

*Note: Completing the Mouse Tutorial and Mousercise exercise which are available on the Class Resources webpage constitutes the first part of this lesson.*

## **ABOUT PROGRAMS AND OPERATING SYSTEMS**

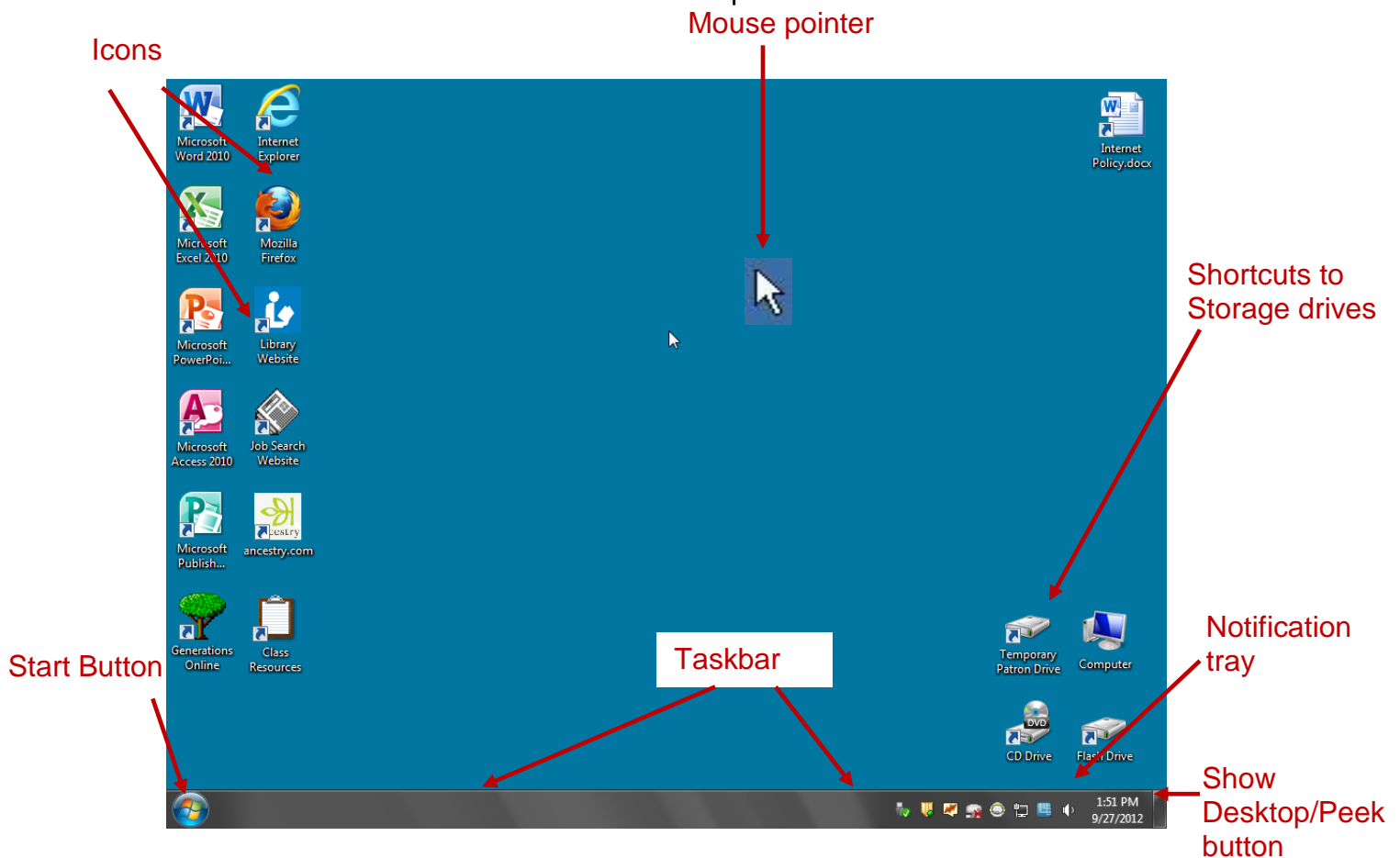
Any time a task is performed on a computer, it is done through a **program**. For the user, the program is the application – the tool – for accomplishing a task. For the computer, it is a set of instructions on knowing how to perform this task. Examples of programs include Internet Explorer and Microsoft Word. The most important program overall is the **operating system**, which manages all of the computer's resources and decides how to treat input from the user.

There are several different operating systems in circulation, such as Mac O/S and Linux. However, far and away, the most commonly-used operating system is **Microsoft Windows**. (Note that Microsoft is just the name of the company that makes Windows, and that there are several versions of Windows. In 2012 all the computers in the lab were updated to the version of Windows called **Windows 7**. If you have some experience with the older versions of Windows you will notice that things look a bit different on a computer running Windows 7.

