

# Practical Workbook

CT-174

## FUNDAMENTALS OF INFORMATION TECHNOLOGY



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# **Practical Workbook**

## **FUNDAMENTALS OF INFORMATION TECHNOLOGY**

**(CT – 174)**

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# Lab Session 01

## OBJECT

*Familiarization with DOS environment and its important commands.*

## WORKING WITH DOS

### Understanding DOS

DOS, the acronym for Disk Operating System, is an operating system with a command-line interface used on personal computers. It provides a set of commands that enables the users to access or manipulate information on their disks, as well as simply interact with their computer.

### Dos Commands

```
C:\WINNT>cd..
C:\>cd assembly
C:\assembly>dir/w
Volume in drive C has no label.
Volume Serial Number is 8415-8531

Directory of C:\assembly

[.]      [...]      ascii.asm    ASCII.EXE    ASCII.MAP    ASCII.OBJ
bsort.asm  BSORT.EXE  FORMAT.ASM  TASM.EXE   TASM.TAH  THHELP.COM
TLIB.EXE   TLINK.EXE
           14 File(s)   376,993 bytes
                   1,778,883,072 bytes free

C:\assembly>
```

**Figure 1.1: DOS environment**

DOS commands are of two types namely internal commands and external commands.

- Internal commands are those which are built into command.com.
- External commands are those that must be located from a file loaded by command.com before it can be executed.

A brief description of important DOS commands is given below:

### Changing drive

Type drive letter of the drive to which you want to switch to, on the command prompt followed by ':'

Example: c :>d : This will change the current drive from C to D.

Result: d :>

## Wild Cards

DOS recognizes two wild cards:

- The asterisk (\*) represents one or more characters that a group of files has in common.
- The question mark (?) represents a single character that a group of files has in common.

## Working with Directories

- **dir** to view the contents of a directory

Prompt on screen: `drive:>`

Syntax: `dir`

Example: `c:>dir` This will list all the files and subdirectories on drive C, which is being prompted on screen. If another drive needs to be accessed, first change the drive, as previously explained and then enter the **dir** command.

Use wild cards to display selected lists. For example:

- `dir *.*` Displays all files and subdirectories on the drive
- `dir ?????.com` Displays all files having names up to five characters and extension ‘**com**’

**dir** command can be modified using these wild cards and other switches as follows so that only one screen of selected information is displayed at a time.

- **Cd** to change from one directory to another

Prompt on screen: `drive:>`

Syntax: `cd drive:\path`

Example: `c:>cd dos` This will change the current directory from the root directory to ‘**dos**’ directory on the prompted drive C.

Result: `c:\dos>`

- **md** to create a new directory

Prompt on screen: `drive:>`

Syntax: `md drive:\path\dirname`

Example: `c:>md neduet` This will create a new directory, named ‘**neduet**’ on the drive being prompted, in this case drive C.

- **cd..** to switch back one level up in the directory structure

Prompt on screen: `drive:>`

Syntax: `cd..`

Example: `c:\dos\subdos>cd..` This will switch back to the directory, ‘**dos**’ from the current directory, ‘**subdos**’ of the prompted drive C.

Result: `c:\dos>`

- **cd\** to switch back to the root drive directory

Prompt on screen: `drive:>`

Syntax: `cd\`

Example: `c:\dos\subdos>cd\` This will switch back to the root drive, C

Result: `c:\>`

- **rd** to remove a directory

Prompt on screen: `drive:>`

Syntax: `rd drive:\path\dirname`

Example: `c:\>rd neduet` This will delete the directory, named '**neduet**' from the prompted drive C.

- **tree** to view directory listing in a hierarchical structure.

Prompt on screen: `drive:>`

Syntax: `tree drive:\path`

Example: `tree d:` This will display the hierarchical directory structure of drive D.

Use `/f` to display the names of the folders as well as the files in each folder, in a hierarchical manner.

## Working with Files

- **copy** to copy a file from one directory or drive to another

Prompt on screen: `drive:>`

Syntax: `copy drive:\source path\filename  
drive:\destination path\ filename`

Example: `copy c:\neduet\cfile.exe c:\windows`

This will copy the file, named '**cfile.exe**' from '**neduet**' directory to '**windows**' directory with the same name for the new file.

- **ren** to rename a file

Prompt on screen: `drive:>`

Syntax: `ren drive:\path\old filename drive:\path\new filename`

Example: `c:\>ren cfile.exe edit.exe`

This will rename the file '**cfile.exe**' to '**edit.exe**' in the prompted drive C.

- **del** to delete a file

Prompt on screen: `drive:>`

Syntax: `del drive:\path\filename`

Example: `c:\>del cfile.exe` This will delete the file, '**cfile.exe**' present in the prompted drive C.

Wild cards can also be used with any of the above commands to work with group of files.

- **Type** to view a file on the screen. Only text based files can be viewed, as DOS supports only such files.

Prompt on screen: `drive:>`

Syntax: `type drive:\path\filename`

Example: `c:\>type cfile.txt` This will list '***cfile.txt***'

Files longer than one screen scroll off to the top. To avoid this, use `|more` suffix following the command.

Example: `c:\>type cfile.txt |more`

## Disk Management

- **format** to format a disk

Prompt on screen: `drive:>`

Syntax: `format drive:`

Example: `c:\>format z:` This will format Flash memory stick in *drive Z*.

- **chkdsk** to get a report on statistics of the disk

Prompt on screen: `drive:>`

Syntax: `chkdsk drive:`

Example: `c:\>chkdsk c:` This will generate a report on statistics of *drive C*.

- **vol** to view a disk's volume label and it's serial number

Prompt on screen: `drive:>`

Syntax: `vol drive:`

Example: `c:\>vol d:` This will display volume label of *drive d*.

- **ver** to find current version of DOS installed on your system

Prompt on screen: `drive:>`

Syntax: `ver`

Example: `c:\>ver` This will display the current version of DOS on your system.

**EXERCISE**

1. Write command to display all files having extension ‘docx’.

---

`dir *.docx*`

---

2. Write command to display all files of all types starting with letter ‘s’.

---

`dir s*`      OR      `dir s*.*`

---

3. Write a command to copy the file *assignment* of type *docx* from the directory ‘ITC’ of drive D to drive F.

---

`copy D:\ITC\assignment.docx F:\`

---

4. Write a command to delete the directory as well as the files of the directory ‘*world*’ on drive E

---

`del E:\world` (First used to delete the contents of folder)

OR      directly use      `rmdir /s /q E:\world`

---



---

`rd E:\world` (Then to delete the empty folder)

---

5. Write command to copy all the files beginning with ‘m’ and whose file names has a ‘txt’ extension from drive A to the ‘\document’ directory on drive C.

---

`copy A:\m*.txt* C:\document\`

---

6. Write set of commands to create a directory ‘practical’ on drive F, and then move into it. Now list all files present in it, then go back to root drive F.

---

`F:> mkdir practical`

---



---

`F:> cd practical`

---



---

`F:\practical> dir`

---



---

`F:\practical\ cd..      => F:>`

---

# Lab Session 02

## OBJECT

*Learning some configuration commands and creating Batch files in DOS environment.*

## CONFIGURATION COMMANDS

- **doskey** to recall previously generated DOS commands, first it should be enabled, which is done by using doskey command.

Prompt on screen: drive:>

Syntax: doskey

Example: c:\>doskey This will install doskey.

Now use UP and DOWN ARROWS to recall commands;

**ESC** clears command line;

**F7** displays command history;

**ALT+F7** clears command history;

**F8** searches command history;

**F9** selects a command by number.

- **date** to set date of the system

Prompt on screen: drive:>

Syntax: date mm/dd/yy (or use '-' in place of '/')

Example: c:\>date 5-16-2011 This will set date to May 16, 2011.

- **time** to set time of the system using the 24 hour clock representation

Prompt on screen: drive:>

Syntax: time hh:mm:ss

Example: c:\>time 14:33 This will set current time to 2:33 pm.

- **cls** to clear the screen

Prompt on screen: drive:>

Syntax: cls

Example: c:\>cls This will clear the screen and bring the cursor to the top.

- **prompt** to set system prompt

Prompt on screen: drive:>

Syntax: prompt prompt name

Example: c:\>prompt neduet: This will set the current prompt to neduet:

Result: neduet:

To get back to standard default system prompt, type prompt without parameters.

Use the following switches anywhere in the prompt command to incorporate special information:

- \$t to get the current time
- \$d to get the current date
- \$p to get both the active drive and directory
- \$n to get the active drive only

- \$g to represent the character ‘>’ (OR also can use ^>)
- \$l to represent the character ‘<’
- \$b to represent the character ‘|’

Example: `c:\>prompt time is $t$g`

Result: time is 14:02:10>

- **exit** to exit from DOS shell

Prompt on screen: `drive:>`

Syntax: `exit`

Example: `c:\>exit` This will close the DOS window

## DOS HELP

- Type `help` at the command prompt to display DOS Help table of contents.
- Type `help` followed by the command name to view information about a command.

For example: `c:\>help copy` This will display information about the ‘copy’ command.

The command name can also be followed by `/?` to view information about a command.

For example: `c:\>copy/?`This will display information about the *copy* command.

## MAKING BATCH FILES

A batch program of a batch file is a text file that contains a series of commands that DOS carries out when its name is typed at the command prompt.

`AUTOEXEC.BAT` file is an example of such files. It is a special batch program that runs every time you start your computer. It starts necessary programs and does settings at the startup. To make a batch file, apply the following steps:

- Open a new text file in an editor (DOS editor, ‘EDIT’ can be used by typing `edit` command at the command prompt to open this editor).
- Type DOS commands, which are to be included in the batch program in this text file. Each command is typed on a different line.
- Save the file with suitable name provided that its extension is `.bat`. For example, `mybatch.bat`

## BATCH FILE COMMANDS

- echo** This command directs DOS whether or not to display the commands in a batch file or not.

Syntax: `echo on/off`

An alternate is to insert @ sign before the command.

Example: `@dir` This command, if included in the batch file will prevent `dir` command from displaying on the command prompt.

- call** This command calls one batch program from another.

Syntax: `call [drive:][path]filename`

Example: Create a batch file named **one.bat** with command **md**. Then make another batch file named **two.bat** with the following two commands:  
`call one.bat`  
`copy/?`

From DOS prompt run `two.bat`

Syntax: `two.bat`

Result: This will display the directory listing, page wise, and then the help file.

- **pause** This command suspends processing of a batch program and displays the message:Press any key to continue...

Syntax: pause

Example: Create a batch file named one.bat with command dir/p. Then make another batch file named two.bat with the following two commands:

```
call one.bat  
pause  
help
```

From DOS prompt run two.bat

Syntax: two.bat

Result: This will display the directory listing page wise, then pause and wait for a key from the user and on receiving a key, it will display the help file.

- **rem** This command records comments <remarks> in a batch file

Syntax: rem [comments]

Example: Create a batch file named remark.bat with the following commands: dir/p  
rem moving to root directory cd\

From DOS prompt run remark.bat

Syntax: remark.bat

Result: This will display the directory listing page wise, it will then print the remark “moving to root directory” and will then move to the root directory.

Result: The echo command will be skipped.

## EXERCISE

1. Write a command to change the command prompt to ‘Good Morning:\>’. Write another command using ‘\$’ to switch back to the standard C prompt (C:\>).

**First Command:** prompt Good Morning:\\$g

**Second Command:** Good Morning:\> prompt

2. Write a command to set the system date to Jan 16<sup>th</sup>, 2018

First open cmd in administrator mode and then :- date 01-16-2018

---

3. Make a batch file called first.bat, which includes commands to display directory listings of drive F, then remove a directory called “new” from the same drive. Do not switch into the drive.

@echo off

---

dir /b /s F:\

---

rmdir /s /q F:\new Now run this cmd by => call first.bat

---

# Introduction to Batch Scripting

Batch scripting is a programming language used to automate tasks in the Windows operating system.

Batch scripts are plain text files that contain a series of commands that are executed one by one.

Batch scripts can be used to perform a wide variety of tasks, such as:

- Copying and moving files
- Creating and deleting folders
- Running programs
- Scheduling tasks
- Automating system administration tasks

## Basic Batch Commands

Here are some basic batch commands that you should know:

- **@echo off**: This command turns off the display of commands as they are executed.
- **rem**: This command adds a comment to a batch script. Comments are ignored by the batch interpreter.
- **cd**: This command changes the current working directory.
- **dir**: This command lists the contents of the current directory.
- **copy**: This command copies files and directories.
- **move**: This command moves files and directories.
- **del**: This command deletes files and directories.
- **start**: This command starts a program.
- **pause**: This command pauses the execution of a batch script.
- **exit**: This command exits the batch interpreter.

## Example Batch Script

The following example batch script copies all of the files in the current directory to a new directory called "backup":

```
@echo off
rem Create a new directory called "backup"
mkdir backup
rem Copy all of the files in the current directory to the "backup" directory
copy .* backup
rem Display a message to the user
echo All of the files in the current directory have been copied to the "backup" directory.
pause
exit
```

To run this batch script, save it as a .bat file and then double-click on the file to run it.

Advanced Batch Scripting

# Advanced Batch Scripting

In addition to the basic batch commands that you learned in the previous section, there are a number of advanced batch scripting topics that you can learn to make your batch scripts more powerful and efficient.

## Conditional Statements

Conditional statements allow you to control the flow of execution of a batch script based on certain conditions. For example, you can use a conditional statement to check if a file exists before trying to

copy it, or to check if a certain program is running before starting another program.

Here are some of the most common conditional statements used in batch scripting:

- **IF:** The IF statement allows you to execute a block of code if a certain condition is met. For example, the following batch script uses an IF statement to check if a file called "myfile.txt" exists. If the file exists, the batch script copies it to the "backup" directory.

```
@echo off
if exist myfile.txt (
    if not exist backup\(
        mkdir backup
    )
    copy myfile.txt backup\
)
exit
```

- **ELSE:** The ELSE statement allows you to execute a block of code if a certain condition is not met. For example, the following batch script uses an ELSE statement to create a new file called "myfile.txt" if it does not already exist.

```
@echo off
if not exist myfile.txt (
    echo This file does not exist.
    echo Creating a new file called "myfile.txt".
    echo.> myfile.txt    if any error here use (type nul > myfile.txt)
)
exit
```

- **ELSEIF:** The ELSEIF statement allows you to check multiple conditions and execute a different block of code for each condition. For example, the following batch script uses an ELSEIF statement to check if a file is read-only or hidden. If the file is read-only, the batch script changes the file's attributes to make it writable. If the file is hidden, the batch script unhides it.

```
@echo off

if exist myfile.txt (
    if attrib -R myfile.txt (
        attrib -R myfile.txt
    ) else if attrib -H myfile.txt (
        attrib -H myfile.txt
    )
)
exit
```

Can also use directly attrib-R and H in first else instead of if-else.

## Loops

Loops allow you to repeat a block of code multiple times. For example, you can use a loop to copy all of the files in a directory, or to process each line of a text file.

Here are some of the most common loops used in batch scripting:

- **FOR:** The FOR loop allows you to iterate over a list of values. For example, the following batch script uses a FOR loop to copy all of the files in the current directory to the "backup" directory.

```
@echo off
for %%f in (*.*) do (
    copy "%%f" backup
)
pause
exit
```

- **WHILE:** The WHILE loop allows you to repeat a block of code as long as a certain condition is met. For example, the following batch script uses a WHILE loop to ping a website until it responds.

```
@echo off
:loop
ping www.google.com
if errorlevel 1 (
    goto loop
)
echo Website is responding.
exit
```

## Tasks

1. Write a batch script to copy all of the files from one folder to another, but skip any files that are txt.

```
@echo off
set "sourceFolder=D:\A FIT\Lab02 Advance Batch Script\New folder"
set "destinationFolder=D:\A FIT\Lab02 Advance Batch Script\aa"

for %%F in ("%sourceFolder%\*.*") do (
    if /I "%~xF" neq ".txt" (
        copy "%~F" "%destinationFolder%" 
    )
)
```

---

echo Files copied, excluding .txt files.

2. Write a batch script to rename all of the files in a directory with the same file extension to have a common prefix.

```
@echo off
setlocal enabledelayedexpansion

set "sourceFolder=C:\Path\To\Your\Folder"
```

```

set "fileExtension=.txt"
set "prefix=NewPrefix"

cd "%sourceFolder%"

for %%F in (*.%fileExtension%) do (
    set "oldName=%%~nF"
    set "newName=!prefix!%oldName!%%~xF"
    ren "%%F" "!newName!"
)
echo Renaming completed.

```

---

### **3. Write a batch script to make excel, txt, image directories then sort all files into them**

```

@echo off
setlocal enabledelayedexpansion

set "sourceFolder=D:\A_FIT\Lab02_Advance_Batch_Script\a"

cd "%sourceFolder%"

:: Create directories
mkdir Excel
mkdir Txt
mkdir Images

:: Sort files into directories
for %%F in (*.xlsx *.xls) do move "%%F" Excel\
for %%F in (*.txt) do move "%%F" Text\
for %%F in (*.jpg *.jpeg *.png *.gif) do move "%%F" Images\

echo Sorting completed.

```

## Lab Session 03

### OBJECT

*Understanding network sharing and working with Windows 7,8*

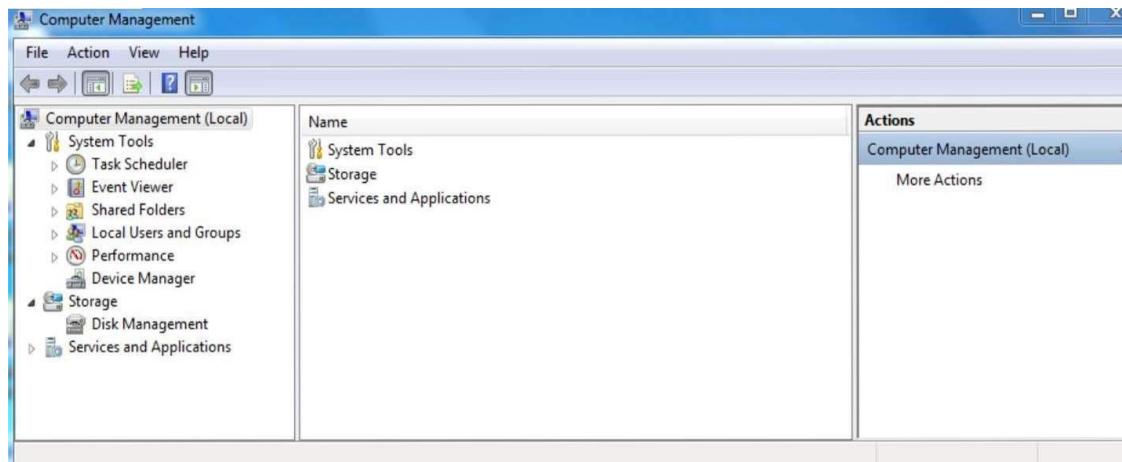
### THEORY

#### COMPUTER MANAGEMENT OVERVIEW

Computer Management is a collection of administrative tools that you can use to manage a single local or remote computer. It combines several administration utilities into a console tree, and it provides easy access to administrative properties and tools. You can use Computer Management to:

- Monitor system events, such as logon times and application errors.
- Create and manage shared resources.
- View a list of users connected to a local or remote computer.
- Start and stop system services, such as Scheduled Tasks and Indexing Service.
- View device configurations and add new device drivers.
- Manage applications and services.

#### OPENING THE COMPUTER MANAGEMENT CONSOLE



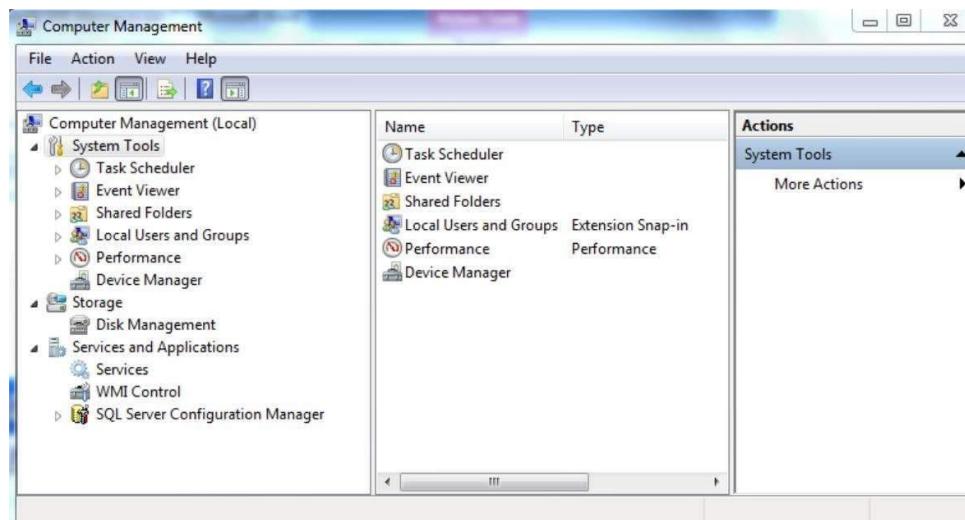
**Fig 3.1 Computer Management**

- To open Computer Management, click Start, and then click Control Panel => System and Security => Administrative Tools => Computer Management Or
  - Go to start => Run and write “compmgmt.msc” and click OK.
- Computer Management contains three items:
1. System Tools
  2. Storage 3, Services and Applications (not to be discussed in this course)

## 1. SYSTEM TOOLS

Systems Tools is the first item in the Computer Management console tree. You can use the following default tools to manage system events and performance on the target computer

- Task Scheduler
- Event Viewer
- Shared Folders
- Local Users and Groups
- Performance (Logs and Alerts)
- Device Manager



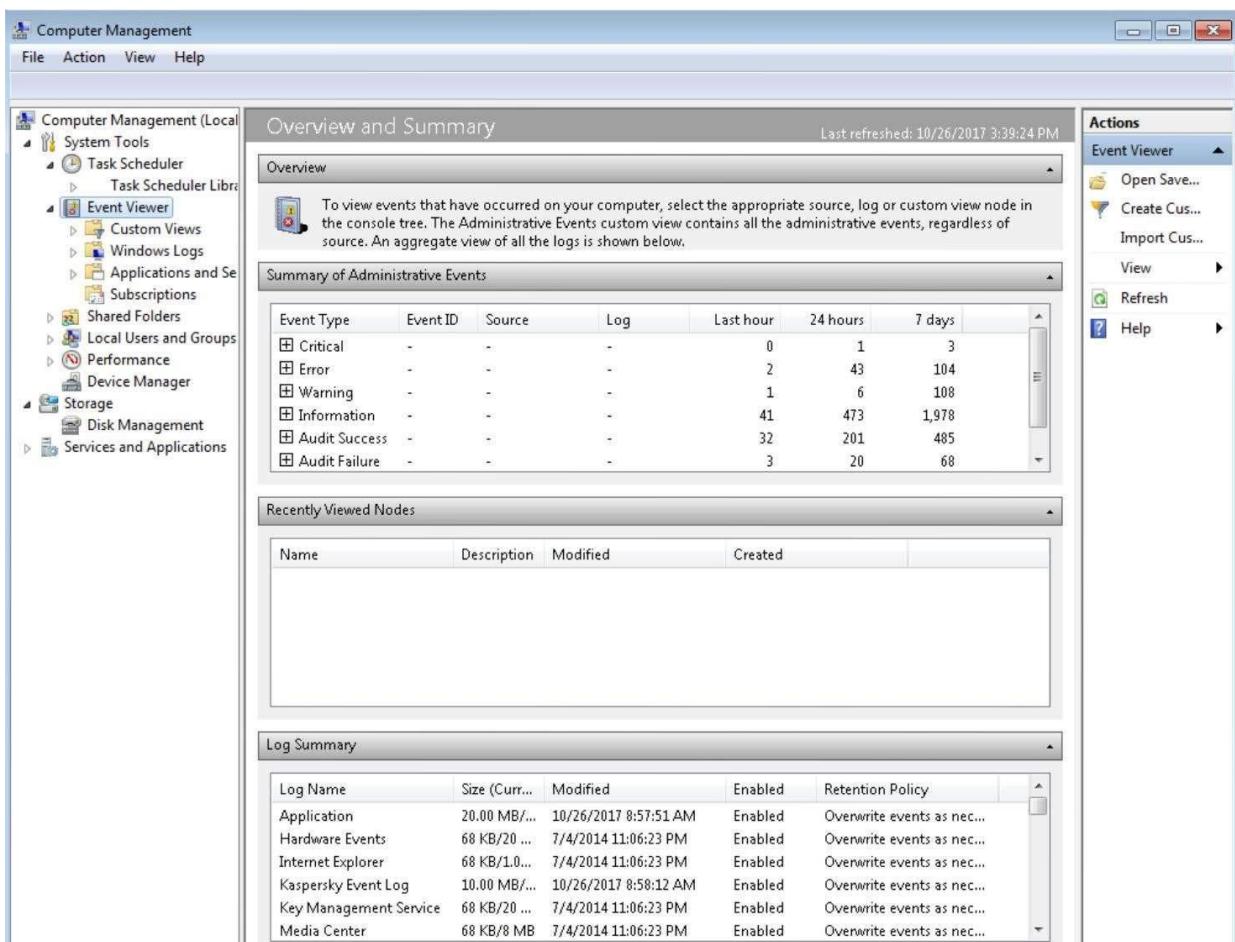
**Figure 3.2 System Tools**

### USING TASK SCHEDULER

You can use task scheduler to create and manage common tasks that your computer will carry out automatically at the times you specify. To begin, click a command in the **Action** menu. Tasks are stored in in folders in the Task Scheduler Library. To view or perform an operation on an individual task, select the task in the Task Scheduler Library and click on a command in the Action menu.

### USING EVENT VIEWER

It can be used to view events that have occurred on your computer, select the appropriate source, log or custom view mode in the console tree. The administrative Events custom view contains all the administrative events regardless of source. An aggregate view of all the logs of some machine is shown in figure 3.3

**Figure 3.3 Event Viewer**

## USING SHARED FOLDER

You can use Shared Folders to manage shared resources on both local and remote computers. Windows Explorer and the command line allow you to manage shared resources on your local computer only.

### *To share a folder or drive*

1. In the console tree, click Shares. → [ Computer Management System Tools Shared Folders Shares ]
2. On the Action menu, click More Actions → New Share...
3. Follow the steps in **Create A Shared Folder Wizard**.
4. You will be prompted to select a folder or drive, type a new share name and description of the shared resource, and set permissions. After you provide this information, click **Finish**.  
[Note: A shared folder is available to a particular user(s) on entire network.]

### *To set permissions on a shared resource*

1. Right-click the shared resource for which you want to set permissions, and then click **Properties**.
2. On the **Share Permissions** tab, select the following options that you want, and then click **OK**:
  - Click **Add** to grant a user or group permission for a shared resource. In the **Select**

**Users, Computers, or Groups** dialog box, look for or type the user, computer, or group name, and then click **OK**.

- Click **Remove** to revoke access to a shared resource.
- In **Permissions for <group or user>**, select the **Allow** or **Deny** check boxes to set individual permissions for the selected user or group.

#### ***To stop sharing a resource***

In the details pane, right-click the folder that you want to stop sharing, and then click **Stop Sharing**.

You can directly right click on a file or folder name and then select share with to share it among users at same computer

## **LOCAL USERS AND GROUPS OVERVIEW**

Local Users and Groups is a tool you can use to manage local users and groups by

- Create a new user account / group
- Modify a user account / group
- Change the password for a user
- Disable or activate a user account / group
- Identify members of local groups
- Delete a user account / group
- Rename a user account

#### ***To create a new user account***

1. On the Action menu, click **New User**.
2. Type the appropriate information in the dialog box.
3. Select or clear the check boxes for:
  - User must change password at next logon
  - User cannot change password
  - Password never expires
  - Account is disabled
4. Click **Create**, and then click **Close**.

#### ***To modify a user account / group***

1. Right-click the / group you want to modify, and then click **Properties**.
2. Make the changes you want, and then click **OK**.

## **PERFORMANCE**

With Performance Monitor you can collect performance data automatically from local or remote computers. You can view logged counter data using System Monitor or export the data to spreadsheet programs or databases for analysis and report generation. Performance Monitor offers the following operations:

- Counter data collected by performance Logs and Alerts can be viewed during collection as well as after collection has stopped.

- Because logging runs as a service, data collection occurs regardless of whether any user is logged on to the computer being monitored.
- You can define start and stop times, file names, file sizes, and other parameters for automatic log generation.
- You can manage multiple logging sessions from a single console window.
- You can set an alert on a counter, specifying that a message be sent, a program be run, an entry be made to the application event log, or a log be started when the selected counter's value exceeds or falls below a specified setting.

Logs and Alerts also offers other options related to recording performance data. These include:

- **Start and stop logging** either manually on demand, or automatically based on a user defined schedule.
- **Configure additional settings** for automatic logging, such as automatic file renaming, and set parameters for stopping and starting a log based on the elapsed time or the file size.
- **Create trace logs.** It traces logs record detailed system application events when certain activities such as a disk input/output (I/O) operation or a page fault occurs.

## DEVICE MANAGER

Device Manager provides you with a graphical view of the hardware that is installed on your computer. (*See figure 3.4*) You can use Device Manager to update the drivers (or software) for hardware devices, modify hardware settings, and troubleshoot problems. Device Manager is typically used to check the status of your hardware and update device drivers on your computer. Advanced users who have a thorough understanding of computer hardware might also use Device Manager's diagnostic features to resolve device conflicts and change resource settings.

You can use Device Manager to:

- Determine whether the hardware on your computer is working properly.
- Change hardware configuration settings.
- Identify the device drivers that are loaded for each device, and obtain information about each device driver.
- Change advanced setting and properties for devices.
- Install updated device drivers.
- Disable, enable, and uninstall devices.
- Roll back to the previous version of a driver.

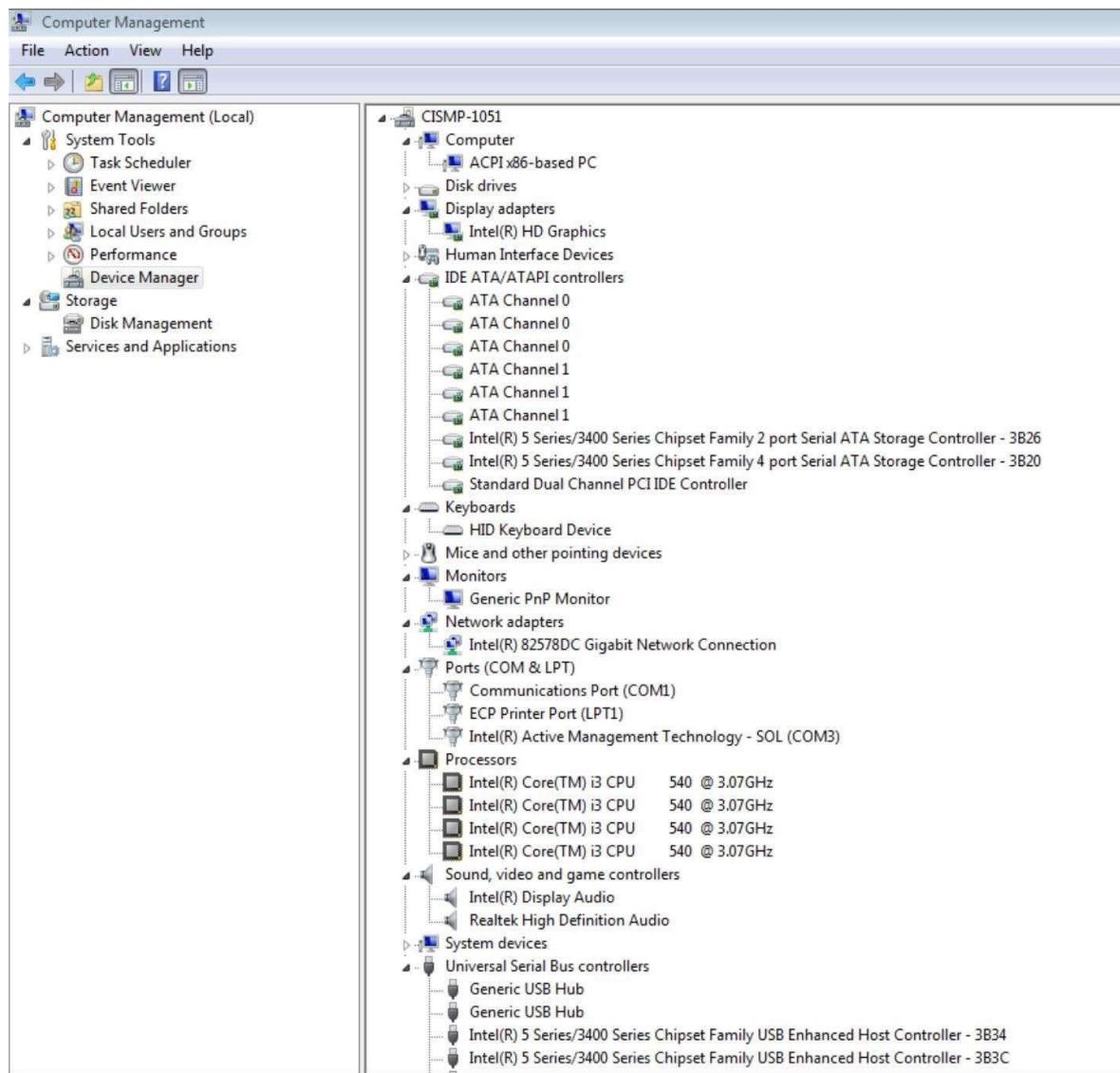
### ***View the status of a device***

1. Click Device Manager.
2. Double-click the type of device you want to view.
3. Right-click the specific device you want, and then click **Properties**.
4. On the **General** tab, under **Device status** is a description of the device status.

