Computer Basics :
Just How Does a Computer Work?

Introduction

Look at this picture of a computer from our Computer Lab. A computer is made up of many parts. Let's explore the parts to see if you know what they are called!

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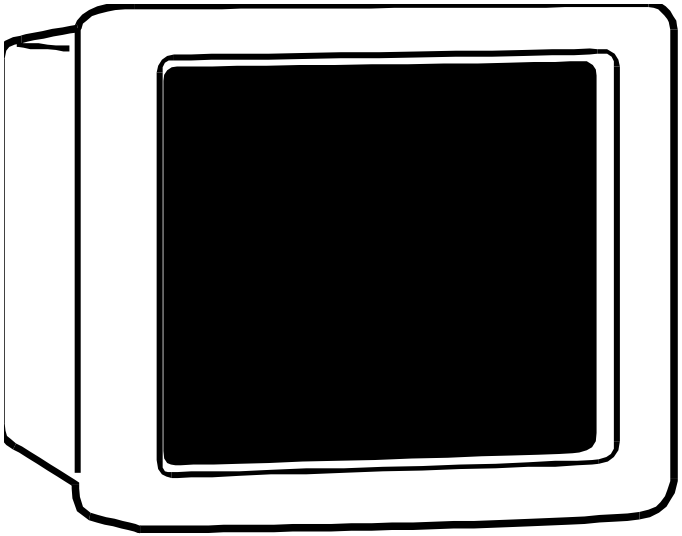
The Monitor



The monitor looks like a TV and lets lets you see your work and your files.

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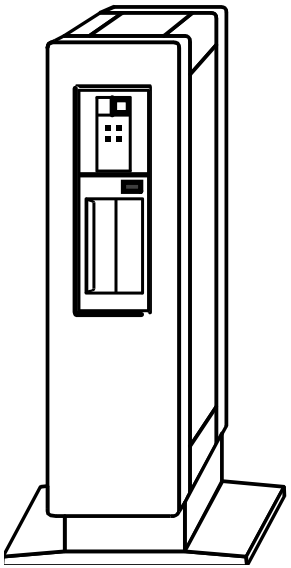
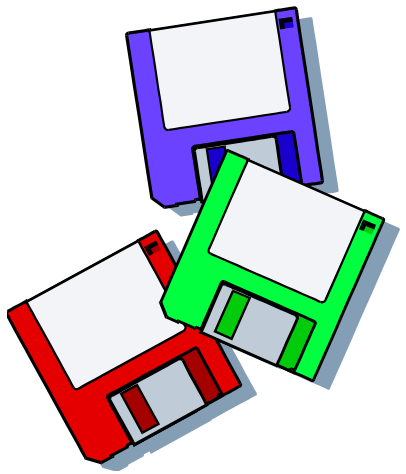
The CPU



CPU stands for "Central Processing Unit". They contain the brains of the computer. They can be **desktop** models that the monitor sits on top of, or **tower** models that stand up tall.

Floppy Disk Drive

The CPU has places to insert disks. One kind of disk drive is a floppy disk drive. A floppy disk drive reads information from a very thin, floppy disk inside a hard plastic case. Floppy disks can hold up to 1.44 megabytes of information.



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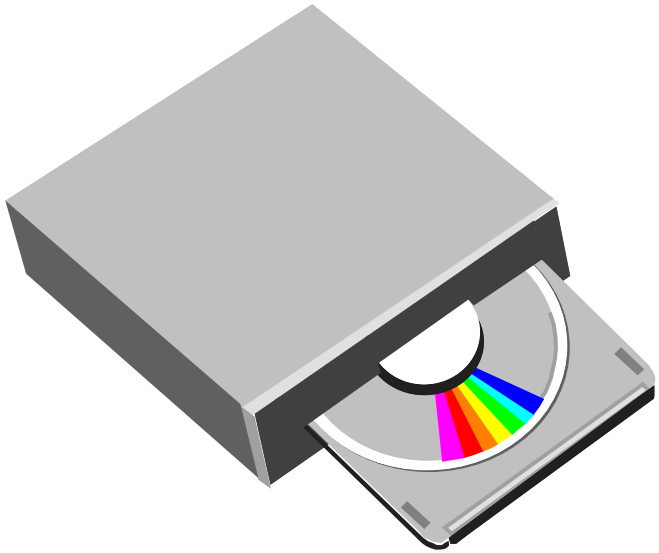
CD-ROM Disk Drive



CD-ROM stands for Compact Disk-Read Only Memory. They are flat, shiny disks that store information. Most new computers have CD-RW drives. CD-RW stands for Compact Disk-ReWrite. This type of disk allows you to write information to it, as well as read from it. Most can hold up to 700 megabytes of information.

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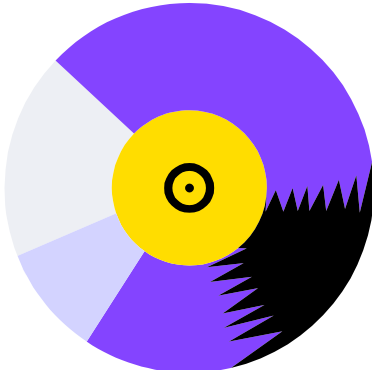
DVD Drive/Burner



The newest computers come with the option of a DVD drive. A DVD (Digital Video Disc) looks just like a CD, but holds much more information! They can store 4.7 gigabytes of data!

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Flash Drive

A Flash Drive is a relatively new storage device. It's like a mini, portable hard drive! You plug it into the USB (Universal Serial Bus) port on the front of newer computers and you can save to it!

How Do Computers Work?

- Input--This is when information is entered into a computer. Some common input devices include the keyboard, mouse and scanner.
- Output--This is the information that comes out of a computer after it has been processed. The information comes out on output devices such as a printer or computer monitor.
- Processing--This is when the information is handled by the computer's brain, known as the CPU (Central Processing Unit).

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Input Devices

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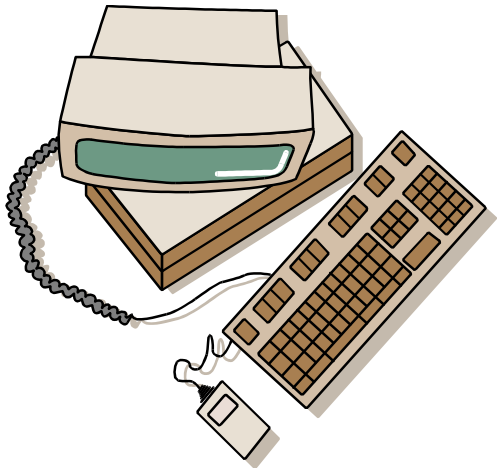
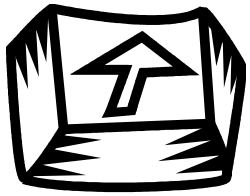
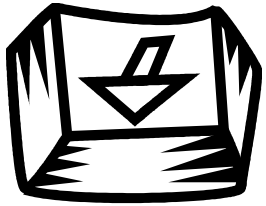
The Keyboard



The keyboard is probably the most used input device. It operates a lot like a typewriter, but has many additional keys that let it do special things a typewriter can't.

Special Keyboard Keys





The flashing light on the computer screen is called the cursor. This cursor can be moved up and down or left and right by pressing the 4 keys that have arrows on them. These arrow keys are called **cursor keys**.

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Shift Key

When this key is pressed at the same time you press a letter key, a capital letter appears on your screen. When it is held down when you press a key with a symbol and number, the top symbol appears on the computer screen. There are two shift keys on your keyboard.

The Backspace Key

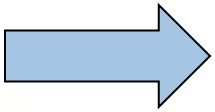
When this key is pressed, the cursor moves back one space to the left on your computer screen. This key is very helpful when you press the wrong letter or number. You can erase your mistakes!

The Caps Lock Key

When you press this key, a small light on the keyboard comes on. Whenever this light is on, any letter key you press will result in a capital of that letter appearing on the screen. Pressing the CAPS LOCK key a second time turns it off.

The Space Bar

This is the long bar located at the bottom of the keyboard. Every time you press this bar, the cursor moves one space to the right on the computer screen.



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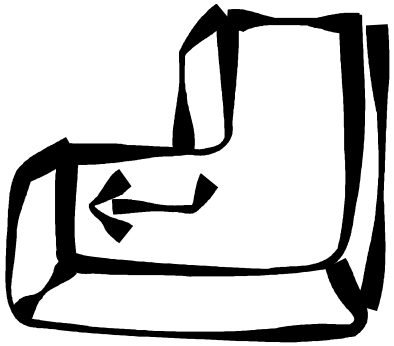
The Enter Key



When you write a letter or a story pressing the Enter Key makes the cursor jump down to the next line. This is a very helpful key to use when you want to start a new paragraph or you're typing your spelling list.

