUND) | | | | | | | | |
|---|--------------|---------------------|----------------------------------|--------------------------|---|------------------------------|-------------------------------------|--|
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| 1 | 212619104001 | ABIRAMIN | 92 | 87 | 80 | 87 | 84 | 87 |
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| 4 | 212619104004 | HARISH.G | 80 | 87 | 87 | 80 | 80 | 80 |
| 5 | 212619104005 | JAIGANESH.K | 34 | 80 | 80 | 90 | 75 | 87 |
| 6 | 212619104006 | JAYA LAKSHMI. T | 71 | 92 | AB | 80 | AB | 80 |
| | | MAX MARKS | 92 | 92 | 87 | 90 | 87 | 87 |
| | | MIN MARKS | =MIN(D6:D11) | | | | | |
| | | AVGERAGE MARKS | | | | | | |
| | | SUM OF THE MARKS | | | | | | |
| | | SQRT OF ANY | | | | | | |
| | | ROUND OF THE MARKS | | | | | | |

| Numerical Operations (MAX, MIN, AVG, SUM, SQRT, ROUND) | | | | | | | | |
|---|--------------|---------------------|----------------------------------|--------------------------|---|------------------------------|-------------------------------------|--|
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| 6 | 212619104006 | JAYA LAKSHMI. T | 71 | 92 | AB | 80 | AB | 80 |
| | | MAX MARKS | 92 | 92 | 87 | 90 | 87 | 87 |
| | | MIN MARKS | 34 | 72 | 77 | 80 | 75 | 80 |
| | | AVGERAGE MARKS | =AVERAGE(D6:D11) | | | | | |
| | | SUM OF THE MARKS | | | | | | |
| | | SQRT OF ANY | | | | | | |
| | | ROUND OF THE MARKS | | | | | | |

| Numerical Operations (MAX, MIN, AVG, SUM, SQRT, ROUND) | | | | | | | | |
|---|--------------|---------------------|----------------------------------|--------------------------|---|------------------------------|-------------------------------------|--|
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| 6 | 212619104006 | JAYA LAKSHMI. T | 71 | 92 | AB | 80 | AB | 80 |
| | | MAX MARKS | 92 | 92 | 87 | 90 | 87 | 87 |
| | | MIN MARKS | 34 | 72 | 77 | 80 | 75 | 80 |
| | | AVGERAGE MARKS | 74 | 83 | 82.2 | 84 | 81.2 | 83.5 |
| | | SUM OF THE MARKS | =SUM(D6:D11) | | | | | |
| | | SQRT OF ANY | | | | | | |
| | | ROUND OF THE MARKS | | | | | | |

| Numerical Operations (MAX, MIN, AVG, SUM, SQRT, ROUND) | | | | | | | | |
|---|--------------|---------------------|----------------------------------|--------------------------|---|------------------------------|-------------------------------------|--|
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| 4 | 212619104004 | HARISH.G | 80 | 87 | 87 | 80 | 80 | 80 |
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| 6 | 212619104006 | JAYA LAKSHMI. T | 71 | 92 | AB | 80 | AB | 80 |
| | | MAX MARKS | 92 | 92 | 87 | 90 | 87 | 87 |
| | | MIN MARKS | 34 | 72 | 77 | 80 | 75 | 80 |
| | | AVGERAGE MARKS | 74 | 83 | 82.2 | 84 | 81.2 | 83.5 |
| | | SUM OF THE MARKS | 444 | 498 | 411 | 504 | 406 | 501 |
| | | SQRT OF ANY | =SQRT(D6) | | | | | |
| | | ROUND OF THE MARKS | | | | | | |

| Numerical Operations (MAX, MIN, AVG, SUM, SQRT, ROUND) | | | | | | | | |
|---|--------------|---------------------|----------------------------------|--------------------------|---|------------------------------|-------------------------------------|--|
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| 4 | 212619104004 | HARISH.G | 80 | 87 | 87 | 80 | 80 | 80 |
| 5 | 212619104005 | JAIGANESH.K | 34 | 80 | 80 | 90 | 75 | 87 |
| 6 | 212619104006 | JAYA LAKSHMI. T | 71 | 92 | AB | 80 | AB | 80 |
| | | MAX MARKS | 92 | 92 | 87 | 90 | 87 | 87 |
| | | MIN MARKS | 34 | 72 | 77 | 80 | 75 | 80 |
| | | AVGERAGE MARKS | 74 | 83 | 82.2 | 84 | 81.2 | 83.5 |
| | | SUM OF THE MARKS | 444 | 498 | 411 | 504 | 406 | 501 |
| | | SQRT OF ANY | 9.591663047 | 9.32737905 | 8.94427 | 9.32738 | 9.16515 | 9.32738 |
| | | ROUND OF THE MARKS | =ROUNDUP(D16,2) | | | | | |