## **THE WINDOWS 7 ENVIRONMENT**

### **The Desktop**

The first thing you see when you log on to the computer is the **DESKTOP**. The Desktop is the display area you see when Windows opens. The following items are the most common items that can be found on the desktop:



## Parts of the Windows 7 Desktop

- **Icon:** A picture representing a program or file or places to store files.
- **Mouse Pointer or Cursor:** The indicator on the screen that you use to select and move objects. It moves as you move the mouse and **changes appearance** depending on what program you are using and what tool you have selected.
- **Taskbar:** The gray/black bar at the bottom of the computer screen. The taskbar buttons in Windows 7 are significantly bigger and will stack behind each other. The taskbar is always visible and is used to switch between open programs. Important sections of the taskbar include:
  - **Notification Tray** –the bottom right corner next to the time and date. It contains miniature icons for easy access to system functions such as antivirus settings, printer, modem, sound volume, battery status, and more. **Point to** the Speaker icon to see a **Screen Tip**. A screen tip displays **information about an icon or button**.
  - **Show Desktop/Peek Button** – farthest over on the right. When programs are running, **hovering** over the button will allow you to view your Desktop. This “peek” functionality is new with Windows 7 and is part of the **Aero** user interface which was introduced on Windows Vista and has been enhanced for Windows 7. Clicking the button will minimize all open windows.
  - **Start Button** – This button is used to launch a menu to access programs and other controls in the operating system.



- The **Start Menu** (Fig. 1) appears when you click the **Start button** on the *left* side of Taskbar.
  - The first view of the start menu will show programs that you have recently used on your computer. To see all of your programs, **hover over the words “Programs”**.
  - All of the programs available on your computer will display in a flyaway menu to the left. (Fig.2) Some of them will be contained within folders. When you hover over a folder, the programs contained within will display.
  - **Hover over the Microsoft Office folder**. Notice that now all the MS office programs are listed. (Fig.3) To open a program, point to it and click once.
  - To exit out of the menu, **point to a clear area off the menu and click once**.