### ***Enable / Disable device***

1. Open Device Manager.
2. Double-click the type of device that you want to **Enable / Disable**

3. Right-click the specific device you want, and then click **Enable / disable**.



**Fig. 3.4      Device Manager**

#### ***Uninstall a device***

1. Open Device Manager.
2. Double-click the type of device that you want to uninstall.
3. Right-click the specific device you want to uninstall, and then click **Uninstall**.
4. In the **Confirm Device Removal** dialog box, click **OK**.
5. When you are done uninstalling the device, turn off your computer, and remove the device from the computer.

## **2. STORAGE**

Storage displays storage device that are installed on the computer that you are managing. You can use the default following tools to manage the properties of storage devices.

## Disk Management

You use Disk Management (See fig. 3.5) to perform disk-related tasks, such as creating partitions and volumes, formatting them, and assigning drive letters.

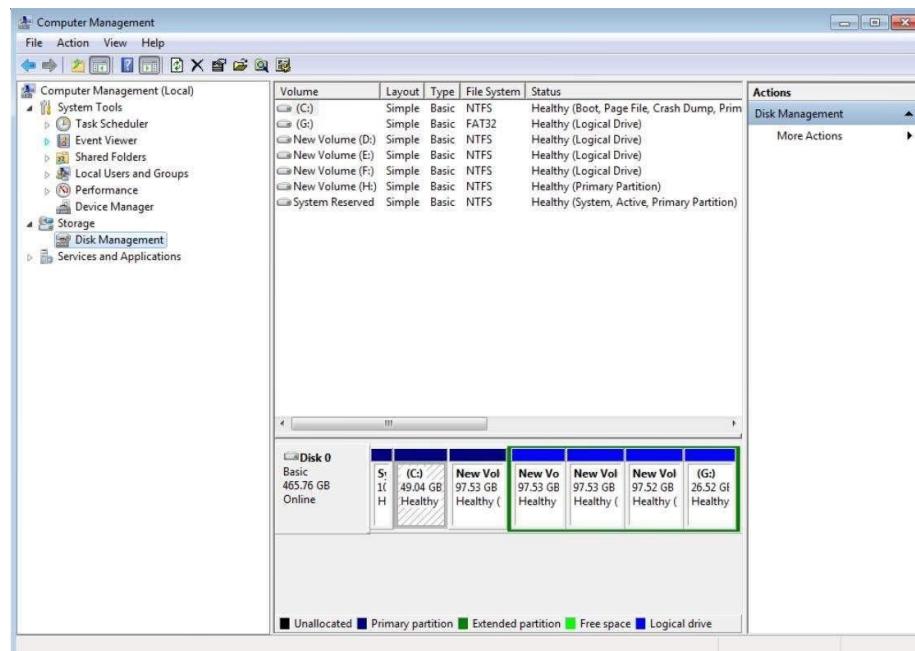


Fig 3.5 Disk Management

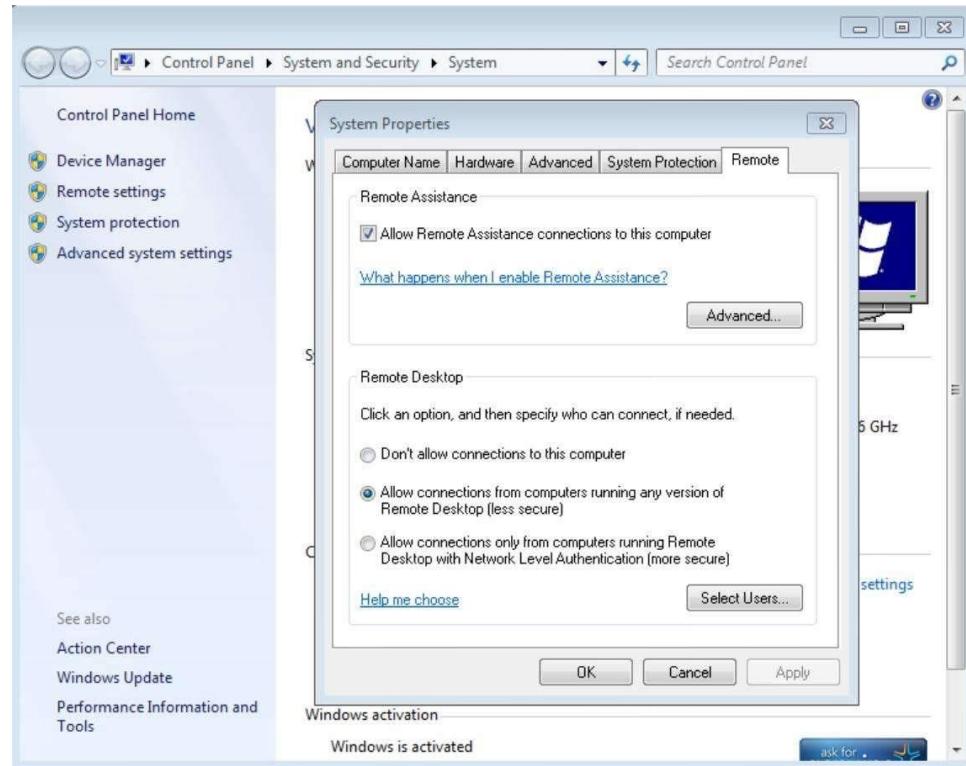
On different operating systems, you can also use Disk Management to perform advanced tasks, such as configuring software RAID. Other operations are;

- **Simplified tasks and intuitive user interface:** Disk Management is easy to use. Menus that are accessible from the right mouse button display the tasks you can perform on the selected object, and wizards guide you through creating partitions or volumes and initializing or converting disks.
- **Basic and dynamic disk storage:** Basic disks contain basic volumes, such as primary partitions, extended partitions, and logical drives. Use basic disks on portable computers or when you plan to install multiple operating systems in different partitions on the same disk.

Dynamic disks contain dynamic volumes that offer features not available in basic disks, such as the ability to create fault-tolerant volumes (RAID).

- **Local and remote disk management:** By using Disk Management, you can manage any remote computer running a compatible Windows OS, on which you are a member of the Administrators group.

For example, if you want to allow your system to be remotely accessed, go to My Computer, then Select Properties by right clicking anywhere on this window. Now Select Remote Settings Tab (See fig. 3.6) and select appropriate radio button (middle one is preferred).



**Fig. 3.6 Allowing Remote Desktop Access**

In order to remotely access a desktop, type Remote Desktop Connection in search bar or mstsc.exe in Run, a window will appear, just give name of the computer, to which you want to get connected, followed by the password. Now a Desktop of that computer will appear on your monitor.

- **Mounted drives:** You can use Disk Management to connect, or mount, a local drive at any empty folder on a local NTFS-formatted volume. Mounted drives make data more accessible and give you the flexibility to manage data storage based on your work environment and system usage. Mounted drives to access more than 26 drives on your computer.
- **Logical Disk Manager Service:** The Logical Disk Manager Service uses disk groups to maintain information about the current state of disks in your computer.

### Manage basic volumes

#### ***Viewing the properties of a volume***

- In **Disk Management**, right-click the partition, logical drive, or other basic volume, and then click **Properties**.

### Assign, changing or remove a drive letter

- Right-click a partition, logical drive, or volume, and then click **Change Drive Letter and Paths**
- Do one of the following:
  - To assign a drive letter, click **Add**, click the drive letter you want to use, and then click **OK**.
  - To modify a drive letter, click it, click **Change**, click the drive letter you want to use, and then click **OK**
  - To remove a drive letter, click it, and then click **Remove**.

#### ***Create a mounted drive***

- Right-click the partition or volume you want to mount, and then click **Change Drive Letter and Paths**.
- Do one of the following:
  - To mount a volume, click **Add**. Click **Mount in the following empty NTFS folder**, type the path to an empty folder on an volume, or click **Browse** to locate it and then click **OK**.
  - To dismount a volume, click it and then click **Remove**.

#### ***Mark a partition as active***

- Right-click the primary partition you want to mark as active, and then click **Mark Partition as Active**.

#### ***Format a basic volume***

- Right-click the partition, logical drive, or basic volume you want to format (or reformat), and then click **Format**.
- Select the options you want, and then click **OK**.

#### ***Create a partition or logical drive***

- Right-click an unallocated region of a basic disk, and then click **New Partition**, or right click in an extended partition, and then click **New Logical Drive**.
- In the New Partition Wizard, click **Next**, click **Primary partition, Extended partition, or Logical drive**, and then follow the instructions on your screen.

Note: first create Primary Partition then extended. Logical Volumes are created with in the extended partition

#### ***Delete a partition or logical drive***

- Right-click the partition, logical drive, or volume you want to delete, and then click **Delete Partition**

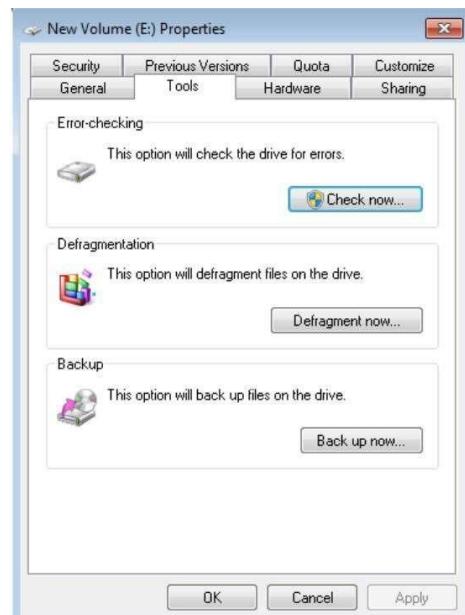
**Note:** First delete all Logical Partition and then Extended and Primary Partitions

#### **Disk Defragmenter**

Disk Defragmenter analyzes local volumes and consolidates fragmented files and folders so that each occupies a single, contiguous space on the volume. As a result, your system can access files and folders and save new ones more efficiently. By consolidating your files and folders, Disk Defragmenter also consolidates a volume's free space, making it less likely that new files will be fragmented. The process of consolidating fragmented files and folders is called defragmentation.

To defragment a particular disk or partition, select and right click on it, then select Properties and go to tab Tools, here you can find options for Disk Defragmentation. (See fig. 3.7)

These days a scheduled task of Disk fragmentation is already present. So you will not find your disk defragmented.



**Fig 3.7 Disk Defragmentation**

## EXERCISE

1. Use Task Scheduler utility to daily prompt a Good Morning message on your screen at 9 a.m. List steps of accomplishing the above task.

As display a message command is deprecated (no longer supported) in newer version of windows so

Create a bat script file with following commands:-

@echo off

msg \* "Good Morning!" (Remember to put spaces in b/w)

Now open “Computer Management System” “Task Scheduler”. Create a basic task. Name and describe the task accordingly

Set the “Trigger” as Daily on 9:00 A.M. Now click Next and choose to Run a Program. Select

the batch file that you made. Now click Finish to complete scheduling “Good Morning!”

2. Your computer is giving warning for low disk space that means your containing the operating system software does not have enough space to ensure reliable system operations List various ways by which you can increase your disk space.

You can either delete unnecessary files/softwares or activate storage sense in Settings so that it disables the unnecessary apps/tasks that you don't use OR if you can increase your ROM-capacity i.e. SSD or HDD or if you

have extra space so you can increase using “Disk management”. You can also shift your personal important stuff to an external drive.

## Lab Session 04

### **OBJECT**

#### *Learning basics of Microsoft Word*

### **WORD PROCESSING CONCEPTS**

Microsoft Word is designed to be user friendly. So, the MS Word often has more than one way to achieve much the same thing.

To start a document, type the first few paragraphs of text. Don't worry yet about formatting or fonts or making text bold.

Obviously the text we have on the screen so far isn't what we have in mind for a nicely formatted document. We need to make the Title and the Headings large and bold. And, we need space after the paragraphs. We need colors, pictures, diagrams etc. in a nicely formatted document.

To achieve that, you can use formatting options discussed below.

#### **Case Changing**

To change case, select the text whose case to be changed; **Press Shift+F3 to change the case.** Each time F3 is pressed the user will toggle through three options: UPPERCASE, lowercase, and Title Case.

#### **Indentation**

To indent both the left and right sides of the paragraph, position the insertion point in the paragraph to be indented, or select multiple paragraphs to indent; Choose Page Layout, type or select a value in the Left and then the Right indentation text boxes. You can also increase or decrease the indentation by clicking on the up and down arrows beside the text boxes.

#### **Text Alignment**

Word automatically aligns text on the left margin (horizontal alignment) and to the top margin (vertical alignment). The user can choose to change the alignment to center, right, full justified, or back to left.

To change horizontal alignment, select the paragraph(s) to be changed; Press Ctrl+L (Left), Ctrl+E (Center), Ctrl+R (Right), or Ctrl+J (Justify) to change the alignment of the paragraph accordingly (or use the Align Left, Center, Align Right, or Justify buttons on the Standard toolbar).

To change vertical alignment, move the insertion point inside the section where the text is to be aligned; Choose Page Layout, Align. Select Center, Justify, or Top to change alignment.

### **Customizing Paragraph Spacing**

The user can customize the paragraph spacing in Word for the spacing between paragraphs and the spacing between the lines in specified paragraphs. To do this, place the insertion point in the paragraph to be modified, or highlight all of the contiguous paragraphs to be changed and right click on it; Choose Paragraph to display the dialog box, then click the Indents and Spacing tab if it is not active; In the Spacing section, select Before and After and change the value(s) in the text box to increase or decrease by points the number of lines before or after a paragraph (6 points = 1 line); To change the line spacing within paragraphs, select the drop-down arrow for the Line Spacing list box, then select one of these options: 1.5 lines, Double, At least, Exactly, or Multiple; If one of the last three options is chosen, enter a number in the At text box. When finished, choose OK.

### **Columns**

To create columns of equal width, choose Page Layout; Select the text (or to format the entire document with columns, select the document); On the Standard toolbar, click the Columns button; Drag the pointer to select the number of columns needed. To remove columns, select the text for the columns to be removed; Click the Columns button on the Standard toolbar and select one column.

### **Borders, Lines, and Shading**

For a finished look, the user can add borders and shading to the documents. Just select the paragraph(s) to apply a border or shading to, then choose Insert, Table and click on Insert Table. In the title bar, there appears a Table Tools box. Click on this box. Click on Border and then on Border and Shading. Then click the desired line style; Click the Line Weight button, then click the line weight to be used; Click the drop-down arrow on the Borders button, then click the type of border to be applied; Click the drop-down arrow on the Shading Color button to display the palette of gray percents and colors, then click the percent of gray or color button.

### **Drop Cap**

A drop cap is large capital letters of the first word that is set into a paragraph to add visual interest. Just select the first letter, word, or section of the paragraph to be formatted with a drop cap; Choose Insert, Drop Cap; Select Dropped or In Margin; In the Drop Cap Options section, select the Font from the drop-down list, and increase or decrease the Lines to Drop if the default of three lines is not to be used; If the distance of the text from the drop cap is to be changed, use the increment buttons on the Distance from Text option, then choose OK. To remove drop caps, click the drop caps text, choose Drop Cap, click the None option in the Position section of the dialog box, then choose OK.

### **Inserting Special Characters**

To insert special characters, place the insertion point at the point in the paragraph where a symbol or special character is to be placed; Choose Insert, Symbol to display the Symbol dialog box. Click the Symbols tab to select a symbol, or click the Special Characters tab to select a special character; On the Symbols tab, select the font set that contains the symbol to be inserted in the document in the Font drop-down list box. To view a symbol in the displayed table, click the symbol. The symbol is then displayed in an enlarged and highlighted view; To insert a symbol or special character, click the item to be inserted, then click the Insert button. Click the Close button to close the dialog box and return to the document.

### **Zooming the Document Display**

Zooms customizes the on-screen size of the document in a way the user wants to view it. However, zoom setting does not affect the actual formatting of the document. To adjust zooming option, click View, zoom; In the drop-down list, select the zoom percentage to be used. The document display changes to the zoom percentage selected; If the required zoom percentage is not in the list, type the percent in the text box part of the Zoom button and press Enter.

### **Creating Custom Colors/Gradients/Textures**

To create custom colors, right click on the graphic element to be colored. Along with the shortcut menu appears the Drawing toolbar. Then click the drop-down arrow of the Fill Color or Line Color button and select More Fill Colors to open the Colors dialog box; Click the Custom tab at the top of the Colors dialog box. Set desired color. For gradient settings, in the drop-down arrow beside the Fill Color button, select Gradient at the bottom of the color palette instead of More Fill Colors. Click the Gradient tab and make desired settings. Texture tab can also be selected to apply designs to the objects.

### **Inserting Clip Art/AutoShapes/Pictures/WordArt**

To insert a Clip Art/ AutoShape, Picture or WordArt, position the insertion point in the document where the image is to be appeared. Choose Insert and then the desired option. Related dialog box appears, then make required selections. The inserted object can be customized in a number of ways. The user can change colors of the image, edit, reposition and resize them.

There are two ways to rotate or flip the inserted object. One is to right click on the object and then choose Format Picture/Shape. Then click on the 3-D Rotation button. From here, the desired rotation in the x, y and z axes may be chosen. The other gives access to that same tool and to the commands Rotate Left, Rotate Right, Flip Horizontal, and Flip Vertical. To do this, click the object to be adjusted choose Page Layout, click on Rotate and then choose the desired option.

These commands automatically execute. If Free Rotate is chosen (if we bring the cursor on the small green circle that appears above any object when we select it, this gives the free rotate option) continue with the following steps; Move the pointer over the rotate handle and, when it assumes the shape of the rotate tool icon, hold down the right mouse button;

The pointer changes to four circling arrows. Drag right or left. While dragging, a dotted outline indicates where the object would be if the mouse button is released; until the object is deselected it can be continuously rotated, even if the mouse button has been released. Place the pointer over a circle handle, hold down the mouse button and continue to rotate. Release the mouse button when the object is rotated to the desired position, and click outside the object to deselect it.

### **Creating Headers and Footers**

Headers and footers contain information repeated at the top or bottom of the pages in a document. To set Header and Footer, with the document open, choose Insert, then click on Header or Footer. Choose the desired format from the drop-down list. The Header pane is displayed in the document; Type and format the information for the header; To include the Page Number, Number of Pages, or current Date or Time, click the corresponding button on the Header and Footer toolbar; To create a footer, click the Go to Footer Button on the toolbar and type and format the footer just as was done for the header. Click Close Header & Footer button to return to the document.

## Document Map

The Document Map is a very functional way to move quickly through long or online documents. To use Document Map, choose View, Navigation Pane. Use the mouse to click the heading or text in the Document Map pane to move to that section of the document; Click the arrow on the left of any heading to expand or collapse the headings; To adjust the size of the Navigation pane, move the mouse pointer onto the right edge of the pane so the pointer changes to a resizing pointer, then click and drag the edge to the left or right. To use the keyboard, press F6 to move to the Navigation pane. Arrow keys and the Enter key will move to the desired location in the document.

## Drawing Tables

Drawing a table allows the user to place the rows and columns where he wants them. To create a table, click the Tables and Borders button to bring up the Tables and Borders toolbar and change the mouse pointer to a pencil; Drag the mouse pointer from one corner of the new table to the opposite corner to create the rectangle outline for the table; If a line is to be removed, click the Eraser button on the Tables and Borders toolbar and drag across the line.

If the user needs the data from a table, he may (rarely) want to convert the table to text with some sort of separator between the data for the former columns. To do this, select the entire table by positioning the mouse directly at the left top of the table until the pointer changes to a four directional arrow and then click it. A Table toolbar appears at the top of the document window. In the Layout tab, choose Convert to Text. Choose to separate the text with Paragraph Marks, Tabs, Commas, or type a new character in the other text box; then choose OK. Similarly, the user may want to convert the lines of text into a table. To do this, select the rows of tabbed text to be converted; Choose Insert, click on Table and then choose Insert Table.

The cells of the table can be edited and formatted, like moving and copying cells, splitting and merging cells, adjusting row and column spacing/width, inserting and deleting rows and columns, by selecting appropriate options from the menu that appears on right clicking the table or the selected cells.

## EXERCISES

- Write a report on any topic of your choice to show the maximum usage of Formatting features discussed in lab4 by MS Word.

**Attach the colored printout here.**



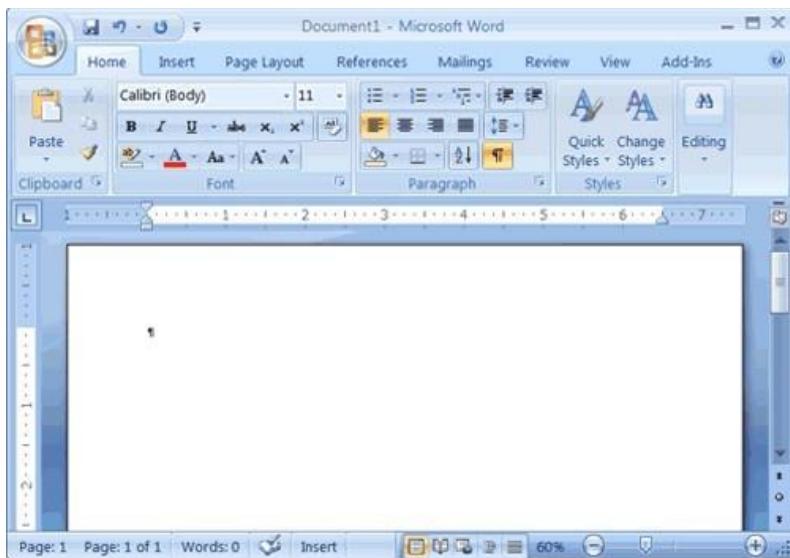
## Lab Session 05

### OBJECT

*Exploring features of Microsoft Word*

### WORD PROCESSING CONCEPTS

Microsoft Word is a word processing software package. You can use it to type letters, reports, and other documents. This lesson will introduce you to the Word window. You use this window to interact with Word.



### Create Sample Data and Select Text

If you type =rand() in your Word document and then press Enter, Word creates three paragraphs. You can use these paragraphs to practice what you learn. Throughout these lessons, you will be asked to select text. The following exercise teaches you how to create data and how to select data. You can select by using the arrow keys or by clicking and dragging. When using the arrow keys, use the up arrow to move up, the down arrow to move down, the left arrow to move left, and the right arrow to move right. When using the mouse, press the left mouse button and then drag in the direction you want to move.

### The Quick Access Toolbar

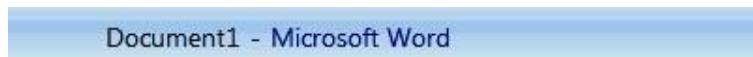
Next to the Microsoft Office button is the Quick Access toolbar. The Quick Access toolbar provides you with access to commands you frequently use. By default Save, Undo, and Redo appear on the Quick Access toolbar. You can use Save to save your file, Undo to rollback an action you have taken, and Redo to reapply an action you have rolled back.



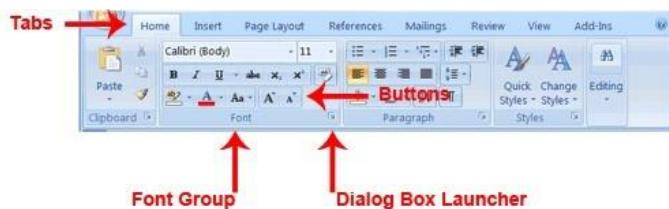
### The Title Bar

Next to the Quick Access toolbar is the Title bar. The Title bar displays the title of the document on which you are currently working. Word names the first new document you open Document1.

As you open additional new documents, Word names them sequentially. When you save your document, you assign the document a new name.



**The Ribbon** You use commands to tell Microsoft Word what to do. In Microsoft Word 2007, you use the Ribbon to issue commands. The Ribbon is located near the top of the screen, below the Quick Access toolbar. At the top of the Ribbon are several tabs; clicking a tab displays several related command groups. Within each group are related command buttons. You click buttons to issue commands or to access menus and dialog boxes. You may also find a dialog box launcher in the bottom-right corner of a group. Clicking the dialog box launcher gives you access to additional commands via a dialog box.



### The Ruler

The ruler is found below the Ribbon.



You can use the ruler to change the format of your document quickly. If your ruler is not visible, follow the steps listed here:



1. Click the View tab to choose it.
2. Click the check box next to Ruler in the Show/Hide group. The ruler appears below the Ribbon.

**The Status Bar** The Status bar appears at the very bottom of your window and provides such information as the current page and the number of words in your document. You can change what displays on the Status bar by right-clicking on the Status bar and selecting the options you want from the Customize Status Bar menu. You click a menu item to select it. You click it again to deselect it. A check mark next to an item means it is selected.



## Understanding Document Views

### Draft View

Draft view is the most frequently used view. You use Draft view to quickly edit your document.

### Web Layout

Web Layout view enables you to see your document as it would appear in a browser such as Internet Explorer.

### Print Layout

The Print Layout view shows the document as it will look when it is printed.

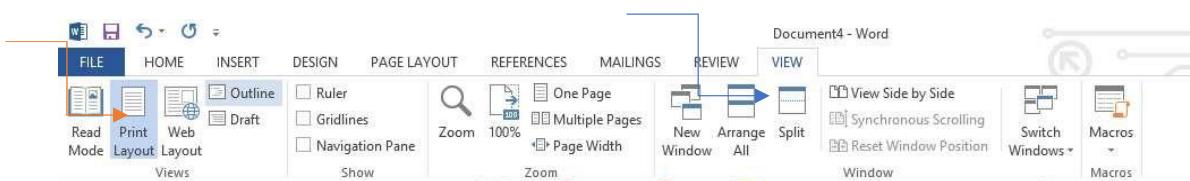
### Reading Layout

Reading Layout view formats your screen to make reading your document more comfortable.

### Outline View

Outline view displays the document in outline form. You can display headings without the text. If you move a heading, the accompanying text moves with it.

You should use Draft view for these lessons. Before moving ahead, make sure you are in Draft view:



1. Click the View tab.
2. Click Draft in the Document Views group. When the Draft option is selected it appears in a contrasting color.

## Understanding Nonprinting Characters

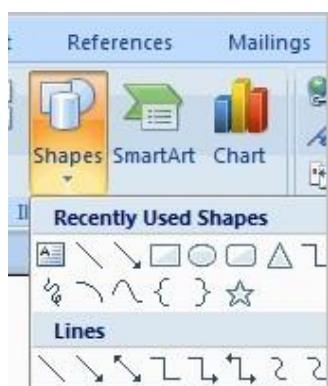
Certain characters, called nonprinting characters, do not print and will not appear in your printed document but do affect your document layout. You can elect to see these characters on the screen as you type or you can elect to have them remain invisible. For these lessons, opt to see them onscreen. This table describes most of them:

Character	Denotes
→	A tab
.	A space
¶	The end of a paragraph
Hidden	Hidden text

To view nonprinting characters:



1. Choose the Home tab.
2. Click the Show/Hide button in the Paragraph group. The Show/Hide button appears in a contrasting color, when it is selected **Working with Shapes**



You can add a **variety of shapes** to your document, including arrows, callouts, squares, stars, and flow chart symbols. Want to offset your name and address from the rest of your resume? Use a line. Need to show the progress of a document through your office? Use a flow chart. While you may not need shapes in every document you create, they can add **visual appeal and clarity** to many documents.

In this lesson, you will learn how to insert a shape and format it by changing its fill color, outline color, shape style, and shadow effects. Additionally, you will learn to apply 3D effects to shapes that have this option.

### **To insert a shape:**

- Select the **Insert** tab.
- Click the **Shape** command.
- Left-click a shape from the menu. Your cursor is now a cross shape.
- Left-click your mouse and while holding it down, drag your mouse until the shape is the desired size.
- Release the mouse button.

**To change shape style:** Select the shape. A new **Format tab** appears with Drawing Tools.



- Click the **More drop-down arrow** in the **Shape Styles** group to display more style options.



- Move your cursor over the styles, and Live Preview will preview the style in your document.
- Left-click a style to select it.

#### *To change the shape fill color:*

- Select the shape. A new **Format tab** appears with Drawing Tools.
- Click the **Shape Fill** command to display a drop-down list.



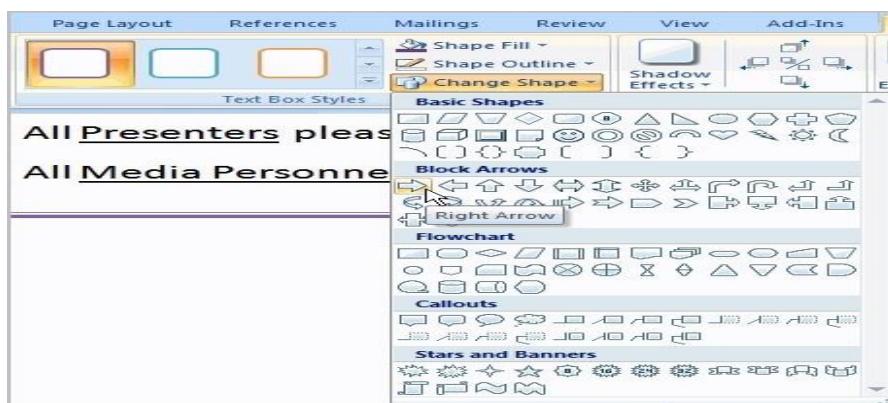
- Select a color from the list, choose No Fill, or choose one of the other options.

#### *To change the shape outline:*

- Select the shape. A new **Format tab** appears with Drawing Tools.
- Click the **Shape Outline** command to display a drop-down list.
- Select a color from the list, choose No Outline, or choose one of the other options.

#### *To change to a different shape:*

- Select the shape. A new **Format tab** appears with Drawing Tools.
- Click the **Change Shape** command to display a drop-down list.

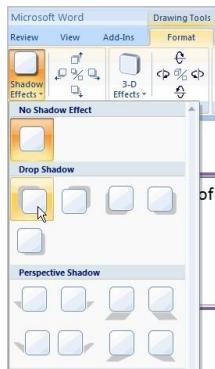


- Select a shape from the list.

□

### To change shadow effects:

- Select the **Format** tab.
- Left-click the **Shadow Effects** command.
- Move your mouse over the menu options. Live Preview displays how it will appear in your document.



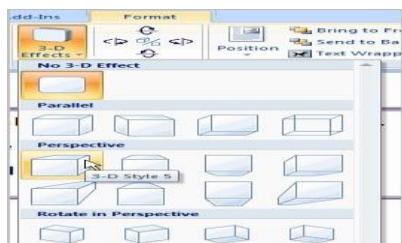
- Click an option to select the shadow effect.

Select **Shadow Color** from the menu, and choose a color from the palette to change the color of the shadow on your shape.

### To change 3D effects:

You cannot add a 3D effect to **all shapes**.

- Select the **Format** tab.
- Left-click the **3-D Effects** command.
- Move your mouse over the menu options. Live Preview displays how it will appear in your document.



- Click an option to select the 3D effect.

