



Lab Manual

CS-100: Fundamentals of ICT

Department of Computer Science

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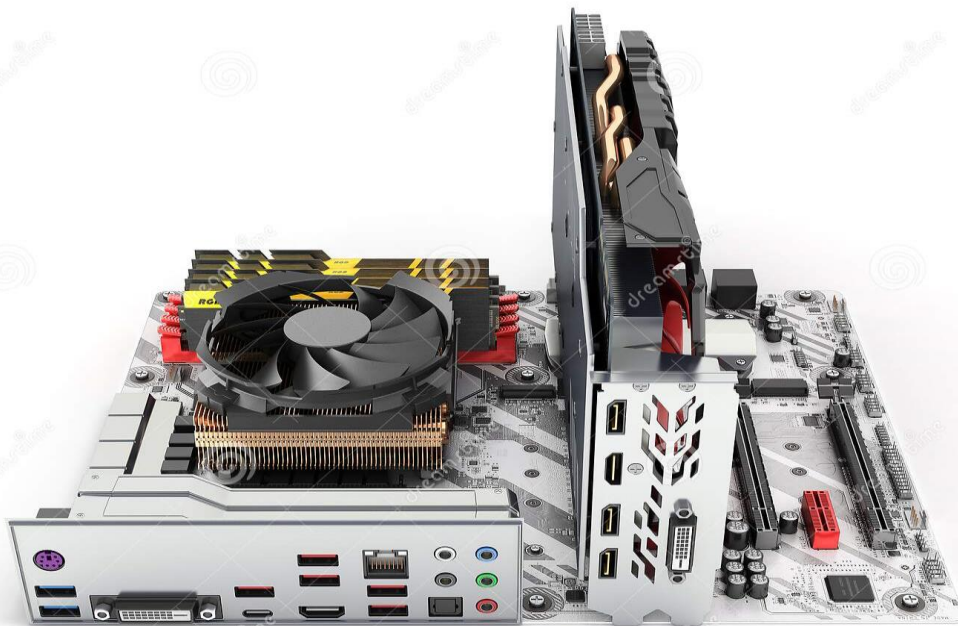
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Lab # 01:

Introduction to Motherboard.

What is the motherboard?

MOTHERBOARD: In simple words, it is the main circuit board for a computer, it is also called, CPU board. Or the motherboard is the vertebral column that linkup the computer's components together at one patch and allows them to interact to each other. Without CPU board, not any of the computer parts, such as the CPU, GPU, or hard drive, could act together. The complete motherboard functionality is needed for a computer to work well and perfectly. It is the motherboard that connects all the components of the computer, that is to say, peripheral equipments which are known as input and output devices and storage devices and many more. Without any doubts, the absent of motherboard a computer cannot work. That is why, the above discussed one is the chief means of computer.



What are the components of it?

The major components are Optical drives, such as DVD and CD-ROM drive, Video cards and GPUs, sound cards, hard drives (SSD or HDD), processors (CPU), USB (Universal serial bus), memory sticks (RAM), Parallel port, floppy controller, CPU slot, power supply plug in and the connector Side of Motherboard and so on.

DVD: It stands for digital video disc, used for recording movie and others that can be played on a computer or a television set.



CD-ROM drive: “CD” stands for compact disc. CD-ROM drive is connected to a computer to play a CD-ROM.



Video Cards and GPUs: These are also called graphics card. GPU (Graphics processing unit), provides a good graphic and used in video editing, and gaming applications.



Sound cards: These are slotted into a computer to produce sound.



Hard drives (SSD or HDD): A *hard disk drive* (HDD), *hard disk*, *hard drive*, or *fixed disk* is an electro-mechanical data storage device that stores and retrieves digital data. Solid State drive (SSD) is a newer, faster type of device



SSD



HDD

that stores data.

Processors (CPU): It is the brain of the computer and processes the instructions which are given to the computer.



USB (Universal serial bus): It is used to store data, keep the backup of it and communicate with other sources.



Memory sticks (RAM): Random Access memory (RAM) stores the data to manipulate it into useful information temporally.



Parallel Port: It is a very old port can be found in early computer and functions to connect peripherals.



Floppy controller: It is an electronic chip controller used as an interface between a computer and a floppy disk drive.



CPU Slot: It is slot on the motherboard to bring connection between CPU and motherboard.



Power Supply Plug In: It provides supply to the motherboard.



The connector Side of Motherboard is shown in the picture below;

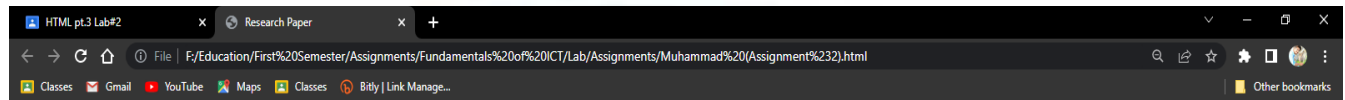


Lab # 02

Introduction to HTML:

Part 01:

A research paper by html;



1. Introduction

A major focus on science is testing theories or models. However, before a model can be tested, it has to be formulated, and the resources for the testing need to be made available. Sometimes the researcher develops an initial model, but lacks the resources to perform the test. Finding these resources can take time, especially with less than ideal communication channels. Academic publishing is one of the core methods used by researchers to communicate with one another. And yet even relatively open publishers such as PLOS and PeerJ outright reject any and all "hypothetical papers"[5, 7]. Many others only accept such papers on a case by case basis. But if academic publishing is about communication, then these communications should include concerns about existing research, and suggestions for new research, not just study results. In order to improve science communication, we need a new paper format.