| Numerical Operations (MAX, MIN, AVG, SUM, SQRT, ROUND) | | | | | | | | |
|---|--------------|---------------------|----------------------------------|--------------------------|---|------------------------------|-------------------------------------|--|
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| 2 | 212619104002 | DAISY DEEPIKA.N | 87 | 80 | 87 | 80 | 87 | 80 |
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| 4 | 212619104004 | HARISH.G | 80 | 87 | 87 | 80 | 80 | 80 |
| 5 | 212619104005 | JAIGANESH.K | 34 | 80 | 80 | 90 | 75 | 87 |
| 6 | 212619104006 | JAYA LAKSHMI. T | 71 | 92 | AB | 80 | AB | 80 |
| | | MAX MARKS | 92 | 92 | 87 | 90 | 87 | 87 |
| | | MIN MARKS | 34 | 72 | 77 | 80 | 75 | 80 |
| | | AVGERAGE MARKS | 74 | 83 | 82.2 | 84 | 81.2 | 83.5 |
| | | SUM OF THE MARKS | 444 | 498 | 411 | 504 | 406 | 501 |
| | | SQRT OF ANY | 9.591663047 | 9.32737905 | 8.94427 | 9.32738 | 9.16515 | 9.32738 |
| | | ROUND OF THE MARKS | 9.6 | 9.33 | 8.95 | 9.33 | 9.17 | 9.33 |

RESULT

The numerical operations were implemented using MS-EXCEL successfully and the desired output was displayed.

AIM

To perform data import/export operations for different file formats using MS-EXCEL.

ALGORITHM

Step 1 : Start Ms Excel application in Ms- office.

Step 2 : Create datasheet for student marks in Ms Excel application.

Step 3 : Save the excel file.

Step 4 : Export the file into CSV file using file menu and export option.

Step 5: Next , import CSV file using data menu and get data option.

Step 6 : Display the desired output in neat format.

Step 7 : Save the excel file and Close the Ms Excel application.

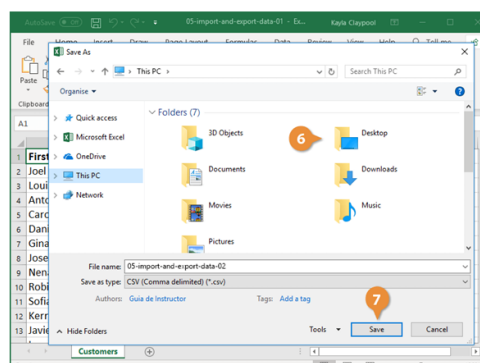
PROCEDURE**Data Import/Export Operations for Different File Formats**

Excel can import and export many different file types aside from the standard .xlsx format. If your data is shared between other programs, like a database, you may need to save data as a different file type or bring in files of a different file type.

EXPORT DATA

When you have data that needs to be transferred to another system, export it from Excel in a format that can be interpreted by other programs, such as a text or CSV file.

1. Click the File tab.
2. At the left, click Export.
3. Click the Change File Type.
4. Under Other File Types, select a file type.
 - a. Text (Tab delimited): The cell data will be separated by a tab.
 - b. CSV (Comma delimited): The cell data will be separated by a comma.
 - c. Formatted Text (space delimited): The cell data will be separated by a space.
 - d. Save as Another File Type: Select a different file type when the Save As dialog box appears. The file type you select will depend on what type of file is required by the program that will consume the exported data.
5. Click Save As.
6. Specify where you want to save the file.
7. Click Save. A dialog box appears stating that some of the workbook features may be lost.
8. Click Yes.

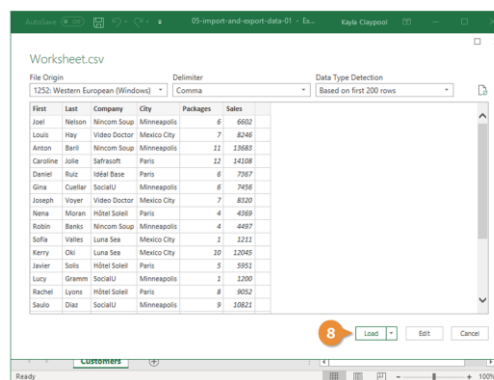
OUTPUT

IMPORT DATA

Excel can import data from external data sources including other files, databases, or web pages.

1. Click the Data tab on the Ribbon.
2. Click the Get Data button. Some data sources may require special security access, and the connection process can often be very complex. Enlist the help of your organization's technical support staff for assistance.
3. Select From File.
4. Select From Text/CSV. If you have data to import from Access, the web, or another source, select one of those options in the Get External Data group instead.
5. Select the file you want to import.
6. Click Import. If, while importing external data, a security notice appears saying that it is connecting to an external source that may not be safe, click OK.
7. Verify the preview looks correct. Because we've specified the data is separated by commas, the delimiter is already set. If you need to change it, it can be done from this menu.
8. Click Load.