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The Function Keys

Most computer keyboards have between 10 and 12 function keys. These keys are usually located at the top of the keyboard and give the computer user fast ways to give the computer special instructions. For example, pressing F1 when using a Windows program will allow the user access to the Help screen.

The Numeric Keypad Keys

On the right side of the keyboard there is a set of keys grouped together in a square. These keys have two functions. When the number lock key is pressed, these keys offer a quick and easy way of entering numbers into the computer. When the number lock key isn't pressed, these keys control the movement of the cursor.

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Text Editing Keys

Located next to the numeric keypad, there are six text editing keys. These keys are designed to be used in Word Processing programs. They allow you to move quickly around a screen when you are writing a letter or story. They are very useful when you want to fix a spelling mistake, add a sentence to your work, or just move to another page.

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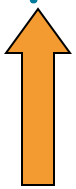
The Mouse

It's another input device. It's called a mouse because of it's shape and the way the cable attaching it to the computer looks a bit like a tail. There are two kinds of mice. Some use a roller ball that allows the mouse to roll around a flat surface. When you do that and look up at the screen, you'll see a small moving arrow. This arrow is called the pointer.



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Scanner

A scanner is a very useful input device. You can place a page of writing or pictures in the scanner and it will send the information to your computer. There they can be changed, saved into a computer file, or printed.

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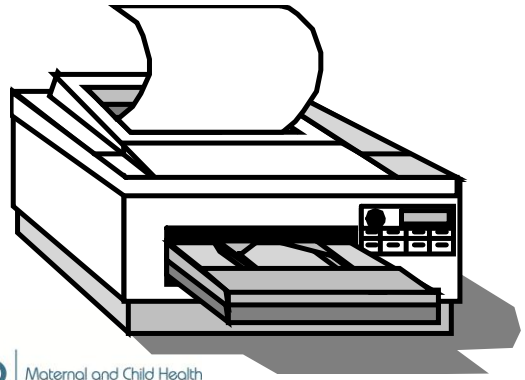
Output Devices

- Printers
- Soundboard
- Audio Speakers

Printers

One output device is a printer. Once a computer user has created something on the computer, such as a story, he can send it to the printer. The printer prints exactly what's on the screen.



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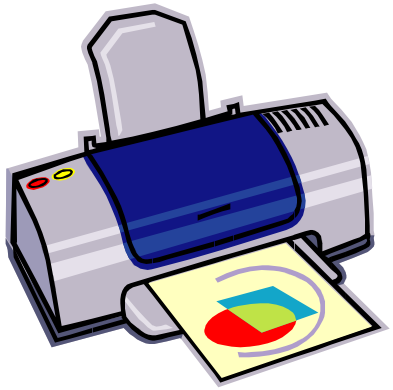
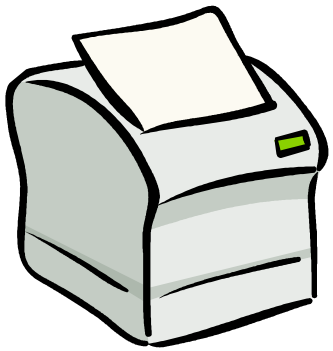
Two Common Types of Printers



An inkjet printer usually prints in color. It prints by squirting out small dots of ink onto the paper.



A laser printer uses a laser beam to create an image that is transferred to paper. It uses toner and a drum. The ink is powder.

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Soundboards

A soundboard is an electronic circuit board, located inside the computer, that can produce music and high quality sounds. If you play video games and multimedia programs on your computer, you'll need a soundboard!

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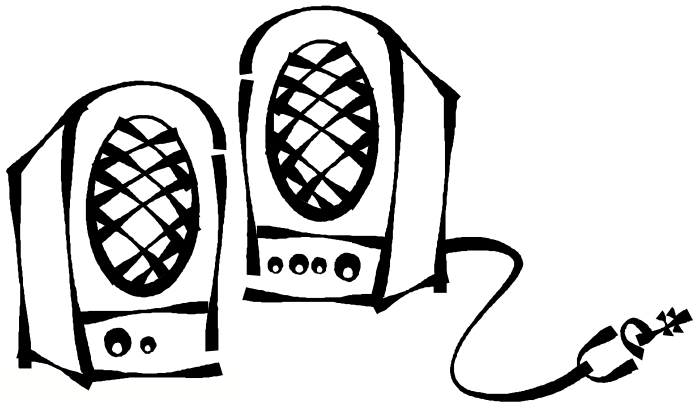
Speakers

Speakers can be connected to your computer so you can hear very realistic sound effects and wonderful music. Some computer monitors come with built in speakers.



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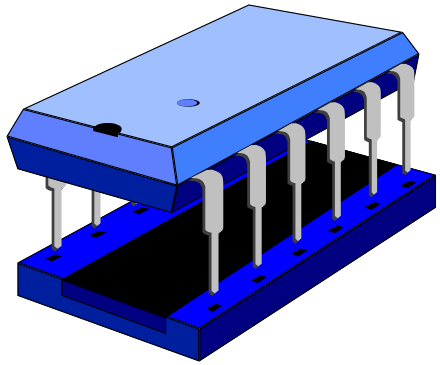
Computer Processing

Once information has been sent to a computer by one of the input devices it's processed. The computer uses it's brain to process the information. The computer's brain is called the CPU, or Central Processing Unit.



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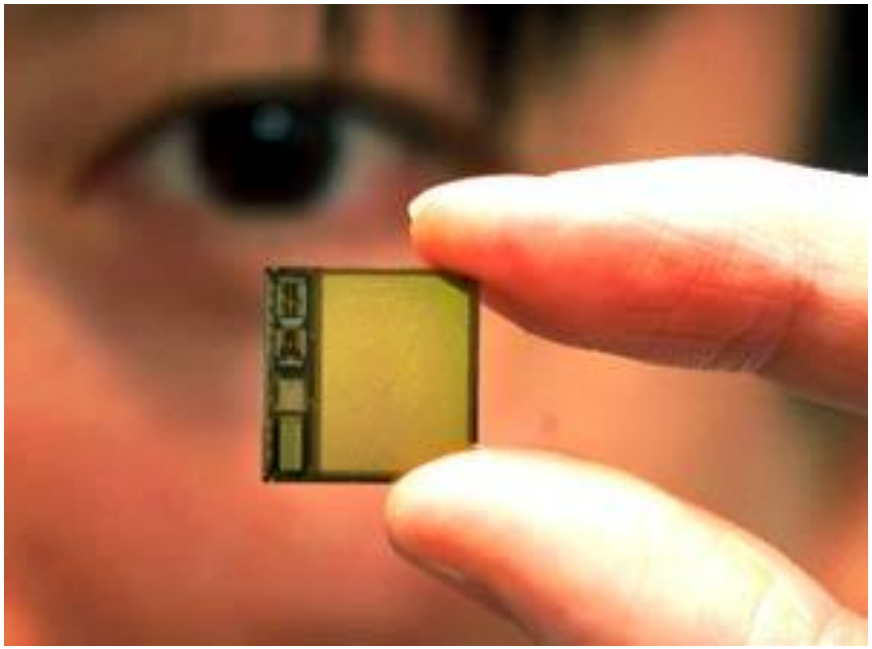
The CPU is also called the microprocessor. The word "micro" means small. Since the CPU is located on a small computer chip about 1 inch square, that makes sense!



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Random Access Memory

When a computer processes information, it uses software programs. Each program requires a certain amount of electronic memory, or RAM (Random Access Memory) to run correctly.

RAM is **temporary memory**. The computer holds information in this memory and gets it when it needs it.

If a computer has more RAM, it can solve problems and process information faster! If you're updating your computer, more RAM is a great thing to add!

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Read-Only Memory

A second kind of computer memory is ROM, which stands for Read-Only Memory. This memory is **permanent**. The information there was put there when the computer was made. The computer needs the information in it's ROM memory in order to function.

