Computer Basics

What’s a Computer?

Computers are devices that let you digitally do almost anything. They do calculations, functions, or operations quickly and efficiently. However, they don’t run on their own! You use your computer and other humans make the hardware and program the software that runs on your computer.

- **Hardware** is everything on your computer that can be directly touched.
- **Software** is the icons, programs, menus, and buttons on your computer.

The monitor (#1 above) is the screen that displays your computer interface. The tower or system unit (#3 above) (typically a box but often integrated into monitors or made incredibly small nowadays) contains the brain of the computer. The system unit sends data to accessories like printers (#6) or other output devices. It also receives data (input) from accessories like the mouse (#4) and keyboard (#7).

The mouse moves around the screen, selects information such as text, and clicks buttons. Keyboards allow you to enter in letters, numbers, punctuation, and symbols and perform various commands and shortcuts.
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In the system unit, the **central processing unit** does most of the main work. **Random Access Memory** stores information before you’ve saved it. **Hard drives** or **hard disks** permanently store files. External storage devices like flash drives, CDs, DVDs, or external hard drives also permanently store files. The system unit has **ports** or **plugs** for connecting accessories including mice, keyboards, printers, speakers (#5), headphones, modems (#2), and wifi adapters.

Find out what a button does

Try placing your mouse over a button without clicking it if you’re ever confused. After a few seconds, a text box describing what the button does often appears. Do this over multiple buttons if you don’t know what to click.

Keyboard Review

![Keyboard Image]

**Special, function, typing, navigation, number, indicator** and **control** keys

**Exercise:** Find some of the important keys on your physical keyboard:

- **Enter** – Confirms an action, creates a new line or paragraph.
- **Backspace** – Removes highlighted text or individual characters to the left.
- **Delete** – Removes highlighted text or individual characters to the right.
- **Spacebar** – Creates blank space between letters or other characters.
- **Arrows** – the ← → ↑ ↓ keys on your keyboard navigate in those directions.
- **Shift** – Hold shift and type a letter to get its upper case version.
- **Num lock** – Make sure the number pad will type letters instead of arrows.
- **Tab** – Indent text or go to the next item in a web page.
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Programs

Programs or applications are individual pieces of software.

- Programs range from Microsoft Word to Internet Explorer, iTunes, media players, games, custom business systems, and so much more.
- Computers often come with many programs installed, but programs may be downloaded for free or purchased online or in stores and then installed.

Desktop

When your computer turns on it usually loads what is called the Desktop. Think of it as a home screen of sorts. It may also load the start screen (more on that later). Here’s what a traditional desktop looks like:

- Icons are pictures representing files, folders, programs, or other resources.
- The Start Menu contains a lot of what computer users need regularly, including a list of all installed programs. This menu was removed from Windows 8 but is expected to return in Windows 10.
- The Task Bar is the horizontal bar at the bottom of your desktop. It contains the Start button which opens the Start Menu, shortcuts to open programs,
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and information like the time and date. If you minimize (more on this later) a program, it can be brought back up from the taskbar.

- **Windows** are the rectangles programs open up in.

The Windows 8.1 *modern desktop* replaces the start menu with the start screen, while keeping most aspects of the desktop.

- **Icons** are pictures representing files, folders, programs, or other resources.
- the **Start button** takes you to the start screen (see below). **The Start menu was removed from Windows 8 but returned in Windows 10.**
- the **Task Bar** is the horizontal bar at the bottom of your desktop. It contains the **Start button, shortcuts to programs**, and information like the time and date. If you minimize (more on this later) a program, it can be brought back up from the taskbar.
- **Windows** are the rectangles programs open up in.

*Exercise*: Open a program and notice that it displays in the bottom task bar.

- Single left click on the green icon for **Microsoft Office Excel 2013**.
  (All programs can also be found in the Apps view in the Start screen.)
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- Do you see how it displays in the task bar? Ask us if you don’t.
- Click on the ‘x’ in the upper right corner to close Excel

Start Screen and File Explorer

In Windows 8, the traditional start menu has been replaced with the start screen. It is basically a full screen view of the start menu. Rectangular tiles are big shortcuts to programs. If you have a lot of them, you can scroll left and right to see more. Tiles may also display information like news, sports scores, and weather. The magnifying glass lets you search. And the small down arrow takes you to all programs. Click on the desktop tile, hit the Windows key on your keyboard, or use the keyboard shortcut Windows+D to return to the desktop.

Exercise: View all programs.

- From the desktop where we started, hit the Windows key on your keyboard to go to the Start screen.
- The down arrow to take you to the all programs will not initially be visible. Move your mouse toward the bottom left of the screen and it will appear. Click it.
- Look at the programs installed on the computer, but don’t open any yet. If you don’t have a program you’re looking for on the desktop or pinned to
your start screen, it is in this all programs screen. Clicking any of the programs will open them up, but don’t open anything right now.