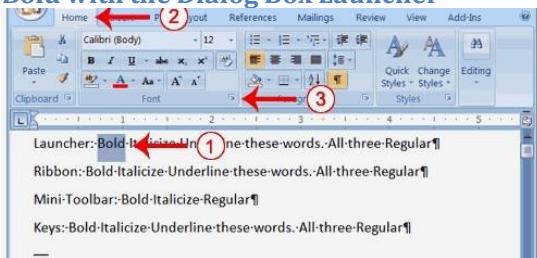
After you have chosen a **3D effect**, you can change other elements of your shape, including the **color, depth, direction, lighting, and surface** of the 3D effect on your shape. This can dramatically change the way the shape looks. You can access these options by clicking the 3-D Effects command

### **Bold, Italicize, and Underline**

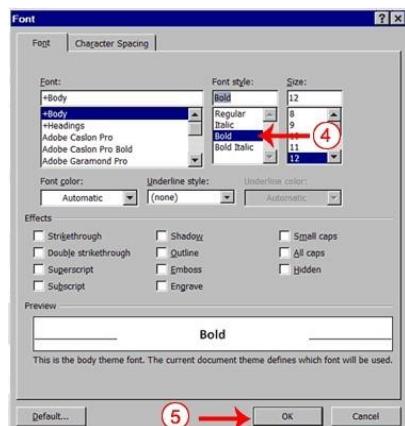
When creating a document, you may need to emphasize particular words or phrases by bolding, underlining, or italicizing. Also, certain grammatical constructs require that you bold, underline, or italicize. You can bold, underline, and italicize when using Word. You also can combine these features—in other words, you can bold, underline, and italicize a single piece of text.

When you need to perform a task in Microsoft Word, you can usually choose from several methods. The exercises that follow show you how to bold, underline, or italicize using four different methods: using the launcher, the Ribbon, the Mini-toolbar/context menu, and the keyboard.

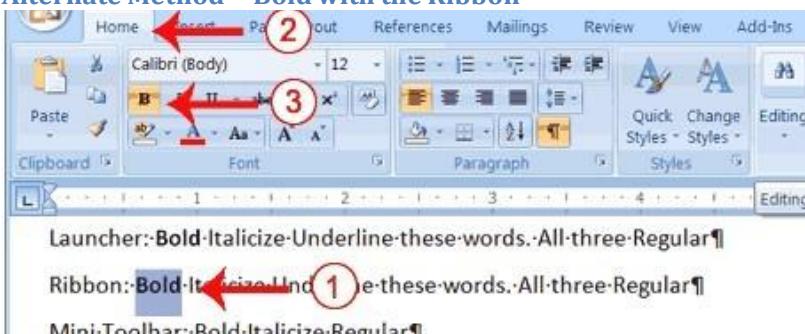
### Bold with the Dialog Box Launcher



1. On the line that begins with "Launcher," select the word "Bold." You can place the cursor before the letter "B" in "Bold." Press the Shift key; then press the right arrow key until the entire word is highlighted.
2. Choose the Home tab.
3. Click the dialog box launcher in the Font group. The Font dialog box appears
4. Click Bold in the Font Style box.
5. Note: You can see the effect of your action in the Preview window. To remove the bold, click Regular.
6. Click OK to close the dialog box.
7. Click anywhere in the text area to remove the highlighting. You have bolded the word bold..



### Alternate Method—Bold with the Ribbon



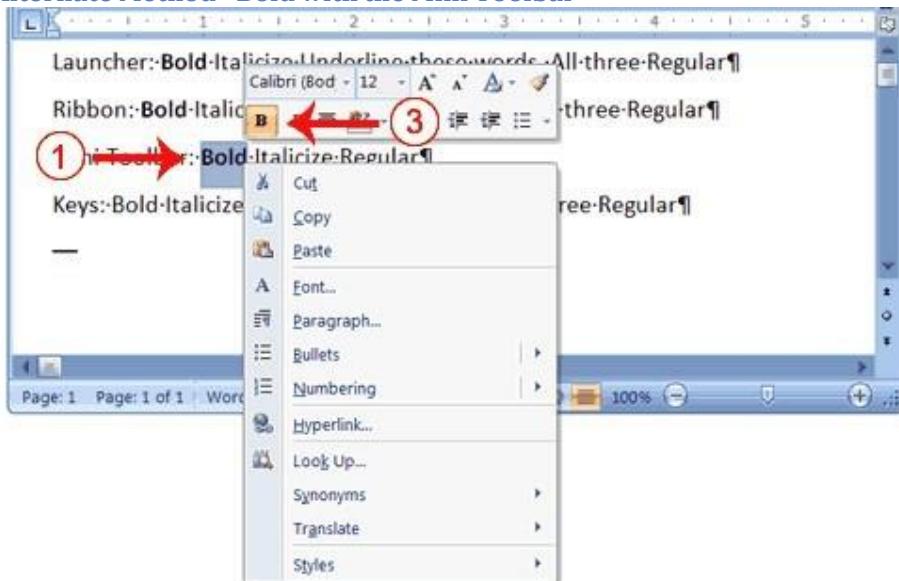
1. On the line that begins with "Ribbon," select the word "Bold." You can place the cursor before the letter "B" in "Bold." Press the Shift key; then press the right arrow key until the entire word is highlighted.
2. Choose the Home tab.

3. Click the Bold button **B** in the Font group. You have bolded the word bold.

**Note:** To remove the bold, you can select the text and then click the Bold button **B** again.

4. Click anywhere in the text area to remove the highlighting.

#### Alternate Method - Bold with the Mini Toolbar

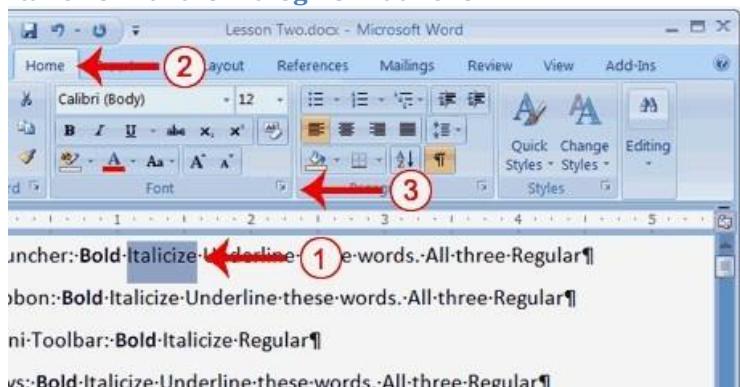


1. On the line that begins with "Mini Toolbar," select the word "Bold." You can place the cursor before the letter "B" in "Bold." Press the Shift key; then press the right arrow key until the entire word is highlighted.
2. Right-click. The Mini toolbar appears.
3. Click the Bold button **B**. You have bolded the word bold.

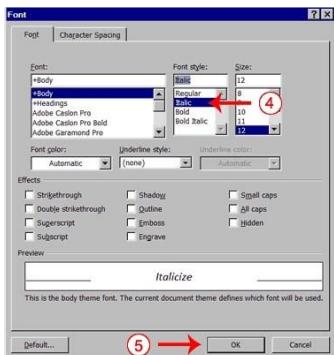
#### Alternate Method—Bold with Keys

1. On the line that begins with "Keys," select the word "Bold." You can place the cursor before the letter "B" in "Bold." Press the Shift key; then press the right arrow key until the entire word is highlighted.
2. Press **Ctrl+b** (hold down the **Ctrl** key while pressing **b**).  
**Note:** To remove the Bold, press **Ctrl+b** again. You can also remove formatting by pressing **Ctrl+spacebar**.
3. Click anywhere in the text area to remove the highlighting.

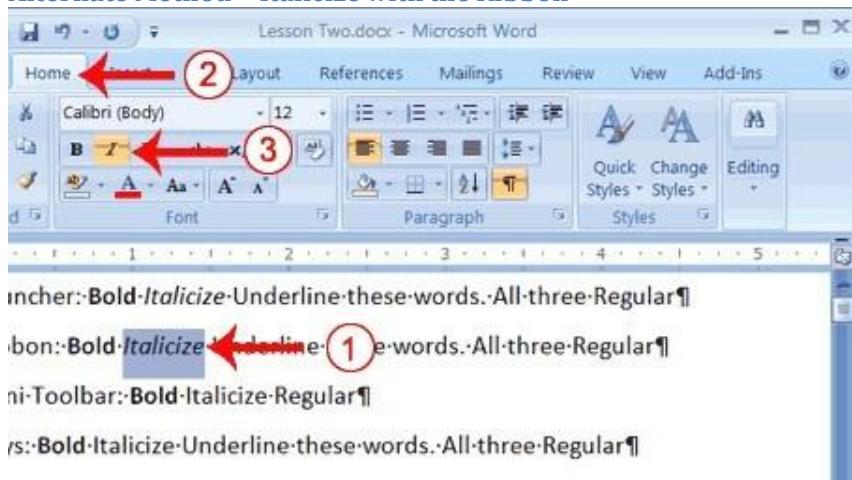
#### Italicize with the Dialog Box Launcher



1. On the line that begins with Launcher, select the word "Italicize." You can place the cursor before the letter "I" in "Italicize." Press the Shift key; then press the right arrow key until the entire word is highlighted.
2. Choose the Home tab.
3. Click the dialog box launcher in the Font group. The Font dialog box appears.
4. Click Italic in the Font Style box.  
**Note:** You can see the effect of your selection in the Preview window. To remove the italics, click Regular in the Font Style box.
5. Click OK to close the Font dialog box.
6. Click anywhere in the text area to remove the highlighting. You have italicized the word Italicize.

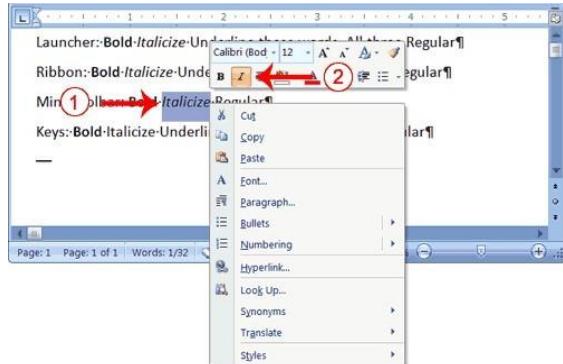


### Alternate Method—Italicize with the Ribbon



1. On the line that begins with "Ribbon," select the word "Italicize." You can place the cursor before the letter "I" in "Italicize." Press the Shift key; then press the right arrow key until the entire word is highlighted.
2. Choose the Home tab.
3. Click the Italic button on the Ribbon. You have italicized the word Italicize.  
**Note:** To remove the italics, select the text and click the Italicize button again.
4. Click anywhere in the text area to remove the highlighting.

### Alternate Method—Italicize with the Mini Toolbar



1. On the line that begins with "Mini Toolbar," select the word "Italicize." You can place the cursor before the letter "I" in "Italicize." Press the Shift key; then press the right arrow key until the entire word is highlighted.
2. Right-click. The Mini toolbar appears.
3. Click the Italic button . You have italicized the word Italicize.

### Alternate Method—Italicize with Keys

1. On the line that begins with "Keys," select the word "Italicize." You can place the cursor before the letter "I" in "Italicize." Press the Shift key; then press the right arrow key until the entire word is highlighted.
2. Press **Ctrl+i** (hold down the Ctrl key while pressing i).  
**Note:** To remove italics, press **Ctrl+i** again. You can also remove formatting by pressing **Ctrl+spacebar**.
3. Click anywhere in the text area to remove the highlighting. You have italicized the word Italicize.

### Underline with the Dialog Box Launcher

You can underline when using Word. Word provides you with many types of underlines from which to choose. The following are some of the underlines that are available if you use the dialog box launcher:

This is an underline. ¶

This is a words only underline. ¶

This is a double underline. ¶

This is a thick underline. ¶

This is a dotted underline. ¶

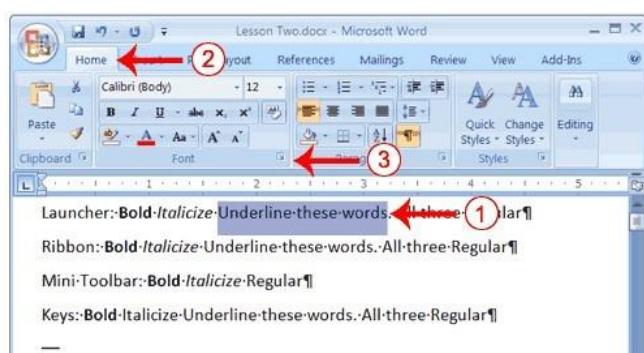
This is a dashed underline. ¶

This is a dot dash underline. ¶

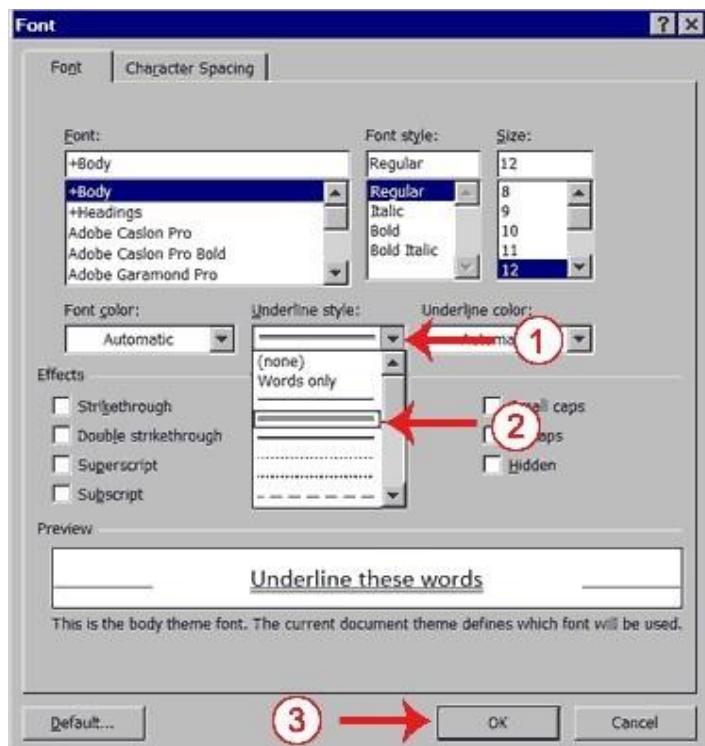
This is a dot dot dash underline. ¶

This is a wave underline. ¶

The following illustrates underlining with the dialog box launcher:

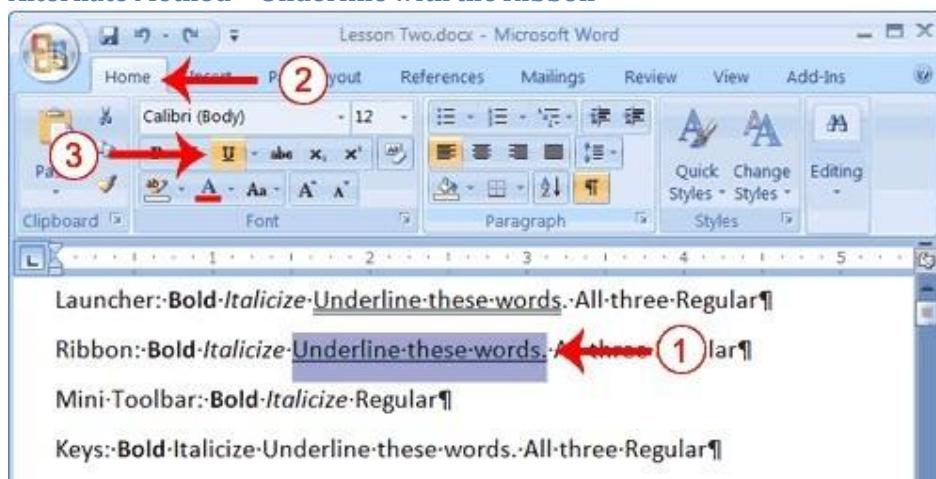


1. On the line that begins with "Launcher," select the words "Underline these words."
2. Choose the Home tab.
3. Click the dialog box launcher in the Font group. The Font dialog box appears.



4. In the Underline Style box, click the down arrow to open the pull-down menu.
  5. Click the type of underline you wish to use.
- Note:** To remove an underline, you select None from the pull-down menu.
6. Click OK to close the dialog box. The underline you selected appears under the words.
  7. Click anywhere in the text area to remove the highlighting.

#### Alternate Method—Underline with the Ribbon



1. On the line that begins with "Ribbon," select the words "Underline these words."
2. Choose the Home tab.
3. Click the Underline button  in the Font group . Alternatively, you can press the down arrow  next to the underline button  and click to choose the type of underline you want.  
**Note:** To remove the underlining, click the Underline button  again.
4. Click anywhere in the text area to remove the highlighting.

### Alternate Method—Underline with Keys

1. On the line that begins with "Keys," select the words "Underline these words."
2. Press **Ctrl+u** (hold down the **Ctrl** key while pressing **u**).  
**Note:** To remove the underlining, press **Ctrl+u** again.
3. Click anywhere in the text area to remove the highlighting.

### All Three with the Dialog Box Launcher

1. On the line that begins with "Launcher," select the words "All three."
2. Choose the Home tab.
3. Click the dialog box launcher in the Font group. The Font dialog box appears.
4. In the Font Style box, click Bold Italic.  
**Note:** You can see the effect of your selection in the preview window. To turn off the Bold Italic, click Regular.
5. In the Underline box, click to open the pull-down menu. Click the type of underline you want to use.  
**Note:** To remove an underline, select None from the pull-down menu.
6. Click OK to close the dialog box.
7. Click anywhere in the text area to remove the highlighting.

### Alternate Method—All Three with the Ribbon

1. On the line that begins with "Ribbon," select the words "All three."
2. Choose the Home tab.
3. Click the Bold button  in the Font group.
4. Click the Italic button  in the Font group.
5. Click the Underline button  in the Font group.
6. Click anywhere in the text area to remove the highlighting.

### Alternate Method—All Three with Keys

1. On the line that begins with "Keys," select the words "All three."
2. Press **Ctrl+b** (bold).
3. Press **Ctrl+i** (italicize).
4. Press **Ctrl+u** (underline).  
**Note:** You can remove formatting by highlighting the text and pressing **Ctrl+spacebar**.
5. Click anywhere in the text area to remove the highlighting.

### Save a File and Close Word

You must save your documents if you wish to recall them later. You can use the Save option on the Microsoft Office menu, to save a document. You can also save a document by typing **Ctrl+s**. The first time you save a document, the Save As dialog box appears. Use the Save As dialog box to locate the folder in which you want to save your document and to give your document a name. After you have saved your document at least once, you can save any changes you make to your document simply by clicking the Save after you click the Microsoft Office button.

## Use Spell Check

Word checks your spelling and grammar as you type. Spelling errors display with a red wavy line under the word. Grammar errors display with a green wavy line under the error. In Word 2007, you can use the Review tab's Spelling & Grammar button to initiate a spell and grammar check of your document.

### Use Spell Check



1. Type the following exactly as shown. Include all errors.
- Open the door for Mayrala. She is a teacher from the town of Ridgemont.**
2. Select: "Open thr door for Mayrala. She is a teacher from the town of Ridgemont."
3. Choose the Review tab.
4. Click the Spelling & Grammar button. The Spelling and Grammar dialog box appears.



6. "The" is misspelled, so it is highlighted on the screen and noted in the Not in Dictionary box. Word suggests correct spellings. These suggestions are found in the Suggestions box.
7. Click "the" in the Suggestions box.
8. Click **Change**.
- Note:** If the word is misspelled in several places, click Change All to correct all misspellings.
9. The name "Mayrala" is not in the dictionary, but it is correct. Click Ignore Once to leave "Mayrala" in the document with its current spelling.
- Note:** If a word appears in several places in the document, click Ignore All so you are not prompted to correct the spelling for each occurrence.
10. "Ridgemont" is not found in the dictionary. If you frequently use a word not found in the dictionary, you might want to add that word to the dictionary by clicking the Add to Dictionary button. Word will then recognize the word the next time it appears. Click Add to Dictionary.
11. The following should appear on your screen: "Word finished checking the selection. Do you want to continue checking the remainder of the document?"
12. Click No. If you wanted Word to spell-check the entire document, you would have clicked Yes.

**Note:** You can also press F7 to initiate a spelling and grammar check. If you don't have anything selected, Word checks the entire document.

### Find and Replace

If you need to find a particular word or phrase in your document, you can use the Find command. This command is especially useful when you are working with large files. If you want to search the entire document, simply execute the Find command. If you want to limit your search to a selected area, select that area and then execute the Find command.

After you find the word or phrase you are searching for, you can replace it with new text by executing the Replace command.

### Add Sample Text

This lesson uses sample text provided by Microsoft for training and demonstration purposes. You can type the text; however, there is a quicker way. You can use the rand function.

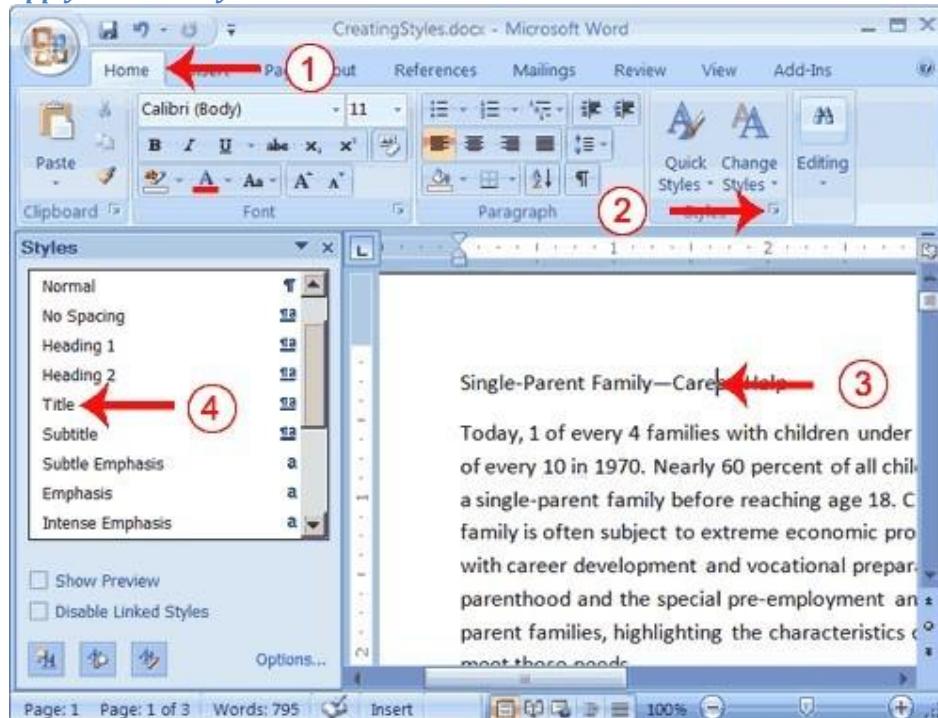
Functions are used to obtain information. You tell the function what you want and the function returns that information to you. By default, in Word, when you type the rand function, Word returns three paragraphs. When working with functions, you use arguments to be specific about what you want the function to return. There are two arguments you can use with the rand function. The first one tells Word how many paragraphs you want, and the second one tells Word how many sentences you want in a paragraph. You place arguments between the parentheses and you separate them with a comma. For example, if you type =rand() and then press Enter, word returns three paragraphs. To tell Word you want two paragraphs with three sentences in each paragraph, you type =rand(2,3).

### Apply a Style

You can see of all the styles available to you in the style set by clicking the launcher in the Styles group and opening the Styles pane. You can leave the Styles pane open and available for use by docking it. To dock the Styles pane, click the top of the pane and drag it to the left or right edge of the Word window.

You do not need to select an entire paragraph to apply a style. If the cursor is anywhere in the paragraph, when you click on the style, Word formats the entire paragraph.

### Apply the Title Style



1. Choose the Home tab.
2. Click the launcher in the Styles Group. The Styles pane appears. You can drag it to the side of the Word window to dock it. To close the Styles pane, click the Close button in the upper right corner of the pane.
3. Click anywhere in the paragraph "Single-Parent Family—Career Help."
4. Click Title in the Styles pane. Word 2007 applies the Title style to the paragraph.

Headings and subheadings mark major topics within your document. With Word 2007, you can easily format the headings and subheadings in your document.

### Apply Headings

1. Click anywhere in the paragraph "The Nature of Single Parenthood."
2. In the Style box, click Heading 1. Word reformats the paragraph.
3. Repeat steps 1 and 2 in the following paragraphs:
  - Types of Single Parents
  - Career Development Needs of Single Parents
  - Career Development Programs

### Apply Subheadings

1. Click anywhere in the paragraph "Displaced Homemakers"
2. In the Style box, click Heading 2. Word reformats the paragraph.
3. Repeat steps 1 and 2 for the following paragraphs:
  - Displaced Homemakers
  - Adolescent Mothers
  - Single Fathers
  - High School Dropout Prevention
  - Established Education Sites

### ***Alternate Method -- Apply Styles with the Ribbon***

You can also choose styles by selecting the option you want from the Styles group on the Ribbon. First you must place your cursor in the paragraph to which you want to apply the style. Then you click the More button in the Styles group to see all of the styles in the currently selected set. As you roll your cursor over each of the styles listed, Word 2007 provides you with a live preview of how the style will appear when applied.

1. Select the paragraphs "Emotional Support" through "Parenthood Education" (they are probably on page two).
2. Click the More button in the Styles group.
3. Locate and click the List Paragraph style. Word applies the List Paragraph style to the paragraphs you selected.

### **Change Style Sets**

Once you have applied styles, changing to another style set is easy. You simply open the Style Set gallery. As you move your cursor down the menu, Word 2007 provides you with a live preview of the effect of applying the style set. To choose a style set, you click it.

### **Adding Bullets and Numbers, Undoing and Redoing, Setting Page Layouts and Printing Documents**

If you have lists of data, you may want to bullet or number them. When using Microsoft Word, bulleting and numbering are easy. The first part of this lesson teaches you to bullet and number.

After you have completed your document, you may want to share it with others. One way to share your document is to print and distribute it. However, before you print you may want to add page numbers and tell Word such things as the page orientation, the paper size, and the margin setting you want to use. In this lesson you will learn how to layout and how to print your documents.

### **Add Bullets and Numbers**

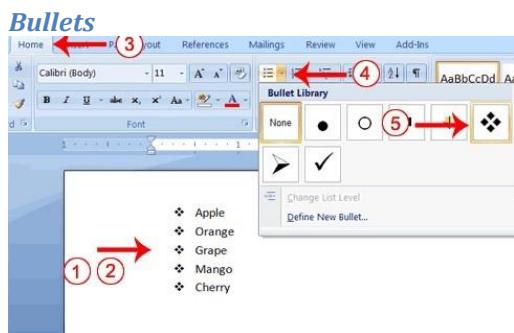
In Microsoft Word, you can easily create bulleted or numbered lists of items. Several bulleting and numbering styles are available, as shown in the examples. You can select the one you wish to use.

#### **EXAMPLES: Numbering**

- |           |           |            |
|-----------|-----------|------------|
| 1. Apple  | 1) Apple  | i. Apple   |
| 2. Orange | 2) Orange | ii. Orange |
| 3. Grape  | 3) Grape  | iii. Grape |
| 4. Mango  | 4) Mango  | iv. Mango  |
| 5. Cherry | 5) Cherry | v. Cherry  |
|           |           |            |
| A. Apple  | a) Apple  | a. Apple   |
| B. Orange | b) Orange | b. Orange  |
| C. Grape  | c) Grape  | c. Grape   |
| D. Mango  | d) Mango  | d. Mango   |
| E. Cherry | e) Cherry | e. Cherry  |

**EXAMPLES:** Bulleting

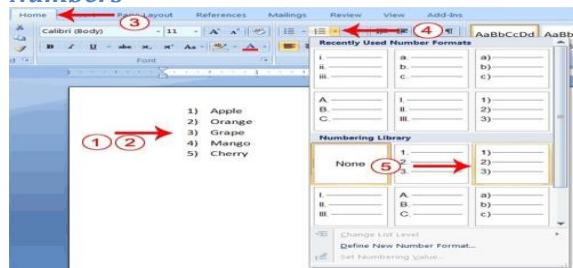
- |          |          |          |
|----------|----------|----------|
| • Apple  | ○ Apple  | ▪ Apple  |
| • Orange | ○ Orange | ▪ Orange |
| • Grape  | ○ Grape  | ▪ Grape  |
| • Mango  | ○ Mango  | ▪ Mango  |
| • Cherry | ○ Cherry | ▪ Cherry |
- 
- |          |          |          |
|----------|----------|----------|
| ❖ Apple  | ➤ Apple  | ✓ Apple  |
| ❖ Orange | ➤ Orange | ✓ Orange |
| ❖ Grape  | ➤ Grape  | ✓ Grape  |
| ❖ Mango  | ➤ Mango  | ✓ Mango  |
| ❖ Cherry | ➤ Cherry | ✓ Cherry |



1. Type the following list as shown:  
**Apple**  
**Orange**  
**Grape**  
**Mango**  
**Cherry**
2. Select the words you just typed.
3. Choose the Home tab.
4. In the Paragraph group, click the down arrow next to the Bullets button . The Bullet Library appears.
5. Click to select the type of bullet you want to use. Word adds bullets to your list.  
**Note:** As you move your cursor over the various bullet styles, Word displays the bullet style onscreen.

To remove the bulleting:

1. Select the list again.
2. Choose the Home tab.
3. In the Paragraph group, click the down arrow next to the Bullets icon. The Bullet dialog box appears.
4. Click None. Word removes the bullets from your list.

**Numbers**

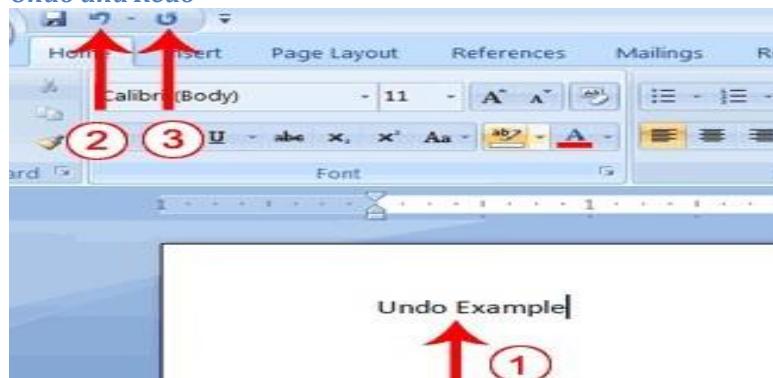
1. Type the following list as shown:  
**Apple**  
**Orange**  
**Grape**  
**Mango**  
**Cherry**
2. Select the words you just typed.
3. Choose the Home tab.
4. In the Paragraph group, click the down arrow next to the Numbering button . The Numbering Library appears.
5. Click to select the type of numbering you want to use. Word numbers your list.  
**Note:** As you move your cursor over the various number styles, Word displays the number style onscreen.

To remove the numbering:

1. Select the list again.
2. Choose the Home tab.
3. In the Paragraph group, click the down arrow next to the Numbering icon. The Number dialog box appears.
4. Click None. Word removes the numbering from your list.

**Undo and Redo**

You can quickly reverse most commands you execute by using Undo. If you then change your mind again, and want to reapply a command, you can use Redo.

**Undo and Redo**

1. Type **Undo example**.
2. Click the Undo button on the Quick Access menu. The typing disappears.
3. Click the Redo button on the Quick Access menu. The typing reappears.
4. Select "Undo example."
5. Press Ctrl+b to bold. Word bolds the text.
6. Press Ctrl+i. Word italicizes the text.

7. Press **Ctrl+u** Word underlines the text.
8. Click the down arrow next to the Undo icon. You will see the actions you performed listed. To undo the underline, click Underline; to undo the underline and italic, click Underline Italic; to undo the underline, italic, and bold click Bold etc.
9. To redo, click the Redo icon several times.

#### ***Alternate Method -- Undo & Redo by Using Keys***

1. Type **Undo example**.
2. Press **Ctrl+z**. The typing disappears.
3. Press **Ctrl+y**. The typing reappears.
4. Select "Undo example."
5. Press **Ctrl+u** to underline.
6. Press **Ctrl+z**. The underline is removed.
7. Press **Ctrl+y**. The underline reappears.

#### **Set the Orientation**

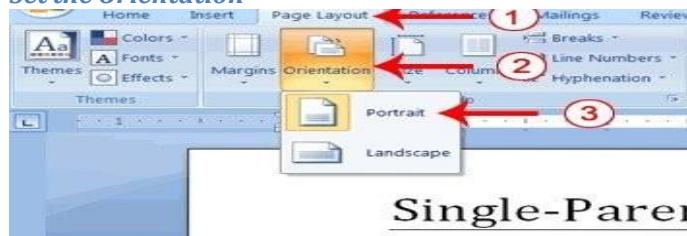
Before you print your document, you may want to change the orientation of your pages. There are two orientations you can use: portrait and landscape. Paper, such as paper sized 8 1/2 by 11, is longer on one edge than it is on the other. If you print in Portrait, the shortest edge of the paper becomes the top of the page. Portrait is the default option. If you print Landscape, the longest edge of the paper becomes the top of the page.