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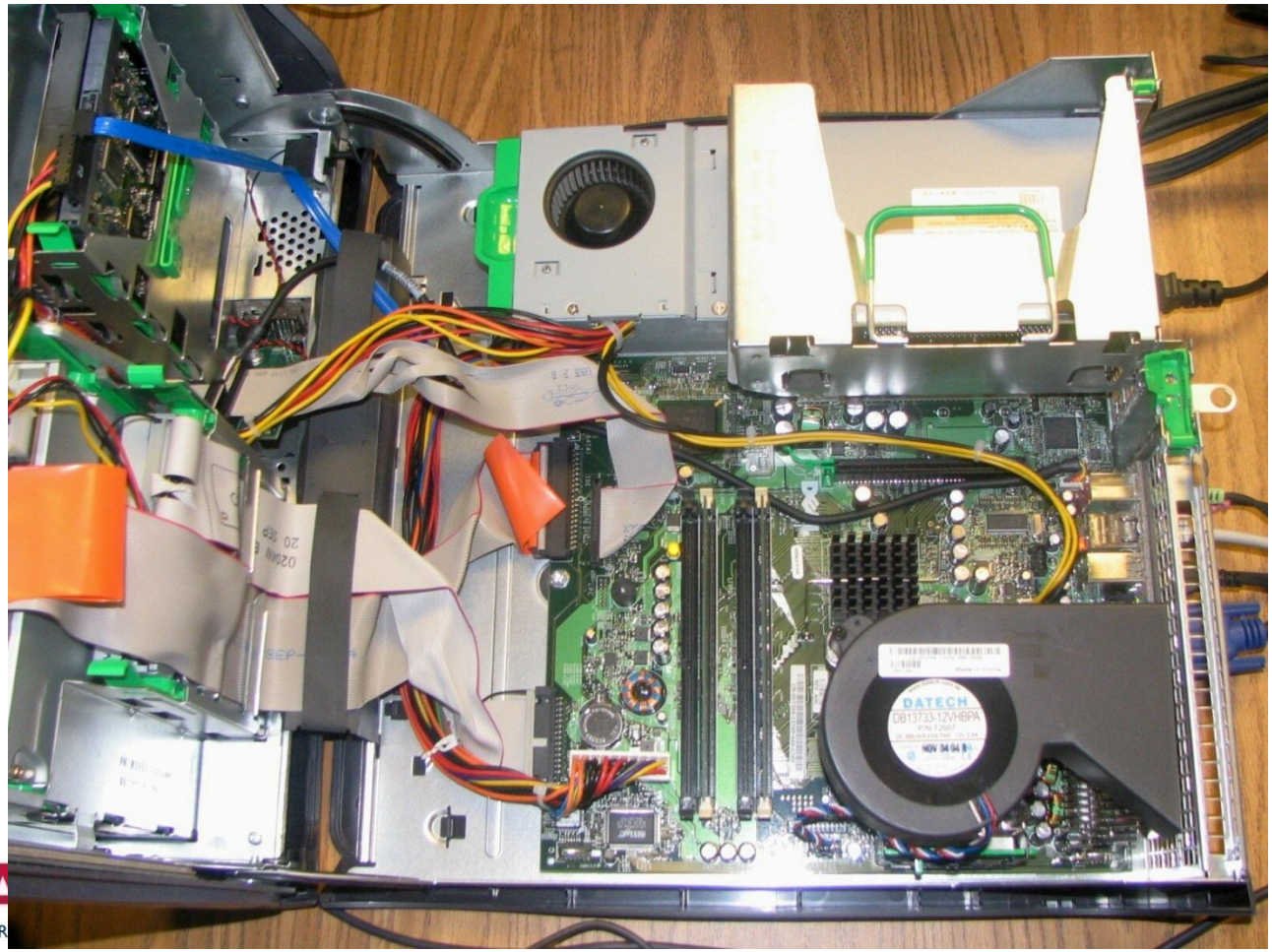
What are all those parts inside my computer and what do they do???



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Computer Hardware

- Hard Drive
- Motherboard
- Sound Card and Video Card
- Memory Card
- Power Supply
- NIC Card
- BIOS

Bytes, Kilobytes, Megabytes and Gigabytes

- Byte 8 Bits=1 byte
- KB Kilobyte=1,000 bytes
- MB Megabyte=1,000,000 (1 million) bytes
- GB Gigabyte=1,000,000,000 (1 billion) bytes

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Just the beginning…..

We just touched on the very basics with this presentation! There is so much more to understanding computers. There are books that are thousands of pages long that explain how they work in great detail. But now maybe you understand them more than you did before and you'll want to keep learning.

Keep computing!

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References

- Kids Domain Resources: Computer Connections, Computers Inside & Out
- http://www.howstuffworks.com
- "Computer Basics", Teacher Created Materials, pub.1996

Computer Operation Overview

Day 4

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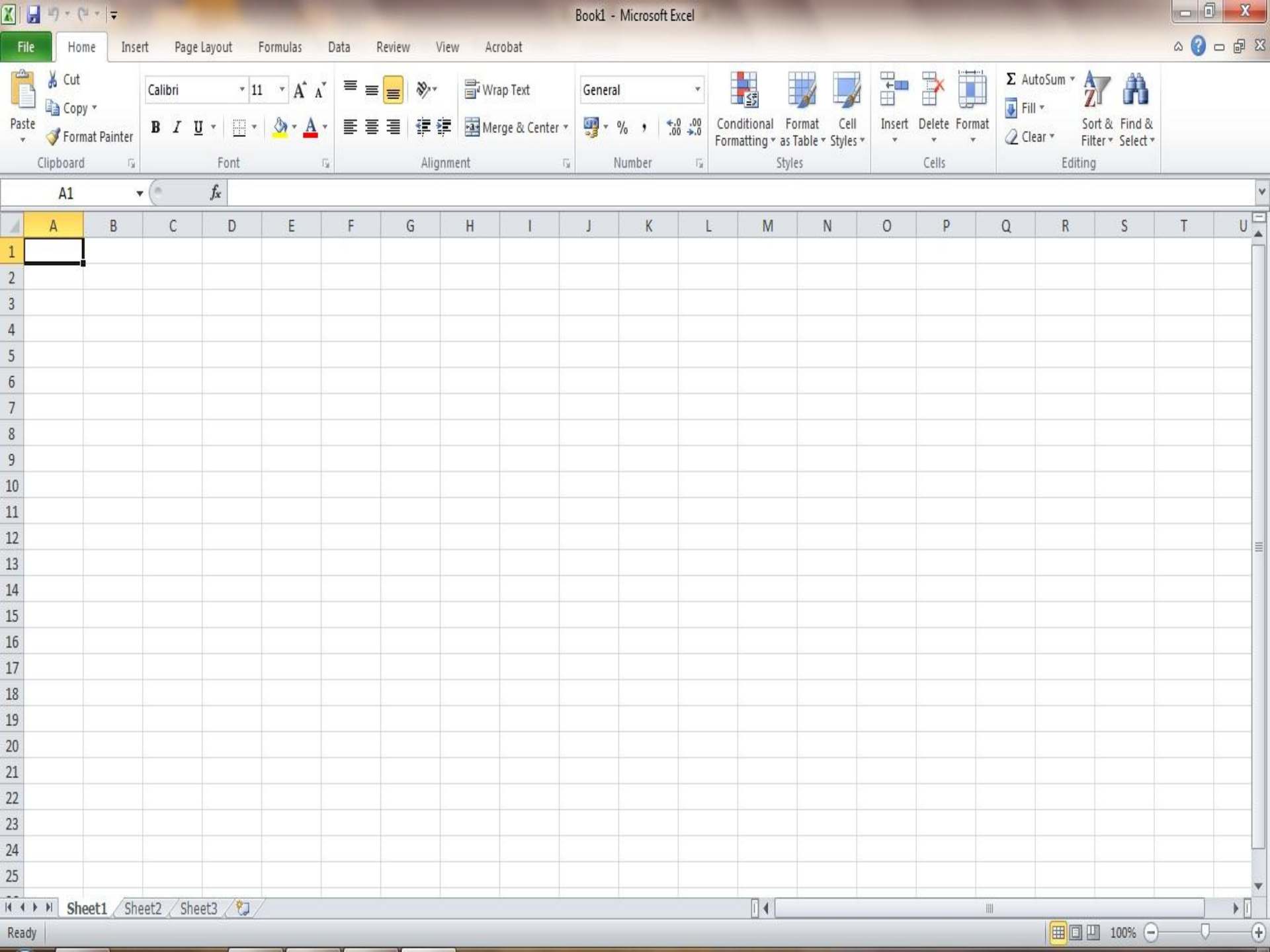
Microsoft Office