Fig. 1

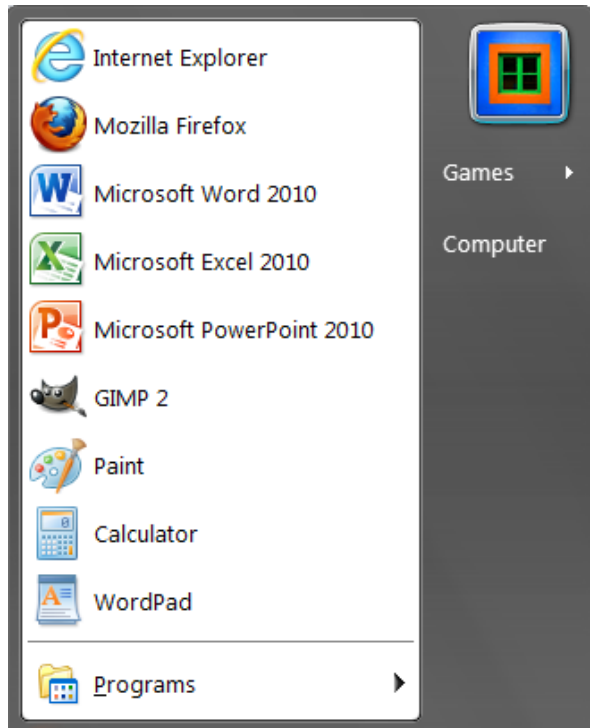


Fig. 2

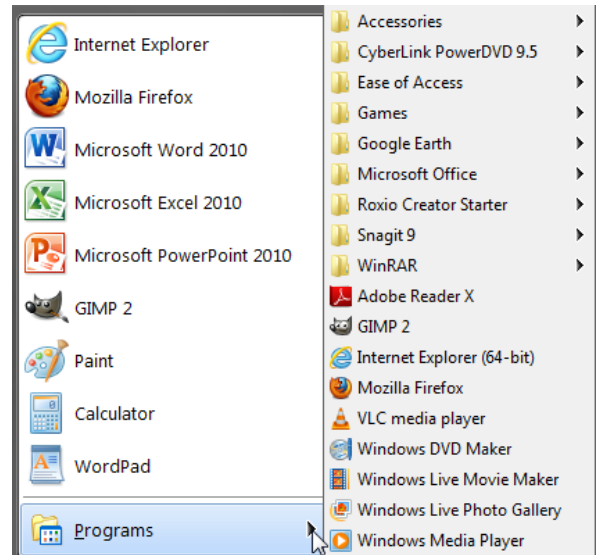
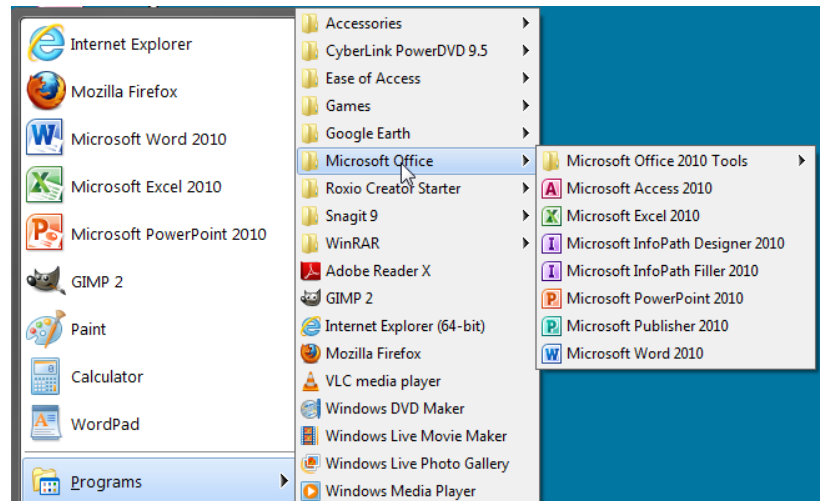


Fig. 3



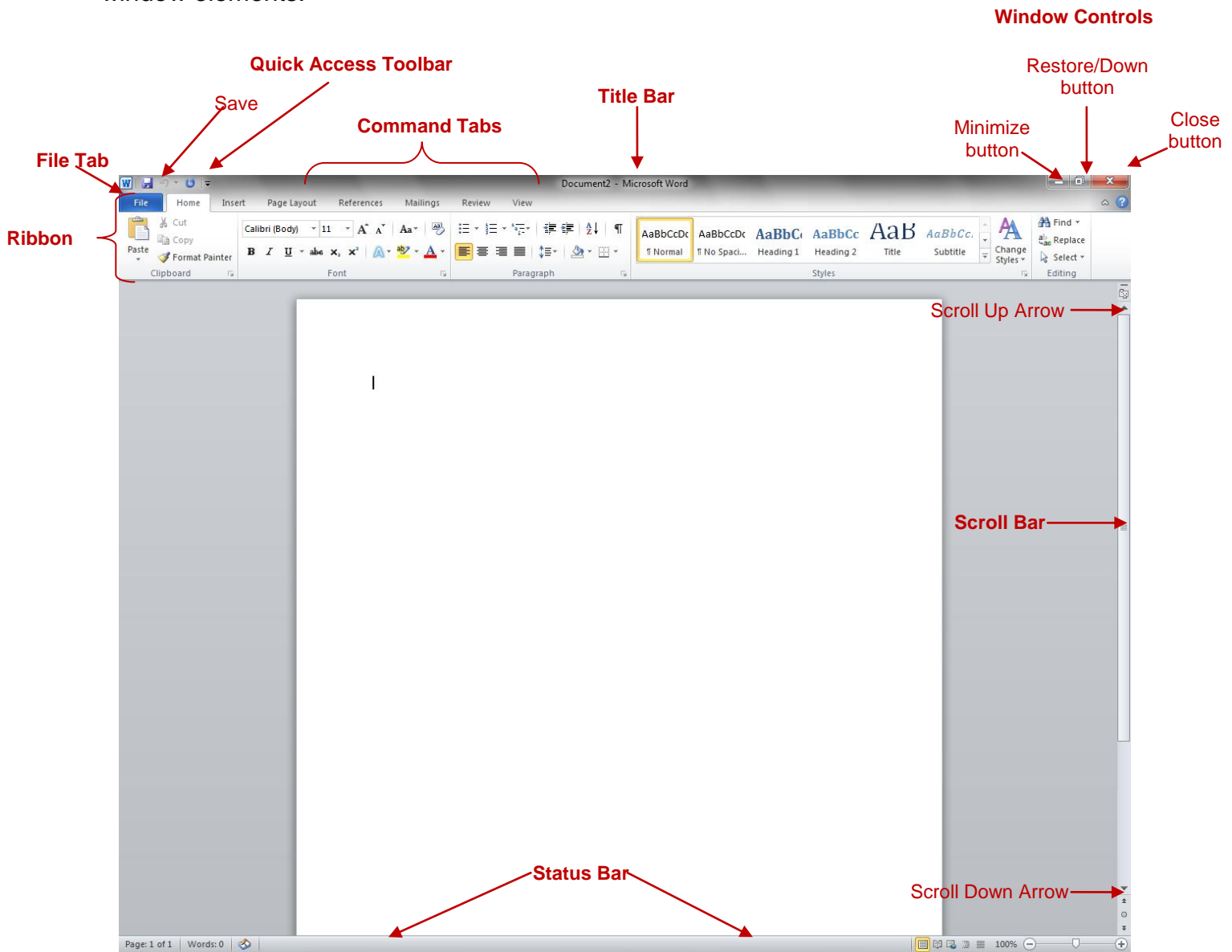
### The Concept of a Window

The idea of a program was introduced, but it was never explained exactly what a Window is.