OUTPUT



| First | Last | Company | City | Packages | Sales |
|----------|---------|---------------|-------------|----------|-------|
| Joel | Nelson | Nincom Soup | Minneapolis | 6 | 6602 |
| Louis | Hay | Video Doctor | Mexico City | 7 | 8248 |
| Anton | Bart | Nincom Soup | Minneapolis | 22 | 23683 |
| Caroline | Jaffe | SoftSouth | Paris | 22 | 14108 |
| Daniel | Ruiz | Ubbel Best | Paris | 6 | 7587 |
| Gina | Cuellar | SocialU | Minneapolis | 8 | 7458 |
| Joseph | Voyser | Video Doctor | Mexico City | 7 | 8320 |
| Nema | Moran | Hibbel Sateel | Paris | 4 | 4989 |
| Ruth | Banks | Nincom Soup | Minneapolis | 4 | 4497 |
| Sofia | Valles | Luna Sea | Mexico City | 2 | 2212 |
| Kerry | Oh | Luna Sea | Mexico City | 20 | 12045 |
| Javier | Solis | Hibbel Sateel | Paris | 5 | 5951 |
| Lucy | Gramm | SocialU | Minneapolis | 2 | 1200 |
| Rachel | Lorenz | Hibbel Sateel | Paris | 8 | 9052 |
| Sevilo | Diaz | SocialU | Minneapolis | 9 | 10821 |

RESULT

The data import/export operations for different file formats were preformed successfully using MS-EXCEL.

Ex. No. 2**PERFORM STATISTICAL OPERATIONS [Mean, Median, Mode and Standard Deviation, Variance, Skewness, Kurtosis]****AIM**

To Perform statistical operations using MS-EXCEL.

ALGORITHM

Step 1 : Start Ms Excel application in Ms- office.

Step 2 : Create datasheet for student marks in Ms Excel application.

Step 3 : If you haven't already installed the Analysis ToolPak , Click the Microsoft Office button, then click on the Excel Options , and then select Add-Ins , Click Go, check the Analysis ToolPak box, and click Ok

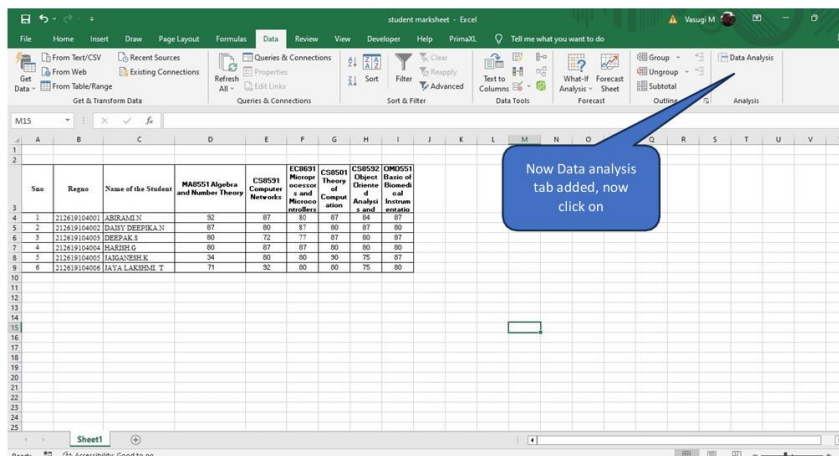
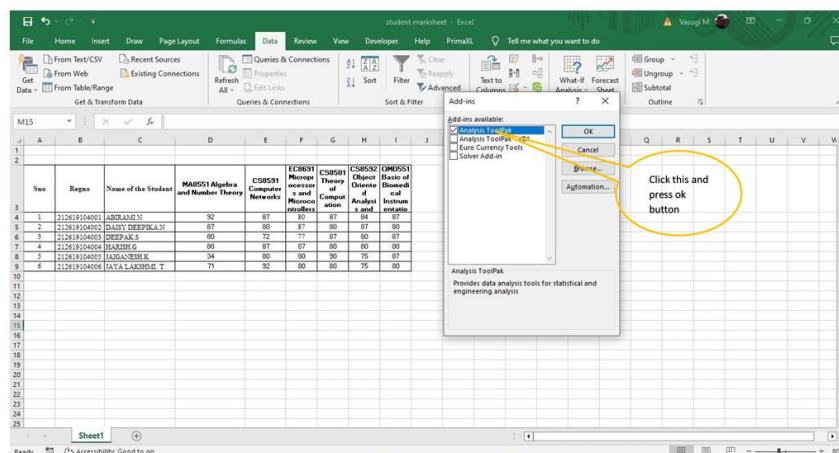
Step 4 : Select Data tab, then click on the Data Analysis option, then selects Descriptive Statistics from the list and Click Ok. [Data tab >> Data Analysis >> Descriptive Statistics]

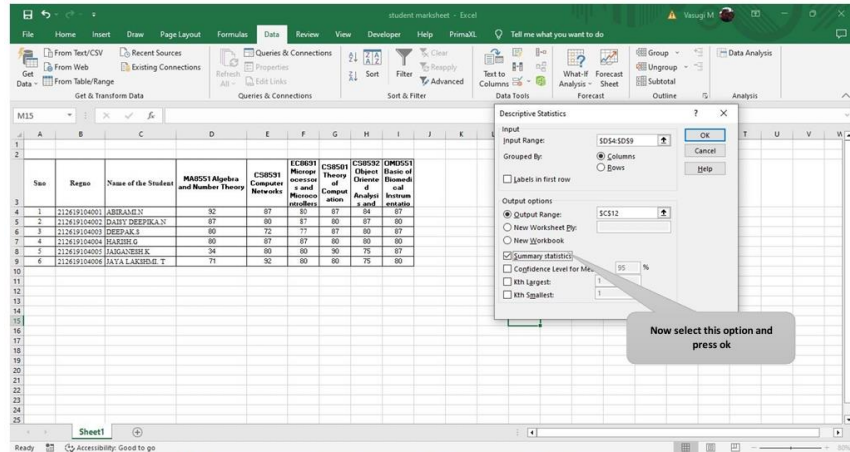
Step 5: In the Input Range we select the data, and then select Output Range where you want the output to be stored. If you don't specify the output range it will throw output in the new worksheet.