The exercises that follow use a file named SamplePrint.docx. [Right click here to download the file](#). Click Save Target As from the menu that appears, and save the linked file to a directory on your computer. The file will download as a zip file. A zip file is a file that is compressed. Compressed files are smaller and easier to download. To open the file:

1. Open the folder you downloaded the file to.
2. Right-click on the file name.
3. Click Extract All on the menu that appears. The Extract Compressed (Zipped) Folders dialog box appears.
4. Enter the folder you want to put the file in or except to suggested location.
5. Click Extract. Windows Explorer extracts the file.
6. You can use Microsoft Word to open the file.

#### ***Set the Orientation***



1. Choose the Page Layout tab.
2. Click Orientation in the Page Setup group. A menu appears.
3. Click Portrait. Word sets your page orientation to Portrait.

### Set the Page Size

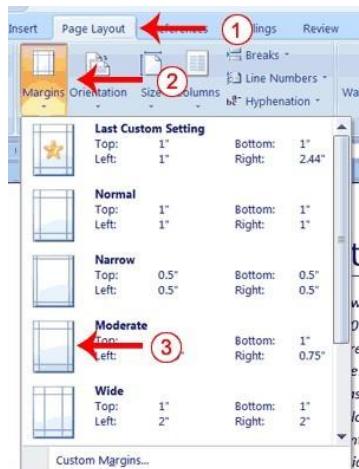
Paper comes in a variety of sizes. Most business correspondence uses 8 1/2 by 11 paper which is the default page size in Word. If you are not using 8 1/2 by 11 paper, you can use the Size option in the Page Setup group of the Page Layout tab to change the Size setting.

### Set the Page Size

1. Choose the Page Layout tab.
2. Click Size in the Page Setup group. A menu appears.
3. Click Letter 8.5 x 11in. Word sets your page size.

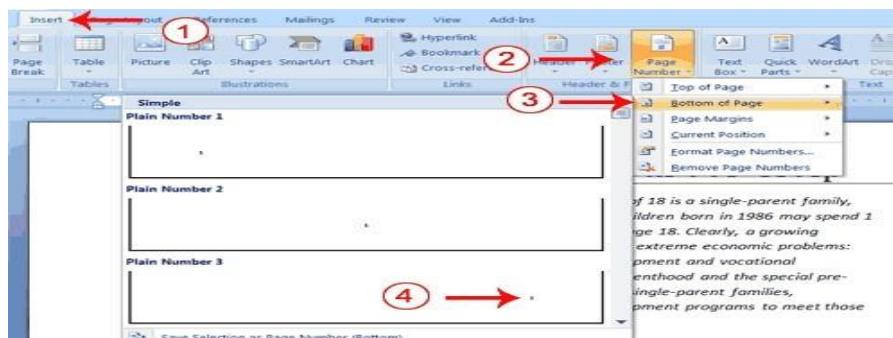
### Set the Margins

Margins define the amount of white space that appears at the top, bottom, left, and right edges of your document. The Margin option in the Page Setup group of the Page Layout tab provides several standard margin sizes from which you can choose. **Set the Margins**



1. Choose the Page Layout tab.
2. Click Margins in the Page Setup group. A menu appears.
3. Click Moderate. Word sets your margins to the Moderate settings.

**Add Page Numbers** Page numbers help you keep your document organized and enable readers to find information quickly. You can add page numbers to the top, bottom, or margins of your pages, and you can choose where the numbers appear. For example, numbers can appear at the top of the page, on the left, right, or center of the page. Word also offers several number styles from which you can choose



1. Choose the Insert tab.
2. Click the Page Number button in the Header & Footer group. A menu appears.
3. Click Bottom of Page.
4. Click the right-side option.

### Preview and Print Documents

When you have your margins, tabs, and so on the way you want them, you are ready to print. In Word, You can preview your document before you print. In the Preview mode, you can review each page, view multiple pages at the same time, zoom in on a page, and access the Size, Orientation, and Margin options.

If you press the Zoom button while you are in Preview mode, the Zoom dialog box appears. In the Zoom dialog box you can set the sizes of the pages that display as well as the number of pages that display.

When you are ready to print, you use the Print dialog box. In the Print Range area, choose All to print every page of your document, choose Current Page to print the page you are currently on, or choose Pages to enter the specific pages you want to print. Type the pages you want to print in the Pages field. Separate individual pages with commas (1,3, 13); specify a range by using a dash (4-9).



### Single-Parent Family—Career

1. Choose the View tab.
2. Click Print Layout in the Document Views group. Your document changes to the Print Layout view

#### **Insert Page Breaks:**

you can display your document in any of five views: Draft, Web Layout, Print Layout, Full Screen Reading, or Online Layout. In Print Layout view you see your document as it will appear when you print it. You can clearly see where each page ends and a new page begins. As you review your document, you may find that you want to change the point at which a new page begins. You do this by inserting a page break. For example, if a page heading appears on one page and the first paragraph under the heading appears on the next page, you may want to insert a page break before the heading to keep the heading and the first paragraph together. Change to Print View

#### ***Insert Page Breaks***



1. Place your cursor before the D in "Displaced Homemakers"
2. Choose the Insert tab.
3. Click Page Break. Word places a page break in your document.

To delete a page break, you select the page break and then press the Delete key.

## Lab Session 06

### OBJECT

#### Creating Bookmarks, Hyperlink, Mail Merge

##### Creating Bookmarks

A bookmark is a named marker for a block of text, an entire table or a graphic, a cell or range of cells in a table, or simply a position in a document. First enter a bookmark where it is wanted, then the user can move to it or cite it as a reference in a field or formula. To create a book mark, click in the document at the location where the bookmark is to be inserted, or select the text or graphic to be named; Choose Insert, Bookmark to display the Bookmark dialog box; enter the new bookmark name in the Bookmark Name text box. The user can also select an existing bookmark name from the list, and Word moves the bookmark from its existing location to the place selected; Click the Add button to add the bookmark to the bookmark list and close the dialog box

To delete a book mark, choose Insert, Bookmark; Select the name of the bookmark to be deleted from the Bookmark Name list box; Click the Delete button. The selected bookmark name is removed from the list box and the document; Click the Close button to close the dialog box and return to the document.

##### Hyperlinks

The user can create a link that jumps to a document, also called a page, on his computer and on a network or intranet. Two types of hyperlinks can be created: one that jumps to a bookmark in the same document and another that jumps to a URL.

First type is for named locations. Named locations can be in the same document the user is working with (an internal link), or in a different document (an external link). The named location targets a Bookmark inserted at the position to be jumped to within a document. To do this, use the Insert Hyperlink button on the Standard toolbar to open the Insert Hyperlink dialog box; choose either Place in this document or Existing File or Webpage button. Locate the Word document containing the Bookmark this link is to jump to. The user can also jump to a named range in Excel, a database object, or a specific PowerPoint slide; choose OK to confirm the choice or Cancel to negate it.

Second type is for URLs and other links. For this click the Insert Hyperlink button on the Standard toolbar to open the Insert Hyperlink dialog box; click on the Browse the Web or Browse for File button to locate and select the document. The path and document name are automatically entered in the Address text box; choose OK to confirm the choice or Cancel to negate it.

## Mail Merge

If the user is sending many documents, mail merge can save lots of time. The user can design a form that prints multiple labels on a page similar to the way he designs a form letter.

- Creating Main Document - A main document is a letter, envelope, or other document that has text that the user wants to appear on every merge, and codes that will be replaced with entries from a data source of names and addresses.

To create the main document, open a new blank document window. Then choose Mailings, Mail Merge. In the drop down list select the Step by step Mail Merge Wizard to display the Mail Merge Helper. Select the document type under Step 1; then select the starting document.

The wizard now asks to select recipients (data source-a location for names and addresses). Now there are two ways to get the data source. Either select from existing data sources or create a new list.

- Opening a Existing List - The existing data source could be a Word document, an Excel document, an Access database or query, a dBASE file, or even a FoxPro file, as well as many others. For this, select the Use an existing list option and then browse. Word can read many different data source formats. Choose the drop-down arrow on the Files of Type list to select the file type for the data source; Navigate in the Look In list to find the drive and folder where the data source file is stored. Select the file and choose Open, or if available, click the MS Query button if a non-Word database is to be selected.
- Creating a New List - If the user does not have a data source that contains list of names and addresses for the merge document, one can be created using the Type new list option and then click on Create. The New Address List dialog box is displayed; Scroll through the list of fields in the Field Names in Header Row list box to see commonly used field names provided by Word; Edit the list of field names using the Customize Fields button. The top-to-bottom order of the fields is the order the fields will be in for data entry in the data source. When finished, choose OK; Word displays the Save As dialog box. In the File Name box, enter a name for the data source document and choose Save.
- Inserting Fields - Step four is to write the letter. The wizard helps to insert fields. Merge fields are the variable information that changes for each document. Position the insertion point where a merge field is to be appeared and then select the field from the list presented; Type any text or punctuation that is needed in the document and continue inserting merge fields where necessary.

## **EXERCISES**

- Create a word document (Properly Formatted), using mail merge wizard, which produces individual information reports for a list of students in the form of a table, including their first name, last name, father's name, home address, phone number, email addresses, and home page address as hyperlinks (if any). Enter few sample records. Table should be properly formatted. Remember to include your name and roll number in the header field. Get a printout to be attached here, of the page that contains only field name and not any records. Also attach 1 sample report containing actual data.

**Attach the colored printout here.**

## Lab Session: 07

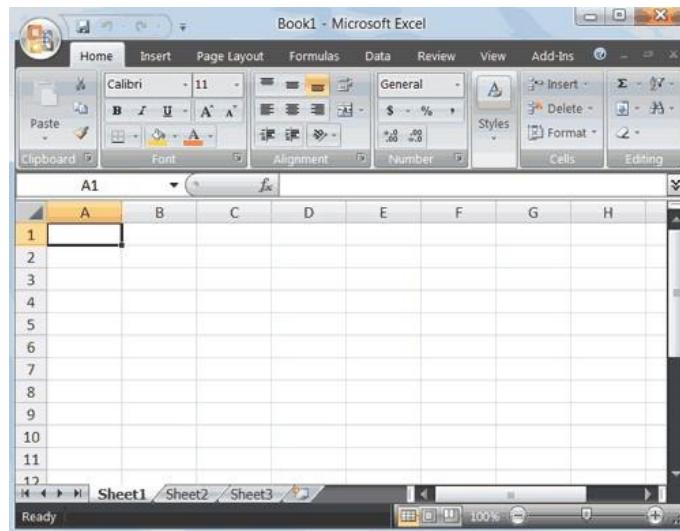
### **Objective(s) :**

**To learn the basics of Microsoft Excel**

#### *The Microsoft Excel Window*

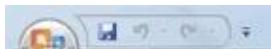
Microsoft Excel is an electronic spreadsheet. You can use it to organize your data into rows and columns. You can also use it to perform mathematical calculations quickly. This tutorial teaches Microsoft Excel basics. Although knowledge of how to navigate in a Windows environment is helpful, this tutorial was created for the computer novice.

- . The Microsoft Excel window appears and your screen looks similar to the one shown here.



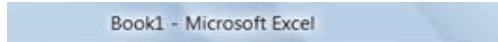
**Note:** Your screen will probably not look exactly like the screen shown. In Excel 2007, how a window displays depends on the size of your window, the size of your monitor, and the resolution to which your monitor is set. Resolution determines how much information your computer monitor can display. If you use a low resolution, less information fits on your screen, but the size of your text and images are larger. If you use a high resolution, more information fits on your screen, but the size of the text and images are smaller. Also, settings in Excel 2007, Windows Vista, and Windows XP allow you to change the color and style of your windows.

#### **The Quick Access Toolbar**



Next to the Microsoft Office button is the Quick Access toolbar. The Quick Access toolbar gives you with access to commands you frequently use. By default, Save, Undo, and Redo appear on the Quick Access toolbar. You can use Save to save your file, Undo to roll back an action you have taken, and Redo to reapply an action you have rolled back.

#### **The Title Bar**



Next to the Quick Access toolbar is the Title bar. On the Title bar, Microsoft Excel displays the name of the workbook you are currently using. At the top of the Excel window, you should see "Microsoft Excel - Book1" or a similar name.

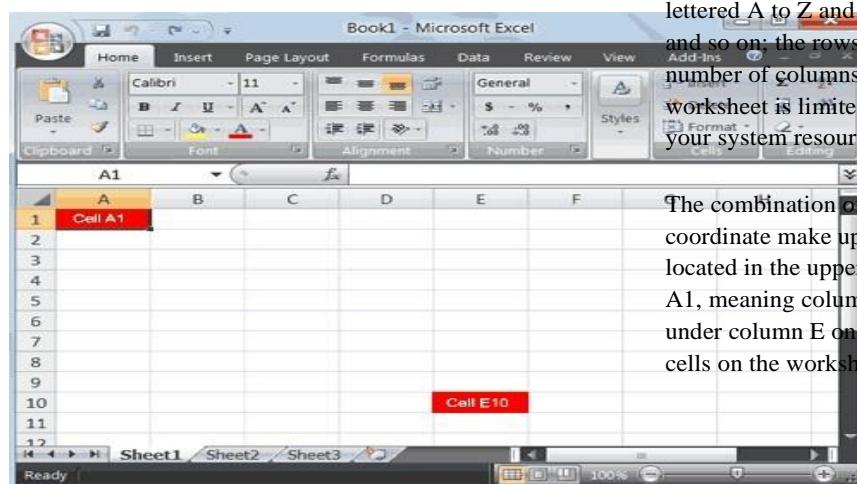
## The Ribbon



You use commands to tell Microsoft Excel what to do. In Microsoft Excel, you use the Ribbon to

issue commands. The Ribbon is located near the top of the Excel window, below the Quick Access toolbar. At the top of the Ribbon are several tabs; clicking a tab displays several related command groups. Within each group are related command buttons. You click buttons to issue commands or to access menus and dialog boxes. You may also find a dialog box launcher in the bottom-right corner of a group. When you click the dialog box launcher, a dialog box makes additional commands available.

## Worksheets



Microsoft Excel consists of worksheets. Each worksheet contains columns and rows. The columns are lettered A to Z and then continuing with AA, AB, AC and so on; the rows are numbered 1 to 1,048,576. The number of columns and rows you can have in a worksheet is limited by your computer memory and your system resources.

The combination of a column coordinate and a row coordinate make up a cell address. For example, the cell located in the upper-left corner of the worksheet is cell A1, meaning column A, row 1. Cell E10 is located under column E on row 10. You enter your data into the cells on the worksheet.

## The Formula Bar



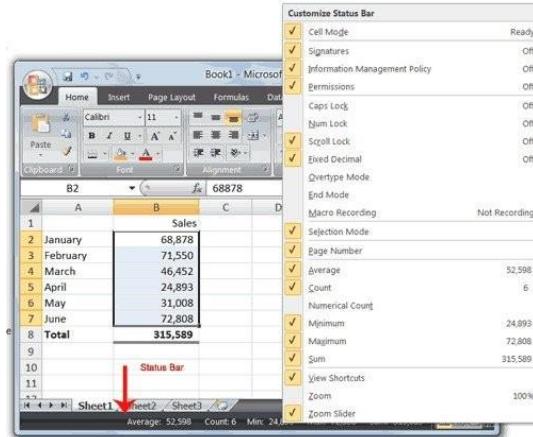
If the Formula bar is turned on, the cell address of the cell you are in displays in the Name box which is located on the left side of the Formula bar. Cell

entries display on the right side of the Formula bar. If you do not see the Formula bar in your window, perform the following steps:

1. Choose the View tab.
2. Click Formula Bar in the Show/Hide group. The Formula bar appears.

**Note:** The current cell address displays on the left side of the Formula bar.

## The Status Bar



The Status bar appears at the very bottom of the Excel window and provides such information as the sum, average, minimum, and maximum value of selected numbers. You can change what displays on the Status bar by right-clicking on the Status bar and selecting the options you want from the Customize Status Bar menu. You click a menu item to select it. You click it again to deselect it. A check mark next to an item means the item is selected.

## Move Around a Worksheet

By using the arrow keys, you can move around your worksheet. You can use the down arrow key to move downward one cell at a time. You can use the up arrow key to move upward one cell at a time. You can use the Tab key to move across the page to the right, one cell at a time. You can hold down the Shift key and then press the Tab key to move to the left, one cell at a time. You can use the right and left arrow keys to move right or left one cell at a time. The Page Up and Page Down keys move up and down one page at a time. If you hold down the Ctrl key and then press the Home key, you move to the beginning of the worksheet.

### *Move Around the Worksheet*

#### *The Down Arrow Key*

- Press the down arrow key several times.  
Note that the cursor moves downward one cell at a time.

#### *The Up Arrow Key*

- Press the up arrow key several times.  
Note that the cursor moves upward one cell at a time.

#### *The Tab Key*

1. Move to cell A1.
2. Press the Tab key several times. Note that the cursor moves to the right one cell at a time.

#### *The Shift+Tab Keys*

- Hold down the Shift key and then press Tab. Note that the cursor moves to the left one cell at a time.

#### *The Right and Left Arrow Keys*

1. Press the right arrow key several times.  
Note that the cursor moves to the right.
2. Press the left arrow key several times.  
Note that the cursor moves to the left.

#### *Page Up and Page Down*

1. Press the Page Down key. Note that the cursor moves down one page.
2. Press the Page Up key. Note that the cursor moves up one page.

#### *The Ctrl-Home Key*

1. Move the cursor to column J.
2. Stay in column J and move the cursor to row 20.
3. Hold down the Ctrl key while you press the Home key. Excel moves to cell A1.

## Go To Cells Quickly

The following are shortcuts for moving quickly from one cell in a worksheet to a cell in a different part of the worksheet.

### *Go to -- F5*

The F5 function key is the "Go To" key. If you press the F5 key, you are prompted for the cell to which you wish to go. Enter the cell address, and the cursor jumps to that cell.

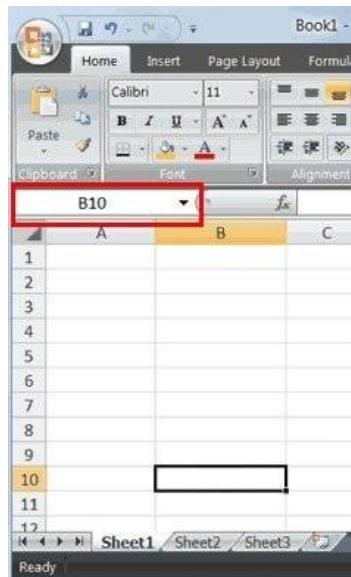
1. Press F5. The Go To dialog box opens.
2. Type **J3** in the Reference field.
3. Press Enter. Excel moves to cell J3.

### *The Name Box*

You can also use the Name box to go to a specific cell.

Name box and then press Enter.

Just type the cell you want to go to in the



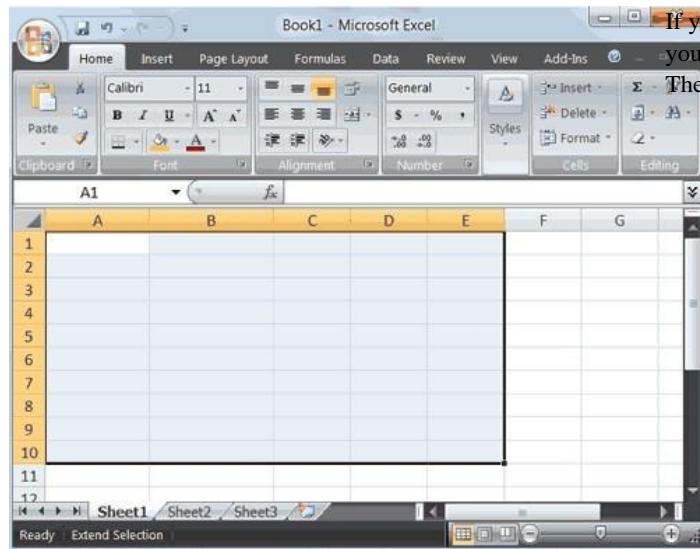
### *Go to -- Ctrl+G*

You can also use Ctrl+G to go to a specific cell.

1. Hold down the Ctrl key while you press "g" (Ctrl+g). The Go To dialog box opens.
2. Type **C4** in the Reference field.
3. Press Enter. Excel moves to cell C4.

1. Type **B10** in the Name box.
2. Press Enter. Excel moves to cell B10.

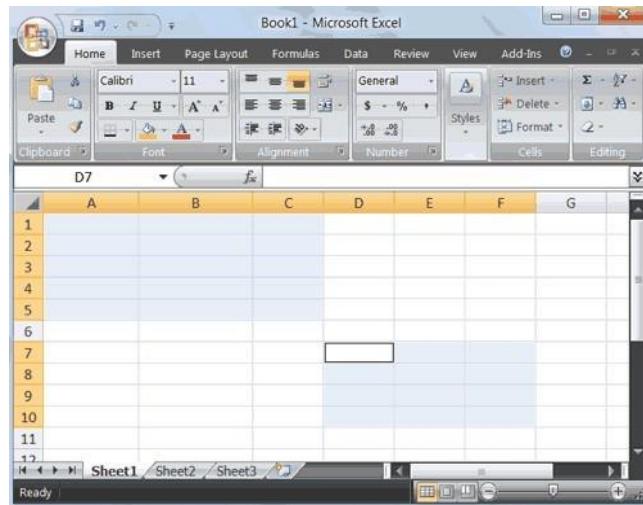
## Select Cells



If you wish to perform a function on a group of cells, you must first select those cells by highlighting them. The exercises that follow teach you how to select.

### *Alternative Method: Select Cells by Dragging*

You can also select an area by holding down the left mouse button and dragging the mouse over the area. In addition, you can select noncontiguous areas of the worksheet by doing the following:



1. Go to cell A1.
2. Hold down the Ctrl key. You won't release it until step 9. Holding down the Ctrl key enables you to select noncontiguous areas of the worksheet.
3. Press the left mouse button.
4. While holding down the left mouse button, use the mouse to move from cell A1 to C5.
5. Continue to hold down the Ctrl key, but release the left mouse button.
6. Using the mouse, place the cursor in cell D7.
7. Press the left mouse button.
8. While holding down the left mouse button, move to cell F10. Release the left mouse button.
9. Release the Ctrl key. Cells A1 to C5 and cells D7 to F10 are selected.
10. Press Esc and click anywhere on the worksheet to remove the highlighting.

## Enter Data

In this section, you will learn how to enter data into your worksheet. First, place the cursor in the cell in which you want to start entering data. Type some data, and then press Enter. If you need to delete, press the Backspace key to delete one character at a time.

### Enter Data

The image consists of two side-by-side screenshots of Microsoft Excel. The left screenshot shows a worksheet with three rows and three columns. Row 1 has cells A1, B1, and C1. Cell A1 contains the text "John Jordan". A red arrow points from the text to the backspace key on a standard QWERTY keyboard. Below the keyboard, two red circles are labeled "1" and "2", indicating the sequence of key presses: 1 for backspace and 2 for enter. The right screenshot shows the same worksheet after pressing enter. Cell A2 now contains the text "John", and the formula bar above the keyboard also displays "John".

## Delete Data

The Backspace key erases one character at a time.

1. Press the Backspace key until Jordan is erased.
2. Press Enter. The name "John" appears in cell A1.

## Edit a Cell

After you enter data into a cell, you can edit the data by pressing F2 while you are in the cell you wish to edit.

The image consists of two side-by-side screenshots of Microsoft Excel. The left screenshot shows a worksheet with four rows and two columns. Row 1 has cells A1, B1. Row 2 has cells A2, B2. Cell A2 contains the text "Jones". The formula bar above the keyboard also displays "Jones". The right screenshot shows the same worksheet after editing. Cell A2 is now empty, indicated by a black rectangle. The formula bar still displays "Jones".

5. Press Enter.

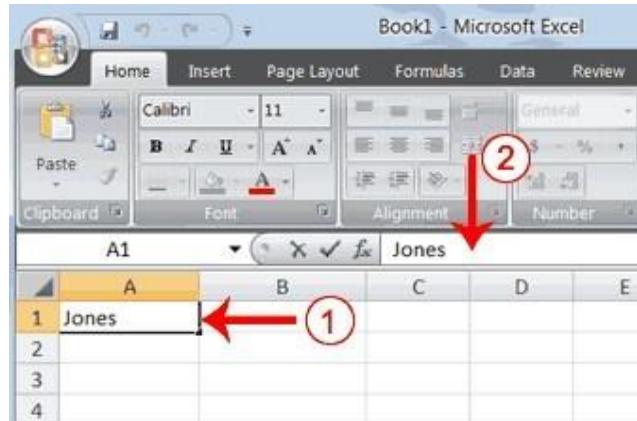
### Edit a Cell

Change "John" to "Jones."

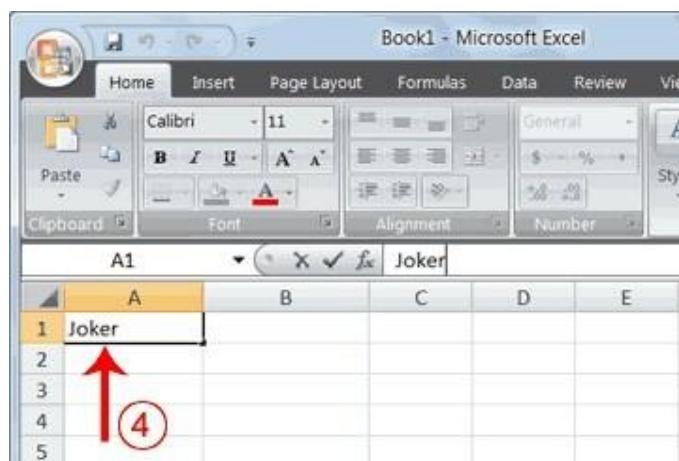
1. Move to cell A1.
2. Press F2.
3. Use the Backspace key to delete the "n" and the "h."
4. Type **nes**.

## *Alternate Method: Editing a Cell by Using the Formula Bar*

You can also edit the cell by using the Formula bar. You change "Jones" to "Joker" in the following exercise.



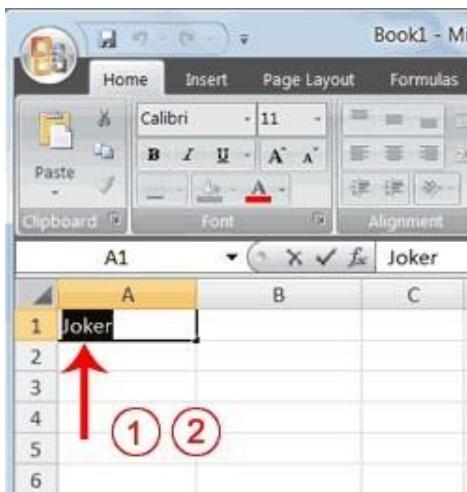
1. Move the cursor to cell A1.
2. Click in the formula area of the Formula bar.



3. Use the backspace key to erase the "s," "e," and "n."
4. Type **ker**.
5. Press Enter.

## *Alternate Method: Edit a Cell by Double-Clicking in the Cell*

You can change "Joker" to "Johnson" as follows:



1. Move to cell A1.
2. Double-click in cell A1.
3. Press the End key. Your cursor is now at the end of your text.

Book1 - M		
Home Insert Page Layout Formulas		
Paste	Font	Clipboard
A2	B C	f <sub>x</sub>
A		
1 Johnson		
2		
3		
4		
5		
6		

3. Use the Backspace key to erase "r," "e," and "k."
4. Type **hnson**.
5. Press Enter.

### Change a Cell Entry

Typing in a cell replaces the old cell entry with the new information you type.

1. Move the cursor to cell A1.
2. Type **Cathy**.
3. Press Enter. The name "Cathy" replaces "Johnson."

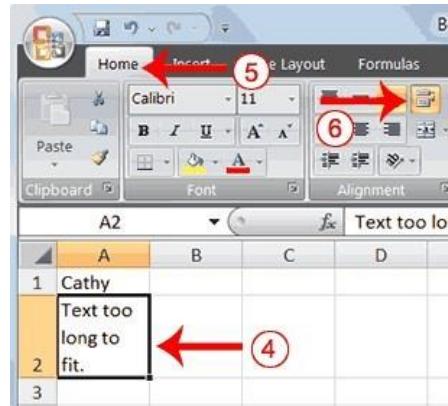
Book1 - M		
Home Insert Page Layout Formulas		
Paste	Font	Clipboard
A2	B C	f <sub>x</sub>
A		
1 Cathy		
2		
3		
4		
5		
6		

### Wrap Text

When you type text that is too long to fit in the cell, the text overlaps the next cell. If you do not want it to overlap the next cell, you can wrap the text.

**Wrap Text**

1. Move to cell A2.
2. Type **Text too long to fit.**
3. Press Enter.



4. Return to cell A2.
5. Choose the Home tab.
6. Click the Wrap Text button . Excel wraps the text in the cell.

**Delete a Cell Entry**

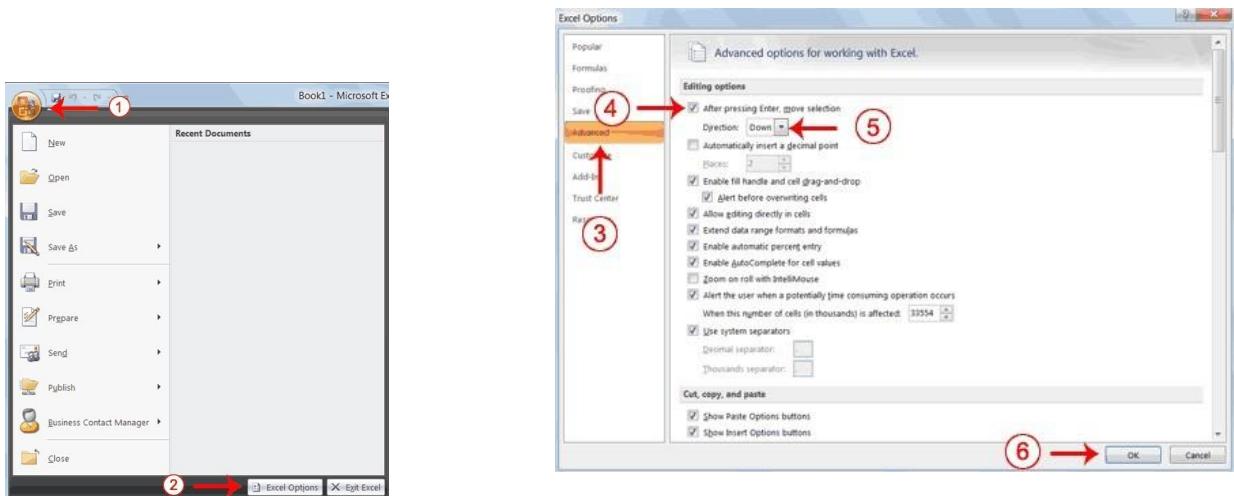
To delete an entry in a cell or a group of cells, you place the cursor in the cell or select the group of cells and press Delete.

**Entering Excel Formulas and Formatting Data**

Lesson 1 familiarized you with the Excel window, taught you how to move around the window, and how to enter data. A major strength of Excel is that you can perform mathematical calculations and format your data. In this lesson, you learn how to perform basic mathematical calculations and how to format text and numerical data. To start this lesson, open Excel.

**Set the Enter Key Direction**

In Microsoft Excel, you can specify the direction the cursor moves when you press the Enter key. In the exercises that follow, the cursor must move down one cell when you press Enter. You can use the Direction box in the Excel Options pane to set the cursor to move up, down, left, right, or not at all. Perform the steps that follow to set the cursor to move down when you press the Enter key.



1. Click the Microsoft Office button. A menu appears.
2. Click Excel Options in the lower-right corner. The Excel Options pane appears.

3. Click Advanced.
4. If the check box next to After Pressing Enter Move Selection is not checked, click the box to check it.
5. If Down does not appear in the Direction box, click the down arrow next to the Direction box and then click Down.
6. Click OK. Excel sets the Enter direction to down.