Older computers could only manage one program at a time, which took up the entire screen. Until you exited that program, you could not do anything new. The advantage of current operating systems such as Windows is that we can do more than one thing at a time, and each program is put in its own little compartment called a **window**. The window can take up the entire screen or just part of it, or it can even be (temporarily) hidden from view altogether. However, it is an essential concept to understand that even if you don't specifically intend to, at some points, the computer will be **MULTI-TASKING**. Multi-tasking is the act of having two or more on-going processes at the same time, such as typing a document and then pausing to look at something on the Internet.

## Looking at a Program Window

Use the **Start Menu** to open **Microsoft Office Word 2010**. **Hover over** “**All Programs**”, **hover over** the Microsoft Office folder and **click** the program name to open it. **Examine** the picture of the Word program window below to locate some common window elements.



## Parts of the Window

- **File Tab:** left click to display a menu of common actions and a **Backstage view** of the current document. (This replaces the Office Button of Word 07).

- **Quick Access Toolbar:** this area provides quick access to common commands. Clicking on the icon shaped like a floppy disk will save the current file.
- **Title Bar:** Top most bar with title of file and name of program
- **Ribbon:** provides a user interface consisting of a large toolbar filled with graphical representations of control elements which are grouped by different functionality
- **Command Tabs:** Clicking on a tab will change the content on the 'ribbon' area.
- **Scroll Bar:** A vertical bar on the side of a window and occasionally a horizontal bar at the bottom of the window used to move around in a document. You can use the scroll arrows to view hidden parts of a document. If the entire document is displayed in the window, there will not be a scroll bar. The size of the scroll button indicates how much of the document is visible.
- **Status Bar:** This bar is just above the taskbar. This is where you can view the status of the file you have open or the progress of some process such as saving or loading a webpage.
- **Window Controls:** This is a group of three buttons to 'Minimize' the current window, toggle the size of the window or 'Close' the window. The right-most button in the upper-right corner, with the X on it, is used to exit or "close" a program or window.

**Click on the X button to close Word.**

### A Closer Look at the Taskbar

At the very bottom of the screen is the taskbar. The two ends of the taskbar contain the Start button and the show desktop/peek button. The taskbar was introduced as the most important part of the screen, even though most of it is blank!



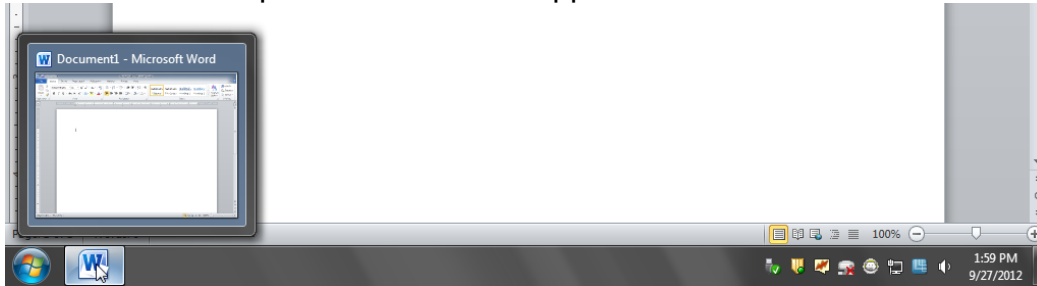
The taskbar lists all the tasks the computer is performing, and this is why it is important. Any time a new window opens, (with a program running in it) it will be represented on the taskbar. For now, simply note that most of the bar is empty, but keep watching how the taskbar changes as the lesson continues.

**Open Word** (by either the icon on the desktop or the Start menu) and **notice** that there is a now a button representing that program on the taskbar.



**Click the CLOSE button** on the Word window and look at the taskbar again. The Word taskbar button is gone.

**Reopen Word. Point** to the button on the taskbar that represents your window. **Note** the **preview window** in which you can see the file name of Document 1. **Point** somewhere else and the preview window disappears.



### Window Control Buttons: *Close, Minimize and Restore Down*

There are three buttons in the upper right corner of the screen and we've only looked at the one on the right, the **Close** button. **Point your mouse at the left-most of those three buttons.** What does the screen tip say this button does? (Screen tips show only when you point to just the right spot and hold still. If you are pointing to the correct button, the screen tip should say "minimize".)