I have written a number of papers over the last few years that are not traditional scientific papers that I will use as examples of the format that I am proposing and its importance. Many of the papers rely on existing information, yet they are not necessarily opinion or position papers either. The closest type of paper that exists in academic publishing might be the literature review, and yet they are more than that as well. They are "call to research" papers and consist of two parts. The first part of the format is very similar to a literature review, but is a bit more narrow. It does not necessarily give the entire state of the field, but rather information specific to the second part. The second part of the format considers various concerns about existing literature and makes proposals for new research. While the exact format may benefit from some changes, it is the general idea of the for that is important.

2. Need

The need to publicly express new research proposals, while limiting the concern about getting credit for the idea are two reasons why the call to research format is useful. But credit is not as important as promoting scientific inquiry. Someone might have a research idea, or new concerns, but lack the resources or funds to actually complete the research themselves. Even if a researcher were to write a grant proposal, waiting to publish an idea, before a grant proposal is even accepted delays science communication even further. Even if the researcher does plan on eventually doing the research themselves, it could take years from the initial idea until the research is published. And years may be too long to wait. For instance, in my paper on Whooping Cough, the question of vaccine efficacy is of utmost importance[5]. If it is true that we are incorrectly estimating vaccine efficacy, then we must change course and create new vaccines that actually do work, and we must take precautions against transmission that we once believed to be protected against.

3. The format

The exact format may be left open to the journal, and there is probably no single right or wrong structure. However, the two parts of the paper should include a discussion on existing scientific literature, that acts as a foundation for a new research question. Using the existing literature, one should be able to argue why the literature is incomplete, why there are concerns about the current state of the field, and why the proposed research being developed in the paper will help improve current scientific understanding of the topic. In most of my call to research papers, I split the paper into two identifiable sections. The first section gives an overview of the field. It is not as comprehensive as a full literature review. A literature review is both a summary and explanation of the complete and current state of knowledge on a limited topic as found in academic books and journal articles[11]. While a brief overview is provided, the majority of the studies cited are used specifically to form the foundation of the proposed research. Therefore, the length and detail of the first half of the paper is determined by how much supporting information is needed in the second part of the paper. The second part of the paper focuses on one or more proposed theories and tests for those theories. Discussion on this matter is generally brief as well. It does not explain the full research protocol that would be used, but provides enough detail so that another researcher could develop a full plan to test the theory. It may also contain other general concerns about the state of the field.

4. Publication

I wish to address the notion of authority in writing this kind of paper. While a Call to Research paper must be of scholarly nature, including care to avoid plagiarisms, ensuring proper citation, provided well argued ideas, and be well written so that it is accessible by any member of the academic community, expertise and authority in the field should not be a necessity. This allowance is not generally provided for general literature reviews. Indeed, as the University of Michigan Research Library details,

Reviews are usually published by experts in the field. Being familiar with the structure and purpose of reviews will help you navigate scientific literature more confidently, but remember that it is not likely you will be writing a review for publication in a journal until well into your career. Sometimes, journal editors will invite scientists to write a review for their journal.

[6] While this requirement seems reasonable in a detailed literature review, which is expected to inform the general research community about the state of a given field, it is a requirement that would stifle the ability of a researcher to express a novel and potentially important idea, as well as the community's ability to voice concerns. This behavior is the exact opposite of what we should be doing as researchers, especially because design thinking, which relies on unfettered ideation, is crucial to the advancement of research[7]. Because academic publishing is still very important, I do think that publishers should be open to accepting this format. Even if the mainstream publishers are not willing to accept this format, Open Science Framework (OSF) and ResearchGate offer an alternative. OSF is a general framework for developing preprints and is a "free and open source project management repository that supports researchers across their entire project lifecycle"[10]. ResearchGate has many similar features, but markets itself as a "professional network for scientists and researchers"[9]. Posting these articles on either, or both, of these platforms will allow authors to connect with other researchers, share their theories, and potentially find research partners. I do not know whether this format will become popular. I also do not know how accepting academic journals will be about this type of publication. However, if research is to become more open and scientific theories are to be updated and shared on a regular basis, this format, or some other format of a similar nature, will need to be at the forefront of scientific communication. This is not to say that traditional article formats, which focus on primary results and the collection of new data will not be just as important to scientific inquiry as they have always been. It is just that we need to take advantage of every avenue of communication that we have at our disposal, especially with the rise of social networks and article repositories geared to storing and sharing our ideas and our results.

References

- [1] Daniel Goldman. "Reforming Science". en. In: (2018). doi: 10.13140/rg.2.2.32797.97769. url: <http://rgdoi.net/10.13140/rg.2.2.32797.97769>.
- [2] Daniel S Goldman. A Unified Psychological and Anthropological Model of Religion. Mar 2018. doi: 10.31235/osf.io/tqtdm. url: osf.io/preprints/psychrxiv/tqtdm.
- [3] Daniel S Goldman. On Religion Rejectionism. Apr 2018. doi: 10.31235/osf.io/d7tph. url: osf.io/preprints/psychrxiv/d7tph.

[Click here for more information!](#)



Lab # 03

Introduction to HTML:

Part 02:

Headings, paragraph, color, different font style and table by html.