## Lab Session: 08

### Objective:

#### *Working with Formulas in Microsoft Excel*

##### Perform Mathematical Calculations

In Microsoft Excel, you can enter numbers and mathematical formulas into cells. Whether you enter a number or a formula, you can reference the cell when you perform mathematical calculations such as addition, subtraction, multiplication, or division. When entering a mathematical formula, precede the formula with an equal sign. Use the following to indicate the type of calculation you wish to perform:

+ Addition

/ Division

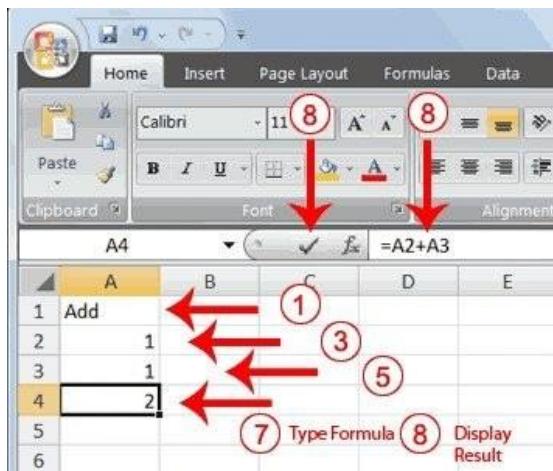
- Subtraction

<sup>^</sup> Exponential

\* Multiplication

In the following exercises, you practice some of the methods you can use to move around a worksheet and you learn how to perform mathematical calculations.

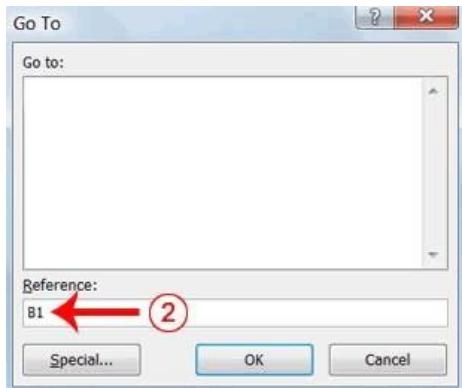
### Addition



1. Type **Add** in cell A1.
2. Press Enter. Excel moves down one cell.
3. Type **1** in cell A2.
4. Press Enter. Excel moves down one cell.
5. Type **1** in cell A3.
6. Press Enter. Excel moves down one cell.
7. Type **=A2+A3** in cell A4.
8. Click the check mark on the Formula bar. Excel adds cell A1 to cell A2 and displays the result in cell A4. The formula displays on the Formula bar.

**Note:** Clicking the check mark on the Formula bar is similar to pressing Enter. Excel records your entry but does not move to the next cell.

### Subtraction



1. Press F5. The Go To dialog box appears.
2. Type **B1** in the Reference field.
3. Press Enter. Excel moves to cell B1.

4. Type **Subtract**.
5. Press Enter. Excel moves down one cell.
6. Type **6** in cell B2.
7. Press Enter. Excel moves down one cell.
8. Type **3** in cell B3.
9. Press Enter. Excel moves down one cell.
10. Type **=B2-B3** in cell B4.
11. Click the check mark on the Formula bar. Excel subtracts cell B3 from cell B2 and the result displays in cell B4. The formula displays on the Formula bar.

### Multiplication

1. Hold down the Ctrl key while you press "g" (Ctrl+g). The Go To dialog box appears.
2. Type **C1** in the Reference field.
3. Press Enter. Excel moves to cell C1
4. Type **Multiply**.
5. Press Enter. Excel moves down one cell.
6. Type **2** in cell C2.

7. Press Enter. Excel moves down one cell.
8. Type **3** in cell C3.
9. Press Enter. Excel moves down one cell.
10. Type **=C2\*C3** in cell C4.
11. Click the check mark on the Formula bar. Excel multiplies C1 by cell C2 and displays the result in cell C3. The formula displays on the Formula bar.

### Division

1. Press F5.
2. Type **D1** in the Reference field.
3. Press Enter. Excel moves to cell D1.
4. Type **Divide**.
5. Press Enter. Excel moves down one cell.
6. Type **6** in cell D2.
7. Press Enter. Excel moves down one cell.

8. Type **3** in cell D3.
9. Press Enter. Excel moves down one cell.
10. Type **=D2/D3** in cell D4.
11. Click the check mark on the Formula bar. Excel divides cell D2 by cell D3 and displays the result in cell D4. The formula displays on the Formula bar.

When creating formulas, you can reference cells and include numbers. All of the following formulas are valid:

1. =A2/B2
2. =A1+12-B3
3. =A2\*B2+12
4. =24+53

### AutoSum

You can use the AutoSum button  on the Home tab to automatically add a column or row of numbers.

When you press the AutoSum button , Excel selects the numbers it thinks you want to add. If you then click the check mark on the Formula bar or press the Enter key, Excel adds the numbers. If Excel's guess as to which numbers you want to add is wrong, you can select the cells you want.

## AutoSum

The following illustrates AutoSum:

4. Type 3.
5. Press Enter. Excel moves down one cell.
6. Type 3.
7. Press Enter. Excel moves down one cell to cell F4.
8. Choose the Home tab.
9. Click the AutoSum button  $\Sigma$  in the Editing group. Excel selects cells F1 through F3 and enters a formula in cell F4.

E	F	G
	3	
	3	
	3	
	9	

10. Press Enter. Excel adds cells F1 through F3 and displays the result in cell F4.

## Perform Automatic Calculations

By default, Microsoft Excel recalculates the worksheet as you change cell entries. This makes it easy for you to correct mistakes and analyze a variety of scenarios.

## Automatic Calculation

Make the changes described below and note how Microsoft Excel automatically recalculates.

1. Move to cell A2.
2. Type **2**.
3. Press the right arrow key. Excel changes the result in cell A4. Excel adds cell A2 to cell A3 and the new result appears in cell A4.
4. Move to cell B2.
5. Type **8**.
6. Press the right arrow key. Excel subtracts cell B3 from cell B3 and the new result appears in cell B4.

### Align Cell Entries

When you type text into a cell, by default your entry aligns with the left side of the cell. When you type numbers into a cell, by default your entry aligns with the right side of the cell. You can change the cell alignment. You can center, left-align, or right-align any cell entry. Look at cells

7. Move to cell C2.
8. Type **4**.
9. Press the right arrow key. Excel multiplies cell C2 by cell C3 and the new result appears in cell C4.
10. Move to cell D2.
11. Type **12**.
12. Press the Enter key. Excel divides cell D2 by cell D3 and the new result appears in cell D4.

A1 to D1. Note that they are aligned with the left side of the cell.

	A	B	C	D
1	Add	Subtract	Multiply	Divide
2	2	8	4	12

## Center

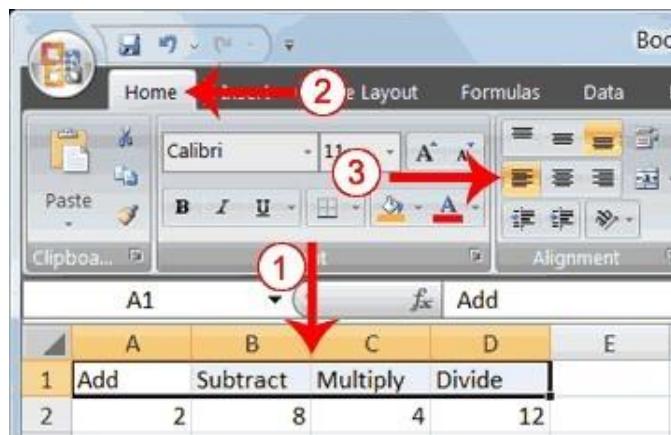
To center cells A1 to D1:

The screenshot shows the Microsoft Excel ribbon with the 'Home' tab selected. In the formula bar, cell 'A1' is highlighted. On the ribbon, the 'Home' tab is circled in red. In the 'Alignment' group of the ribbon, the 'Center' button is circled in red. The main area of the screen shows a table with columns A, B, C, D and rows 1 and 2. The data in the cells is: Row 1: Add, Subtract, Multiply, Divide; Row 2: 2, 8, 4, 12. The cells are currently left-aligned.

1. Select cells A1 to D1.
2. Choose the Home tab.
3. Click the Center button in the Alignment group. Excel centers each cell's content.

### Left-Align

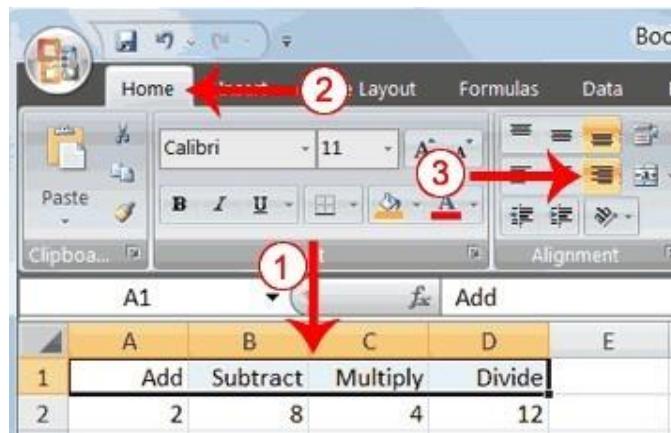
To left-align cells A1 to D1:



1. Select cells A1 to D1.
2. Choose the Home tab.
3. Click the Align Text Left  button in the Alignment group. Excel left-aligns each cell's content.

### Right-Align

To right-align cells A1 to D1:



1. Select cells A1 to D1. Click in cell A1.
2. Choose the Home tab.
3. Click the Align Text Right  button. Excel right-aligns the cell's content.
4. Click anywhere on your worksheet to clear the highlighting.

**Note:** You can also change the alignment of cells with numbers in them by using the alignment buttons.

### Perform Advanced Mathematical Calculations

When you perform mathematical calculations in Excel, be careful of precedence. Calculations are performed from left to right, with multiplication and division performed before addition and subtraction.

#### Advanced Calculations

1. Move to cell A7.
2. Type  $=3+3+12/2*4$ .
3. Press Enter.

**Note:** Microsoft Excel divides 12 by 2, multiplies the answer by 4, adds 3, and then adds another 3. The answer, 30, displays in cell A7.

A7	B	C	D	E
7	30			
8				

To change the order of calculation, use parentheses. Microsoft Excel calculates the information in parentheses first.

1. Double-click in cell A7.
2. Edit the cell to read  $=(3+3+12)/2*4$ .

3. Press Enter.

**Note:** Microsoft Excel adds 3 plus 3 plus 12, divides the answer by 2, and then multiplies the result by 4. The answer, 36, displays in cell A7.

A7	B	C	D	E
7	36			
8				

### Copy, Cut, Paste, and Cell Addressing

In Excel, you can copy data from one area of a worksheet and place the data you copied anywhere in the same or another worksheet. In other words, after you type information into a worksheet, if you want to place the same information somewhere else, you do not have to retype the information. You simple copy it and then paste it in the new location.

You can use Excel's Cut feature to remove information from a worksheet. Then you can use the Paste feature to place the information you cut anywhere in the same or another worksheet. In other words, you can move information from one place in a worksheet to another place in the same or different worksheet by using the Cut and Paste features.

Microsoft Excel records cell addresses in formulas in three different ways, called *absolute*, *relative*, and *mixed*. The way a formula is recorded is important when you copy it. With relative cell addressing, when you copy a formula from one area of the worksheet to another, Excel records the position of the cell relative to the cell that originally contained the formula. With *absolute* cell addressing, when you copy a formula from one area of the worksheet to another, Excel references the same cells, no matter where you copy the formula. You can use mixed cell addressing to keep the row constant while the column changes, or vice versa. The following exercises demonstrate.

### Copy, Cut, Paste, and Cell Addressing

1. Move to cell A9.
2. Type **1**. Press Enter. Excel moves down one cell.
3. Type **1**. Press Enter. Excel moves down one cell.
4. Type **1**. Press Enter. Excel moves down one cell.
5. Move to cell B9.
6. Type **2**. Press Enter. Excel moves down one cell.
7. Type **2**. Press Enter. Excel moves down one cell.
8. Type **2**. Press Enter. Excel moves down one cell.

In addition to typing a formula as you did in Lesson 1, you can also enter formulas by using Point mode. When you are in Point mode, you can enter a formula either by clicking on a cell or by using the arrow keys.

1. Move to cell A12.
2. Type =.
3. Use the up arrow key to move to cell A9.
4. Type +.
5. Use the up arrow key to move to cell A10.

6. Type +.
7. Use the up arrow key to move to cell A11.
8. Click the check mark on the Formula bar. Look at the Formula bar. Note that the formula you entered is displayed there.

A	B	C	D	E
9	1	2		
10	1	2		
11	1	2		
12	3			
13				
14				

### Copy with the Ribbon

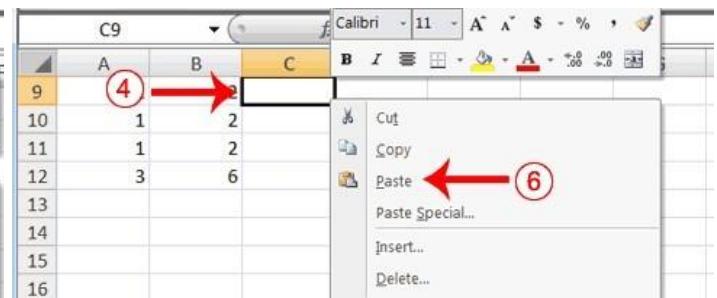
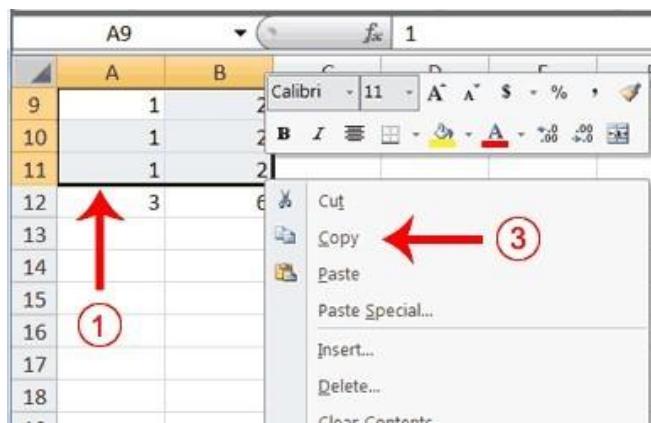
To copy the formula you just entered, follow these steps:

1. You should be in cell A12.
2. Choose the Home tab.
3. Click the Copy button in the Clipboard group. Excel copies the formula in cell A12.

4. Press the right arrow key once to move to cell B12.
5. Click the Paste button in the Clipboard group. Excel pastes the formula in cell A12 into cell B12.
6. Press the Esc key to exit the Copy mode.

Compare the formula in cell A12 with the formula in cell B12 (while in the respective cell, look at the Formula bar). The formulas are the same except that the formula in cell A12 sums the entries in column A and the formula in cell B12 sums the entries in column B. The formula was copied in a *relative* fashion.

Before proceeding with the next part of the exercise, you must copy the information in cells A7 to B9 to cells C7 to D9. This time you will copy by using the Mini toolbar.



1. Select cells A9 to B11. Move to cell A9. Press the Shift key. While holding down the Shift key, press the down arrow key twice. Press the right arrow key once. Excel highlights A9 to B11.
2. Right-click. A context menu and a Mini toolbar appear.
3. Click Copy, which is located on the context menu. Excel copies the information in cells A9 to B11.
4. Move to cell C9.
5. Right-click. A context menu appears.
6. Click Paste. Excel copies the contents of cells A9 to B11 to cells C9 to C11.

	A	B	C	D	E
9		1	2	1	2
10		1	2	1	2
11		1	2	1	2
12	3	6			
13					
14					
15					
16					

7. Press Esc to exit Copy mode.

### Absolute Cell Addressing

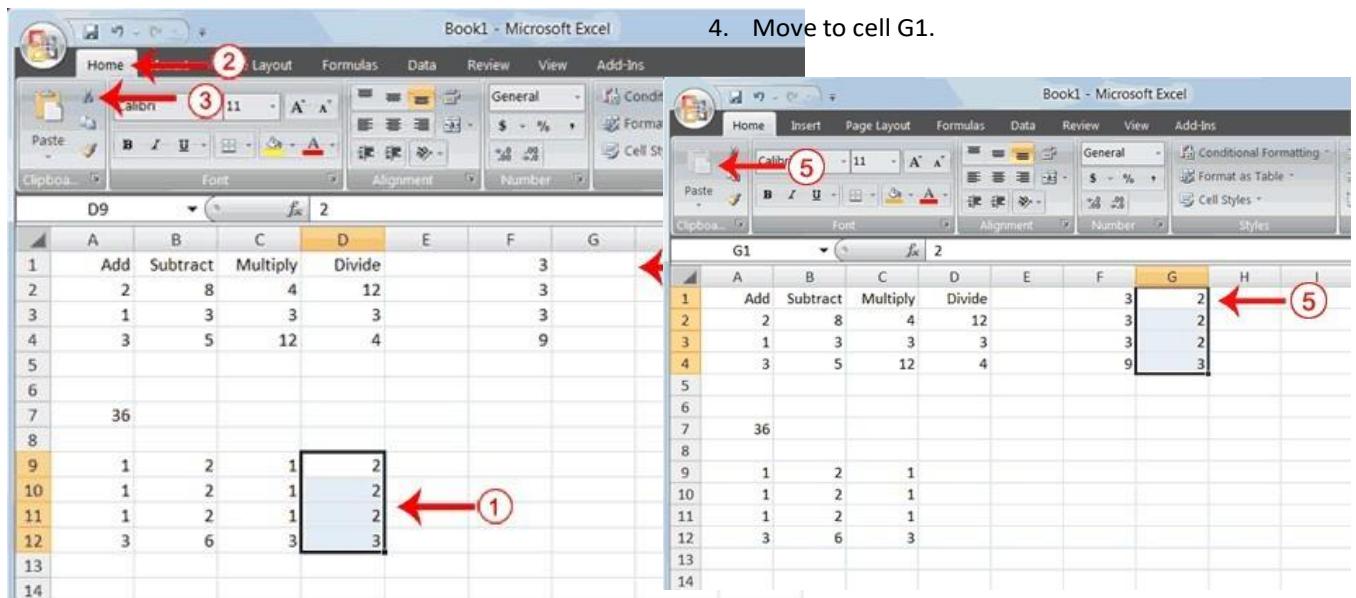
You make a cell address an absolute cell address by placing a dollar sign in front of the row and column identifiers. You can do this automatically by using the F4 key. To illustrate:

1. Move to cell C12.
2. Type =.
3. Click cell C9.
4. Press F4. Dollar signs appear before the C and the 9.
5. Type +.
6. Click cell C10.
7. Press F4. Dollar signs appear before the C and the 10.
8. Type +.
9. Click cell C11.
10. Press F4. Dollar signs appear before the C and the 11.
11. Click the check mark on the formula bar. Excel records the formula in cell C12.

	A	B	C	D	E	F
9		1	2	1	2	
10		1	2	1	2	
11		1	2	1	2	
12	3	6	3			
13						
14						

### Cut and Paste

You can move data from one area of a worksheet to another.



1. Select cells D9 to D12
2. Choose the Home tab.
3. Click the Cut  button.
4. Move to cell G1.
5. Click the Paste button . Excel moves the contents of cells D9 to D12 to cells G1 to G4.

The keyboard shortcut for Cut is Ctrl+x. The steps for cutting and pasting with a keyboard shortcut are:

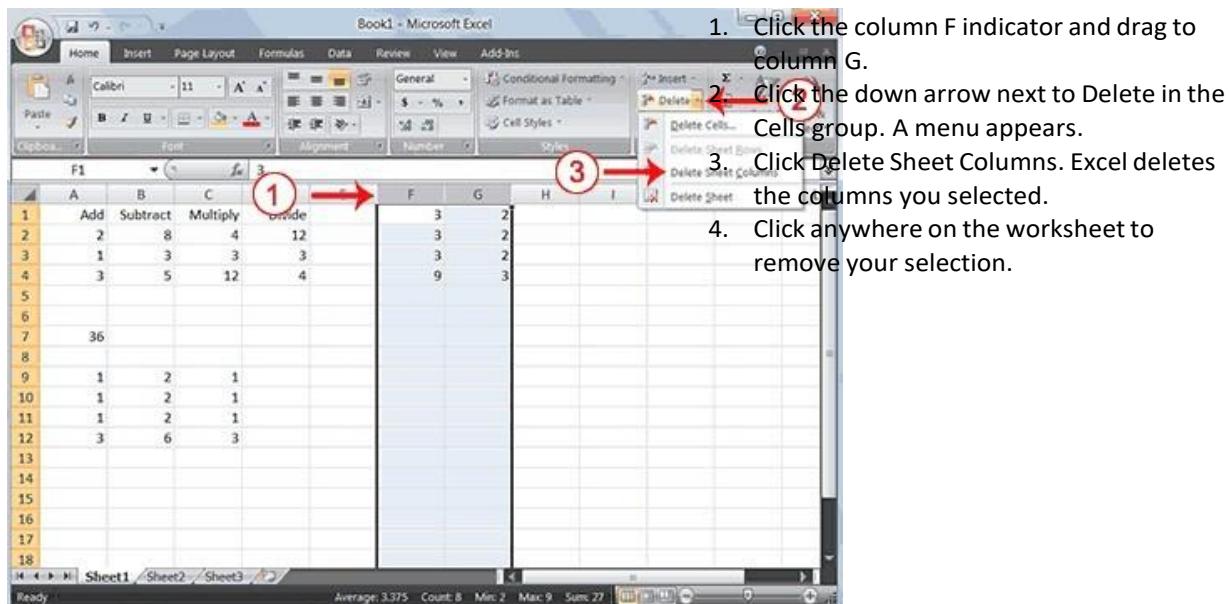
1. Select the cells you want to cut and paste.
2. Press Ctrl+x.
3. Move to the upper-left corner of the block of cells into which you want to paste.
4. Press Ctrl+v. Excel cuts and pastes the cells you selected.

### Insert and Delete Columns and Rows

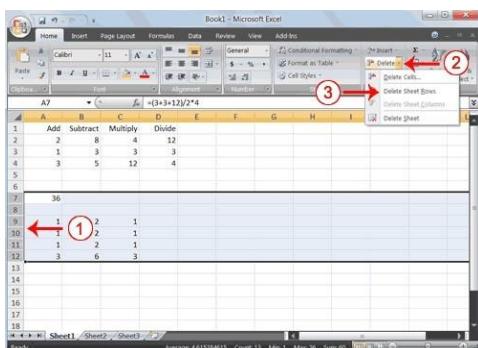
You can insert and delete columns and rows. When you delete a column, you delete everything in the column from the top of the worksheet to the bottom of the worksheet. When you delete a row, you delete the entire row from left to right. Inserting a column or row inserts a completely new column or row.

### *Insert and Delete Columns and Rows*

To delete columns F and G:



To delete rows 7 through 12:



1. Click the row 7 indicator and drag to row 12.
2. Click the down arrow next to Delete in the Cells group. A menu appears.
3. Click Delete Sheet Rows. Excel deletes the rows you selected.
4. Click anywhere on the worksheet to remove your selection.

To insert a column:

1. Click on A to select column A.
2. Click the down arrow next to Insert in the Cells group. A menu appears.
3. Click Insert Sheet Columns. Excel inserts a new column.
4. Click anywhere on the worksheet to remove your selection.

To insert rows:

1. Click on 1 and then drag down to 2 to select rows 1 and 2.
2. Click the down arrow next to Insert in the Cells group. A menu appears.
3. Click Insert Sheet Rows. Excel inserts two new rows.
4. Click anywhere on the worksheet to remove your selection.

Your worksheet should look like the one shown here.

	A	B	C	D	E	F	G
1							
2							
3		Add	Subtract	Multiply	Divide		
4		2	8	4	12		
5		1	3	3	3		
6		3	5	12	4		
7							
8							

### Create Borders

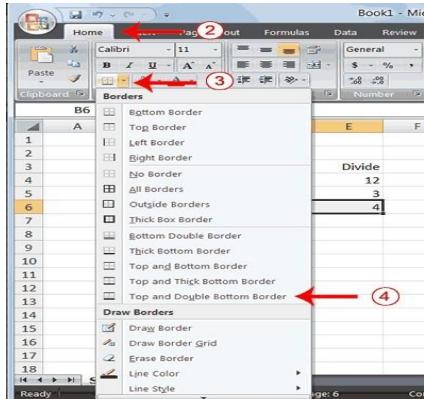
You can use borders to make entries in your Excel worksheet stand out. You can choose from several types

of borders. When you press the down arrow next to the Border button , a menu appears. By making the proper selection from the menu, you can place a border on the top, bottom, left, or right side of the selected cells; on all sides; or around the outside border. You can have a thick outside border or a border with a single-line top and a double-line bottom. Accountants usually place a single underline above a final number and a double underline below. The following illustrates:

## Create Borders

	A	B	C	D	E	F	G
1							
2							
3		Add	Subtract	Multiply	Divide		
4		2	8	4	12		
5		1	3	3	3		
6		3	5	12	4		
7							
8							

1. Select cells B6 to E6.



2. Choose the Home tab.
3. Click the down arrow next to the Borders button . A menu appears.
4. Click Top and Double Bottom Border. Excel adds the border you chose to the selected cells.

	A	B	C	D	E	F	G
1							
2							
3		Add	Subtract	Multiply	Divide		
4		2	8	4	12		
5		1	3	3	3		
6		3	5	12	4		
7							
8							

### Merge and Center

Sometimes, particularly when you give a title to a section of your worksheet, you will want to center a piece of text over several columns or rows. The following example shows you how.

### Merge and Center

The screenshot shows the Microsoft Excel ribbon with the 'Home' tab selected. In the formula bar, 'Sample Worksheet' is typed. The range B2 to E2 is selected. Step 3 is highlighted with a red arrow pointing to the selected cells. Step 5 is highlighted with a red arrow pointing to the 'Home' tab. Step 6 is highlighted with a red arrow pointing to the 'Merge and Center' button in the Alignment group of the ribbon.

	B	C	D	E	F	G
1						
2	Sample Worksheet					
3	Add	Subtract	Multiply	Divide		
4	2	8	4	12		
5	1	3	3	3		
6	3	5	12	4		
7						
8						

2. Type **Sample Worksheet**.
3. Click the check mark on the Formula bar.
4. Select cells B2 to E2.
5. Choose the Home tab.
6. Click the Merge and Center button in the Alignment group. Excel merges cells B2, C2, D2, and E2 and then centers the content.

1. Go to cell B2.

**Note:** To unmerge cells:

1. Select the cell you want to unmerge.
2. Choose the Home tab.
3. Click the down arrow next to the Merge and Center button A menu appears.
4. Click Unmerge Cells. Excel unmerges the cells.
- 5.

#### Add Background Color

To make a section of your worksheet stand out, you can add background color to a cell or group of cells.

#### Add Background Color

The screenshot shows the Microsoft Excel ribbon with the 'Home' tab selected. In the formula bar, 'Sample Worksheet' is typed. The range B2 to E3 is selected. Step 1 is highlighted with a red arrow pointing to the selected cells. Step 2 is highlighted with a red arrow pointing to the 'Home' tab.

	B	C	D	E	F
1					
2	Sample Worksheet				
3	Add	Subtract	Multiply	Divide	
4	2	8	4	12	
5	1	3	3	3	
6	3	5	12	4	
7					
8					

1. Select cells B2 to E3.
2. Choose the Home tab.
3. Click the down arrow next to the Fill Color button .
4. Click the color dark blue. Excel places a dark blue background in the cells you selected.

The screenshot shows the Microsoft Excel ribbon with the 'Home' tab selected. In the formula bar, 'Sample Worksheet' is typed. The range B2 to E3 is selected. Step 2 is highlighted with a red arrow pointing to the 'Home' tab. Step 3 is highlighted with a red arrow pointing to the 'Fill Color' button in the Font group of the ribbon. Step 4 is highlighted with a red arrow pointing to the dark blue color swatch in the color palette.

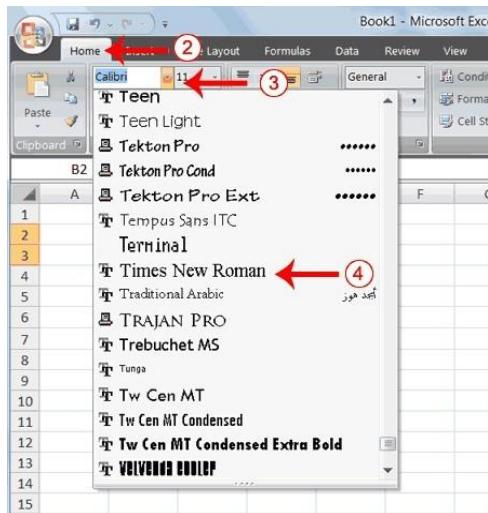
	B	C	D	E	F
1					
2	Sample Worksheet				
3	Add	Subtract	Multiply	Divide	
4	2	8	4	12	
5	1	3	3	3	
6	3	5	12	4	
7					
8					

## Change the Font, Font Size, and Font Color

A font is a set of characters represented in a single typeface. Each character within a font is created by using the same basic style. Excel provides many different fonts from which you can choose. The size of a font is measured in points. There are 72 points to an inch. The number of points assigned to a font is based on the distance from the top to the bottom of its longest character. You can change the Font, Font Size, and Font Color of the data you enter into Excel.

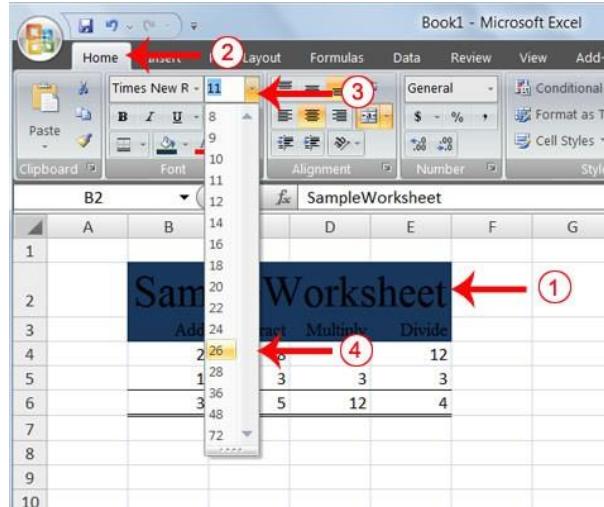
### Change the Font

1. Select cells B2 to E3.



2. Choose the Home tab.
3. Click the down arrow next to the Font box. A list of fonts appears. As you scroll down the list of fonts, Excel provides a preview of the font in the cell you selected.
4. Find and click Times New Roman in the Font box. **Note:** If Times New Roman is your default font, click another font. Excel changes the font in the selected cells.

### Change the Font Size



1. Select cell B2.
2. Choose the Home tab.
3. Click the down arrow next to the Font Size box. A list of font sizes appears. As you scroll up or down the list of font sizes, Excel provides a preview of the font size in the cell you selected.
4. Click 26. Excel changes the font size in cell B2 to 26.

**Change the Font Color**

2. Choose the Home tab.  
3. Click the down arrow next to the Font Color button .  
4. Click on the color white. Your font color changes to white.

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						

**Sample Worksheet**

	Add	Subtract	Multiply	Divide
1	2	8	4	12
2	1	3	3	3
3	3	5	12	4

1. Select cells B2 to E3.

Your worksheet should look like the one shown here

**Move to a New Worksheet**

In Microsoft Excel, each workbook is made up of several worksheets. Each worksheet has a tab. By default, a workbook has three sheets and they are named sequentially, starting with Sheet1. The shows you how.

name of the worksheet appears on the tab. Before moving to the next topic, move to a new worksheet. The exercise that follows

**Move to a New Worksheet**

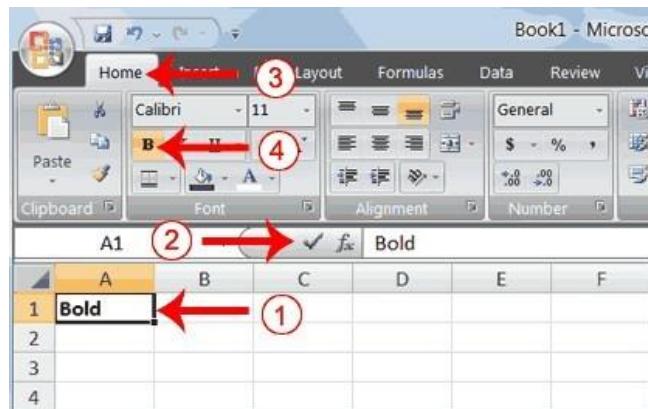
- Click Sheet2 in the lower-left corner of the screen. Excel moves to Sheet2.