**Click** the **Minimize button**, and as you do, the Word window should disappear. However, is the program truly gone? **Look** at your taskbar; there is still a button representing Word there. This means the program is still open and running. We have only hidden it out of view. Just as we might shove a paper off to the side on a real desktop, the advantage of doing this is to put something else in your workspace, which we will do later. For now, let us worry about how to get the Word window back so we can work in it.

**Try clicking** on the **Word button** on the taskbar. Your Word window returns! (*Note – this only works when you have only one window of a particular program open. As soon as windows begin to "stack" on the taskbar, you will not be able to use a taskbar button as a way to toggle in and out of the minimized state*).

While we are here, **click** on the **Word taskbar button** again. This is an alternate way to Minimize. **Click the button one more time to restore the window.**

Now let us turn our attention to the middle window control button. When you point at it, the screen tip should say **Restore Down**. That's a kind of funny term, but it essentially means to **de-maximize** a window. **Note** the symbol on the button. It looks like two boxes or squares, one slightly behind the other. This is the symbol for a window that is in full-screen mode or, in other terminology, a **maximized** state. **Click** the **Restore Down button** and **notice** what happens – the window will shift from **full-screen mode** to using just part of the screen. **Point** to the middle button now and the screen tip should say Maximize. **Take particular note** the symbol on the button. It looks like a single box or square. This means that if you click the button it will return the window to a maximized state. **Click the button** and **note** the window is using the full screen.



The Restore Down button is one key to being able to change the size of a window so that you can see two or more different tasks at the same time. The computer can perform many different things at the same time, as you will soon see, but one task window would be blocking out all the others if all of them used the entire screen.

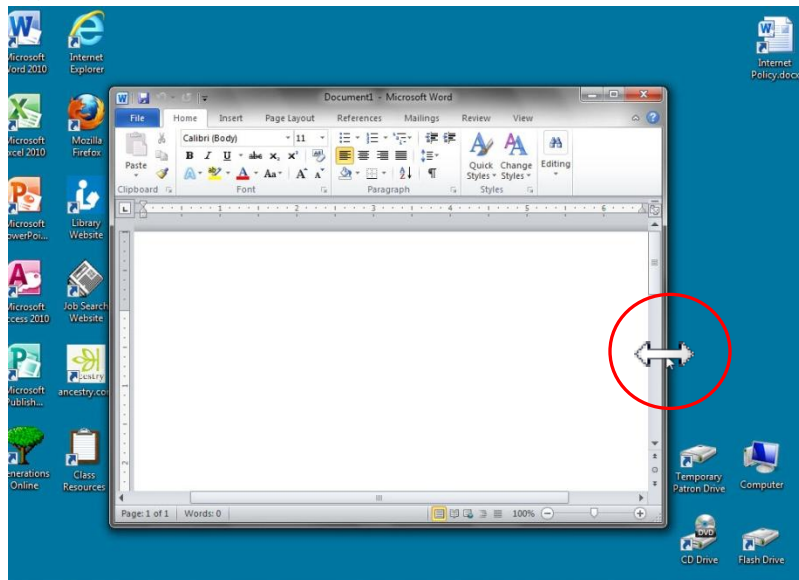
## Dragging and Resizing Program Windows

What if we wanted to use a different part of the screen than the Restore Down Button gives us?

**Click** your **Restore Down button** once more to get to a de-maximized state. **Point** your mouse to the center of the **Title bar**, **hold** your **left mouse button in**, and **move** your mouse around *just a little bit*. Try not to go too close to the edge of the desktop or something unexpected will happen, which we will look at next. Moving the window around like this is called **Dragging**.

While in a restored down state you can change the size and shape of a window.

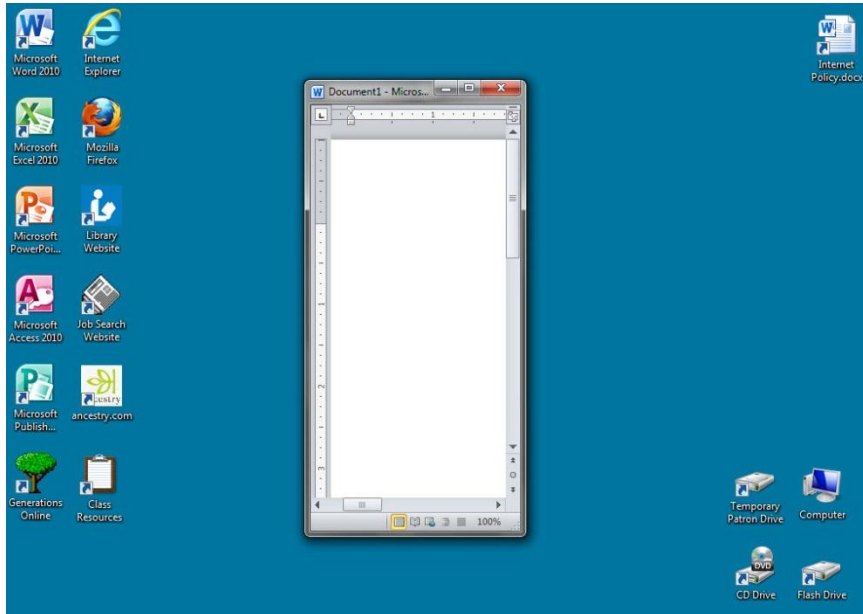
**Point** the very tip of your mouse **pointer** to the outer frame of the window, until the pointer changes into a **two-way arrow**. This two-way arrow is called a **resizing tool**.