Step 6 : Check Summary Statistics and Confidence Level for Mean options. By default the confidence level is 95%. You can change the level as per the hypothesis standard of study.

Step 7 : When you click Ok, you will see the result in the selected output range.

Step 8: Save the excel file and Close the Ms Excel application.

OUTPUT



| Sno | Regno | Name of the Student | MA8551 Algebra and Number Theory | CS8591 Computer Networks | EC8691 Microprocessors and Microcontrollers | CS8501 Theory of Computation | CS8592 Object Oriented Analysis and Design | OMD551 Basic of Biomedical Instrumentation |
|--------------------|--------------|---------------------|----------------------------------|--------------------------|---|------------------------------|--|--|
| 1 | 212619104001 | ABIRAMIN | 92 | 87 | 80 | 87 | 84 | 87 |
| 2 | 212619104002 | DAISY DEEPIKA.N | 87 | 80 | 87 | 80 | 87 | 80 |
| 3 | 212619104003 | DEEPAK.S | 80 | 72 | 77 | 87 | 80 | 87 |
| 4 | 212619104004 | HARISH.G | 80 | 87 | 87 | 80 | 80 | 80 |
| 5 | 212619104005 | JAGANESH.K | 34 | 80 | 80 | 90 | 75 | 87 |
| 6 | 212619104006 | JAYA LAKSHMI.T | 71 | 92 | 80 | 80 | 75 | 80 |
| Column1 | | | | | | | | |
| Mean | | | 74 | | | | | |
| Standard Error | | | 8.512735557 | | | | | |
| Median | | | 80 | | | | | |
| Mode | | | 80 | | | | | |
| Standard Deviation | | | 20.85185843 | | | | | |
| Sample Variance | | | 434.8 | | | | | |
| Kurtosis | | | 3.733266953 | | | | | |
| Skewness | | | -1.838637384 | | | | | |
| Range | | | 58 | | | | | |
| Minimum | | | 34 | | | | | |
| Maximum | | | 92 | | | | | |
| Sum | | | 444 | | | | | |
| Count | | | 6 | | | | | |

RESULT

The statistical operations were performed successfully using MS-EXCEL and the desired output was displayed in neat format.

AIM

To Perform Z-test, T-test & ANOVA operations using MS-EXCEL.

ALGORITHM**Z-TEST**

Step 1 : Start Ms Excel application in Ms- office.

Step 2 : Create datasheet for student marks in Ms Excel application.

Step 3 : If you haven't already installed the Analysis ToolPak , Click the Microsoft Office button, then click on the Excel Options , and then select Add-Ins , Click Go, check the Analysis ToolPak box, and click Ok

Step 4 : Select Data tab, then click on the Data Analysis option, then selects Descriptive Statistics from the list and Click Ok. [Data tab >> Data Analysis >>z-test two sample means]

Step 5: In the Input Range we select range of the data for variable 1 and variable 2 and Give variable 1 and variable 2 value as 0.5. then select Output Range where you want the output to be stored. If you don't specify the output range it will throw output in the new worksheet.

Step 6 : Then select Output Range where you want the output to be stored. If you don't specify the output range it will throw output in the new worksheet.

Step 7 : When you click Ok, you will see the result in the selected output range.

Step 8: Save the excel file and Close the Ms Excel application.

OUTPUT

The top screenshot shows the Microsoft Excel interface with the 'Data' tab selected. The 'Data Analysis' dialog box is open, and 'z-Test: Two Sample for Means' is selected from the list of tools. The bottom screenshot shows the 'z-Test: Two Sample for Means' dialog box with the following settings:

- Input Variable 1 Range: \$D\$4:\$D\$9
- Input Variable 2 Range: \$E\$4:\$E\$9
- Hypothesized Mean Difference: 0.5
- Variable 1 (Stdev (known)): 0.5
- Variable 2 (Stdev (known)): 0.5
- Alpha: 0.05
- Output options:
 - ☒ Output Range: \$G\$11
 - ☐ New Worksheet Book
 - ☐ New Workbook

Annotations in the bottom screenshot indicate the following steps:

- (1) Now select this data range
- (2) Now give values above 1
- (3) Now select the any cell for output range to be displayed

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| 6 | 212619104006 | JAYA LAKSHMI T | 71 | 92 | 80 | 80 | 75 | 80 |
| | | | z-Test: Two Sample for Means | | | | | |
| | | | | Variable 1 | Variable 2 | | | |
| | | | Mean | 74 | 83 | | | |
| | | | Known Variance | 0.5 | 0.5 | | | |
| | | | Observations | 6 | 6 | | | |
| | | | Hypothesized Mean Di | 0 | | | | |
| | | | z | -22.045408 | | | | |
| | | | P(Z<=z) one-tail | 0 | | | | |
| | | | z Critical one-tail | 1.64485363 | | | | |
| | | | P(Z<=z) two-tail | 0 | | | | |
| | | | z Critical two-tail | 1.95996398 | | | | |

T-TEST

Step 1 : Start Ms Excel application in Ms- office.