**Bold, Italicize, and Underline**

When creating an Excel worksheet, you may want to emphasize the contents of cells by bolding, italicizing, and/or underlining. You can easily bold, italicize, or underline text with Microsoft Excel. You can also combine these features—in other words, you can bold, italicize, and underline a single piece of text.

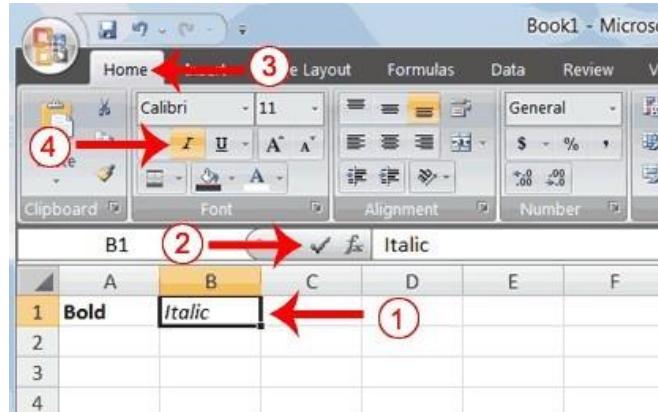
In the exercises that follow, you will learn different methods you can use to bold, italicize, and underline.

### Bold with the Ribbon



- Type **Bold** in cell A1.

### Italicize with the Ribbon

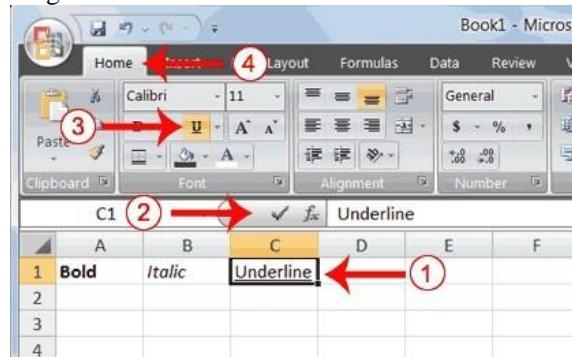


- Click the check mark located on the Formula bar.
- Choose the Home tab.
- Click the Bold button **B**. Excel bolds the contents of the cell.
- Click the Bold button **B** again if you wish to remove the bold.

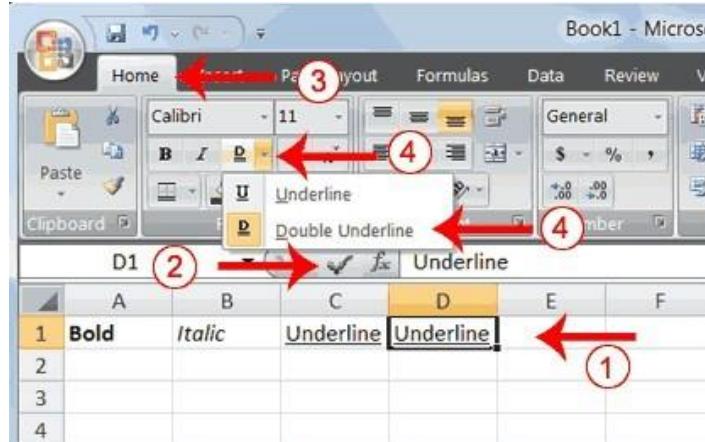
### Underline with the Ribbon

Microsoft Excel provides two types of underlines. The exercises that follow illustrate them.

#### Single Underline:



- Type **Underline** in cell C1.
- Click the check mark located on the Formula bar.
- Choose the Home tab.
- Click the Underline button **U**. Excel underlines the contents of the cell.
- Click the Underline button **U** again if you wish to remove the underline.

**Double Underline**

1. Type **Underline** in cell D1.
2. Click the check mark located on the Formula bar.

3. Choose the Home tab.
4. Click the down arrow next to the Underline button and then click Double Underline. Excel double-underlines the contents of the cell. Note that the Underline button changes to the button shown here , a D with a double underline under it. Then next time you click the Underline button, you will get a double underline. If you want a single underline, click the down arrow next to the Double Underline button and then choose Underline.
5. Click the double underline button again if you wish to remove the double underline.

**Bold, Underline, and Italicize**

1. Type **All three** in cell E1.
2. Click the check mark located on the Formula bar.
3. Choose the Home tab.
4. Click the Bold button . Excel bolds the cell contents.

5. Click the Italic button . Excel italicizes the cell contents.
6. Click the Underline button . Excel underlines the cell contents

**Work with Long Text**

Whenever you type text that is too long to fit into a cell, Microsoft Excel attempts to display all the text. It left-aligns the text regardless of the alignment you have assigned to it, and it borrows space from the blank cells to the right. However, a long text entry will never write over cells that already contain entries—instead, the cells that contain entries cut off the long text. The following exercise illustrates this.

**Work with Long Text**

A	B	C	D	E	F	G
6 Now is the time for all good men to go to the aid of their army.						
7						
8						
9						

1. Move to cell A6.
2. Type **Now is the time for all good men to go to the aid of their army.**
3. Press Enter. Everything that does not fit into cell A6 spills over into the adjacent cell.

A	B	C	D	E	F	G
6 Now is the Test						
7						
8						
9						

4. Move to cell B6.
5. Type **Test**.
6. Press Enter. Excel cuts off the entry in cell A6.

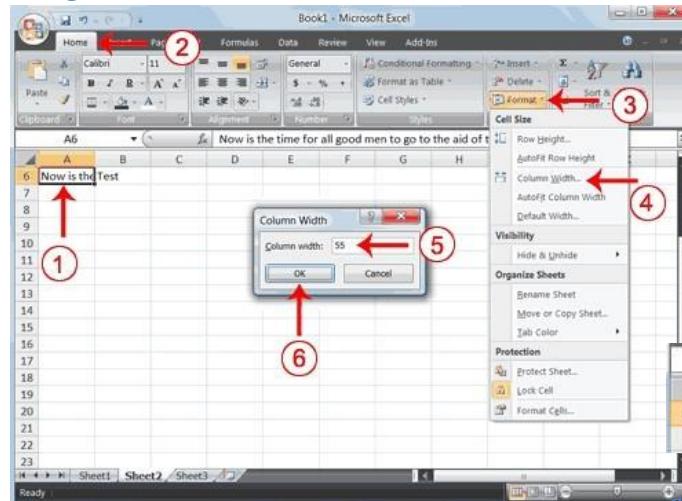
A	B	C	D	E	F	G	H	I
A6								
6 Now is the Test								
7								
8								
9								

7. Move to cell A6.
8. Look at the Formula bar. The text is still in the cell.

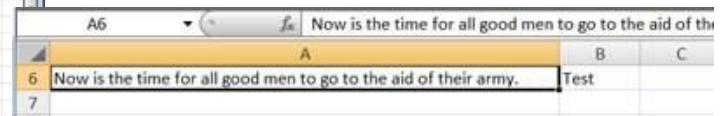
## Change A Column's Width

You can increase column widths. Increasing the column width enables you to see the long text.

### Change Column Width



2. Choose the Home tab.
3. Click the down arrow next to Format in the Cells group.
4. Click Column Width. The Column Width dialog box appears.
5. Type 55 in the Column Width field.
6. Click OK. Column A is set to a width of 55. You should now be able to see all of the text.



### Change a Column Width by Dragging

1. Make sure you are in any cell under column A.

**You can also change the column width with the cursor.**

1. Place the mouse pointer on the line between the B and C column headings. The mouse pointer should look like the one displayed here , with two arrows.
2. Move your mouse to the right while holding down the left mouse button. The

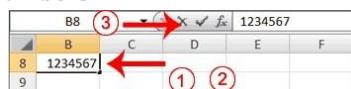
width indicator  appears on the screen.

3. Release the left mouse button when the width indicator shows approximately 20. Excel increases the column width to 20.

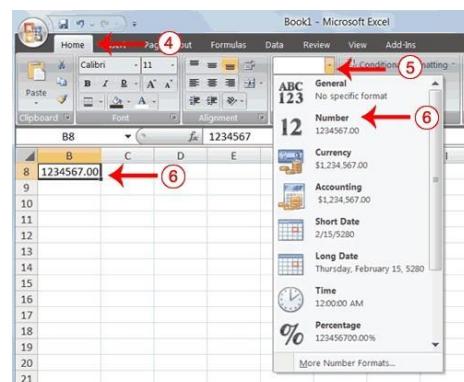
## Format Numbers

You can format the numbers you enter into Microsoft Excel. For example, you can add commas to separate thousands, specify the number of decimal places, place a dollar sign in front of a number, or display a number as a percent.

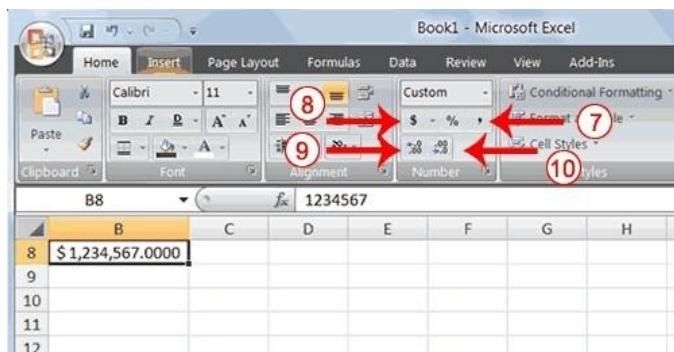
### Format Numbers



1. Move to cell B8.
2. Type 1234567.
3. Click the check mark on the Formula bar.

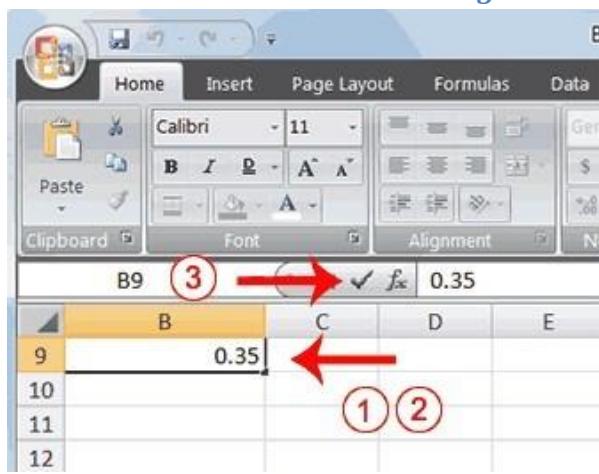


4. Choose the Home tab.
5. Click the down arrow next to the Number Format box. A menu appears.
6. Click Number. Excel adds two decimal places to the number you typed.

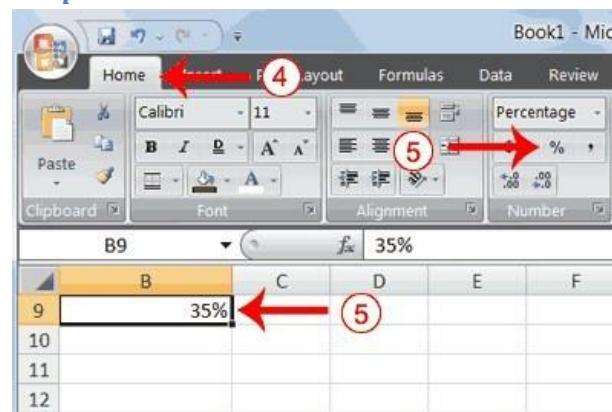


7. Click the Comma Style button . Excel separates thousands with a comma.
8. Click the Accounting Number Format button . Excel adds a dollar sign to your number.
9. Click twice on the Increase Decimal button to change the number format to four decimal places.
10. Click the Decrease Decimal button if you wish to decrease the number of decimal places.

### Change a decimal to a percent.



1. Move to cell B9.
2. Type **.35** (note the decimal point).
3. Click the check mark on the formula bar.



4. Choose the Home tab.
5. Click the Percent Style button . Excel turns the decimal to a percent.

### Creating Excel Functions and Filling Cells

By using functions, you can quickly and easily make many useful calculations, such as finding an average, the highest number, the lowest number, and a count of the number of items in a list. Microsoft Excel has many functions that you can use.

### Using Reference Operators

To use functions, you need to understand reference operators. Reference operators refer to a cell or a group of cells. There are two types of reference operators: *range* and *union*.

A range reference refers to all the cells between and including the reference. A range reference consists of two cell addresses separated by a colon. The reference A1:A3 includes cells A1, A2, and A3. The reference A1:C3 includes cells A1, A2, A3, B1, B2, B3, C1, C2, and C3.

A union reference includes two or more references. A union reference consists of two or more numbers, range references, or cell addresses separated by a comma. The reference A7,B8:B10,C9,10 refers to cells A7, B8 to B10, C9 and the number 10.

## Understanding Functions

*Functions* are prewritten formulas. Functions differ from regular formulas in that you supply the value but not the operators, such as +, -, \*, or /. For example, you can use the SUM function to add. When using a function, remember the following:

Use an equal sign to begin a formula.

Specify the function name.

Enclose arguments within parentheses. Arguments are values on which you want to perform the calculation. For example, arguments specify the numbers or cells you want to add.

Use a comma to separate arguments.

Here is an example of a function:

=SUM(2,13,A1,B2:C7)

In this function:

The equal sign begins the function.

SUM is the name of the function.

2, 13, A1, and B2:C7 are the arguments.

Parentheses enclose the arguments.

Commas separate the arguments.

After you type the first letter of a function name, the AutoComplete list appears. You can double-click on an item in the AutoComplete list to complete your entry quickly. Excel will complete the function name and enter the first parenthesis.

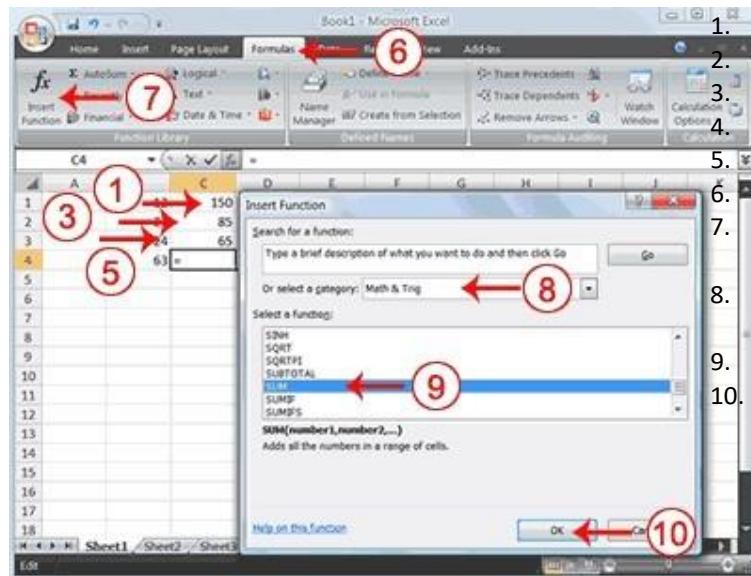
## Functions

The SUM function adds argument values.

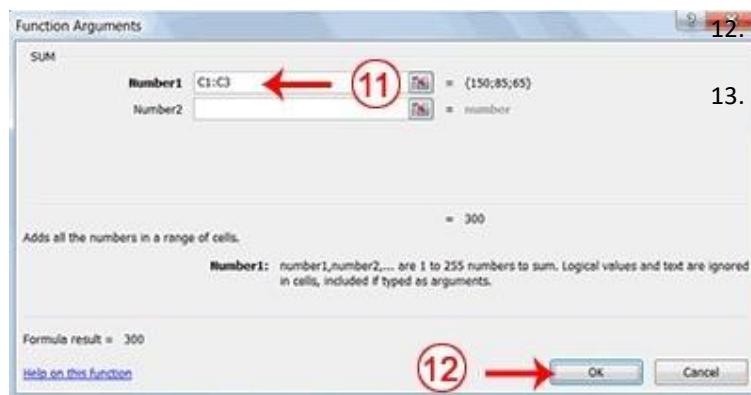
	B4	f <sub>x</sub>	=SUM(B1:B3)	
A	B	C	D	E
1		12		
2		27		
3		24		
4		63		
5				
6				

1. Open Microsoft Excel.
2. Type **12** in cell B1.
3. Press Enter.
4. Type **27** in cell B2.
5. Press Enter.
6. Type **24** in cell B3.
7. Press Enter.
8. Type **=SUM(B1:B3)** in cell A4.
9. Press Enter. The sum of cells B1 to B3, which is 63, appears.

### Alternate Method: Enter a Function with the Ribbon



1. Type **150** in cell C1.
2. Press Enter.
3. Type **85** in cell C2.
4. Press Enter.
5. Type **65** in cell C3.
6. Choose the Formulas tab.
7. Click the Insert Function button. The Insert Function dialog box appears.
8. Choose Math & Trig in the Or Select A Category box.
9. Click Sum in the Select A Function box.
10. Click OK. The Function Arguments dialog box appears.



12. Type **C1:C3** in the Number1 field, if it does not automatically appear.
13. Click OK. The sum of cells C1 to C3, which is 300, appears.

## Format worksheet

	A	B	C	D
1		12	150	
2		27	85	
3		24	65	
4	Sum	63	300	
5				
6				

1. Move to cell A4.
2. Type the word **Sum**.
3. Select cells B4 to C4.
4. Choose the Home tab.
5. Click the down arrow next to the Borders button .

6. Click Top and Double Bottom Border.

As you learned in Lesson 2, you can also calculate a sum by using the AutoSum button .

### Calculate an Average

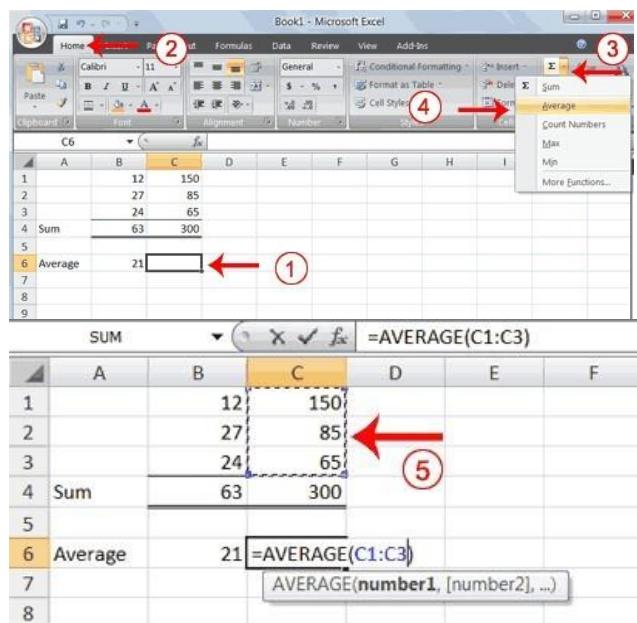
You can use the AVERAGE function to calculate the average of a series of numbers.

	B6	f <sub>x</sub>	=AVERAGE(B1:B3)	
1				
2				
3				
4	Sum	63	300	
5				
6	Average	21		
7				

1. Move to cell A6.
2. Type **Average**. Press the right arrow key to move to cell B6.
3. Type **=AVERAGE(B1:B3)**.
4. Press Enter. The average of cells B1 to B3, which is 21, appears.

### Calculate an Average with the AutoSum Button

In Microsoft Excel, you can use the AutoSum button  to calculate an average.



The screenshot shows two parts of the Microsoft Excel interface. The top part shows the ribbon with the Home tab selected. The status bar indicates 'Book1 - Microsoft Excel'. The formula bar shows '=AVERAGE(B1:B3)'. The bottom part shows the Excel grid with data from row 1 to 6. Cell C6 contains the value 21, which is the average of cells B1 to B3. Red numbered arrows indicate the following steps:

1. Click on cell C6.
2. Click on the Home tab in the ribbon.
3. Click on the AutoSum button in the ribbon.
4. Click on the 'Average' option in the dropdown menu.
5. Click on cell C6 again to see the result.

1. Move to cell C6.
2. Choose the Home tab.
3. Click the down arrow next to the AutoSum button .
4. Click Average.
5. Select cells C1 to C3.
6. Press Enter. The average of cells C1 to C3, which is 100, appears.

## Find the Lowest Number

You can use the MIN function to find the lowest number in a series of numbers.

	B7	=MIN(B1:B3)	1. Move to cell A7. 2. Type Min. 3. Press the right arrow key to move to cell B7. 4. Type = MIN(B1:B3). 5. Press Enter. The lowest number in the series, which is 12, appears.
1		12	150
2		27	85
3		24	65
4	Sum	63	300
5			
6	Average	21	100
7	Min	12	
8			
9			

**Note:** You can also use the drop-down button next to the AutoSum button  to calculate minimums, maximums, and counts.

## Find the Highest Number

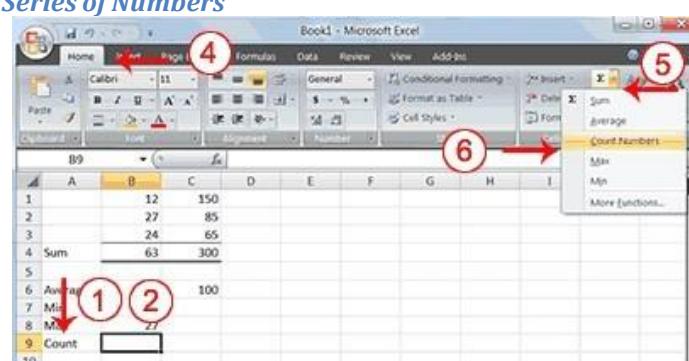
You can use the MAX function to find the highest number in a series of numbers.

	B8	=MAX(B1:B3)	1. Move to cell A8. 2. Type Max. 3. Press the right arrow key to move to cell B8. 4. Type = MAX(B1:B3). 5. Press Enter. The highest number in the series, which is 27, appears
1		12	150
2		27	85
3		24	65
4	Sum	63	300
5			
6	Average	21	100
7	Min	12	
8	Max	27	
9			

6. .

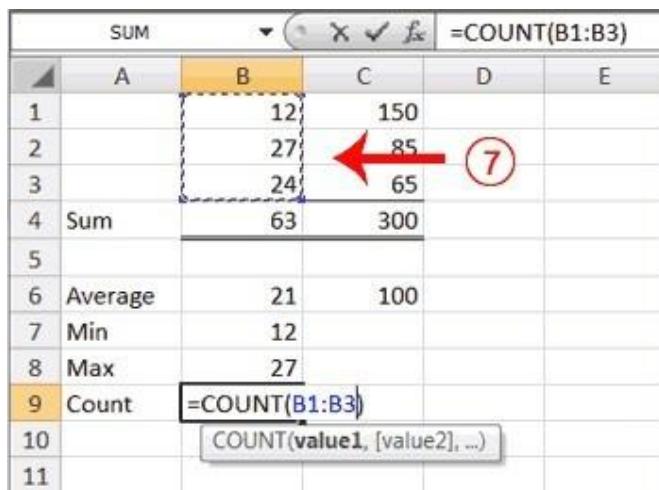
## Count the Numbers in a Series of Numbers

You can use the count function to count the number of numbers in a series.

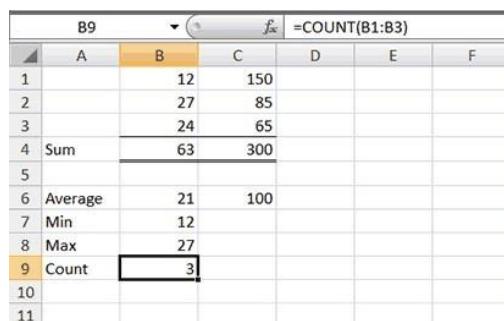


The screenshot shows a Microsoft Excel spreadsheet with data in rows 1 through 9. Row 9 contains the formula `=COUNT(A1:A7)` in cell B9. The formula bar at the top also displays `=COUNT(A1:A7)`. The status bar at the bottom indicates the value 6. The ribbon menu is visible, and the Home tab is selected. The formula bar has a red circle labeled 1 pointing to the formula, another red circle labeled 2 pointing to the cell reference in the formula, and a red circle labeled 3 pointing to the COUNT button in the ribbon. The formula bar also has a red circle labeled 4 pointing to the formula text, and a red circle labeled 5 pointing to the dropdown arrow next to the COUNT button. A red circle labeled 6 points to the result value 6 in cell B9.

1. Move to cell A9.
2. Type **Count**.
3. Press the right arrow key to move to cell B9.
4. Choose the Home tab.
5. Click the down arrow next to the AutoSum button .
6. Click Count Numbers. Excel places the count function in cell C9 and takes a guess at which cells you want to count. The guess is incorrect, so you must select the proper cells.



SUM				
	A	B	C	D
1		12	150	
2		27	85	
3		24	65	
4	Sum	63	300	
5				
6	Average	21	100	
7	Min	12		
8	Max	27		
9	Count	=COUNT(B1:B3)		
10		COUNT(value1, [value2], ...)		
11				



B9					
	A	B	C	D	E
1		12	150		
2		27	85		
3		24	65		
4	Sum	63	300		
5					
6	Average	21	100		
7	Min	12			
8	Max	27			
9	Count	3			
10					
11					

### Fill Cells Automatically

You can use Microsoft Excel to fill cells automatically with a series. For example, you can have Excel automatically fill your worksheet with days of the week, months of the year, years, or other types of series.

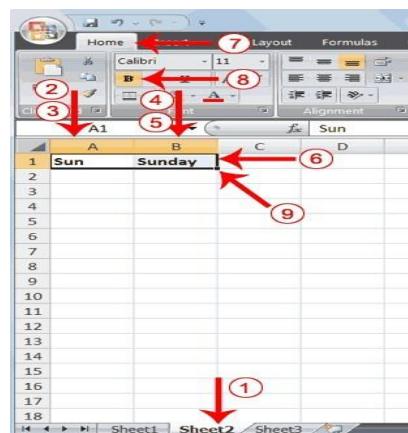
#### *Fill Cells Automatically*

The following demonstrates filling the days of the week:

	A	B	C	D
1	Sun	Sunday		
2	Mon	Monday		
3	Tue	Tuesday		
4	Wed	Wednesday		
5	Thu	Thursday		
6	Fri	Friday		
7	Sat	Saturday		
8	Sun	Sunday		
9	Mon	Monday		
10	Tue	Tuesday		
11	Wed	Wednesday		
12	Thu	Thursday		
13	Fri	Friday		
14	Sat	Saturday		
15				
16				
17				
18				

Auto Fill Options Button

1. Click the Sheet2 tab. Excel moves to Sheet2.
2. Move to cell A1.
3. Type Sun.
4. Move to cell B1.
5. Type Sunday.
6. Select cells A1 to B1.
7. Choose the Home tab.
8. Click the Bold button  . Excel bolds cells A1 to B1.



9. Find the small black square in the lower-right corner of the selected area. The small black square is called the fill handle.
10. Grab the fill handle and drag with your mouse to fill cells A1 to B14. Note how the days of the week fill the cells in a series. also, note that the Auto Fill Options button appears.

## Copy Cells

	A	B	C	D	E
1	Sun	Sunday			
2	Sun	Sunday			
3	Sun	Sunday			
4	Sun	Sunday			
5	Sun	Sunday			
6	Sun	Sunday			
7	Sun	Sunday			
8	Sun	Sunday			
9	Sun	Sunday			
10	Sun	Sunday			
11	Sun	Sunday			
12	Sun	Sunday			
13	Sun	Sunday			
14	Sun	Sunday			
15					
16					
17					
18					

Copy Cells

1. Click the Auto Fill Options button. The Auto Fill Options menu appears.
3. Click the Auto Fill Options button again.
4. Choose the Fill Series radio button. The cells fill as a series from Sunday to Saturday again.

Sunday to Saturday, but the entries are not bolded.

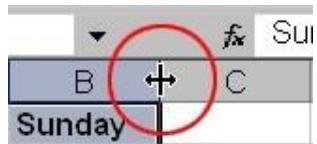
7. Click the Auto Fill Options button again.

2. Choose the Copy Cells radio button. The entry in cells A1 and B1 are copied to all the highlighted cells.
5. Click the Auto Fill Options button again.
6. Choose the Fill Without Formatting radio button. The cells fill as a series from Monday to Friday.
8. Choose the Fill Weekdays radio button. The cells fill as a series from Monday to Friday.

### Adjust Column Width

Some of the entries in column B are too long to fit in the column. You can quickly adjust the column width to fit the longest entry.

1. Move your mouse pointer over the line that separates column B and C. The Width Indicator appears.



2. Double-click. The Column adjusts to fit the longest entry.

After you complete the remainder of the exercise, your worksheet will look like the one shown here.

	A	B	C	D	E	F
1	Sun	Sunday	1:00:00 AM	1	Lesson 1	
2	Mon	Monday	2:00:00 AM	2	Lesson 2	
3	Tue	Tuesday	3:00:00 AM	3	Lesson 3	
4	Wed	Wednesday	4:00:00 AM	4	Lesson 4	
5	Thu	Thursday	5:00:00 AM	5	Lesson 5	
6	Fri	Friday	6:00:00 AM	6	Lesson 6	
7	Mon	Monday	7:00:00 AM	7	Lesson 7	
8	Tue	Tuesday	8:00:00 AM	8	Lesson 8	
9	Wed	Wednesday	9:00:00 AM	9	Lesson 9	
10	Thu	Thursday	10:00:00 AM	10	Lesson 10	
11	Fri	Friday	11:00:00 AM	11	Lesson 11	
12	Mon	Monday	12:00:00 PM	12	Lesson 12	
13	Tue	Tuesday	1:00:00 PM	13	Lesson 13	
14	Wed	Wednesday	2:00:00 PM	14	Lesson 14	
15						

### *Fill Times*

The following demonstrates filling time:

1. Type **1:00** into cell C1.
2. Grab the fill handle and drag with your mouse to highlight cells C1 to C14. Note that each cell fills, using military time.
3. Press Esc and then click anywhere on the worksheet to remove the highlighting.

To change the format of the time:

1. Select cells C1 to C14.
2. Choose the Home tab.
3. Click the down arrow next to the number format box . A menu appears.
4. Click Time. Excel changes the format of the time.

## Exercise 1

---

### How many ways to make 12?

Create a sheet that has four tables as shown below. The sheet determines how many different ways can you calculate the number 12. Fill in numbers in the tables to add, subtract, multiply, and divide to equal 12.

How Many Ways to 12					
Addition			Subtraction		
6	+	6	=	12	
15	+	-3	=	12	
9	+	3	=	12	
5	+	8	=	13	
33	+	-21	=	12	
44	+	-32	=	12	
12	+	0	=	12	
-1	+	13	=	12	
19	+	-7	=	12	
10	+	2	=	12	
Multiplication					
24	x	0.5	=	12	
17	x	0.7059	=	12	
12	x	1	=	12	
66	x	0.1818	=	12	
3.1429	x	3.8182	=	12	
4	x	3	=	12	
Division					
36	/	3	=	12	
132	/	11	=	12	
108	/	9	=	12	
56	/	4.6667	=	12	
12	/	1	=	12	
4	/	0.3333	=	12	

---

## Exercise 2

---

### ATTENDANCE SHEET

Create a sheet as shown below. The sheet determines the count of „P“ for each student. Also use a formula to calculate percentage.

ATTENDANCE SHEET														
	Roll No	Name	1	2	3	4	5	6	7	8	9	10	Total Attendance	% age
7	1	Asim	P	P	P	A	P	P	P	P	P	P	9	90
8	2	Bilal	P	A	A	P	P	P	A	P	P	P	7	70
9	3	Danish	A	A	A	P	P	P	A	A	P	P	5	50
10	4	Ejaz	P	A	A	A	P	P	P	A	P	P	6	60
11	5	Faraz	A	P	P	A	P	P	A	P	P	P	7	70
12	6	Amjad	A	P	P	P	P	P	A	P	P	P	8	80
13	7	Shuja	A	A	A	P	P	P	A	A	P	P	5	50
14	8	Sajjad	P	A	P	P	P	P	P	A	P	P	8	80
15	9	Imran	P	P	P	P	P	P	P	P	P	P	10	100
16	10	Irfan	A	P	P	P	P	P	A	P	P	P	8	80

## Lab Session 09

### OBJECT

#### *Working with conditions, logical & Trigonometric functions in Microsoft Excel*

##### Entering Formulas

Formulas enable the user to perform calculations by using values in the worksheet. Arithmetic operators that can be used in formulas include + for addition, - for subtraction, \* for multiplication, / for division, % for percentage, and ^ for exponentiation. For example: =a1+b1 adds the contents of a1 and b1 in the cell where the formula is typed.