- Single left click the up arrow that will appear as you move near the bottom left to return to the start screen.
- Hit the Windows key on your keyboard to return to the desktop.

**Exercise:** Open the “Documents” folder.

- Single left click on the manila file folder near the bottom left corner of the desktop. This program is called ‘File Explorer’.
- Single left click on ‘Documents’ toward the top left, or double click on ‘Documents’ if it is in the middle of the window.

**Windows**

- Programs open up in **windows**. Windows can be all different shapes and sizes. You can minimize, maximize, resize, move, and close windows.
- **Minimize** means sending a program down to the bottom task bar. This hides your program in the bottom task bar – allowing you to see other things – without actually closing the program.
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- **Maximize** means having a program take up the entire screen (except the space for the bottom task bar)
- Resizing allows you to make a window a custom size.
- Moving windows around lets you organize your different open programs.
- Closing a window/program stops it from running now, but you can always reopen it later.

**Exercise:** Minimize, maximize, resize, move, and close a window.

- In the last exercise, we opened up the ‘Documents’ window, minimize it by single left clicking the straight line icon to the left of the red close ‘x’ in the top right corner of the window. Documents will disappear to the bottom.
- Single left click on the manila file folder square in the bottom task bar. (It should be lightly highlighted.) The ‘Documents’ section of File Explorer should come back up to exactly where it was before!
- Maximize a window by hitting the square to the left of the red close ‘x’. When a window is maximized, that square icon will change to two squares called the **resize button**. Single left click the **two squares icon to un-maximize**.
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- There are two ways to resize a window.
  1) Move your mouse to any of the edges of the Documents window. Your mouse will change from a pointer to two arrows pointing away from each other. When your pointer is that icon, single left click and hold and drag the window to a new size. We recommend using the bottom right corner.
  2) Click the resize button when a window is maximized as described above.
- When windows are not maximized, you may move them around by single left clicking any blank space to the left of the minimize button (called the title bar – see picture above) and then holding and moving the window to your desired location.
- In the top right corner of the ‘Documents’ window, click the red ‘x’ to close.

Save a file

It is really important to save your work! Computers randomly shut down, programs crash – stuff happens. Prevent yourself from losing anything by saving regularly. The first time you save a document or file, you have to ‘Save As’. This means giving the file a name and then saving it. Once you’ve done that, if you want to save again, you simply have to hit ‘Save’. (If you want to rename a file and save it, you can use ‘Save As’ again and then simply type a new file name before clicking save.)

Exercise: Open and save a Microsoft Word document.

- Single left click on the dark blue icon for Microsoft Office Word 2013.
- A document should open. It is ready for you to type. Use the keyboard to type a few words or sentences.
- When you’ve finished that, click on the file button (pictured right) and then click ‘Save As’.
- In the menu that pops up, click on ‘Browse’ toward the right.
- In the menu that appears, click on ‘Documents’ toward the left. This means we are going to save this file to the ‘Documents’ folder. You can use this same menu to choose other locations, such as the Desktop, or a flash drive.
- Type to give your file a name. Then click ‘Save’.
- Close the file by clicking the top right close ‘x’.
Files and Folders

A tricky aspect of computers is managing files and folders. Since computers are digital, your files and folders don’t have a physical location. They are somewhere in the computer, and you simply have to remember where they went or find them. A lot of times, programs save files automatically to a Documents or My Documents folder. Programs also commonly use locations like your Desktop or your Downloads to store files.

Exercise: Let’s do some basic file operations.

- Single left click the manila File Explorer button toward the bottom left
- Single left click on Documents on the left side
- The file we created earlier should be in the Documents folder. If you wanted to open it, you would double left click it. But we’re going to move it.
- Single left click the icon and hold, and then drag the file out of the window and on to any blank space on your desktop.
- If you wanted to delete this file, you could single left click it and then either
  - Hit the Delete key on your keyboard, OR
  - Single right click it and then single left click it and then click Delete.
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Turn on / Shut down (demo only)

- As long as you can locate your power button, turning on and shutting down your computer is really easy. The picture to the right is the universal symbol for power. Your system unit should have a button with that symbol on it somewhere.
- To turn your computer on, simply push that button in for a second.
- There are two ways to turn your computer off.
  - Hit the Windows key on your keyboard, then the start screen should load. On the start screen, click on your username, and then click on Shut Down. On our computers it only says ‘Sign out’ for security reasons.
  - If your computer has frozen up, press and hold the system unit power button for either 5 seconds or until the machine shuts down.