Microsoft Office is a proprietary commercial office suite of inter-related desktop applications, servers and services for the Microsoft Windows operating systems, introduced by Microsoft in 1989. Initially a marketing term for a bundled set of applications, the first version of Office contained:

- ❑ Microsoft Word √
- ❑ Microsoft Excel
- ❑ Microsoft PowerPoint

Microsoft Excel

Microsoft Excel is a commercial spreadsheet application written and distributed by Microsoft for Microsoft Windows and Mac OS X. It features calculation, graphing tools, pivot tables and a macro programming language called Visual Basic for Applications. With its powerful functions, Excel has been a very widely applied spreadsheet in many fields, this article


Book1 - Microsoft Excel
File
Home
Insert
Page Layout
Formulas
Data
Review
View
Acrobat
Cut
Copy
Format Painter
Paste
Clipboard
Calibri
11
Font
Wrap Text
Merge & Center
Alignment
General
Number
Conditional Formatting
Format as Table
Cell Styles
Styles
Insert
Delete
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Cells
AutoSum
Fill
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Sort & Filter
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Editing
A1
Sheet1
Sheet2
Sheet3
Ready
100%

Use of Microsoft Excel

1. Manage data records like name list

The commonly usage of Excel is to manage data records and name lists. You don't have to plan in advance on how the table should look like, as the preset layout alllows you to create the tables on the fly, just fill in the information, the table is developed on the go. Another more attractive point is that you have the ability to sort the list and filter the listing like a database tool.

2. Used as an analytical tool

Besides the good use on managing data, Excel is a great analytical tool for business. With the **pivot table** contained within Excel, you can easily analyse a large number of data, as the pivot table can automatically sort, count, and total the data stored in one table or spreadsheet and create a second table displaying the summarized data. It has gone through many revision. In each revision, we see its power being enhanced. In the latest version of Excel 2010, there are many new features added: It added almost six new caculations, a 'Show Value As' function and some great visual tools.

3. Create forms and consolidate results

You can use Excel to create not only a simple form that contains boxes, but also professional forms which include option buttons that allow you to select answers, dropdown list to select a particular answer from list of items. Together with charts, you can use Excel to compile answers to tests or quizzes and analyze the profile of the class (If you are a teacher) or your team (If you are a supervisor).

Use of Microsoft Excel

4. Corporate Budgeting

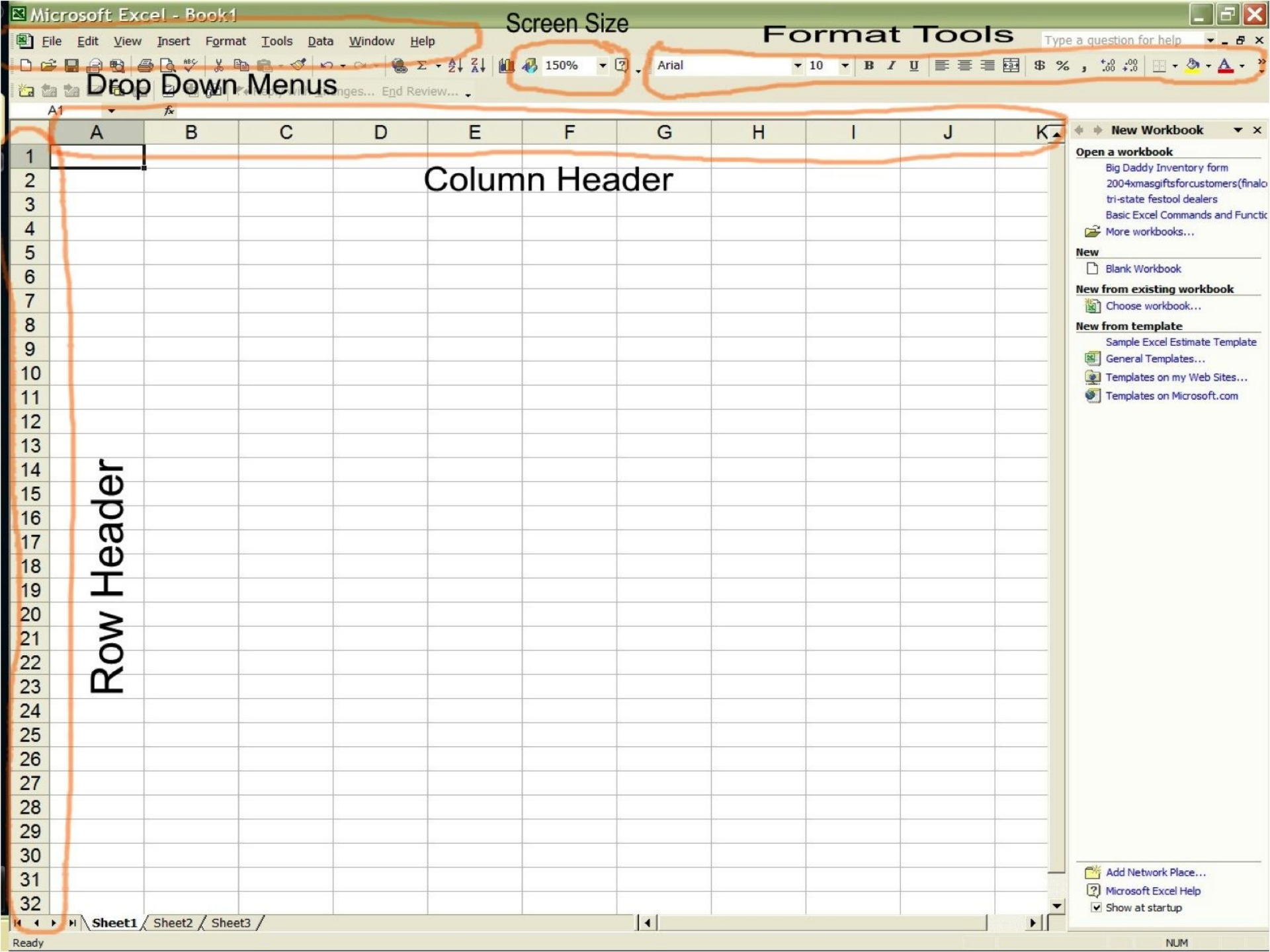
A major business application of Excel is in corporate budgeting. Many companies, from big corporations to small companies use Excel for their budgeting. Despite numerous calls by suppliers of Business Performance Management Systems (BPM) to move away from Excel as a budgeting tool, 70% to 80% of all corporations still use Excel as their primary budgeting tool.

5. Inventory Management

Excel provide many functions and formulas that will not only help you manage your data records efficiently but will also allow you to analyse your data based on your constantly changing business environment. Through the use of Microsoft® Excel formulas, you can create comprehensive drop down boxes to facilitate data inputs and reduce erroneous entries. And through the use of pivot tables, you could get a good detailed analysis of your stock movement and also your inventory level at any point in time.

\6. Finding Profit Breakeven

Finding breakeven is never easy without using Excel. To manually find out the breakeven for a project, you have to perform many calculations using different numbers as it's inputs. And the calculation becomes even more complex if the components include fixed cost and step up cost. But with the goal seek function in Excel, this task can be completed in a few seconds.