Step 2 : Create datasheet for student marks in Ms Excel application.

Step 3 : If you haven't already installed the Analysis ToolPak , Click the Microsoft Office button, then click on the Excel Options , and then select Add-Ins , Click Go, check the Analysis ToolPak box, and click Ok

Step 4 : Select Data tab, then click on the Data Analysis option, then selects Descriptive Statistics from the list and Click Ok. [Data tab >> Data Analysis >> T-test Paired two sample for means]

Step 5: In the Input Range we select range of the data for variable 1 and variable 2 and Give alpha value as 0.05. then select Output Range where you want the output to be stored. If you don't specify the output range it will throw output in the new worksheet.

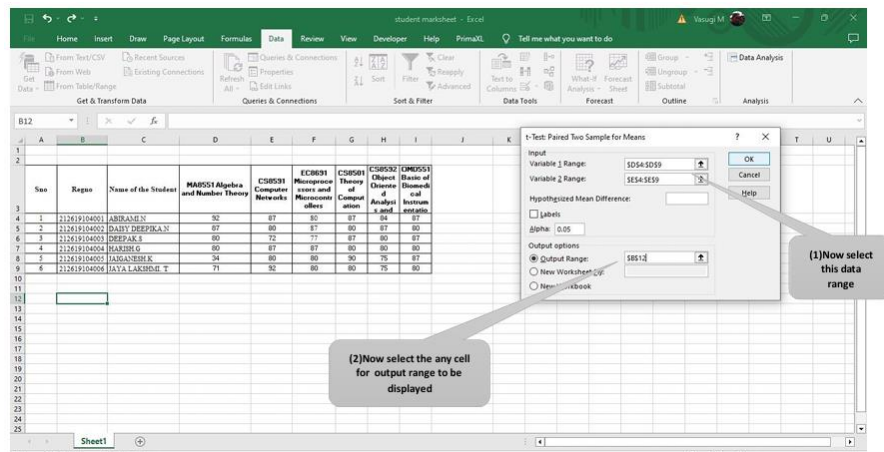
Step 6 : Then select Output Range where you want the output to be stored. If you don't specify the output range it will throw output in the new worksheet.

Step 7 : When you click Ok, you will see the result in the selected output range.

Step 8: Save the excel file and Close the Ms Excel application.

OUTPUT

The screenshot displays the Microsoft Excel interface with the 'Data' tab selected. The 'Data Analysis' task pane is open on the right, showing a list of analysis tools. 't-Test: Two-Sample Assuming Unequal Variances' is highlighted. The background spreadsheet contains student marks for subjects: MA8551 Algebra and Number Theory, CS8591 Computer Networks, EC8691 Microprocessors and Microcontrollers, CS8501 Theory of Computation, CS8592 Object Oriented Analysis and Instrumentation, and OMD551 Basic of Biomedical Instrumentation. The data is organized in columns A through I, with rows for student numbers (Sno) and registration numbers (Regno).



| Sno | Regno | Name of the Student | MA8551 Algebra and Number Theory | CS8591 Computer Networks | EC8691 Microprocessors and Microcontrollers | CS8591 Theory of Computation | CS8592 Object Oriented Analysis and Design | OMD551 Basic of Biomedical Instrumentation |
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| | | |
|-------------------------------------|--------------|------|
| t-Test: Paired Two Sample for Means | | |
| Variable 1 | Variable 2 | |
| Mean | 74 | 83 |
| Variance | 434.8 | 50.4 |
| Observations | 6 | 6 |
| Pearson Correlation | 0.113487818 | |
| Hypothesized Mean | 0 | |
| df | 5 | |
| t Stat | -1.037387876 | |
| P(T<=t) one-tail | 0.173548244 | |
| t Critical one-tail | 2.015048373 | |
| P(T<=t) two-tail | 0.347096488 | |
| t Critical two-tail | 2.570581836 | |

ANOVA TEST

Step 1 : Start Ms Excel application in Ms- office.

Step 2 : Create datasheet for student marks in Ms Excel application.