It is our Last lab Assignment of html:

In the Lab of ICT, we had started learning to html by Lab Engineer, Ma'am Syeda Hafsa who taught us Masha Allah outstandingly and She a very soft-hearted teacher. At very first lab we have read the introduction to html and some of its tags. 2nd lab we went towards how to utilize them into various style and etc. In the 3rd and 4th, we locomoted to "Styling of text in HTML and use of CSS: cascading style sheet" which was a really great experience under the leadership of Ma'am. finally, assign us a task to add statistics of departments of NBC in table by focusing the following which are given below.

- Add a background image.
- Add border to your webpage.
- Align the text in center of your webpage.
- Add 'marquee' tag and see the results.
- Then add a table and put some data into table.
- Border the table with different types of table borders.

Batch	Department	Strength
2021	Computer Science	27
2020	Civil engineering	42
2019	Statistics	39

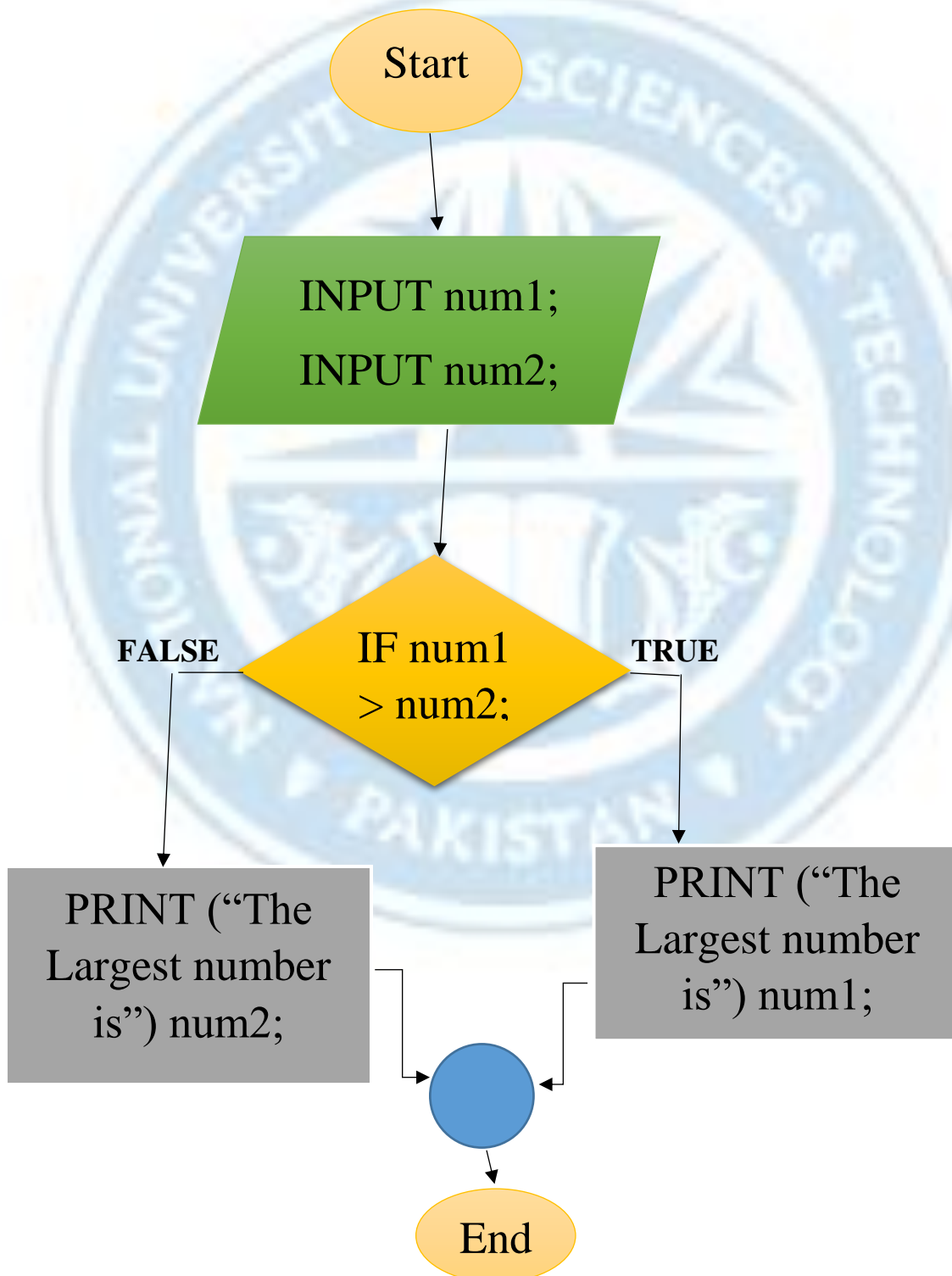
Thank you for checking my assignmet, ma'am!

Lab # 04

Pseudo code and flow chart.

1. Draw a flowchart of two numbers from user and display the largest of two numbers.
2. Write pseudo code for this program

FLOWCHART:



PSEUDO CODE:

BEGIN

INTEGER num1, num2;

OUTPUT ("Enter the first number: ")

INPUT num1

OUTPUT ("Enter the second number: ")

INPUT num2

IF num1>num2

OUTPUT ("The largest number is num1")

ELSE

OUTPUT ("The largest number is num2")

END

Lab # 05

Google docs and surveys

I've invited you to fill out a form:

NUST Baluchistan Campus

MCQs

Where is the main campus of NUST? *

- ☐ Karachi
- ☐ Balochistan
- ☐ Islamabad
- ☐ Rawalpindi

Which University in the Pakistan is top number one according to Engineering? *

- ☐ NUST
- ☐ MUST
- ☐ BOTH
- ☐ None

Where is Nust Balochistan Campus? *

- ☐ Quetta
- ☐ Turbat
- ☐ Kalat
- ☐ Khulo

Why have you joined NBC? *

How is NBC? *

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Lab # 06

Search engines and Internet.