This cursor shape is your cue that the edge of the window can be moved to the left or right. **Hold your mouse button down and move the mouse slightly**, and the left edge of the window will follow your mouse until **you let go of the button**. (If you grab a corner, you will be moving two sides at once.)

Resizing can also be done at the top and bottom of the window. When you resize, be careful not to touch the window control buttons and don't go too close to the edges of the desktop.

**Resize your window** so that it looks like the one below and is located in the center of the desktop as pictured.



After experimenting with your resizing, **Click** the **Maximize button**. Your window is restored to its full screen mode. **Click** the **Restore Down button** again. **Note** that the window reverts to the smaller shape and size that you gave it. As you toggle back and forth, keep your bearings by **noticing** the symbol on your middle window control button changing. Again, the two boxes means the window is maximized, the single box means that it is de-maximized.

Another way to return the window to its full screen mode is to double click on the title bar. That accomplishes the same thing as clicking the maximize button. **Try double-clicking the title bar** to return to the full screen mode.

Conversely, double-clicking on the title bar while in full screen mode will accomplish the same thing as clicking the restore down button. **Try double-clicking on the title bar**. **Choose** whichever method you prefer (clicking the maximize button or double-clicking the title bar) to return the window to full screen mode.

## Dragging and Snapping

Earlier we tried dragging our de-maximized Word window around just a little bit. We are going to explore that functionality a little more now. When we were dragging our window before, we had first used the restore down button to make the window smaller. After de-maximizing the window we were then able to drag it around. In previous versions of Windows it was only possible to drag a window if it was in a de-maximized state. The same is true in Windows 7, but in Windows 7, new functionality makes it possible to de-maximize a window simply by dragging the title bar.

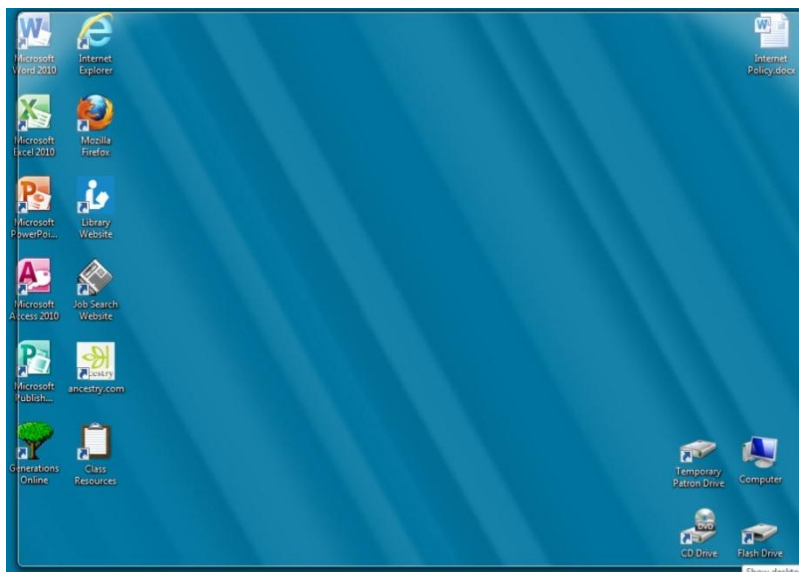


**Point** to the **Title bar** of your maximized Word window, **hold your mouse button down and drag your hand straight downwards**.

**Note** that the window has returned to its previous custom de-maximized state. In particular **notice** that the symbol on the middle window control button changed from two boxes to one box. **Double-click** the **Title bar** to return the window it to its **maximized** state. Again, **note** the symbol on the middle window control button. It has two boxes, the symbol for a maximized window.

We could have used the dragging method to maximize the window, but before we learn how to do that, let's take a look at the **Aero Peek** functionality first as it will come into play when we start dragging windows more.

We currently have one window open and it is filling the screen. If we wanted to take a peek at our desktop for some reason we can simply **point** to the **Show Desktop button** on the far right end of the taskbar. **Note** how the desktop looks like it has a **sheer curtain** pulled over it. We are essentially looking through the full screen window we had open and seeing our desktop.