Microsoft Excel - Book1
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New from template
Sample Excel Estimate Template
General Templates...
Templates on my Web Sites...
Templates on Microsoft.com
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Sheet1 Sheet2 Sheet3
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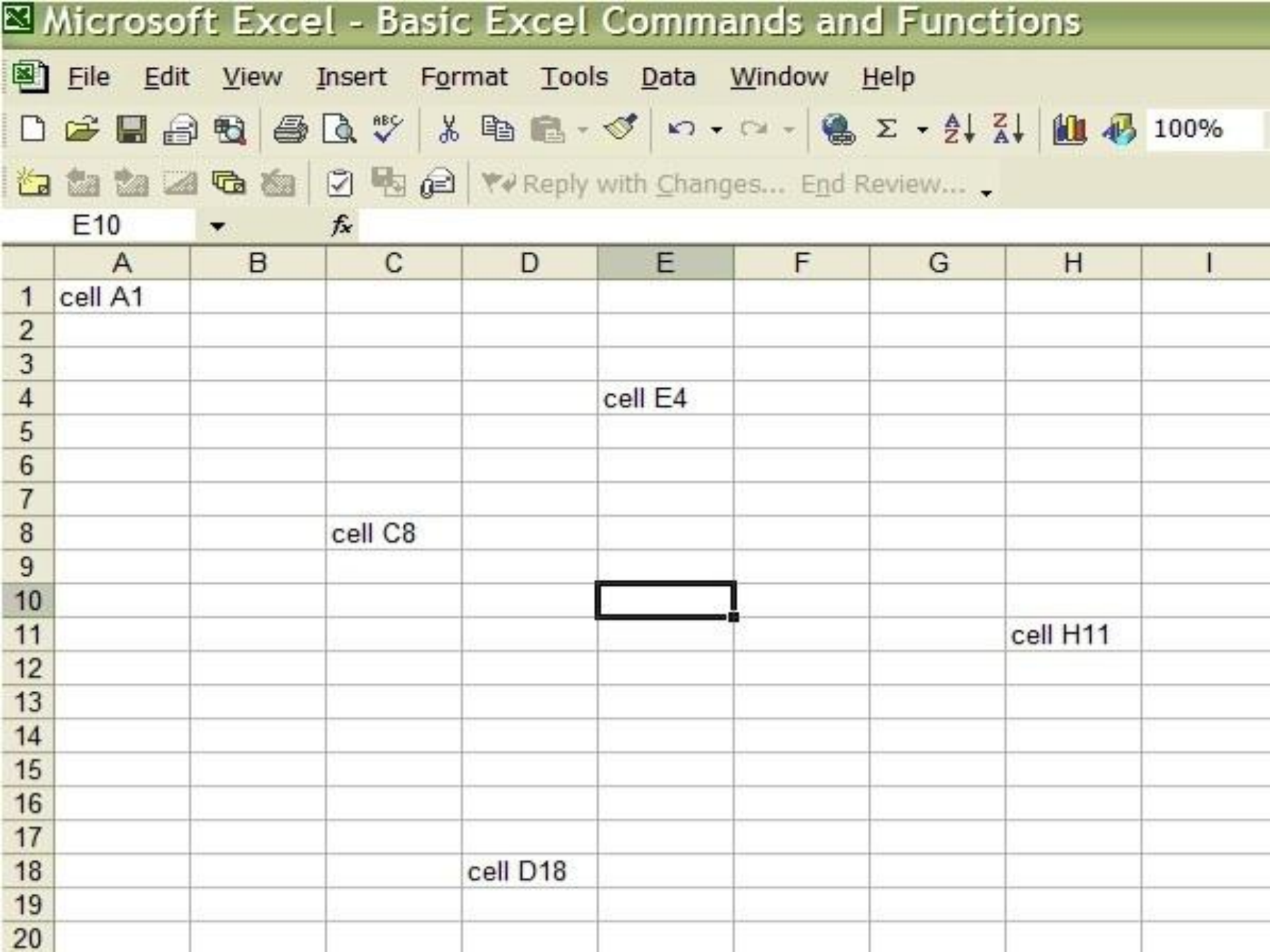
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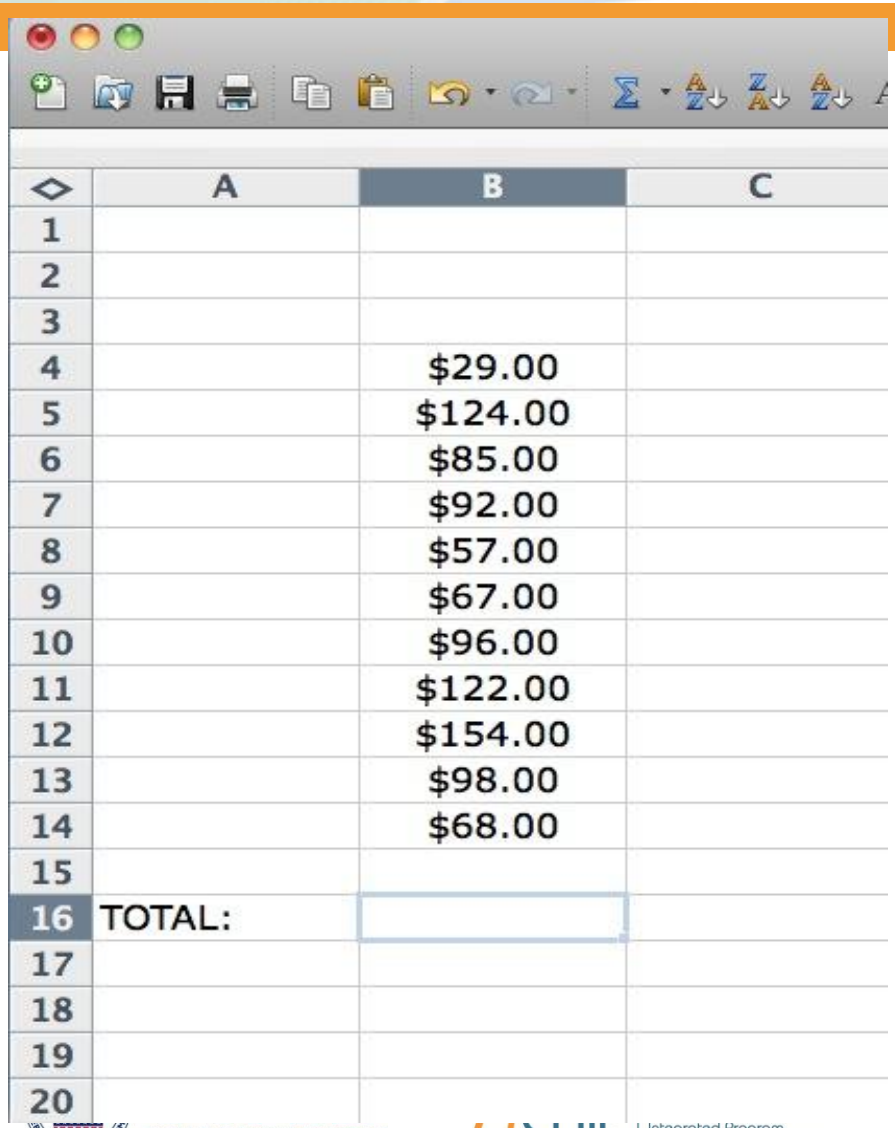
Calculation with Excel



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1			
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4		$29.00	
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6		$85.00	
7		$92.00	
8		$57.00	
9		$67.00	
10		$96.00	
11		$122.00	
12		$154.00	
13		$98.00	
14		$68.00	
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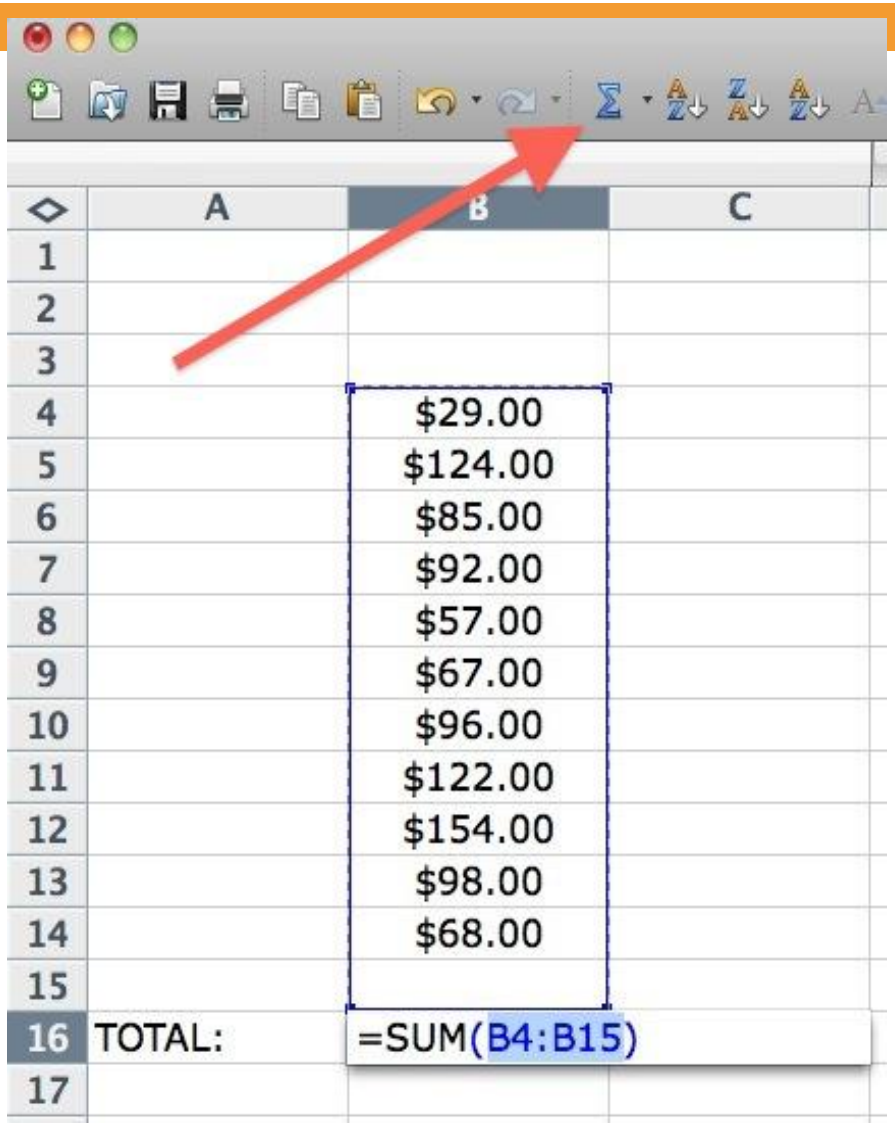