Search engines:

With billions of websites online today, there is a lot of information on the Internet. Search engines make this information easier to find. Let's look at the basics of using a search engine, as well as some techniques you can use to get better search results.

How to search the Web?

There are many different search engines you can use, but some of the most popular include Google, Yahoo!, and Bing. To perform a search, you'll need to navigate to a search engine in your web browser, type one or more keywords—also known as search terms—then press Enter on your keyboard.

What is the Internet?

The Internet is a global network of billions of computers and other electronic devices. With the Internet, it's possible to access almost any information, communicate with anyone else in the world, and do much more. You can do all of this by connecting a computer to the Internet, which is also called going online. When someone says a computer is online, it's just another way of saying it's connected to the Internet.

What is the Web?

The World Wide Web—usually called the Web for short—is a collection of different websites you can access through the Internet. A website is made up of related text, images, and other resources. Websites can resemble other forms of media—like newspaper articles or television programs—or they can be interactive in a way that's unique to computers. The purpose of a website can be almost anything: a news platform, an advertisement, an online library, a forum for sharing images, or an educational site like us! Once you are connected to the Internet, you can access and view websites using a type of application called a web browser. Just keep in mind that the web browser itself is not the Internet; it only displays websites that are stored on the Internet.

How does the Internet work?

At this point you may be wondering, how does the Internet work? The exact answer is complicated and would take a while to explain. Instead, let's look at some of the most important things you should know. It's important to realize that the Internet is a global network of physical cables, which can include copper telephone wires, TV cables, and fiber optic cables. Even wireless connections like Wi-Fi and 3G/4G rely on these physical cables to access the Internet. When you visit a website, your computer sends a request over these wires to a server. A server is where websites are stored, and it works a lot like your computer's hard drive. Once the request arrives, the server retrieves the website and sends the correct data back to your computer. What's amazing is that this all happens in just a few seconds!

Lab # 07

Microsoft Word:

INTRODUCTION:

It is an application word processor software used to interact and process with textual data based document. For example, format, manipulate, save, print, edit, add, remove, design and many more. It is provided and designed by Microsoft Company. It was first released on October 25, 1983, under the name Multi-Tool Word for Xenix systems. Now a days, can be called as the most commonly used word processor application also known as full-feathered word processor.

INTERFACE:

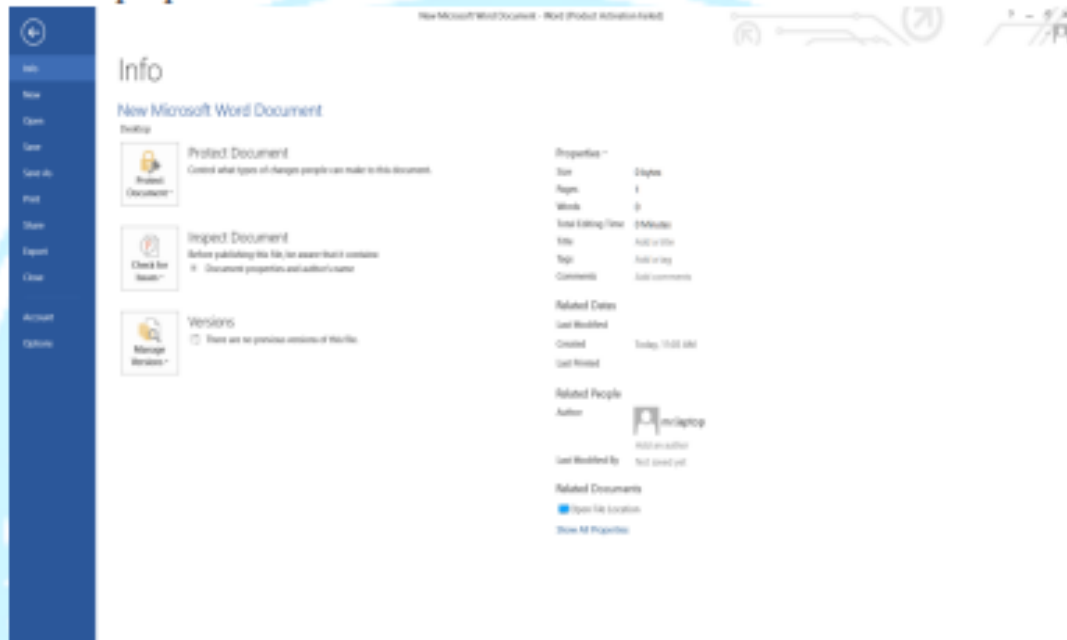
MS word's interface is shown by a screenshot given below and defined by the labels mentioned on it.



MAIN MENU's tabs: The Menu bar is directly below the Title bar and it displays the menu. The menu begins with the word File and continues with Home, Insert, Design, Page layout, References, Mailing, Review and View. You use the menu to give instructions to the software.

The following mentioned above tabs are defined below with figures.