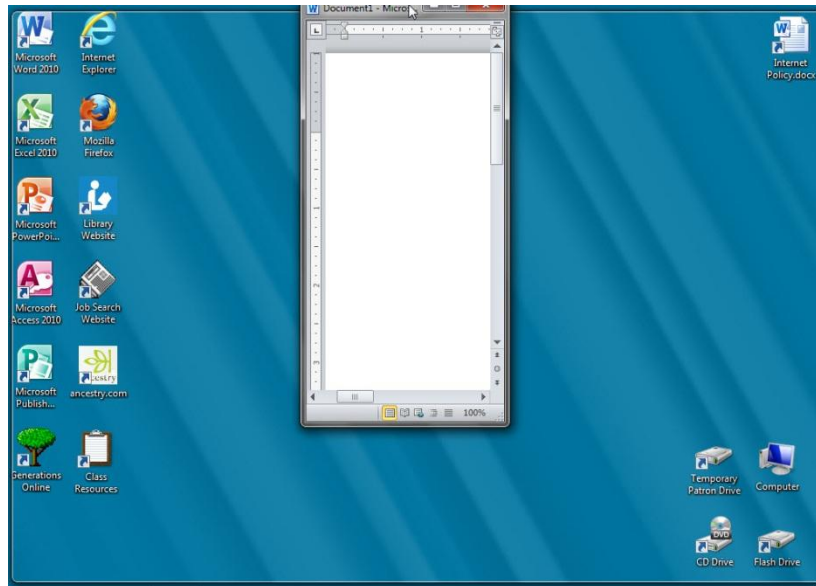


If we actually wanted to go to the desktop and click on something, we would have to click on the show desktop button and it would minimize to the taskbar any open windows we might have. Go ahead and **click on the show desktop button**. Then **click on the taskbar button for our document** in order to return it to its previously **maximized** state.

Now, using the **dragging** method, let's return our window to the previous de-maximized state.

This time we are going to use the **dragging method** to **maximize** the window. **Point to the title bar** of your de-maximized Word window, **hold your mouse button down and**

**drag your hand straight up towards the top of the desktop.** Don't let go until you see **Peek** curtain. (See illustration below)



**Note** that after you see the peek curtain and let go of the mouse button, your window is maximized.

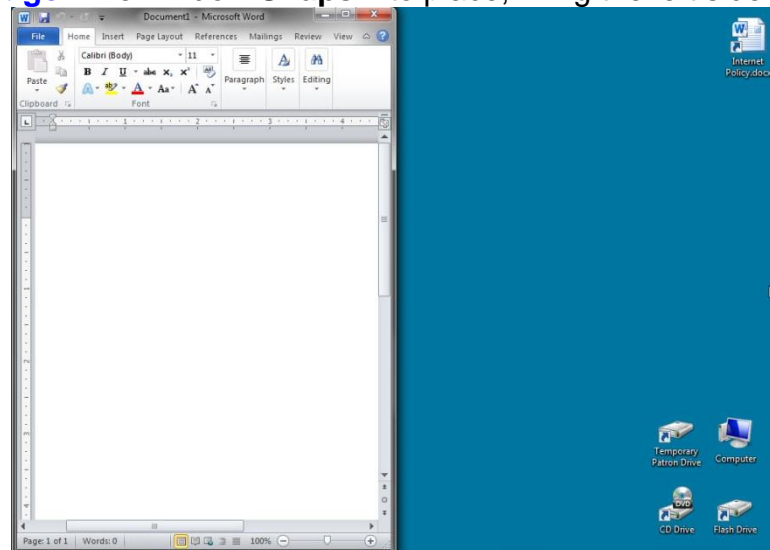
This functionality, to resize a window by dragging it to certain places on the desktop, is a new feature in Windows 7 called **Snap**.

Let's try some more **Dragging** and **Snapping**!

**Click and hold** on the **title bar** of your Word window and **begin to drag** it to the left. **Note** how the window reverts to its previous de-maximized size and shape. **Keep dragging to the left** until you **see** the **Peek curtain** appear across half of the screen.