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5		$124.00	
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15			
16	TOTAL:	=SUM(B4:B15)	
17			

Computer Operation Overview

Day 3

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Microsoft Office

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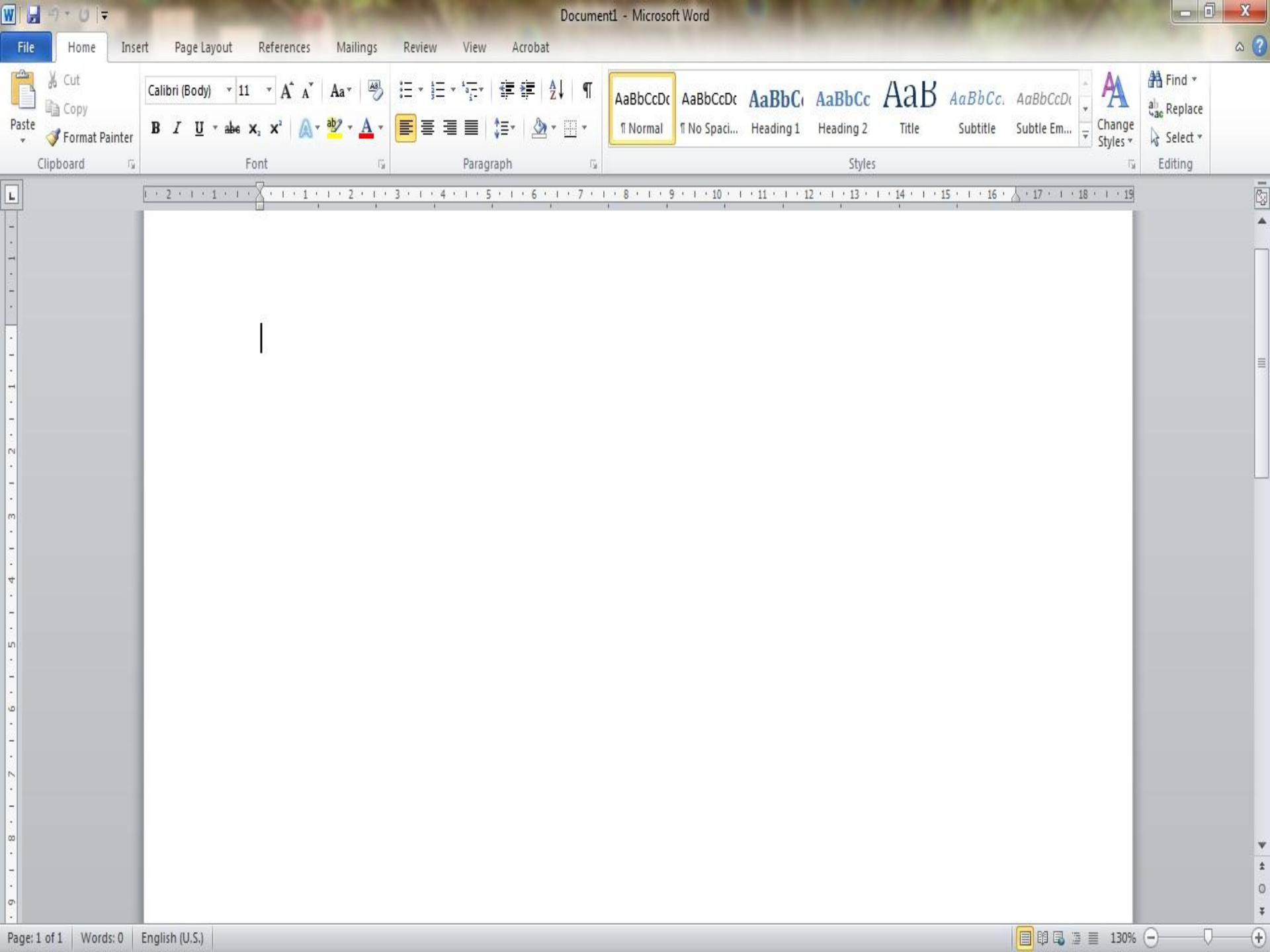
- Microsoft Word
- Microsoft Excel
- Microsoft PowerPoint

Microsoft Office

Microsoft Word Processor is a Software package that enables you to create, edit, print and save documents for future retrieval and reference. Creating a document involves typing by using a keyboard and saving it. Editing a document involves correcting the spelling mistakes, if any, deleting or moving words sentences or paragraphs.

Advantages of Word Processing:

One of the main advantages of a word processor over a conventional typewriter is that a word processor enables you to make changes to a document without retyping the entire document.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Mailings
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Copy
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Paste
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AaBbCc. Subtitle
AaBbCcDc Subtle Em...
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Page: 1 of 1
Words: 0
English (U.S.)
130%

Features of Word Processing

Most Word Processor available today allows more than just creating and editing documents. They have wide range of other tools and functions, which are used in formatting the documents. The following are the main features of a Word Processor:

- Text is typing into the computer, which allows alterations to be made easily.
- Words and sentences can be inserted, amended or deleted.
- Paragraphs or text can be copied /moved throughout the document.
- Margins and page length can be adjusted as desired.
- Spelling can be checked and modified through the spell check facility.
- Multiple document/files can be merged.
- Multiple copies of letters can be generated with different addresses through the mail-merge facility.

Computer Operation Overview

Day 2

Operating System

An **operating system** (**OS**) is software, consisting of programs and data, that runs on computers, manages computer hardware resources, and provides common services for execution of various application software. The operating system is the most important type of system software in a computer system. Without an operating system, a user cannot run an application program on their computer, unless the application program is self booting.

Computer Application

Application software, also known as an **application** or an "**app**", is computer software designed to help the user to perform specific tasks. Examples include enterprise software, accounting software, office suites, graphics software and media players. Many application programs deal principally with documents. Apps may be bundled with the computer and its system software, or may be published separately. Some users are satisfied with the bundled apps and need never install one.

List of OS & Application

OPERATING SYSTEM

- Windws XP
- Windows 7
- Windows Server 2008
- UNIX
- LINUX
- Mac OS

COMPUTER APPLICATON

- Microsoft Office (word, Excel, PowerPoint, Outlook)
- Photoshop
- Corel Draw
- Tally (Accounting Software)
- Adobe Acrobat / Reader

Internet/Intranet

Internet

An international computer network providing e-mail and information from computers in educational institutions, government agencies, and industry, accessible to the general public via modem links