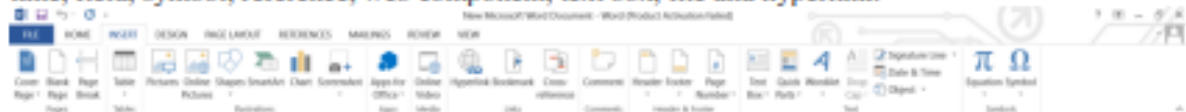
1. **The File Menu:** The file menu is one you will find yourself using extensively. It is used to create new documents, open existing documents and saving your new/updated documents. It also includes the page setup, print preview, and other important functions relating to your document and its properties.



2. **Home:** The Home tab is the default tab in Microsoft Word. It has five groups of related commands; Clipboard, Font, Paragraph, Styles and Editing. It helps you change document settings like font size, adding bullets, adjusting styles and many other common features.



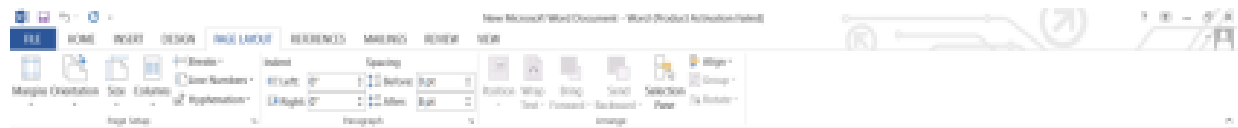
3. **Insert:** The insert menu is used to place various objects into your document, such as page numbers, pictures, symbols, comments and other objects. Commands include break, date and time, field, symbol, reference, web component, text box, file and hyperlink.



4. **Design:** The Design tab includes table formatting, cell and table borders, arranging the table on the page, and the size of the table.



5. Page layout: The Page Layout Tab holds all the options that allow you to arrange your document pages just the way you want them. You can set margins, apply themes, control of page orientation and size, add sections and line breaks, display line numbers, and set paragraph indentation and lines.



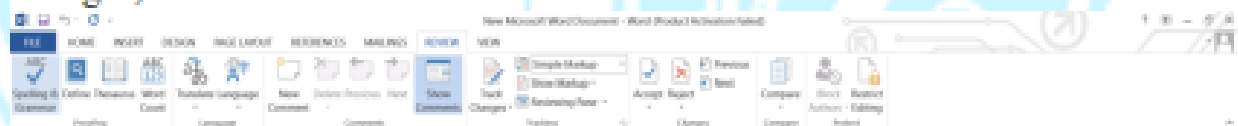
6. References: The References Tab allows you to now create a table of contents, footnotes, citations, cross-references, select MLA or APA or ISO formats and so on. You can also turn your Works Cited into a collection of records and use them in the future.



7. Mailings: The Mailings Menu will help us to get wiring & insert fields by the items of Highlight Merge Fields, Address Block..., Greeting Line..., Insert Merge Field, Rules, and Update Labels. It enables us to preview our mailing merge results by the items of Preview Results, Find Recipient, Auto Check for Errors, and more.



8. Review: The Review tab provides icons for document review-related commands, such as spelling check, translation, track changes, apply changes, comments and so on.



9. **View:** The View menu is a drop-down menu at the top of the screen, and contains the following commands: To the far left in all toolbars and also in the menu bar, a symbol of vertical dots is displayed. Clicking and dragging here un-docks or docks the bar in the standard Windows fashion.



Lab # 08

Microsoft PowerPoint

INTRODUCTION:

Microsoft PowerPoint can be a powerful classroom tool. Used ineffectively, however, its technical bells and whistles can obscure educational content, turning a great lesson into computer chaos. The Education World Tech Team offers ideas on how to use PowerPoint to enhance, rather than overshadow, student learning. Included: A detailed lesson plan and rubric, an equation for creating your own PowerPoint rubric, a completed student presentation, and dozens of tips for ensuring effective PowerPoint presentations in your classroom.

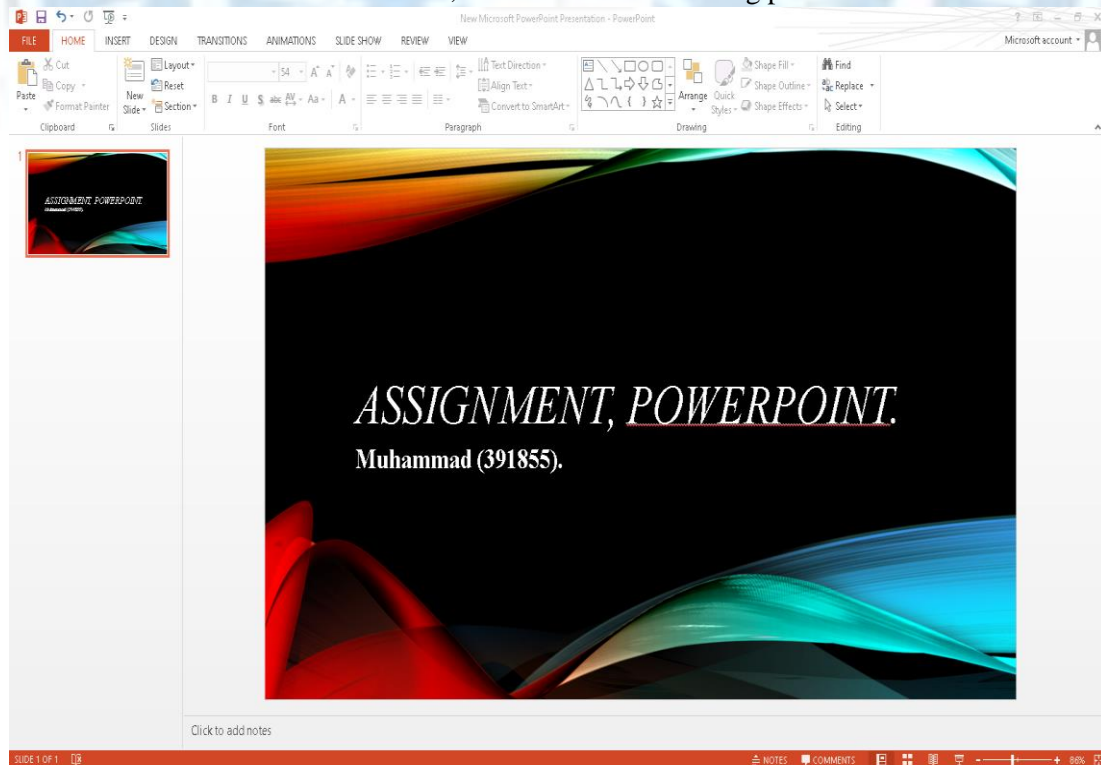
OVERVIEW:

With PowerPoint on your PC, Mac, or mobile device, you can:

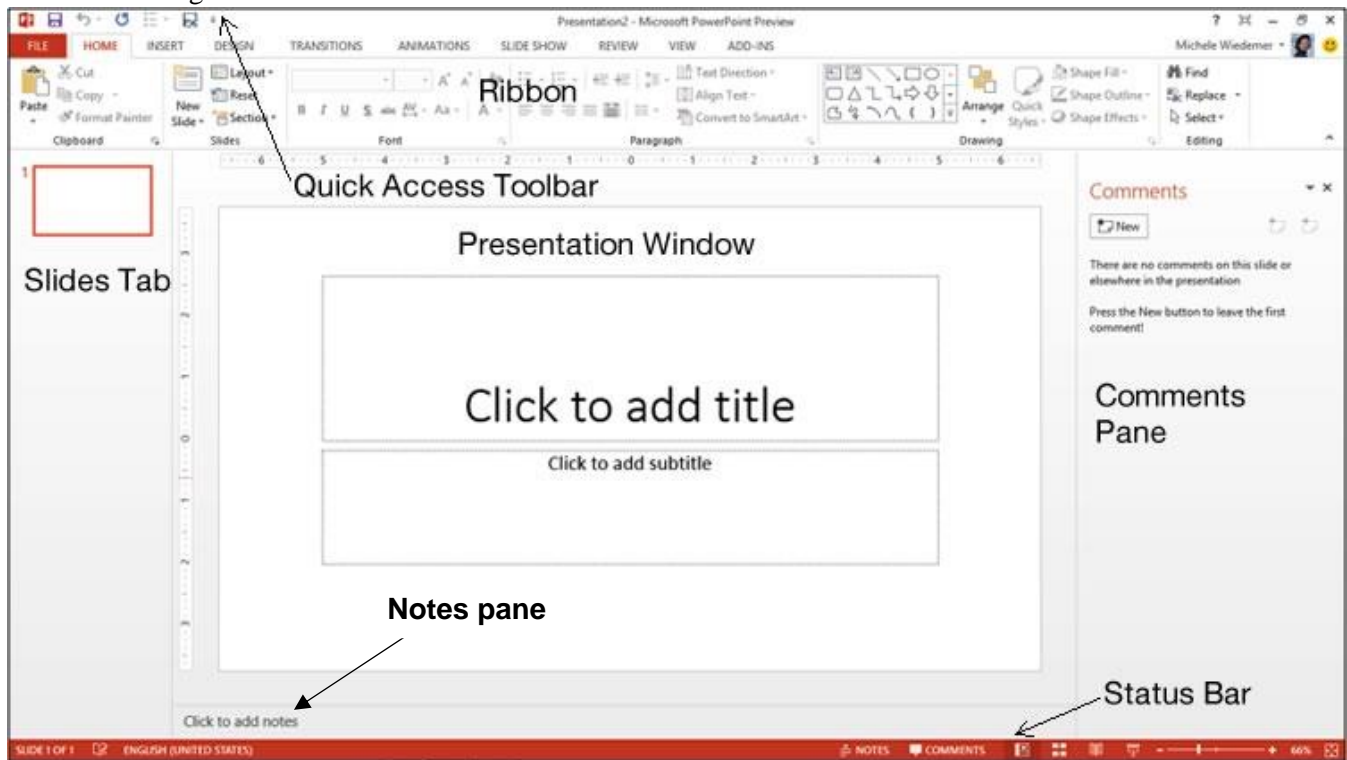
- ✓ Create presentations from scratch or a template.
- ✓ Add text, images, art, and videos.
- ✓ Select a professional design with PowerPoint Designer.
- ✓ Add transitions, animations, and cinematic motion.
- ✓ Save to OneDrive, to get to your presentations from your computer, tablet, or phone.
- ✓ Share your work and work with others, wherever they are.

INTERFACE:

When we run MS PowerPoint, we will see the following presentation window.