To fill the same formula in multiple cells, select the adjacent cells or ranges to be filled; With the range(s) still selected, type the formula or value in the active cell; Press Ctrl+Enter (rather than just Enter) to enter the formula or value.

To reference cells in other Worksheets, select the cell where the formula is to be appeared , and type an equal sign (=) to start the formula; Click the sheet tab containing the cell to be referenced in the formula; Select the cell or range to be referred to. The complete reference appears in the formula bar; Finish the rest of the formula; then press Enter to complete the formula.

Excel also provides functions like SUM, AVERAGE, etc. Select the cell where the function is to be appeared, and type an equal sign (=) to start the function; Type the function name (such as SUM, AVERAGE, etc) and a left parenthesis; Select the range of cells for the argument and press Enter. Excel automatically adds the closing parenthesis and enters the function. References to columns or rows can also be entered manually, using commas (,) for separation. If colon (:) is used between two references then, it acts as range operator, which produces one reference to all the cells between two references, including the two reference. Following are some of the most commonly used formula.

- **SUM:** Adds all the numbers in a range of cells.  
*Syntax: =SUM(number1, number2, ....)*
- **AVERAGE:** Returns the average (arithmetic mean) of the arguments.  
*Syntax: =AVERAGE(number1, number2, ....)*
- **COUNT:** Counts the number of cells that contain numbers and numbers within the list of arguments.  
*Syntax: =COUNT(value1, value2, ....)*
- **COUNTA:** Counts the number of cells that are not empty and the values within the list of arguments.  
*Syntax: =COUNTA(value1, value2, ....)*
- **PRODUCT:** Multiplies all the numbers given as arguments and returns the product.  
*Syntax: =PRODUCT(number1, number2, ....)*

**SUM PRODUCT FUNCTION:** Calculate the product and then return the total sum of the product.

Formula	Description	Result
=SUMPRODUCT(A2:A4, B2:B4)	Multiples all the components of the two arrays	=SUMPRODUCT(A2:A4,B2:B4)

**SUMIF:** Adds the cells specified by a given criteria.

*Syntax:* SUMIF(range, criteria, sum\_range)

Where 'Range' is the range of cells to be evaluated according to the given criteria. 'Criteria' is the criteria in the form of a number, expression, or text that defines which cells will be added. 'Sum\_range' are the actual cells to sum. The cells in sum\_range are summed only if their corresponding cells in range match the criteria. If sum\_range is omitted, the cells in range are summed.

EmpID	Emp Name	Designation	BASIC	HRA	DA	MA	PF	Gross Salary	Net Salary
101.00	AAA	Manager	12000	2160.00	14400.00	1000.00	9600.00	7960.00	19960.00
102.00	BBB	CEO	15000	2700.00	18000.00	1000.00	12000.00	9700.00	24700.00
103.00	CCC	Accountant	11000	1980.00	13200.00	1000.00	8800.00	7380.00	18380.00
104.00	DDD	Clerk	3000	540.00	3600.00	500.00	2400.00	2240.00	5240.00
105.00	EEEE	Peon	1500	270.00	1800.00	500.00	1200.00	1370.00	2870.00
106.00	FFFF	Manager	13000	2340.00	15600.00	1000.00	10400.00	8540.00	21540.00
107.00	GGGG	Peon	2000	360.00	2400.00	500.00	1600.00	1660.00	3660.00
108.00	HHHH	Clerk	3500	630.00	4200.00	500.00	2800.00	2530.00	6030.00

## How to use Sumifs, Countifs

Month	Product	Country	Sales Revenue
Jan	Shirt white	USA	546
Jan	Shirt blue	USA	519
Feb	Shirt white	USA	492
Feb	Shirt blue	USA	559
Feb	Shirt white	USA	591
Feb	Shirt white	USA	535
Feb	Shirt blue	USA	550
Feb	Shirt yellow	USA	517
Feb	Shirt blue	UK	449
Feb	Shirt white	UK	410
Mar	Shirt white	UK	435
Mar	Shirt yellow	USA	468
Mar	Shirt blue	USA	568

Find total sales for the below criteria:  
Feb  
Feb Shirt white  
Feb Shirt white USA

=sumifs(D4:D22,A4:A22,G6,B4:B22,H6)

Find out how many shirts were sold for the below criteria:  
Feb  
Feb Shirt white  
Feb Shirt white USA

=countif(A4:A22,G11)

## Formulas: Absolute, Relative, and Mixed Cell References

When a cell contains a formula with references to other cells, several methods can be used to handle those references.

Excel normally uses relative references for cell addresses in a formula, unless specified otherwise. When relative references are used, the cell references in a formula automatically adjust after the formula is copied to another cell or range. If cell B10 contains the formula =SUM(B3:B9), for example, and user copies this formula from cell B10 to cell C10, the new formula in cell C10 automatically adjusts to read =SUM(C3:C9).

To prevent a cell reference in a formula from changing when that formula is copied to another cell or range, use an absolute reference. Absolute references can be indicated by typing a dollar sign (\$) in front of the column letter and the row number. In a sales worksheet, for example, if the user have a column of formulas that multiply a value by the commission percentage located in cell D7, he could use \$D\$7 to refer to that percentage in the first cell; then copy the formula down the column.

Combinations of these two types of references called mixed references can also be used. For example \$C3 prevents the column from changing, C\$3 adjusts the column to a new location but the row remains fixed when the formula is copied.

To use this, place the cell pointer in the cell where the formula is to be entered; To enter an absolute or mixed reference in a formula, type an equal sign (=) to start the formula (to enter a relative reference, just type the reference--no special treatment is needed). Then type or click the cell reference; Press F4 until the desired combination of dollar signs appears, and then type the arithmetic operator, such as a plus sign (+); Continue to type other values or cell references and operators as needed; then press Enter to complete the formula

## Logical Functions

The logical functions enable the user to add decision-making and logical tests to the worksheets. The IF statement is useful for testing conditions and making decisions based on a cell's contents. The AND and OR functions can test multiple criteria or test conditions for use in IF functions. The following examples show the use:

- 1.** `=AND(D15,G23<30)` result is TRUE only when D15 is not zero and G23 is less than 30 OR `=AND(C4>B4,D4="YES")` RESULT IS TRUE comparison of two values

	A	B	C	D	E
1					
2					
3	Division	Budget	Amt Spent	Growth Potential	Needs Review
4	Engines	\$250,000	\$286,000.00	Yes	
5	Wheels	\$75,000	\$71,245.00	Yes	
6	Axles	\$125,000	\$137,456.00	No	
7	Chassis	\$205,000	\$190,000.00	No	
8					
9					<code>=and(C4&gt;B4,D4="yes")</code>
10					

## 2. IF :AND

`=IF(AND(<Test 1>, <Test 2>, ...), TRUE, FALSE)`

- `=IF(AND(D17>10, D17<30), "Valid", "Invalid")` returns Valid if the cell D17 is greater than 10 and less than 30; otherwise the formula returns Invalid

v **Needs Review**  
`=IF(and(C4>B4,D4="no"),"Review ASAP","No Review Needed")`

## 3. NESTED IF

If Customer Bill  
`> 20000, "A"`  
`> 10000, "B"`      Nested  
`< 10000, "C"`  
`=IF(C2>20000,"A",IF(`  
`C2>10000,"B","`

`=IF(OR(D17=10, D17=30), "Contains 10 or 30", "Not 10or30")` tests whether cell D17 contains the result 10 or 30 and produces the message Contains 10 or 30 when it does; otherwise, the formula produces the message Not 10 or 30

## Math and Trigonometric Functions

Like logical functions, math and trigonometric functions can also be used in the Worksheets.

**Trigonometric functions use angles measured in radians.**

Following are some examples:

=Radians(**NUMBER**) : Convert Degree In To Radian

Tangent:

2	<b>TANGENT:</b>	30	=TAN(RADIANS(B2))
3	<b>INVERSE SINE:</b>		RADIANS(angle) angle

Sin Function: =SIN(**NUMBER**) : sin(radians(30))

- **number** - The angle in radians for which you want the sine.

**Inverse sine:** Result Will Be In Degrees according to formula given below.

3	<b>INVERSE SINE:</b>	0.6	=DEGREES(ASIN(RADIANS(DEGREES(B3))))
4	<b>COSINE:</b>		DEGREES(angle) EES(angle)

**Syntax COS**

=COS (**number**) : =Cos(radians(30))

Or                           =Radians(30) Convert Degree In To Radian

4	<b>COSINE:</b>	20	=COS(RADIANS(B4))
---	----------------	----	-------------------

**Arguments**

- **number** - The angle in radians for which you want the cosine.

**ACOS:** The Excel ACOS function calculates the arccosine (i.e. the inverse **cosine**) of a given number, and returns an angle, in radians, between 0 and  $\pi$ .

**Result In Radian**

For degrees =degree(ACOS(RADIAN(DEGREES(30))))

- =ABS(A10) returns 18 when cell A10 contains -18
- =ACOS(0.5) returns 1.047198 (radians)
- =DEGREES(0.5) returns 28.64789 (degrees)
- =ROUND(102.927,2) returns 102.93

- **Mround**

A	B	C	D
Number	Formulae	Description	Result
5.1		Rounds Number to the nearest multiple of 1.	=MROUND(A2,1)
7.5		Rounds Number to the nearest multiple of 5.	=MROUND(A3,5)
24		Rounds Number to the nearest multiple of 10.	

## EXERCISES

1. Design a TEMPERATURE CONVERTER from Celsius to Fahrenheit and Fahrenheit to Celsius. Present the Converter with appropriate design. Formulas for conversion are as follows:

$$[{}^{\circ}\text{C}] = ([{}^{\circ}\text{F}] - 32) \cdot 5/9$$

$$[{}^{\circ}\text{F}] = [{}^{\circ}\text{C}] \cdot 9/5 + 32$$

Also report the weather conditions as HOT if the temperature exceeds  $35^{\circ}\text{C}$ , WARM if the temperature is between  $20^{\circ}\text{C}$  to  $35^{\circ}\text{C}$  and COLD if the entered temperature is below  $20^{\circ}\text{C}$ .

2. Create a magic square puzzle as per given example below, the sum of all the numbers in a row must be equal, simultaneously the sum of all the numbers in a column must be equal, and the sum of diagonal numbers should also be equal:

- Take the input from the user in all the squares. For a user all the squares will be blank initially and the box given below will contain the text “KEEP TRYING” unless the user enters all correct entries. If user solves the puzzle correctly then a message “WELL DONE” appears below. Format your work accordingly.

1.

12	3	9	
5	8	11	24
7	13	4	24

24	24	24	24
----	----	----	----

WELL DONE!!!

40

## Lab Session 10

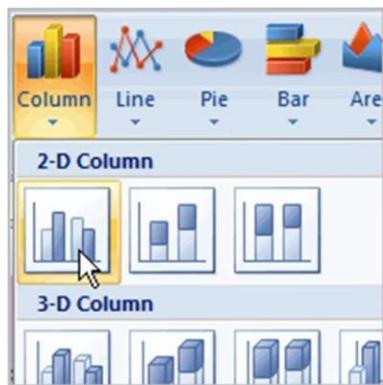
### Objective:

#### Charts and Graphs

To explore different features of Microsoft Excel.

To learn how to depict data graphically.

### Introduction



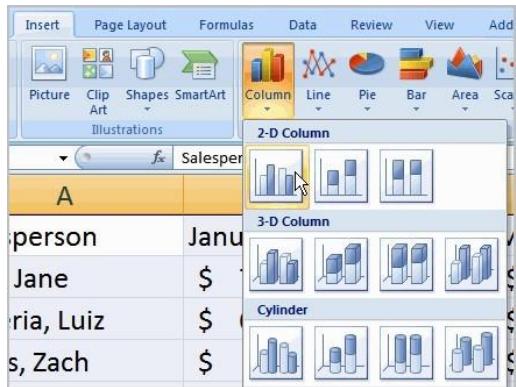
A **chart** is a tool you can use in Excel to communicate your **data graphically**. Charts allow your audience to more easily see the meaning behind the numbers in the spreadsheet, and to make showing comparisons and trends much easier. In this lesson, you will learn how to **insert** and **modify** Excel charts and see how they can be an effective tool for communicating information.

### Creating a chart

Charts can be a useful way to communicate data. When you insert a chart in Excel, it appears in the selected worksheet with the source data by default.

#### *To create a chart:*

- Select the **worksheet** you want to work with. In this example, we use the **Summary** worksheet.
- Select the **cells** you want to chart, including the **column titles** and **row labels**.
- Click the **Insert** tab.
- Hover over each **Chart option** in the Charts group to learn more about it.
- Select one of the Chart options. In this example, we'll use the Columns command.
- Select a **type of chart** from the list that appears. For this example, we'll use a 2-D Clustered Column. The chart appears in the worksheet.



**Identifying the parts of a chart :** Have you ever read something you didn't fully understand but when you saw a chart or graph, the concept became clear and understandable? Charts are a **visual representation** of data in a worksheet. Charts make it easy to see comparisons, patterns, and trends in the data.



**Source data :** The range of cells that make up a chart. The chart is updated automatically whenever the information in these cells changes.

### Title

The title of the chart.

### Legend

The chart key, which identifies what each color on the chart represents.

### Axis

The vertical and horizontal parts of a chart. The vertical axis is often referred to as the Y axis, and the horizontal axis is referred to as the X axis.

### Data series

The actual charted values, which are usually rows or columns of the source data.

### Value axis

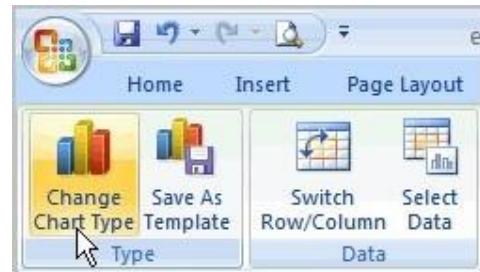
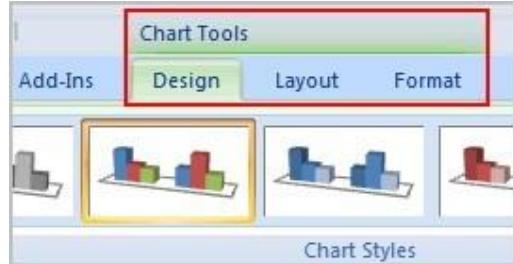
The axis that represents the values or units of the source data.

### Category axis

The axis identifying each data series.

## Chart tools

Once you insert a chart, a new set of **Chart Tools**, arranged into three tabs, will appear above the Ribbon. These are only visible when the chart is selected.



### To change the chart type:

- Select the **Design** tab.
- Click the **Change Chart Type** command. A dialog box appears.

- Select another **chart type**.
- Click OK.

The chart in the example compares each salesperson's monthly sales to his or her other months' sales; however, you can change what is being compared. Just click the **Switch Row/Column Data** command, which will rotate the data displayed on the **x** and **y axes**. To return to the **original view**, click the Switch Row/Column command again.

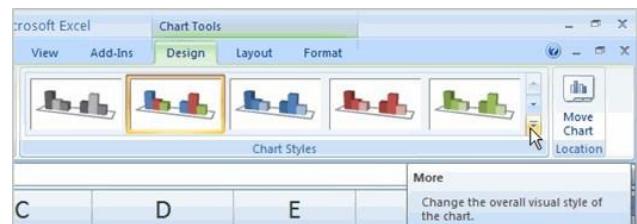
### To change chart layout:

- Select the **Design** tab.
- Locate the **Chart Layouts** group.
- Click the **More** arrow to view all of your layout options.
- Left-click a layout to select it.



### To change chart style:

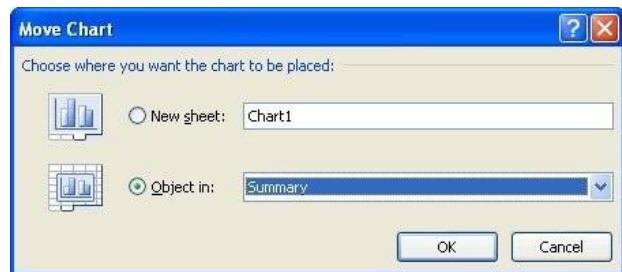
- Select the **Design** tab.
- Locate the **Chart Style** group.
- Click the **More** arrow to view all of your style options.
- Left-click a style to select it.



### To move the chart to a different worksheet:

- Select the **Design** tab.
- Click the **Move Chart** command. A dialog box appears. The current location of the chart is selected.

- Select the desired location for the chart (i.e., choose an existing worksheet, or select New Sheet and name it).



---

## Exercise 1

---

### USING RADAR CHART IN EXCEL

Demonstrate the use of Radar & Bar chart by comparing the average monthly temperature of three cities. Label the graph as 'Average Monthly Temperatures'.

	A	B	C	D
1		avg temp Bermuda	avg temp Sydney	Memphi s
2	January	65	73	49
3	February	64	73	54
4	March	64	70	63
5	April	67	66	72
6	May	72	59	80
7	June	77	55	89
8	July	80	54	92
9	August	81	57	91
10	September	79	61	85
11	October	75	64	75
12	November	70	68	62
13	December	66	70	52

---

## Exercise 2

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### TRIGONOMETRIC GRAPHS

Draw a sine ( $\sin\Theta$ ) wave and a cosine ( $\cos\Theta$ ) wave on a single graph. Angle ( $\Theta$ ) ranges from  $0^\circ$  to  $360^\circ$  with the interval of  $15^\circ$ .

Attach the formula sheets also for the sine and cosine chart.

# Lab Session 11

## OBJECT

*Creating databases using Microsoft Access*

### USING MICROSOFT ACCESS

#### FAMILIARIZATION WITH SOME BASIC DATABASE RELATED TERMS

- A **record** in a row on a datasheet and is a set of values defined by fields. In a mailing list table, each record would contain the data for one person as specified by the intersecting fields.
- A **field** is a column on a datasheet and defines a data type for a set of values in a table. For a mailing list table might include fields for first name, last name, address, city, state, zip code, and telephone number.
- A **table** is a grouping of related data organized in fields (columns) and records (rows) on a datasheet. By using a common field in two tables, the data can be combined. Many tables can be stored in a single database.
- A **database** is a collection of related information.

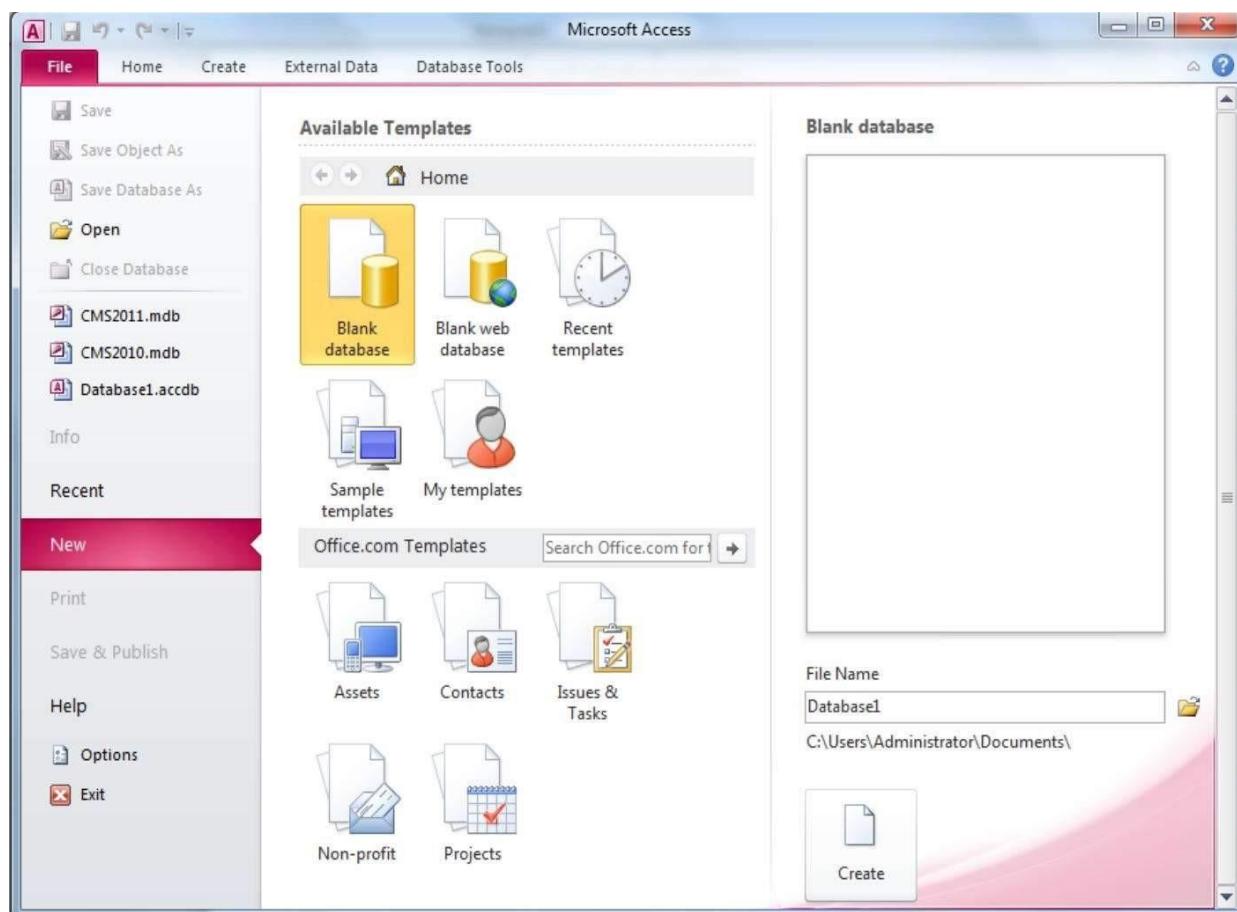


Figure 11.1 MS Access Welcome window

## GETTING STARTED

After opening Access, you will be presented with two major options as shown in figure above. First if you are creating a new database or the second if you want to open and edit an existing database. Details about both of these choices are given below:

### Open an existing database

If the database was opened recently on the computer, it will be listed in the File Menu either directly or inside *Recent* option. Highlight the database name and click *OK*. Otherwise, click Open (Ctrl + O) from File Menu, navigate to proper folder location, highlight the database name in the listing and click *OK*.

### Creating a new database

Click *New* (Ctrl + N) option inside the File Menu. You will be presented with MS Access available database templates both offline and online and then you are required to select any one of them to create your new database. Some of the example offline database templates include Blank Database, Blank Web database, sample database etc. Some of the example online database templates include Assets, Contacts, Issues and Tasks etc. Unlike Word documents, Excel worksheets, and Power Point presentations, you must save an Access database before you start working on it. After selecting "Blank Access database" for example, you will first be prompted to specify a location and name for the database.

## SCREEN LAYOUTS

### Database Window

The Database Window (figure 11.2) organizes all of the objects in the database e.g. Tables, Queries, Forms etc. The default table listing provides links for creating or modifying tables and will list all of the tables in the database when they have been added.

### Design View

Design View (Figure 11.3) customizes the fields in the database so that data can be entered.

### Datasheet View

The datasheet view (Figure 11.4) allows you to enter data into the database.

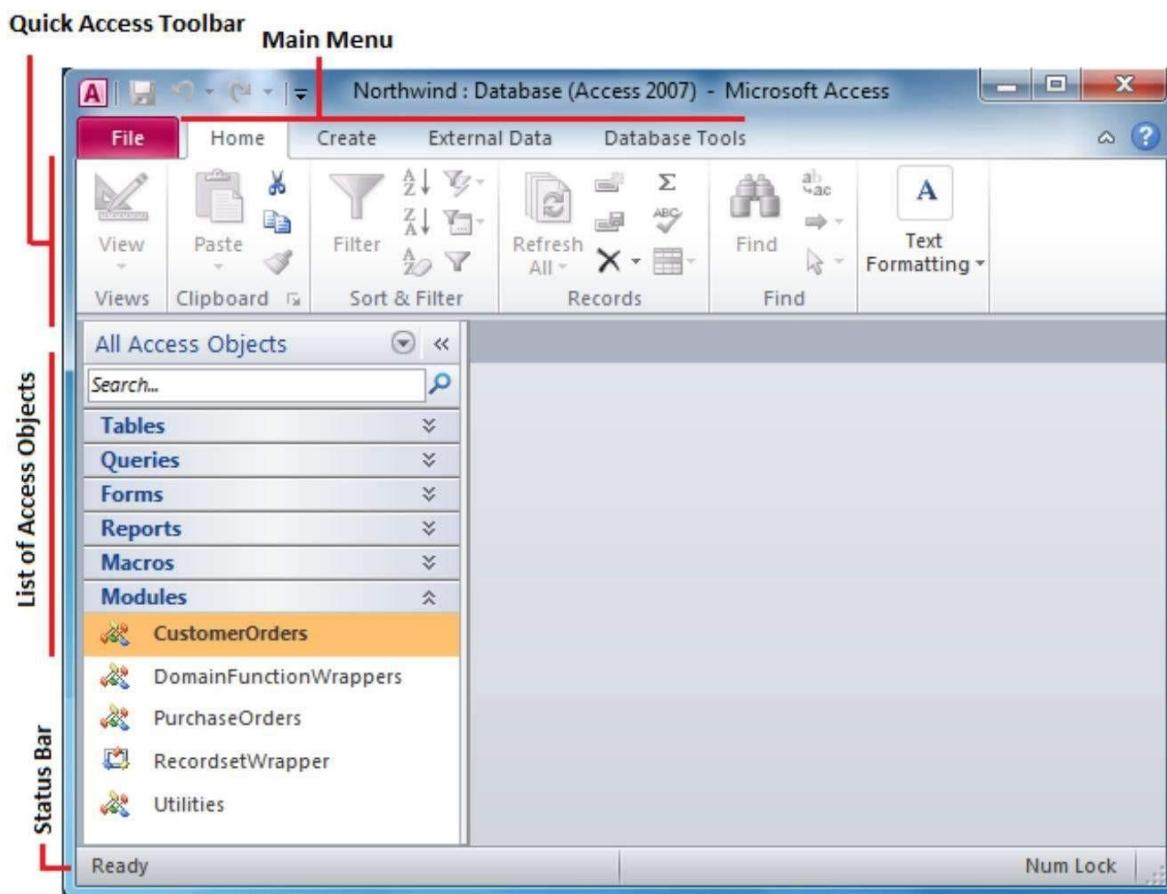


Figure 11.2: Database Window

The screenshot shows the Microsoft Access application window in Design view, titled "Northwind : Database (Access 2007) - Microsoft...". The window includes:

- Design Tab:** Selected tab in the ribbon.
- Toolbars:** Standard toolbar with View, Primary Key, Builder, Test Validation, Rules, and Tools.
- Table Tools:** Sub-toolbar for the current table "Invoices".
- List of Access Objects:** Sidebar showing tables like Customers, Invoices, etc.
- Field Properties:** A pane showing the properties of the selected field "Invoice ID" in the "Invoices" table. The properties listed are:
 

Field Name	Data Type	Description
Invoice ID	AutoNumber	
Order ID	Number	
Invoice Date	Date/Time	
Due Date	Date/Time	
Tax	Currency	
Shipping	Currency	
Amount Due	Currency	
- Note:** A callout bubble states: "A field name can be up to 64 characters long, including spaces. Press F1 for help on field names."

Defining Fields & their data types  
Setting Filed Properties

Figure 11.3: Design View



## CREATING TABLES

### Introduction to Tables

Tables are grids that store information in a database similar to the way an Excel worksheet stores information in a workbook. To create a table Click Create from Main Menu. Access provides two ways to create a table for which there are icons Table and Table design. Double-click on any icon to create a table.

- **Create table in Design view** will allow you to create the fields of the table. This is the most common way of creating a table and is explained in detail below.
- **Create table by entering data** will give you a blank datasheet with just ID field and the rest with unlabeled columns that looks much like an Excel worksheet. Enter data into the cells and click the *Save* button. After the table is saved, the empty cells of the datasheet are trimmed. The fields are given generic names such as "Field1", "Field2", etc. To rename them with more descriptive titles that reflect the content of the fields, change the view to Design view again and modify names as per requirements.

### Create a Table in Design View

Design View will allow you to define the fields in the table before adding any data to the datasheet. The window is divided into two parts: a top pane for entering the field name, data type, and an option description of the field, and a bottom pane for specifying field properties as shown in (figure 11.3)

- **Field Name** - This is the name of the field and should represent the contents of the field such as "Name", "Address", "Final Grade", etc. The name cannot exceed 64 characters in length and may include spaces.
- **Data Type** is the type of value that will be entered into the fields.
  - *Text* - The default type, text type allows any combination of letters and numbers up to a maximum of 255 characters per field record.
  - *Memo* - A text type that stores up to 64,000 characters. ○ *Number* - Any number can be stored.
  - *Date/Time* - A date, time, or combination of both.
  - *Currency* - Monetary values that can be set up to automatically include a dollar sign (\$) and correct decimal and comma positions.
  - *AutoNumber* - When a new record is created, Access will automatically assign a unique integer to the record in this field. From the General options, select Increment if the numbers should be assigned in order or random if any random number should be chosen. Since every record in a datasheet must include at least one field that distinguishes it from all others, this is a useful data type to use if the existing data will not produce such values.
  - *Yes/No* - Use this option for True/False, Yes/No, On/Off, or other values that must be only one of two.
  - *OLE Object* - An OLE (Object Linking and Embedding) object is a sound, picture, or other object such as a Word document or Excel spreadsheet that is created in another program. Use this data type to embed an OLE object or link to the object in the database.
  - *Hyperlink* - A hyperlink will link to an Internet or Intranet site, or another location in the database. The data consists of up to four parts each separated by the pound sign (#): DisplayText#Address#SubAddress#ScreenTip. The Address is the only required part of the string. Examples:

*Internet hyperlink example:*      FGCU Home Page#http://www.fgcu.edu#

*Database link example:*      #c:\My Documents\database.mdb#MyTable

- **Description** (optional) - Enter a brief description of what the contents of the field are.
- **Field Properties** - Select any pertinent properties for the field from the bottom pane.

### Field Properties

Properties for each field are set from the bottom pane of the Design View window.

- **Field Size** is used to set the number of characters needed in a text or number field. The default field size for the text type is 50 characters. If the records in the field will only have two or three characters, you can change the size of the field to save disk space or prevent entry errors by limiting the number of characters allowed. Likewise, if the field will require more than 50 characters, enter a number up to 255. The field size is set in exact characters for Text type, but options are given for numbers:
  - **Byte** - Positive integers between 1 and 255
  - **Integer** - Positive and negative integers between -32,7613 and 32,7613

- **Long Integer (default)** - Larger positive and negative integers between -2 billion and 2 billion.
  - **Single** - Single-precision floating-point number ○
  - Double** - Double-precision floating-point number
  - **Decimal** - Allows for Precision and Scale property control
- **Format** confirms the data in the field to the same format when it is entered into the datasheet. For text and memo fields, this property has two parts that are separated by a semicolon. The first part of the property is used to apply to the field and the second applies to empty fields.

### Primary Key

Every record in a table must have a primary key that differentiates it from every other record in the table. In some cases, it is only necessary to designate an existing field as the primary key if you are certain that every record in the table will have a different value for that particular field. A social security number is an example of a record whose values will only appear once in a database table.



**Figure 11.5 Quick Access Toolbar – Table Tools**

Designate the primary key field by right-clicking on the record and selection *Primary Key* from the shortcut menu or select *Primary Key* from the Quick Access Toolbar as given in figure above. The primary key field will be noted with a key image to the left. To remove a primary key, repeat one of these steps.

### Indexes

Creating indexes allows Access to query and sort records faster. To set an indexed field, select a field that is commonly searched and change the Indexed property to *Yes (Duplicates OK)* if multiple entries of the same data value are allowed or *Yes (No Duplicates)* to prevent duplicates.

### **Field Validation Rules**

Validation Rules specify requirements (change word) for the data entered in the worksheet. A customized message can be displayed to the user when data that violates the rule setting is entered. Click the expression builder ("...") button at the end of the Validation Rule box to write the validation rule. Examples of field validation rules include  $<> 0$  to not allow zero values in the record, and  $??? < 3$  to only allow all data strings three characters in length.