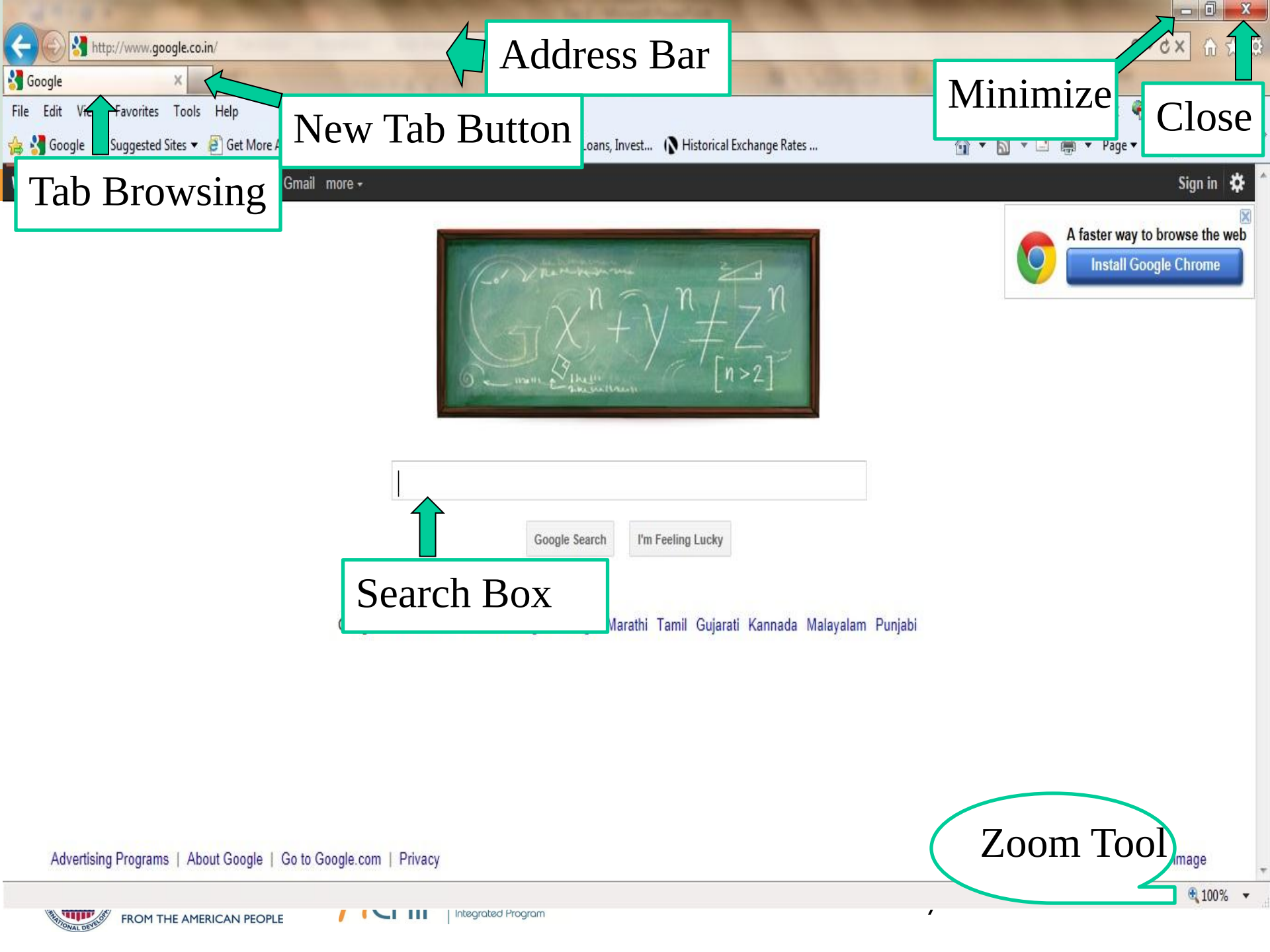
Intranet

An **intranet** is a computer network that uses Internet Protocol technology to securely share any part of an organization's information or network operating system within that organization. The term is used in contrast to *internet*, a network between organizations, and instead refers to a network within an organization

How to Use Internet

The Internet can powerfully extend your ability to find, manage, and share information. The following sections provide references to client application software, and descriptions of the main features and capabilities of each Internet application:

- Internet Explorer (IE)
- Mozilla Firefox
- Google Chrome
- Safari
- Netscape Navigator


Address Bar
Minimize
Close
New Tab Button
Tab Browsing
http://www.google.co.in/
Google
File Edit Favorites Tools Help
Suggested Sites
Historical Exchange Rates ...
Page
Gmail more
Sign in
A faster way to browse the web
Install Google Chrome
Google Search
I'm Feeling Lucky
Search Box
Marathi Tamil Gujarati Kannada Malayalam Punjabi
Advertising Programs | About Google | Go to Google.com | Privacy
Zoom Tool
100%
FROM THE AMERICAN PEOPLE
Integrated Program

Internet Search Engine

A **web search engine** is designed to search for information on the World Wide Web and FTP servers. The search results are generally presented in a list of results and are often called *hits*. The information may consist of web pages, images, information and other types of files. Some search engines also mine data available in databases or open directories. Some search engine are:

- Google (www.google.com)
- Yahoo (www.yahoo.com)
- Altavista (www.altavista.com)

Internet E-mail

Electronic mail, commonly called **email** or **e-mail**, is a method of exchanging digital messages from an author to one or more recipients. Modern email operates across the Internet or other computer networks. Some early email systems required that the author and the recipient both be online at the same time, in common with instant messaging (IM).

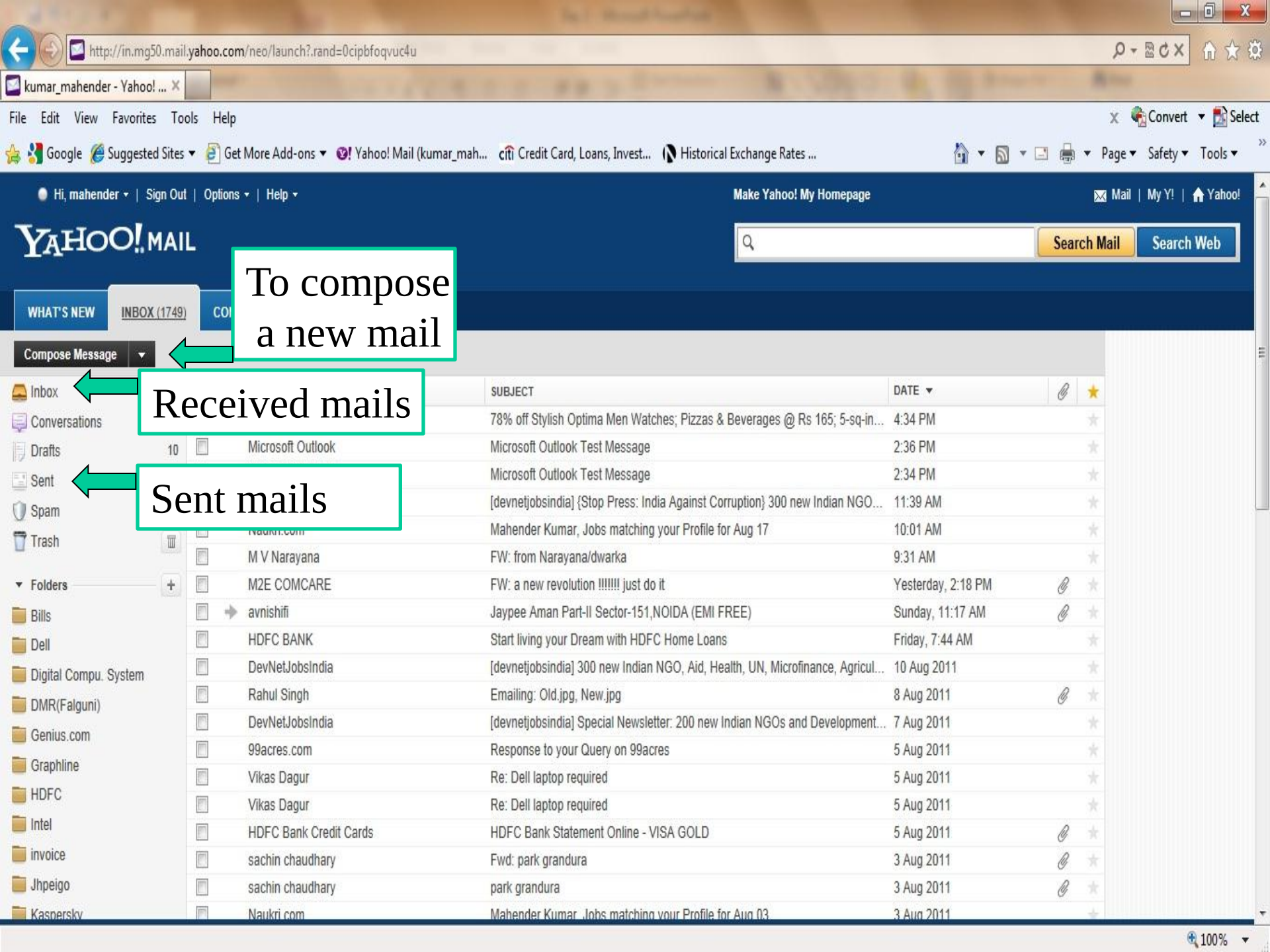
An email message consists of three components, the message *envelope*, the message *header*, and the message *body*. The message header contains control information, including, minimally, an originator's email address and one or more recipient addresses. Usually descriptive information is also added, such as a subject header field and a message submission date/time stamp.