Step 3 : If you haven't already installed the Analysis ToolPak , Click the Microsoft Office button, then click on the Excel Options , and then select Add-Ins , Click Go, check the Analysis ToolPak box, and click Ok

Step 4 : Select Data tab, then click on the Data Analysis option, then selects Descriptive Statistics from the list and Click Ok. [Data tab >> Data Analysis >> Anova : Single factor]

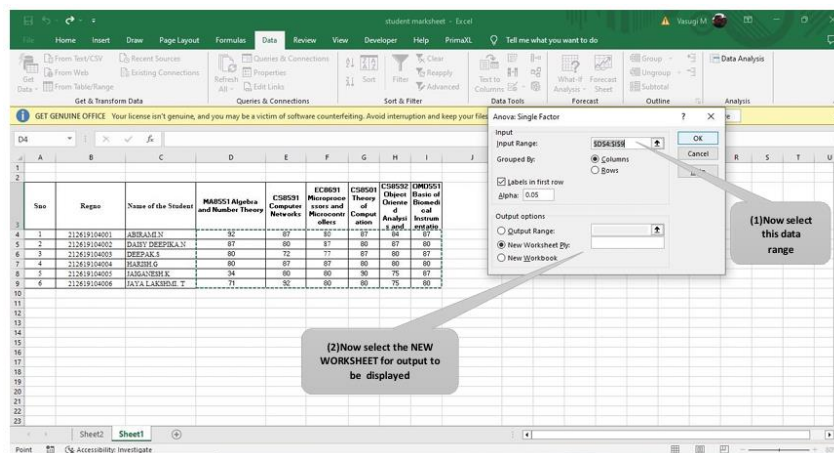
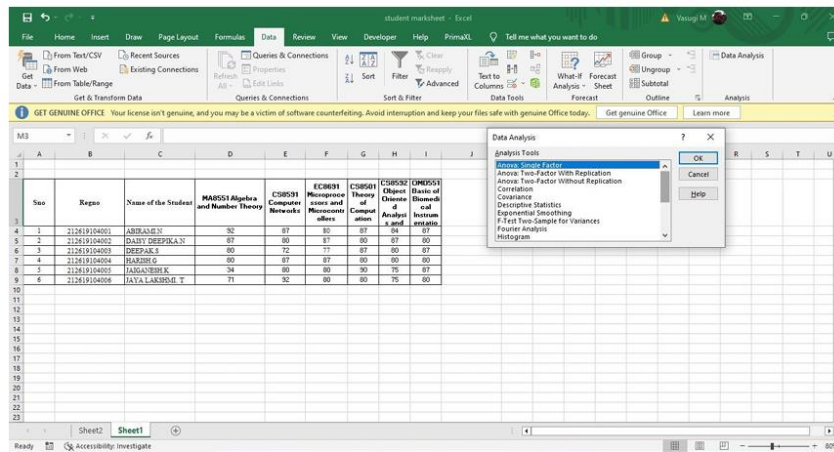
Step 5: In the Input Range we select range of the data and Give alpha value as 0.05. then select Output Range where you want the output to be stored. If you don't specify the output range it will throw output in the new worksheet.

Step 6 : Then select Output Range where you want the output to be stored. If you don't specify the output range it will throw output in the new worksheet.

Step 7 : When you click Ok, you will see the result in the selected output range.

Step 8: Save the excel file and Close the Ms Excel application.

OUTPUT



student marksheet - Excel

GET GENUINE OFFICE Your license isn't genuine, and you may be a victim of software counterfeiting. Avoid interruption and keep your files safe with genuine Office today. Get genuine Office Learn more

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Ex. No 4 (a)**Perform data pre-processing operations - Handling Missing data****AIM:**

To handle the missing data in data pre-processing operations on the dataset using MS-EXCEL.

ALGORITHM:

Step 1 : Start Ms Excel application in Ms- office.

Step 2 : Create datasheet for student marks in Ms Excel application.

Step 3 : If you haven't already installed the PrimaXL Addin, install it. Click the PrimaXL tab , choose missing

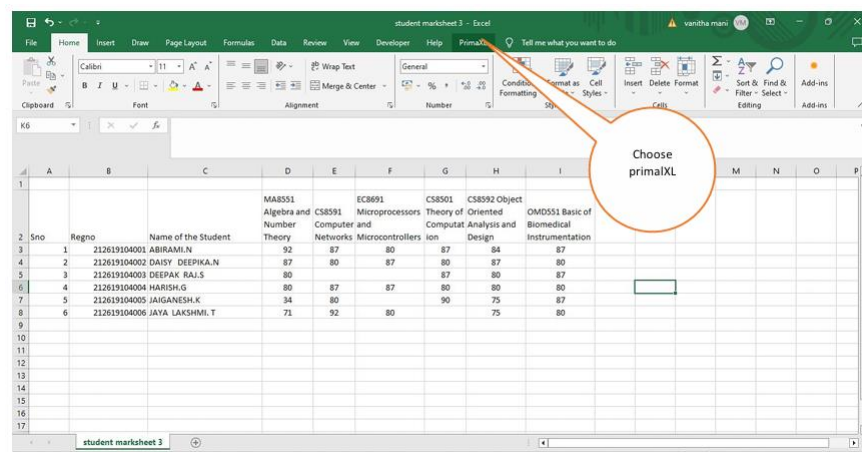
Step 4 : In the Input Range we select marks of all subjects with missing values and select the Choice as “filling of the missing data by taking average” or ” filling of the missing data by random pick”.

Step 5: Then select Output Range where you want the output to be stored. If you don’t specify the output range it will throw output in the new worksheet.