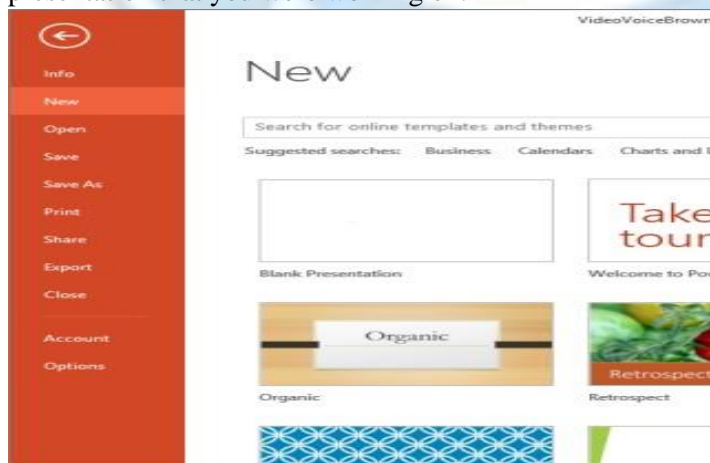
The PowerPoint interface, including the Ribbon, the Slides tab, the presentation window, the Notes pane, the Comments pane, the Quick Access toolbar, and the Status bar. The Slides tab shows a thumbnail of each slide in the presentation. The presentation window is where you can view and edit the entire slide. As labeled and given below:



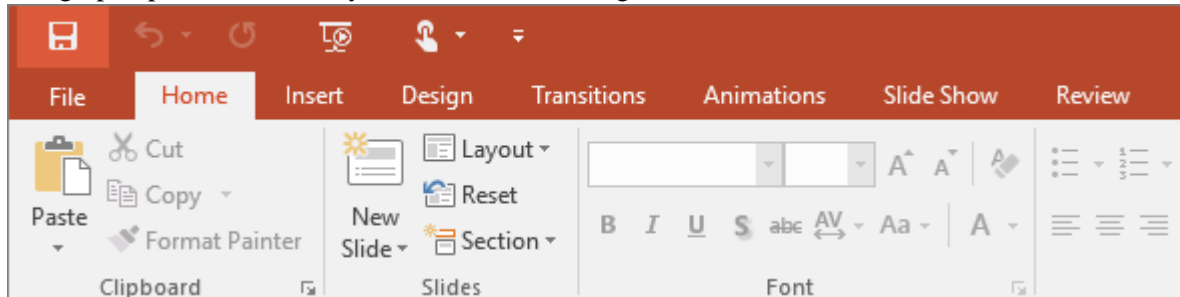
TABS:

The main tabs of MS PowerPoint are FILE, HOME, INSERT, DESIGN, TRANSITIONS, ANIMATIONS, SLIDE SHOW and REVIEW.

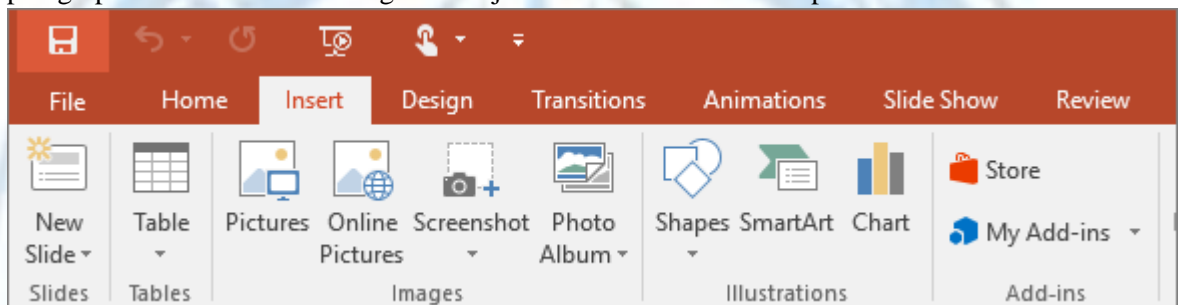
1. **File:** At one end of the ribbon is the File tab, which you use for the behind-the-scenes stuff you do with a file, such as opening, saving, sharing, exporting, printing and managing your presentation. Click the File tab to open a new view called the Backstage and to return to the presentation that you were working on.



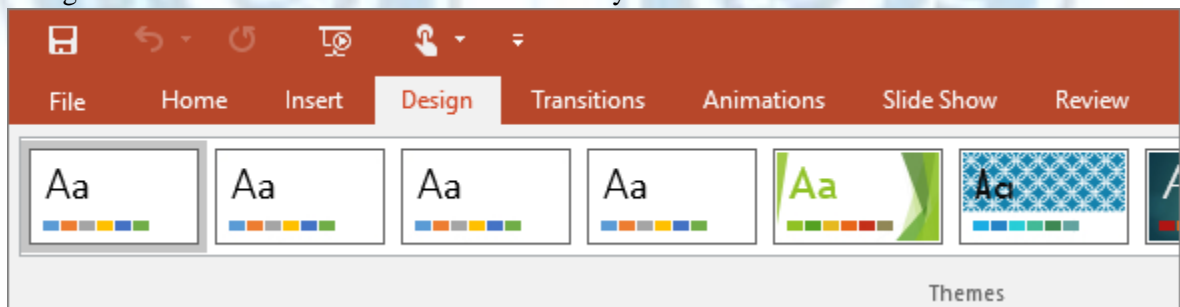
2. **Home:** It is the second tab in the menu ribbon located at the top of the screen. It is between the “File” tab and the “Insert” tab. When you open a new PowerPoint file, the “Home” tab will be open in the menu ribbon by default. The Home tab holds the Cut and Paste features, Font and Paragraph options, and what you need to add and organize slides.