### **Input Masks**

An input mask controls the value of a record and sets it in a specific format. They are similar to the Format property, but instead display the format on the datasheet before the data is entered. For example, a telephone number field can be formatted with an input mask to accept ten digits that are automatically formatted as "(555) 123-4567". The blank field would look like (\_\_)-\_\_. Add an input mask to a field by following these steps:

- In design view, place the cursor in the field that the input mask will be applied to.
- Click in the white space following *Input Mask* under the *General* tab.
- Click the "..." button to use the wizard or enter the mask, `(@@@) @@@@-@@@ @@`, into the field provided.

## **DATASHEET RECORDS**

### **Adding Records**

Add new records to the table in datasheet view by typing in the record beside the asterisk (\*) that marks the new record.

### **Editing Records**

To edit records, simply place the cursor in the record that is to be edited and make the necessary changes. Use the arrow keys to move through the record grid. The previous, next, first, and last record buttons at the bottom of the datasheet are helpful in maneuvering through the datasheet.

### **Deleting Records**

Delete a record on a datasheet by placing the cursor in any field of the record row and select *Delete Record* from the menu bar or click the *Delete* button on the Quick Access toolbar.

### **Adding and Deleting Columns**

Although it is best to add new fields (displayed as columns in the datasheet) in design view because more options are available, they can also be quickly added in datasheet view. Highlight the column that the new column should appear to the left of by clicking its label at the top of the datasheet and press right click then select *Insert field* from the dropdown menu. Entire columns can be deleted by placing the cursor in the column and selecting *Delete field* from the dropdown menu.

## Freezing and unfreezing Columns

Similar to freezing panes in Excel, columns on an Access table can be frozen. This is helpful if the datasheet has many columns and relevant data would otherwise not appear on the screen at the same time. Freeze a column by placing the cursor in any record in the column and select *Freeze fields* from the right click dropdown menu. Select the same option to unfreeze a single column or select *Unfreeze All fields*.

## Finding Data in a Table

Open the table in datasheet view. Place the cursor in any record in the field that you want to search and select *Home/Find (Ctrl + F)...* from the Quick Access toolbar. Enter the value criteria in the *Find What:* box. From the *Look In:* drop-down menu, define the area of the search by selecting the entire table or just the field in the table you placed your cursor in during step 2. Select the matching criteria from *Match:* to and click the *More >>* button for additional search parameters. When all of the search criteria are set, click the *Find Next* button. If more than one record meets the criteria, keep clicking *Find Next* until you reach the correct record.

## Sorting & Filtering

Sorting and filtering allow you to view records in a table in a different way either by reordering all of the records in the table or view only those records in a table that meet certain criteria that you specify.

### Sorting

In table datasheet view, place the cursor in the column that you want to sort by. Select *Ascending* or *Descending* from the Quick Access toolbar under Home main menu or click the *Sort A to Z* or *Sort Z to A* from the dropdown menu.

To sort by more than one column (such as sorting by date and then sorting records with the same date alphabetically), highlight the columns by clicking and dragging the mouse over the field labels and select one of the sort methods stated above.

### Filter by Selection

This feature will filter records that contain identical data values in a given field such as filtering out all of the records that have the value "Smith" in a name field. To Filter by Selection, place the cursor in the field that you want to filter the other records by and click the *Selection* button inside Home main menu on the toolbar or directly select the criteria from right click dropdown menu.

### Filter by Form

If the table is large, it may be difficult to find the record that contains the value you would like to filter by so using Filter by Form may be advantageous instead. This method creates a

blank version of the table with drop-down menus for each field that each contains the values found in the records of that field.

The following methods can be used to select records based on the record selected by that do not have exactly the same value. Type these formats into the field where the drop-down menu appears instead of selecting an absolute value.

### Saving A Filter

The filtered contents of a table can be saved as a query by selecting *Advanced/Save As Query*. Enter a name for the query and click *OK*. The query is now saved within the database.

### Remove a Filter

To view all records in a table again, click the depressed *toggle Filter* button.

## **EXERCISES**

Create the following tables in Microsoft Access:

Table1: *Student* (containing fields: *Student ID*, *First Name*, *Last Name*, *Department* and *Class*).

Table2: *Marks* (containing fields: *Student ID*, *ITC*, *Mathematics*, *English*, *Electronics*, *Physics*).

Select appropriate primary keys and define appropriate relationship for these two tables.  
Add some sample data to the tables and make a hard copy of the tables created.

**Attach your printout here.**

# Lab Session 12

## OBJECT

*Creating queries, forms and reports in Microsoft Access*

### INTRODUCTION TO QUERIES

Queries select records from one or more tables in a database so they can be viewed, analyzed, and sorted on a common datasheet. The resulting collection of records, called a dynaset (short for dynamic subset), is saved as a database object and can therefore be easily used in the future. The query will be updated whenever the original tables are updated. Types of queries are *select queries* that extract data from tables based on specified values, *find duplicate* queries that display records with duplicate values for one or more of the specified fields, and *find unmatched* queries display records from one table that do not have corresponding values in a second table.



Figure 12.1 Create Menu Quick Access Toolbar

### Create a Query in Design View

From the Create Main Menu as in figure 12.1, click the *Query Design icon*. Select tables and existing queries from the *Tables* and *Queries* tabs and click the *Add* button to add each one to the new query. Click *Close* when all of the tables and queries have been selected. Add fields from the tables to the new query by double-clicking the field name in the table boxes or selecting the field from the *Field:* and *Table:* drop-down menus on the query form. Specify sort orders if necessary.

Enter the criteria for the query in the *Criteria:* field. The *Expression Builder* can also be used to assist in writing the expressions. After you have selected all of the fields and tables, click the *Run* button on the toolbar. Save the query by clicking the *Save* button.

### Query Wizard

Click the *Create query by using wizard* icon in the database window to have Access step you through the process of creating a query. From the first window, select fields that will be included in the query by first selecting the table from the drop-down *Tables/Queries* menu. Select the fields by clicking the *>* button to move the field from the Available Fields list to Selected Fields. Click the double arrow button *>>* to move all of the fields to Selected Fields. Select another table or query to choose from more fields and repeat the process of moving them to the Selected Fields box. Click *Next >* when all of the fields have been selected. On the next window, enter the name for the query and click *Finish*.

## Find Duplicates Query

This query will filter out records in a single table that contain duplicate values in a field. Click the *New* button on the Queries database window, select *Find Duplicates Query Wizard* from the *New Query* window and click *OK*. Select the table or query that the find duplicates query will be applied to from the list provided and click *Next >*. Select the fields that may contain duplicate values by highlighting the names in the Available fields list and clicking the *>* button to individually move the fields to the Duplicate-value fields list or *>>* to move all of the fields. Click *Next >* when all fields have been selected. Select the fields that should appear in the new query along with the fields selected on the previous screen and click *Next >*. Name the new query and click *Finish*.

## Delete a Query

To delete a query, select the required query and press the *Delete* key on the keyboard.

## FORMS

Forms are used as an alternative way to enter data into a database table.

### Create Form by Using Wizard

From the Create Main Menu as in figure 12.1, click *Form wizard* option in Forms section. From the *Tables/Queries* drop-down menu, select the table or query whose datasheet the form will modify. Then, select the fields that will be included on the form by highlighting each one the *Available Fields* window and clicking the single right arrow button *>* to move the field to the *Selected Fields* window. To move all of the fields to Select Fields, click the double right arrow button *>>*. If you make a mistake and would like to remove a field or all of the fields from the Selected Fields window, click the left arrow *<* or left double arrow *<<* buttons. After the proper fields have been selected, click the *Next >* button to move on to the next screen. On the second screen, select the layout of the form.

- **Columnar** - A single record is displayed at one time with labels and form fields listed side-by-side in columns.
- **Justified** - A single record is displayed with labels and form fields are listed across the screen.
- **Tabular** - Multiple records are listed on the page at a time with fields in columns and records in rows.
- **Datasheet** - Multiple records are displayed in Datasheet View

Click the *Next >* button to move on to the next screen. Select a visual style for the form from the next set of options and click *Next >*. On the final screen, name the form in the space provided. Select "Open the form to view or enter information" to open the form in Form View or "Modify the form's design" to open it in Design View. Click *Finish* to create the form.

### Adding Records Using A Form

Input data into the table by filling out the fields of the form. Press the *Tab* key to move from field to field and create a new record by clicking *Tab* after the last field of the last record. A new record can also be created at any time by clicking the *New Record* button  at the

bottom of the form window. Records are automatically saved as they are entered so no additional manual saving needs to be executed.

## Editing Forms

The following points may be helpful when modifying forms in Design View:

- ***Grid lines*** - By default, a series of lines and dots underlay the form in Design View so form elements can be easily aligned. To toggle this feature on and off right click and select Grid.
- ***Resizing Objects*** - Form objects can be resized by clicking and dragging the handles on the edges and corners of the element with the mouse.
- ***Change form object type*** - To easily change the type of form object without having to create a new one, right click on the object with the mouse and select *Change To* and select an available object type from the list.
- ***Label/object alignment*** - Each form object and its corresponding label are bounded and will move together when either one is moved with the mouse. However, to change the position of the object and label in relation to each other (to move the label closer to a text box, for example), click and drag the large handle at the top, left corner of the object or label.
- ***Tab order*** - Alter the tab order of the objects on the form by selecting *Tab Order* from design Menu when Form is active. Click the gray box before the row you would like to change in the tab order, drag it to a new location, and release the mouse button.
- ***Form Appearance*** - Change the background color of the form by clicking the *Shape Fill* button on the format menu inside Form Design. Change the color of individual form objects by highlighting one and selecting a color from *Color* palette on the formatting toolbar. The font and size, font effect, font alignment, border around each object, the border width, and a special effect can also be modified using the formatting toolbar buttons inside Form Design Tools.

## Form Controls

This section explains the uses for other types of form controls including lists, combo boxes, checkboxes, option groups, and command buttons.

- ***List and Combo Boxes:*** If there are small, finite number of values for a certain field on a form, using combo or list boxes may be a quicker and easier way of entering data. These two control types differ in the number of values they display. List values are all displayed while the combo box values are not displayed until the arrow button is clicked to open.
- ***Check Boxes and Option Buttons:*** Use check boxes and option buttons to display yes/no, true/false, or on/off values. Only one value from a group of option buttons can be selected while any or all values from a check box group can be chosen. Typically, these controls should be used when five or fewer options are available. Combo boxes or lists should be used for long lists of options.
- ***Command Buttons:*** Command buttons provide you with a way of performing action(s) by simply clicking them. When you choose the button, it not only carries out the appropriate action, it also looks as if it's being pushed in and released.

## Reports

Reports will organize and group the information in a table or query and provide a way to print the data in a database.

## Using the Wizard

From the Create Main Menu as in figure 12.1, click Report Wizard option in the Reports section. Select the information source for the report by selecting a table or query from the *Tables/Queries* drop-down menu. Then, select the fields that should be displayed in the report by transferring them from the *Available Fields* menu to the *Selected Fields* window using the single right arrow button > to move fields one at a time or the double arrow button >> to move all of the fields at once. Click the *Next >* button to move to the next screen.

Select fields from the list that the records should be grouped by and click the right arrow button > to add those fields to the diagram. Use the *Priority* buttons to change the order of the grouped fields if more than one field is selected. Click *Next >* to continue. If the records should be sorted, identify a sort order here. Select the first field that records should be sorted by and click the A-Z sort button to choose from ascending or descending order. Click *Next >* to continue. Select a layout and page orientation for the report and click *Next >*

>. Select a color and graphics style for the report and click *Next >*. On the final screen, name the report and select to open it in either Print Preview or Design View mode. Click the *Finish* button to create the report.

## Create in Design View

Click Report Design button in the Reports section of create access toolbar and you will be presented with a blank grid. Automatically properties window will open for this newly being created report. Click on Record Source property combo box and you will be presented with the list of available tables and queries. Choose the data source of the report from the drop-down menu and click *OK*. Design the report in much the same way you would create a form. For example, double-click the title bar of the Field Box to add all of the fields to the report at once. Then, use the handles on the elements to resize or move them to different locations, and modify the look of the report as per your requirements.

# Lab Session 13

## OBJECT

### *Familiarization with the environment of Microsoft Power Point*

## USING POWER POINT

A user can communicate information better and more easily with a PowerPoint presentation. A presentation is a series of slides that a user creates by using PowerPoint. The more important the message, the clearer the presentation should be. Also for larger audience, the message must be easy to grasp.

The facilities PowerPoint provides are discussed below:

### **Creating a New Power Point Presentation**

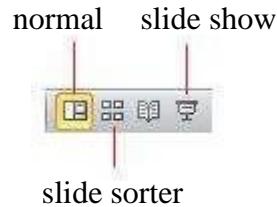
**Presentation Type:** Open Power Point and you will be prompted by a dialog box with different choices. These choices are explained below. If Power Point is already open or this box does not appear, select *File/New* from the menu bar.

- *Blank Presentation*: Select Blank Presentation to build the presentation from scratch with no preset graphics or formatting.
- *Recent Templates*: This option shows all the templates used previously during the current session of your work.
- *Sample Templates*: This option provides templates and ideas for a variety of presentation types. Page through the wizard to select the required type.
- *Themes*: Power Point provides many templates with different backgrounds and text formatting to begin your presentation. Preview each design by highlighting the template name in the menu. Double click on the chosen design to open the required template.
- *My Template*: This option allows you to insert and/or create your own design template.
- *New from Existing*: This option lets you convert the older version power point files into the current version. Then you can save it with the new format by using the *File/Save* option from the menu bar.

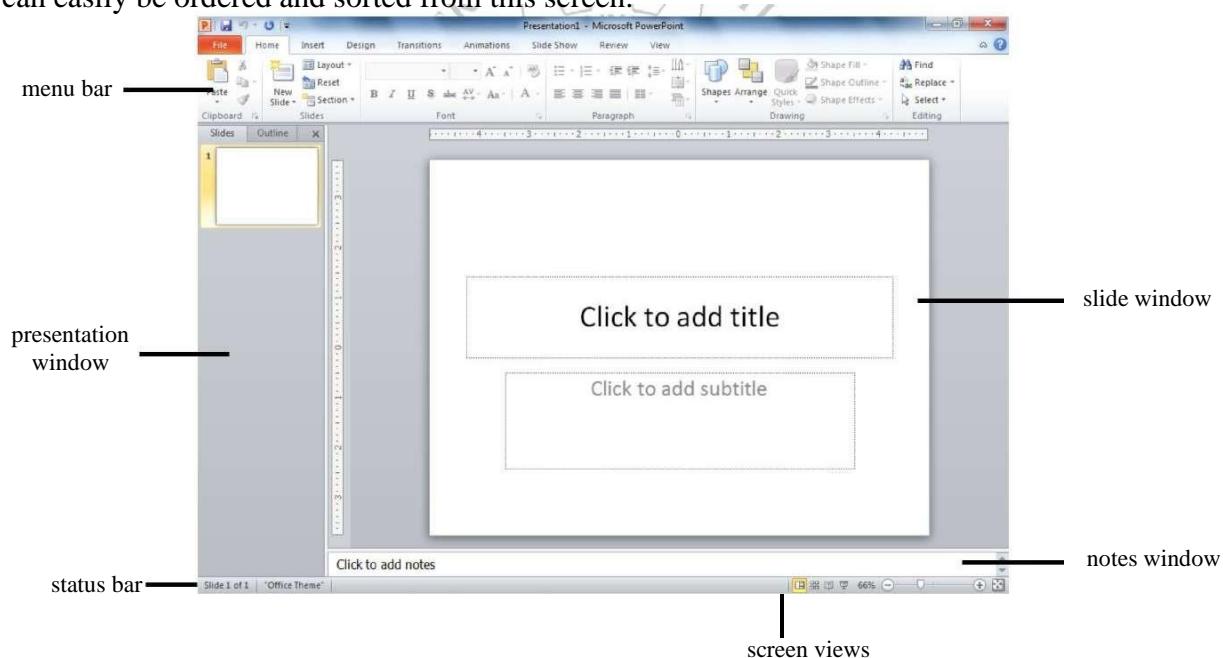
To open an existing Power Point presentation, select *File/Open* option from the menu bar. Select the folder in which the file is located from the Look in: drop-down menu and highlight the file on the list. Click Open to open the presentation.

### **Screen Layout Views**

Power Point gives you three screen layouts for constructing or viewing your presentation. These can be selected by using the icons given in the bottom right corner, or you can go to the *View* menu and select these options from the Presentation View section.

**Figure 13.1: Screen Views**

- **Normal View:** This screen is split into three sections showing the presentation window on the left, the slide in the main window, and notes at the bottom. The presentation window can further be viewed in two different ways:
  - **Outline View:** The presentation outline is displayed on the majority of the screen with small windows for the slide and notes. This view is recommended for editing text.
  - **Slide View:** The slide view displays each slide on the screen and is helpful for adding images, formatting text, and adding background styles.
- **Slide Sorter View:** A small image of each slide is displayed in Slide Sorter view. Slides can easily be ordered and sorted from this screen.

**Figure 13.2: The Power Point screen layout in Normal View**

Click the *Slide Show* button to view the full-screen slide show.

### Working with Slides

**Insert a New Slide** : In the Normal View, select the slide you want the new slide to appear after by clicking the slide's number. Select *Home/NewSlide* from the menu bar. Choose the page layout from the window.

**Applying a Design Template:** To add a design template or change the existing one, select *Design* menu, and choose the template from the given options in the Themes section. If you want to change the design of only one slide, then right click on the chosen theme and select ‘Apply to Selected Slide’ option.

**Changing Slide Layouts:** To change the layout template of the slide, select *Home/Layout* from the menu bar. Select one of the layout thumbnail images.

**Reordering Slides:** To reorder a slide in Slide Sorter View, simply click on the slide you wish to move and drag it to the new location. In Normal or Outline View, click the slide icon  beside the number of the slide you want to move and drag the icon to a new location.

**Hide Slides:** If you do not want a slide to appear during the slide show, but do not want to delete the slide as it may be used later, the slide can be hidden by selecting *SlideShow/HideSlide* from the menu bar. To add the slide back to the slide show, select *SlideShow/HideSlide* again.

**Create a Custom Slide Show:** The Custom Slide Show feature allows you to select the slides you want to display in the slide show if not all the slides should be used. For this, select *Slide Show/Custom Slide Show/Custom Shows* menu bar; Click the *New...* button in the *Custom Shows* window; In the *Define Custom Show* window, type a name for the slide in the *Slide show name* field; Add slides to the custom show by highlighting them in the *Slides in presentation* window and clicking the *Add>>* button. Those slides will then appear in the *Slides in custom show* window; To remove slides from the custom show, highlight their names in the *Slides in custom show* window and click the *Remove* button; To reorder slides in the custom show, highlight the slide that should be moved and click the up and down arrows to change its order in the show; Click *OK* when finished; Click the *Show* button on the *Custom Shows* window to preview the custom slide show and click *Close* to exit.

**Edit a Custom Slide Show:** Select *Slide Show/Custom Slide Show/Custom Shows* from the menu bar and then choose the custom show that needs to be edited from the window that appears on screen. To edit, click on the *Edit...* button; to delete a show, highlight the name and click *Remove*; to create a copy of a show, click the *Copy* button. The copy can then be renamed by clicking the *Edit...* button; Click the *Show* button to preview the custom slide show and click *Close* to exit.

## Adding Contents

**Bulleted Lists on Design Templates:** Bulleted lists allow you to clearly display the main points of your presentation on slides. The text boxes on design templates already include bulleted lists. Click the place holder on the slide to begin adding text and press the *ENTER* key to return to the next line and add a new bulleted item. To go to the next line without adding another bullet, hold down the *SHIFT* key while pressing *ENTER*.

**Additional Bulleted List:** In slide view, create a text box by selecting *Insert/Text Box* from the menu bar. Then draw the text box on the slide by holding down the left mouse button while you move the mouse until the box is the size you want it. Select the Bullets icon from the *Home* menu to insert new bullets in the text box. In order to change the formatting of bullets, click on the arrow besides the Bullets icon and select the *Bullets and Numbering...*

option. This opens a new window, from where you can change the size and color of the bullets. You can also click the *Picture* button to view the *Picture Bullet* window. Select one of the bullets and click *OK*.

-OR-

Click the *Customize* button to select any character from the fonts on the computer. Select a symbol font such as Wingdings or Webdings from the *Bulletsfrom* drop-down menu for the best selection of icons. Click on the characters in the grid to see them larger. Click *OK* when you have chosen the bullet you want to use. Click *OK* on the *Bullets and Numbering* window and use the same methods described in the "Bulleted Lists on Design Templates" to enter text into the bulleted list.

**Bulleted Lists and New Slides from an Outline:** In *Normal* or *Outline* view, text can easily be entered in the outline window and new slides are automatically added. Next to the *Slide 1* icon, type the title of the slide. The text you type beside the slide icons will be the large-type titles on each slide. Press *ENTER* to type the next line. This will automatically create a new slide. To create a bulleted list for the first slide, press the *TAB* key or click the *demote* button  on the *More Buttons* menu accessible by clicking the "triple arrow" button at the end of the formatting toolbar .

-OR-

Press *ALT+SHIFT+Right Arrow* to demote the selection to a bulleted list item; Continue entering text for the bulleted list, pressing *ENTER* at the end of each line to create a new bullet; Create a multilevel list by executing the demote action again to create a bulleted sub list. Press the *promote* button on the *More Buttons* menu or press *ALT+SHIFT+Left Arrow* to return to the original list; Create a new slide by executing the *promote* action until a new slide icon appears; Continue creating new slides and bulleted lists by using the demote and promote actions until the presentation is completed. Use the formatting instructions below to format the lists.

If there is more than one bulleted list on the slide, the lists will be designated by numbers enclosed in black boxes. The example below shows the slide created from the outline on the left. The bulleted list on the left side of the slide is labeled list "1" on the outline and the list on the right is labeled list "2". When typing the outline, begin typing in the new list by pressing *CTRL+ENTER*. In this example, *CTRL+ENTER* was pressed after typing "Access".

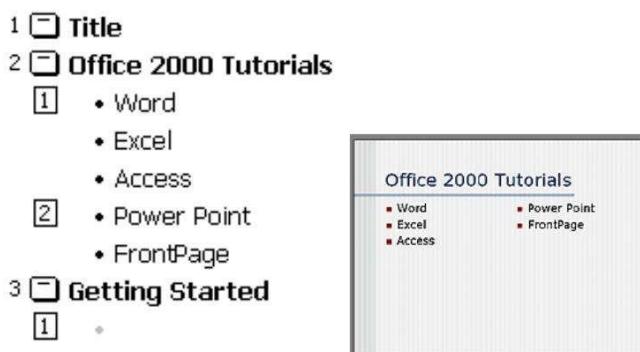


Figure 13.3

**Adding Notes:** From *Normal View*, notes can be added to the slide. These notes will not be seen on your presentation, but they can be printed out on paper along with the slide. This can be done by selecting *File/Print* menu, then under the *Settings*, in the second drop down menu, select the option 'Notes Pages'.

## Lab Session 14

### Object:

**To learn the concept of Action Buttons and Invisible Buttons**

### Action Buttons



In PowerPoint, you have the ability to link to a webpage, email address, file, slide in the same presentation, and slide in a different presentation. You can do all of this using two tools called **hyperlinks** and **action buttons**.

In this lesson, you will learn how to insert hyperlinks using text and objects, as well as how to insert an action button.

### Inserting action buttons

In addition to hyperlinks, another tool you can use to connect to a webpage, file, email address, or slide is called an **action button**, or action link. **Action buttons** are **built-in button shapes** you can add to a presentation and use as hyperlinks. When someone clicks or moves over the button, the action can occur.

Hyperlinks and action buttons are closely connected and can do many of the same things. Action buttons are used most for self-running presentations, such as those at a trade show booth or kiosk.

#### To insert an action button on all slides:

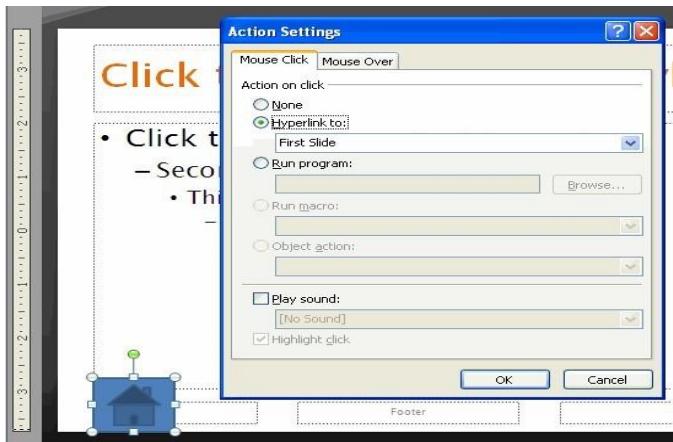
- Select the **View** tab.
- Click the **Slide Master** command in the Presentation Views group. The slide master view will appear.
- Select slide 1, the slide master. Changes to this slide will appear on all slides in the presentation.
- Select the **Insert** tab.
- Click the **Shapes** command in the Illustrations group.



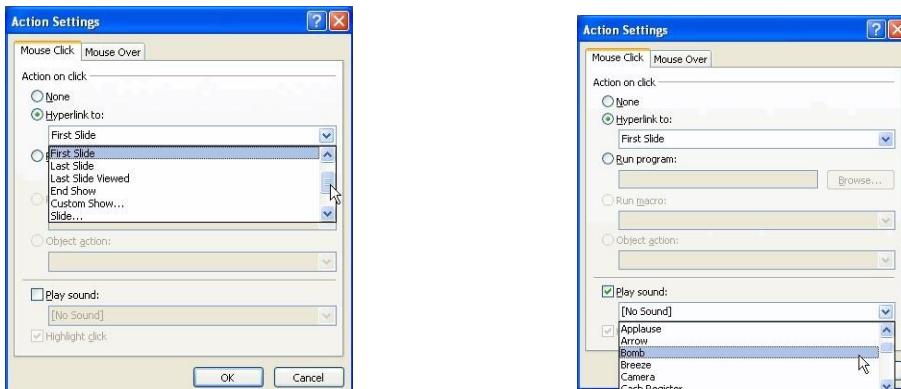
- Select an **action button** from the bottom of the list. In this example, we will select the **Home** action button.



- Insert the shape onto the slide. The Actions Setting dialog box will appear.



- Select the **Mouse Click** or **Mouse Over** tab. Use the Mouse Click tab to set actions to occur when you click, and use the Mouse Over tab to set actions to occur when you move the cursor over the action button. In this example, we will leave the Mouse Click tab selected.
- In the **Action on click** section, click **None** or **Hyperlink to**.
  - If you click **None**, the shape will have no action associated with it.
  - If you click **Hyperlink to**, select an option from the menu. The hyperlink options work the same for action buttons as they do for traditional hyperlinks.

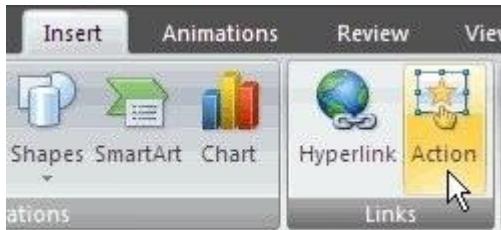


- Click **Play Sound** if you wish to play a sound when the action button is clicked.
  - Select a sound from the drop-down menu.
- Click **OK**.

Action buttons do not have to be inserted on master slides. You can insert an action button on one slide, if you wish.

### To edit the action button:

- Select the action button.
- Select the **Insert** tab.
- Click the **Action** command in the Links group. The Actions Settings dialog box will appear.



- Edit the action or hyperlink.
- Click **OK**.

When the action button is selected, the **Format** tab is available because it is a shape. You can change the shape style or color so it matches the color scheme of the slide from this tab.

**Video:** To add a video to your presentation select *Insert/Video/Video from File* or to insert a video from Microsoft's gallery choose *Insert/Video/Clip Art Video*. Select the video file and click *OK*.

**Audio:** To add sound to your presentation, select *Insert/Audio/Audio from File* or *Clip Art Audio*. Select a sound file and click *OK*.

### Graphics

The Drawing Toolbar provides many commands for creating and editing graphics. Select *Insert* menu to choose the different tools as explained below:

**Adding Clip Art:** Select *Insert/Clip Art* from the menu bar, and use various options to insert, preview and edit the clips.

**Adding Picture or Photo Album:** To add a photo or graphic from a file, select *Insert/Picture* from the menu bar. Choose the file and insert it. Similarly, in order to insert a complete interactive photo album to the slide, select *Insert/Photo Album* option.

**Adding Shapes:** The Shapes menu allows you to add a number of geometrical shapes, arrows, flow chart elements, stars, and other graphics on a slide. Select *Insert/Shapes* from the menu bar, and choose one of the different shapes provided in the drop down menu.

**Adding Action Buttons:** Use the action button toolbar to add functioning buttons to slides in a presentation. Select *Insert/Shape* from the menu bar and choose the *Action Buttons* given in the menu. As soon as the button is placed on the slide, the Action Settings window will appear on screen. Set the actions under either the *Mouse Click* or *Mouse Over* tabs. Actions specified for

Mouse Click will execute when the button is clicked on the slide while actions for Mouse Over will occur when the mouse pointer hovers over the button. Select an action for the button by choosing a *Hyperlink to* destination. If you want a sound to be played when the button is clicked, check the *Play sound* box and choose a sound from the drop-down menu. Click *OK* when finished. If the window does not appear, first click on the action button to select it. Then

select *Insert/Actions* option to open the Action Settings window. The button on the slide can be resized using the white box handles and the depth of the button can be changed by dragging the yellow diamond.

**Adding WordArt:** Add headlines in striking colors and shapes to your presentation using Word Art. Select *Insert/WordArt* from the menu bar to choose a Word Art style from the listing.

**Adding Charts:** A graph or a chart can be used in a presentation to highlight its activity. Select *Insert/Chart* from the menu bar. A window appears with different types of charts available in the software. Select any one, and click *OK*. A spreadsheet opens up, which lets you edit the values and range of the chart as per user requirement.

**Adding SmartArt:** SmartArt Graphics include different types of lists, cycles, hierarchies, relationships, etc. that may be useful in a technical presentation. Select *Insert/SmartArt* from the menu bar, and then choose the required options from the window.

**Slide Animation:** Several animations for slide objects are available through *Animation* menu on the menu bar. First, select the text box or graphic that will be animated. Select one of the options from the ‘Animations’ section. To select a different animation or turn the animation off, select the appropriate choice from the same menu. You can also change the duration of your animation by specifying the number of seconds in the ‘Duration’ box. The ‘Delay’ option can be used to delay or stop your animation from appearing for the specified number of seconds.

**Slide Transitions:** Select *Transition* tab from the menu bar. From the ‘Transition to This Slide’ section, choose a transition and notice the preview after the transition is selected. The speed or duration of transition can be changed by entering the time value in the ‘Duration’ box. You can check the “On mouse click” checkbox for the slide transition to occur by clicking the mouse or using keystrokes, or check the “After:” checkbox and a number of seconds if the transition should occur automatically. Select a *Sound* if necessary and check the *Loop until next sound* if it should keep repeating until the next sound is played. Click *Apply to All* if the transition effects should be added to every slide or *Apply* if the effects should be added only to the current slide.

## Presentation Basics

- Begin the slide show by clicking the Slide Show button on the bottom of the screen. 
- Move to the next slide by pressing the *SPACE BAR*, *ENTER*, *PAGE DOWN*, or right arrow keys or by clicking the left mouse button.
- Go back to the previous slide by pressing *BACKSPACE*, *PAGE UP*, or the left arrow key.
- To end the slideshow before it is complete press *ESC* on the keyboard.

- A pen tool is available for drawing on the screen with the mouse. Press *CTRL+P* or click the right mouse button at any time and a popup window will appear. Choose *Pen* and the pointer will change to a pen that allows you to draw freehand on the screen using the mouse. Press the *E* key to erase all pen strokes. Press *CTRL+A* to disable the pen feature and revert the pen back to a pointer arrow.
  - If you would like to use the pen to draw on a blank screen during a presentation, press the *B* or *W* keys, or select *Screen/Black Screen* from the popup menu and the screen will turn black.
- 
- Press *B* or *W* again or choose *Next* from the popup menu to return to the presentation when you are finished drawing.
  - To hide the pointer and button from the screen press the *A* key.
- Be sure to preview the slide show using a projector if one will be used during the presentation. Words or graphics that are close to the edge of the screen may be cut off by the projector.

## **EXERCISES**

- Create a Power Point presentation on a topic of your own choice of 2 slides. Add appropriate animation effects and clip arts, smart art, graphs, photos videos, etc to make a powerful presentation.

**Attach the colored printout here.**