How to Use E-mail

To send and receive e-mail you need to create a e-mail account with the help of e-mail services provider like YAHOO, GMAIL, HOTMAIL etc.

To create an e-mail account we need to follow some setups:

- Open a e-mail provider website
- Signup for new mail account
- Fill the form and choose your mail account name as per your choice.
- Finally sign in with you registered mail account.


To compose a new mail
Received mails
Sent mails

Computer System Overview

Computer Systems & Accessories

Desktop Computer

A *desktop computer* is a personal computer (PC) in a form intended for regular use at a single location, as opposed to a mobile laptop or portable computer

Components of Desktop Computer

- CPU (Central Processing unit)
- Monitor
- Keyborad
- Mouse
- Speaker

Computer Systems & Accessories

Laptop Computer

A *laptop*, also called a notebook, is a personal *computer* for mobile use. A *laptop* integrates most of the typical components of a desktop *computer*

Components of Laptop Computer

- CPU (Central Processing unit)
- Monitor
- Keyborad
- Mouse
- Speaker

Above components are In-Built in Laptop Computer.

Computer Systems & Accessories

LCD Projector

An **LCD projector** is a type of video projector for displaying video, images or computer data on a screen or other flat surface

Components of LCD Computer

- Multi color Lens
- Power Cable
- RGB Video Cable
- Remote
- Slide Presenter

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MCHIP Maternal and Child Health Integrated Program

Computer Systems & Accessories

LaserJet Printer

A printer linked to a computer producing printed material by using a laser to form a pattern of electrostatically charged dots on a light-sensitive drum, which attract toner

DeskJet Printer/Dot Matrix Printer

An *Deskjet printer* is a type of computer printer that creates a digital image by propelling droplets of ink onto paper.

A **DMP** is a type of computer printer with a print head that runs back and forth, or in an up and down motion, on the page and prints by impact

Connectivity Between Device

1. Desktop Computer
2. Laptop Computer
3. Printer
4. LCD Projector

Computer Operation Overview

Day 5

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Microsoft Office

Microsoft Office is a proprietary commercial office suite of inter-related desktop applications, servers and services for the Microsoft Windows operating systems, introduced by Microsoft in 1989. Initially a marketing term for a bundled set of applications, the first version of Office contained:

- ❑ Microsoft Word √
- ❑ Microsoft Excel √
- ❑ Microsoft PowerPoint

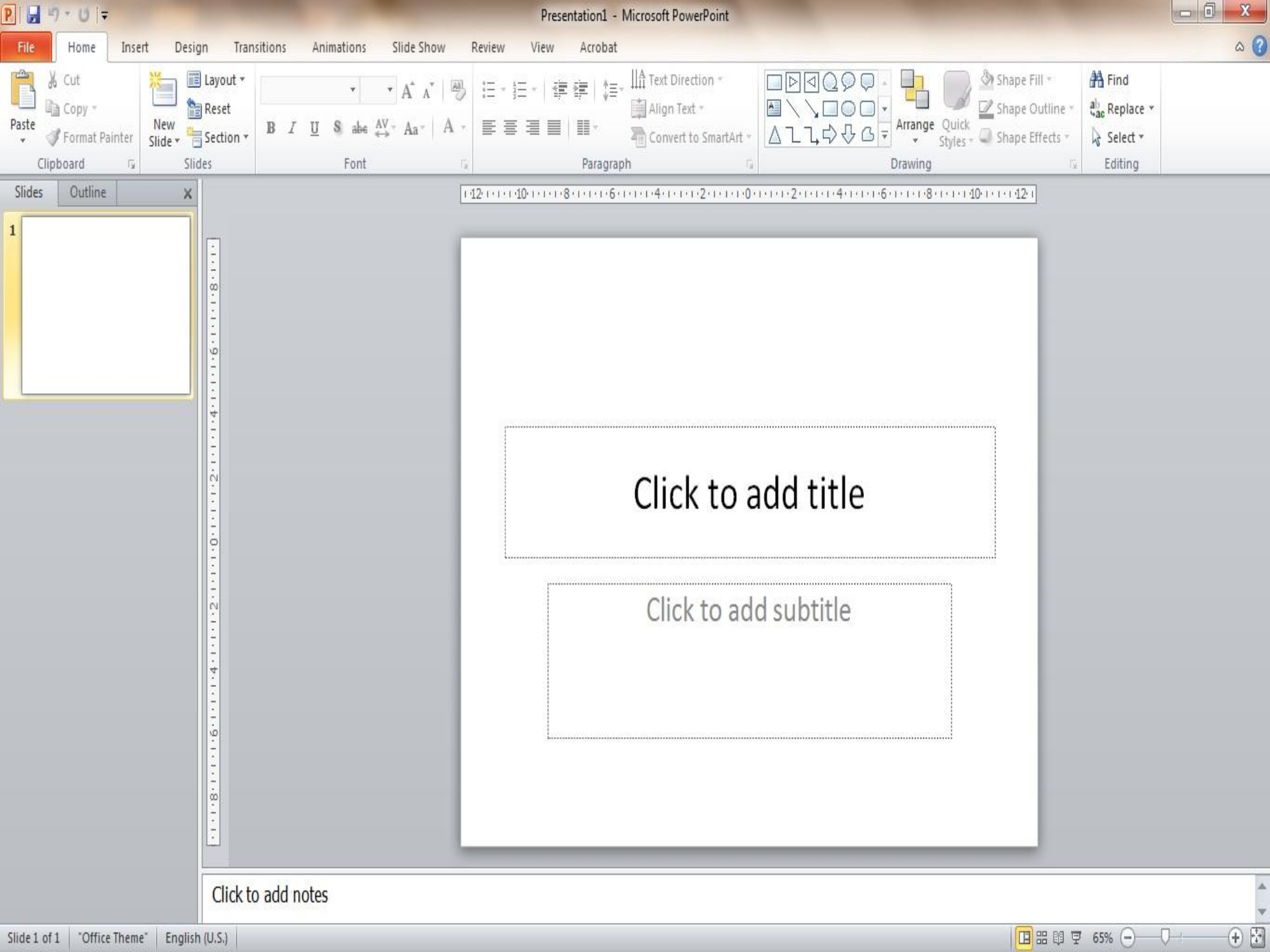
Microsoft PowerPoint

PowerPoint presentations consist of a number of individual pages or "slides". The "slide" analogy is a reference to the slide projector. Slides may contain text, graphics, sound, movies, and other objects, which may be arranged freely. PowerPoint, however, facilitates the use of a consistent style in a presentation using a template or "Slide Master".

The presentation can be printed, displayed live on a computer, or navigated through at the command of the presenter. For larger audiences the computer display is often projected using a video projector. Slides can also form the basis of webcasts.

<u>PowerPoint provides three types of movements:</u>

- Entrance, emphasis, and exit of elements on a slide itself are controlled by what PowerPoint calls Custom Animations
- Transitions, on the other hand are movements between slides. These can be animated in a variety of ways
- Custom animation can be used to create small story boards by animating pictures to enter, exit or move.


Presentation1 - Microsoft PowerPoint
File
Home
Insert
Design
Transitions
Animations
Slide Show
Review
View
Acrobat
Paste
Cut
Copy
Format Painter
Clipboard
New Slide
Layout
Reset
Section
Slides
Font
Text Direction
Align Text
Convert to SmartArt
Paragraph
Arrange
Quick Styles
Shape Fill
Shape Outline
Shape Effects
Drawing
Find
Replace
Select
Editing
Slides
Outline
1
Click to add title
Click to add subtitle
Click to add notes
Slide 1 of 1
"Office Theme"
English (U.S.)
65%

Presentation2 - Microsoft PowerPoint

File | Home | Insert | Design | Transitions | Animations | Slide Show | Review | View | Acrobat

Paste | Cut | Copy | Format Painter | Clipboard

New Slide | Layout | Reset | Section | Slides

Font | Paragraph | Text Direction | Align Text | Convert to SmartArt

Arrange | Quick Styles | Shape Fill | Shape Outline | Shape Effects | Drawing

Find | Replace | Select | Editing

TEST ONLY

For test only

Slide 1 of 1 | "Office Theme" | English (U.S.) | 70%

Summary

- Desktop Computer
- Laptop Computer
- LCD Projector
- LaserJet Printer
- DeskJet Printer
- Operating System
- Computer Application
- Internet
- Internet search engine
- Internet Email
- Microsoft Word
- Microsoft Excel
- Microsoft PowerPoint