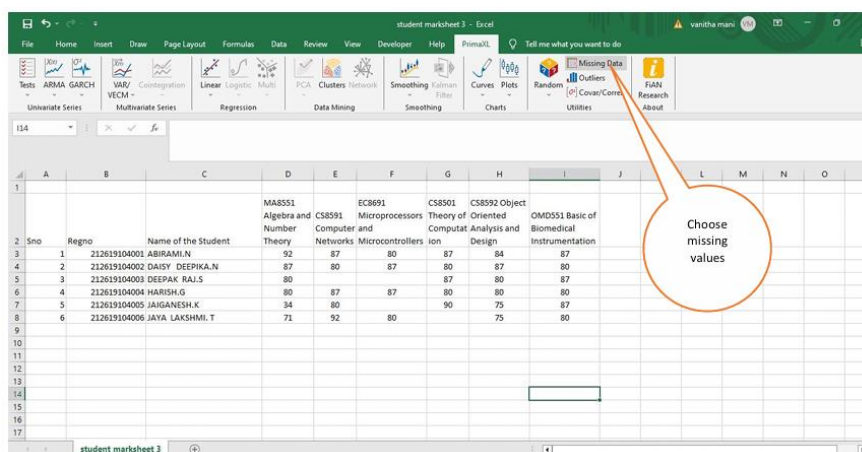
Step 6 : Then select Output Range where you want the output to be stored. If you don’t specify the output range it will throw output in the new worksheet.

Step 7 : When you click Ok, you will see the result in the selected output range.

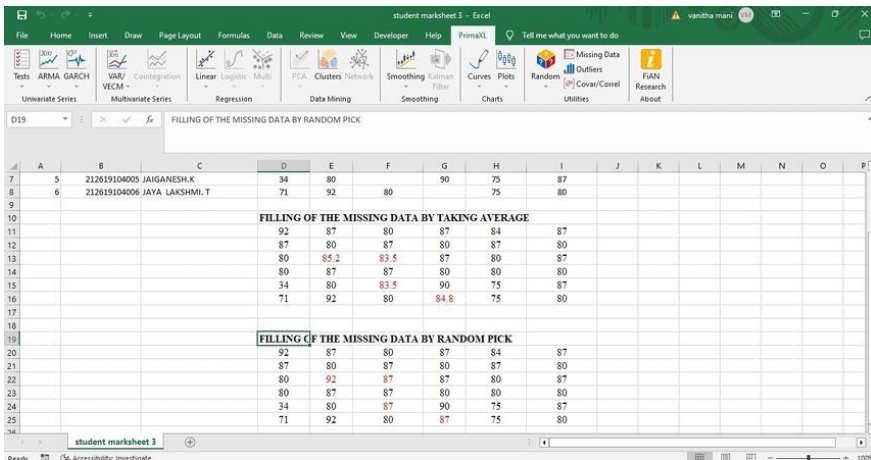
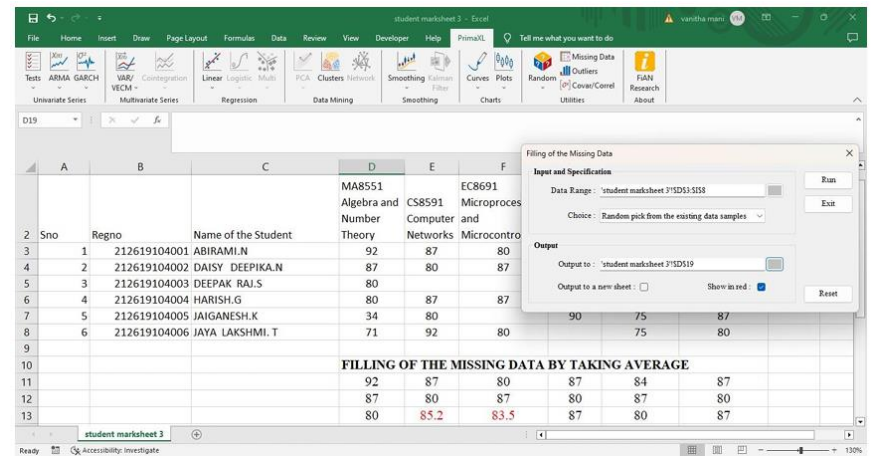
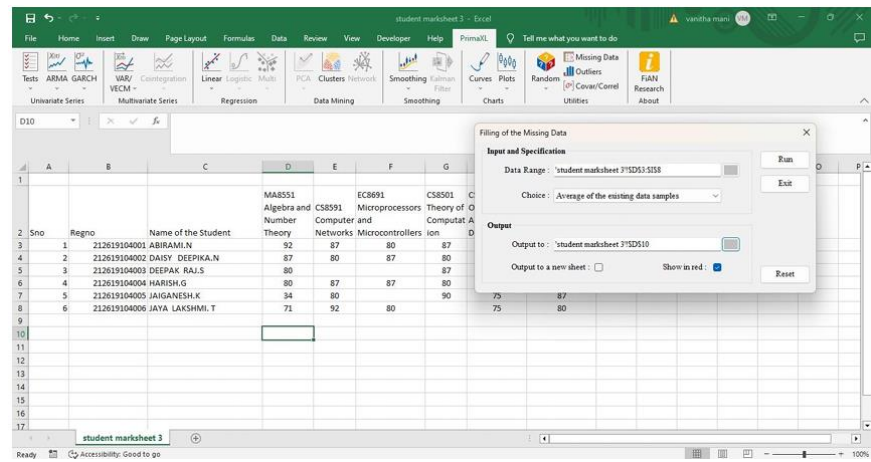
Step 8: Save the excel file and Close the Ms Excel application.