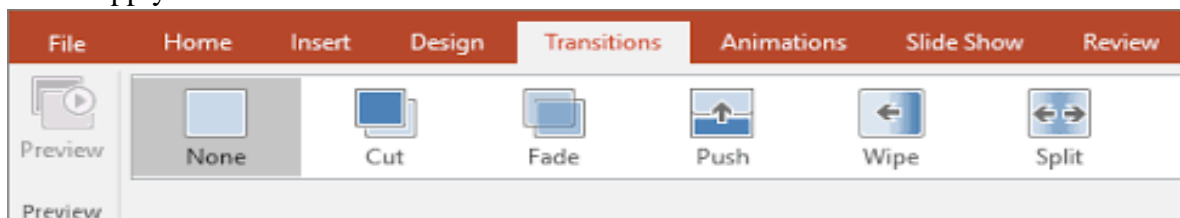
3. **Insert:** To insert tabs in PowerPoint, first enable the ruler, if needed, by checking the “Ruler” checkbox in the “Show” button group on the “View” tab of the Ribbon. Then select the paragraphs in the text-containing slide object for which to set tab stops in PowerPoint.



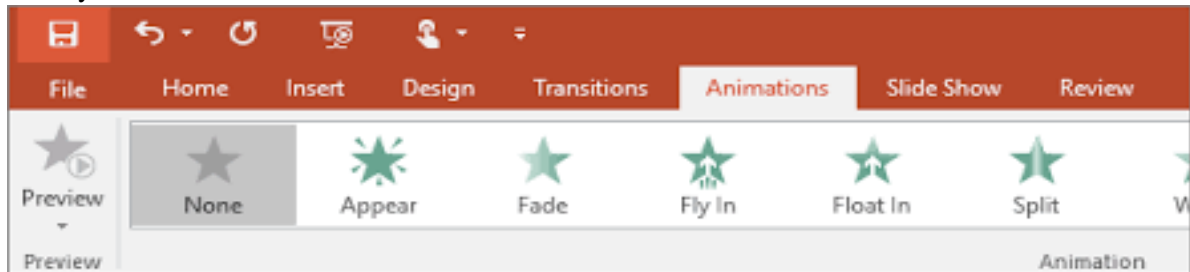
4. **Design:** It is the same whether you're using a Mac or PC computer, iPad, Android, or Windows tablet, or PowerPoint Online. If it's not already open, display the Design Ideas pane on the right side of the screen by clicking "Design Ideas" in the ribbon. You can find it in the "Design" tab. It changes the content of the slide. It adds functionality to the slide.



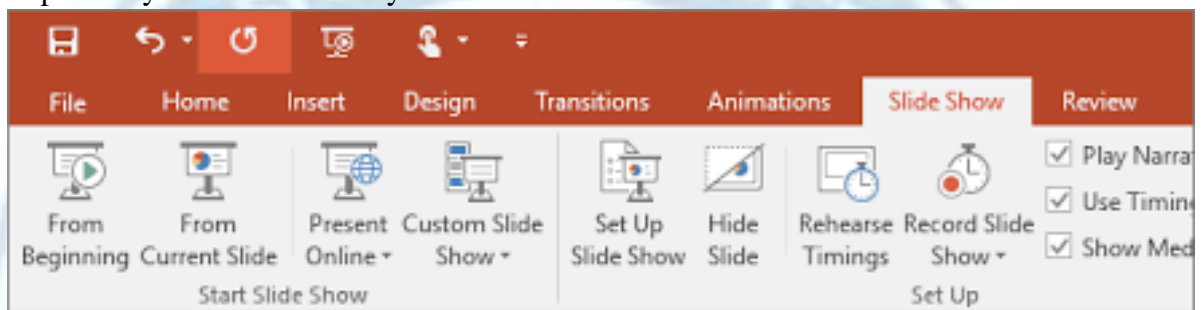
5. **Transitions:** The transitions tab contains the Transitions to This Slide group. From this group choose a special effect to be applied during the transition between the previous slides to the next slide. To apply transition schemes to all the slides in your presentation select Apply to All.



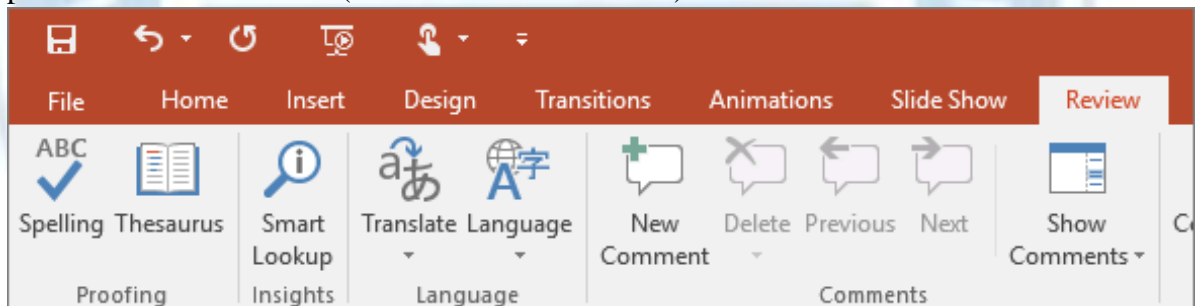
6. **Animations:** It allows you to view and manage all of the effects that are on the current slide. You can modify and reorder effects directly from the Animation Pane, which is especially useful when you have several effects.



7. **Slide Show:** It is used to display the presentation on or from your computer. This is the best way to view or preview your presentation to ensure it is clear, focused and has the impact on your audience that you want.



8. **Review:** The Review tab lets you add comments, run spell-check, or compare one presentation with another (such as an earlier version).



THE END!