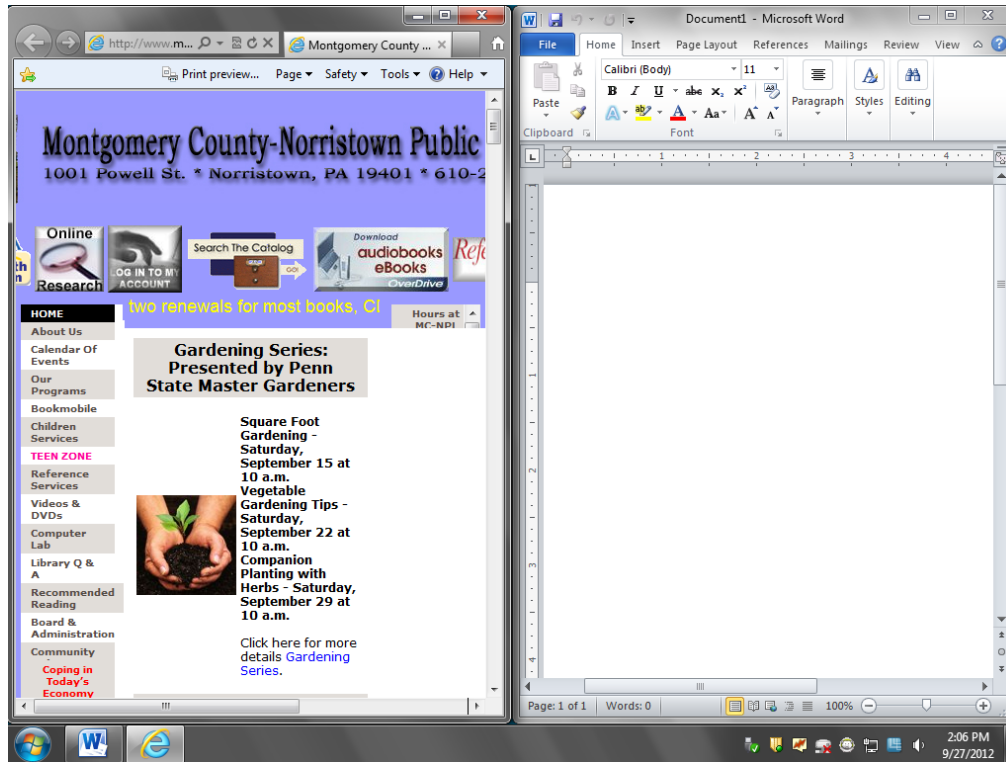
Then you can **let go**. The window **Snaps** into place, filling the left side of the screen!



**Try dragging** the window to the right side of the desktop until it snaps into place filling the right side of the screen. Note how the window first reverts to the custom size we gave it, and then it snaps into a new size.

**Look** for the library website icon on the desktop and **double-click** on it. The library website is set to open in our **default** browser, Internet Explorer.

Now **use** the **click and drag method** to **snap** the Internet Explorer window to the left side of the screen. We now have two windows side-by-side and our **multitasking** can begin.



## Recognizing Active and Inactive Windows

**Look at the taskbar again. Notice** a “blue e” icon. This represents an open Internet Explorer window which is displaying the library webpage. **Notice** there is another button, the Word button which represents our Word window

Although the computer can handle juggling many tasks at the same time, it can only focus on one at a time. You can switch between them on a whim, but the window that you can actually work in is called the **active window**. When you have two windows side by side the active window is easily distinguishable because the **close button is red**. **Note** how the close button on our Internet Explorer window is red and on the Word window it is grey. The Word window is the **inactive** window.

### Switching Between Windows

Switching between two visible windows to make a particular window the active window can be done two different ways. The simpler way is to click somewhere on the window you want to be the active one. To play it safe, it is usually a good idea to click in a clear area (where there are no words or pictures,) and the one place it will always be safe to click is the center of the title bar. So, **click on the title bar of the other window. Switch back and forth several times, and finish by making Word your active Window.**

### Another way to switch between windows

The other method to switch between active windows, and generally the most preferable one, is by using your taskbar buttons. If you click on the taskbar listing for an inactive window, it will become the active window and will appear in front of any window it overlaps with. **Click on the taskbar button for the Internet Explorer window (remember, it is the one with the blue e)** Be careful – if you click on the active window on the taskbar, it minimizes it, as we saw earlier. As you **click back and forth** between the taskbar buttons for our Word window and Internet Explorer, **take note** of the difference in appearance between the button for the active window and the inactive window. The button for the active window is brighter than the button for the inactive window. **Make** the Internet Explorer window the active window.

One more thing to notice, while you have the Internet Explorer window active: **try pointing at the different buttons on the toolbar in Word.** (Just point, don't click.) Normally you would get a screen tip, however because it is not the active window, nothing, not even screen tips will work for it right now.

### Closing resized windows

If you close a window such as the Internet Explorer window, which was **snapped** to fill half the screen, without maximizing it first, it will, nevertheless, open full screen the next time. Try it. **Close** the Internet Explorer window and then **re-open** Internet Explorer. **Notice** how the window opens full-screen. **Close** Internet Explorer.

We are not going to get the same result however with our Word window because before we snapped it, we had manually customized its size and shape. **Close** the Word window, and then **open** the Word program. **Note** how the Word program opens in our custom size. In a public computing environment this could be very confusing to the next person who sits down. Try to **remember** to maximize any window you have custom sized before you close it.

**Maximize** and **close** Word.