OUTPUT

| Sno | Regno | Name of the Student | MA8551 Algebra and Number Theory | CS8591 Computer Networks | EC8691 Microprocessors and Microcontrollers | CS8501 Theory of Oriented Computation | CS8592 Object Analysis and Design | OMD551 Basic of Biomedical Instrumentation |
|-----|--------------|---------------------|----------------------------------|--------------------------|---|---------------------------------------|-----------------------------------|--|
| 1 | 212619104001 | ABIRAM.N | 92 | 87 | 80 | 87 | 84 | 87 |
| 2 | 212619104002 | DADY DEEPIKA.N | 87 | 80 | 87 | 80 | 87 | 80 |
| 3 | 212619104003 | DEEPAK RAJ.S | 80 | 87 | 87 | 80 | 80 | 87 |
| 4 | 212619104004 | HARISH.G | 80 | 87 | 87 | 80 | 80 | 80 |
| 5 | 212619104005 | JAIGANESH.K | 34 | 80 | 90 | 75 | 87 | |
| 6 | 212619104006 | JAYA LAKSHMI. T | 71 | 92 | 80 | 75 | 80 | |



| Sno | Regno | Name of the Student | MA8551 Algebra and Number Theory | CS8591 Computer Networks | EC8691 Microprocessors and Microcontrollers | CS8501 Theory of Oriented Computation | CS8592 Object Analysis and Design | OMD551 Basic of Biomedical Instrumentation |
|-----|--------------|---------------------|----------------------------------|--------------------------|---|---------------------------------------|-----------------------------------|--|
| 1 | 212619104001 | ABIRAM.N | 92 | 87 | 80 | 87 | 84 | 87 |
| 2 | 212619104002 | DADY DEEPIKA.N | 87 | 80 | 87 | 80 | 87 | 80 |
| 3 | 212619104003 | DEEPAK RAJ.S | 80 | 87 | 87 | 80 | 80 | 87 |
| 4 | 212619104004 | HARISH.G | 80 | 87 | 87 | 80 | 80 | 80 |
| 5 | 212619104005 | JAIGANESH.K | 34 | 80 | 90 | 75 | 87 | |
| 6 | 212619104006 | JAYA LAKSHMI. T | 71 | 92 | 80 | 75 | 80 | |



RESULT

The missing data on dataset was handled successfully using MS-EXCEL and the desired output was displayed in neat format.

AIM: To normalize in the given dataset using MS-EXCEL.

Normalization (Or Min-Max scaling) data in excel It is the process of scaling data in such a way that all data points lie in a range of 0 to 1. Thus, this technique, makes it possible to bring all data points to a common scale. The mathematical formula for normalization is given as:

$$X' = \frac{X - X_{min}}{X_{max} - X_{min}}$$

where X is the data point, Xmax and Xmin are the maximum and minimum value in the group of records respectively. The process of normalization is generally used when the distribution of data does not follow the Gaussian distribution.

PROCEDURE:

Step 1 : Start Ms Excel application in Ms- office.

Step 2 : Create datasheet for sales data in Ms Excel application.

Step 3 : Find maximum and minimum values of given data set.

Step 4 : Calculate the difference between maximum and minimum values

Step 5: Apply the normalization formula using maximum value, minimum value and difference value. Step 6 : Find the best value of the normalized data.

Step 7 : Display the normalized data in desired format .

Step 8: Save the excel file and Close the Ms Excel application.

OUTPUT

| sno | Region | State | branch | Month | no of customers | Sales | no of customers | Sales | Total |
|-----|---------|----------------|--------|------------|-----------------|-------|-----------------|-------|-------|
| 1 | South | Kentucky | A1 | Jan | 32 | 10000 | 0.00 | 0.00 | 0.00 |
| 2 | West | California | A2 | Jan | 45 | 12000 | 0.57 | 0.10 | 0.67 |
| 3 | South | Florida | A3 | Jan | 55 | 18000 | 1.00 | 0.40 | 1.40 |
| 4 | West | California | A4 | Jan | 50 | 20000 | 0.78 | 0.50 | 1.28 |
| 5 | South | North Carolina | A5 | Jan | 50 | 22000 | 0.78 | 0.60 | 1.38 |
| 6 | West | Washington | A6 | Jan | 40 | 24000 | 0.35 | 0.70 | 1.05 |
| 7 | Central | Texas | A7 | Jan | 52 | 26000 | 0.87 | 0.80 | 1.67 |
| 8 | Central | Wisconsin | A8 | Jan | 50 | 28000 | 0.78 | 0.90 | 1.68 |
| 9 | West | Utah | A9 | Jan | 41 | 30000 | 0.39 | 1.00 | 1.39 |
| | | | | MIN | 32 | 10000 | | | |
| | | | | MAX | 55 | 30000 | | | |
| | | | | Difference | 23 | 20000 | | | |

RESULT

The given dataset was normalized using MS-EXCEL and the desired output was displayed in neat format.