



## Computers and Tablets and Phones, Oh My!

**Overview:** COMPUTERS and the INTERNET are EVERYWHERE! Not just “computers” any more, they are both traditional (like laptops) and nontraditional (like electrical outlets). Learn how to read technology advertising and understand what’s most important about buying a computer. What is a “smart” device? Why might you want one (or WHY NOT?)

**Student Skill Level:** Basic

**Requirements:** None

### Objectives:

- The student will be able to:
- Decipher a computer advertisement by:
  - Naming the three major types of computer
  - Naming hardware elements of a personal computer
  - Understand memory space and processing speeds and how they affect computer speed (and price)
  - Define the term Operating System (software)
    - Why is it that important?
  - Define the Internet and a Home Network
  - Discuss various Smart Devices: Apple, Google, Windows
  - Search the Internet for Information



## Hardware Type

There are now three major types of hardware: **PCs** (or desktops), **Laptops/Notebooks**, and **Tablets**. Keep in mind the following:

**PCs** are the sturdiest, and generally, the most inexpensive to purchase

**Laptops** are very popular now, and price depends on more than just hardware and software, it depends on size, too. Laptops are measured just like TVs: on the diagonal.

**Tablets** are fully-functional computers, minus USB ports (**some**), hard drives, and optical drives.

Typical Computer Ad (See [www.tigerdirect.com](http://www.tigerdirect.com))

### PCs



**CyberPowerPC Gamer Xtreme Desktop PC - Intel Core i5-9400F 2.9GHz, 8GB DDR4, 500GB SSD, GeForce GTX 1660, 802.11AC, GigE, HDMI, 2x DisplayPort, Win 10 Home 64-bit - GXi11260CPG**

Item#: 41749944 | Model#: GXi11260CPG

Price: **\$749<sup>99</sup>**



**Lenovo ThinkCentre M625q 10TF Tiny Desktop PC - AMD A9 9420e 1.8GHz, 4GB RAM, 500GB HDD, AMD Radeon R5, GigE, WiFi, BT 4.2, 3x USB 3.1, Win 10 Pro 64-bit - 10TF0032US**

Item#: 41976814 | Model#: 10TF0032US

Price: **\$399<sup>99</sup>**

**Free Shipping Today!**



**Dell Optiplex 3020 SFF Desktop PC - Intel Core i5-4570 3.2GHz, 16GB RAM, 256GB SSD, Intel HD, DVD-RW, 2x USB 3.0, 6x USB 2.0, DP, Win 10 Pro 64-bit, 1 Year Warranty, Grade A Refurbished - PC1-3908-REF**

Item#: 42007058 | Model#: PC1-3908-REF | **CERTIFIED REFURBISHED**

Price: **\$249<sup>99</sup>**

**\$9.99 Shipping**



**HP EliteDesk 800 G1 MT Desktop PC - Intel Core i7-4770 3.4GHz Quad-Core CPU, 16GB DDR3 RAM, 2TB HDD, DVDRW, 2x DP, 1x VGA, 1 Year Warranty, Windows 10 Pro 64-bit, Grade A Refurbished - PC2-0843**

Item#: 40598992 | Model#: PC2-0843 | **CERTIFIED REFURBISHED**

Price: **\$449<sup>99</sup>**

**\$9.99 Shipping**

## Laptops



**Lenovo ThinkPad T490 20N2 Laptop PC - 8th Gen Intel Core i5-8265U 1.6GHz, 8GB DDR4, 256GB SSD NVMe, 14" IPS 1920x1080(FHD), UHD Graphics 620, Wi-Fi, USB-C, HDMI, Win 10 Pro 64-bit - 20N20032US**

Item#: 41735792 | Model#: 20N20032US

Price: **\$699<sup>99</sup>**

**Free Shipping Today!**



**HP 17-ca0054cl Notebook PC - AMD A9-9425 3.1GHz, 12GB RAM, 1TB HDD, DVD-RW, 17.3" Touch 1600x900 (HD+), AMD Radeon R5, WiFi, BT 4.2, GigE, 2x USB 3.1, Win 10 Home 64-bit, Refurbished - 5KF69UAR#ABA**

Item#: 41769466 | Model#: 5KF69UAR#ABA

Price: **\$401<sup>99</sup>**

**\$6.99 Shipping**



**Apple 13.3" MacBook Air w/ Touch ID - 2560x1600 Retina w/ True Tone Technology, 8th Gen Intel Core i5 2C 1.6GHz, 8GB LPDDR3, 128GB SSD, 2x Thunderbolt 3, WiFi, BT, macOS Mojave, Space Gray - MVFH2LL/A**

Item#: 41811667 | Model#: MVFH2LL/A

Price: **\$1,049<sup>00</sup>**

**\$9.99 Shipping**

## Tablets



**Microsoft Surface Pro 6 Tablet - 8th Gen Intel Core i7-8650U Quad-Core 1.9GHz, 16GB LPDDR3 SDRAM, 1TB SSD, 12.3" Touchscreen 2736x1824, Intel UHD Graphics 620, USB 3.0, WiFi, Win 10 Pro - LQK-00001**

Item#: 41578788 | Model#: LQK-00001

Price: **\$2,049<sup>00</sup>**

**\$6.99 Shipping**



**Lenovo Tablet 10 20L3 Tablet - Intel Celeron N4100 1.1GHz, 4GB LPDDR4, 128GB eMMC, 10.1" IPS 1920x1200 MultiTouch, UHD Graphics 600, Wi-Fi, BT, USB-C, Black, Win 10 Pro 64-bit - 20L3000HUS**

Item#: 41089997 | Model#: 20L3000HUS

Price: **\$478<sup>99</sup>**



**Apple 12.9" iPad Pro Tablet - A12X Bionic Chip w/ Neural Engine+M12 Coprocessor, 2732x2048 MultiTouch Liquid Retina Display, 512GB, WiFi, BT, 12MP Rear+7MP Face ID Cam, iOS 12, Space Gray - MTFP2LL/A**

Item#: 41631502 | Model#: MTFP2LL/A

Price: **\$1,344<sup>00</sup>**

**\$9.99 Shipping**



**Samsung Galaxy Tab A - Qualcomm SDA450 Octa Core 1.8GHz CPU, 3GB RAM, 32GB Storage, 10.5" Multi-Touch 1920x1200, USB Type-C, WiFi, Bluetooth, 8MP Rear & 5MP Front Cameras, Android 8.0 - SM-T590NZKAXAR**

Item#: 41559046 | Model#: SM-T590NZKAXAR

Price: **\$329<sup>99</sup>**

**\$4.99 Shipping**



**Lenovo Tab E8 ZA3W Tablet - MediaTek MT8163B 1.3GHz, 2GB RAM, 16GB Storage, 8" IPS Multi-touch 1280x800, Mali T720 MP2, Wi-fi, Bluetooth, 5MP Rear, 2MP Front, Android 7.0 (Nougat) - ZA3W0031US**

Item#: 41691302 | Model#: ZA3W0031US

Price: **\$128<sup>99</sup>**

**\$6.99 Shipping**

**CERTIFIED  
REFURBISHED  
PCs**

**SAVE OVER 50%  
VS BUYING NEW!**



**SHOP NOW**

**12 MONTH  
WARRANTY**

**NOTE: If you understand everything on these pages, congratulations! You have successfully completed the class! If not, stick around. We can learn together!**



## Hardware: Monitor

**Liquid Crystal Display (LCD or flat panel)** – narrower and more expensive, they also provide a sharper picture and take up less space on a desk.

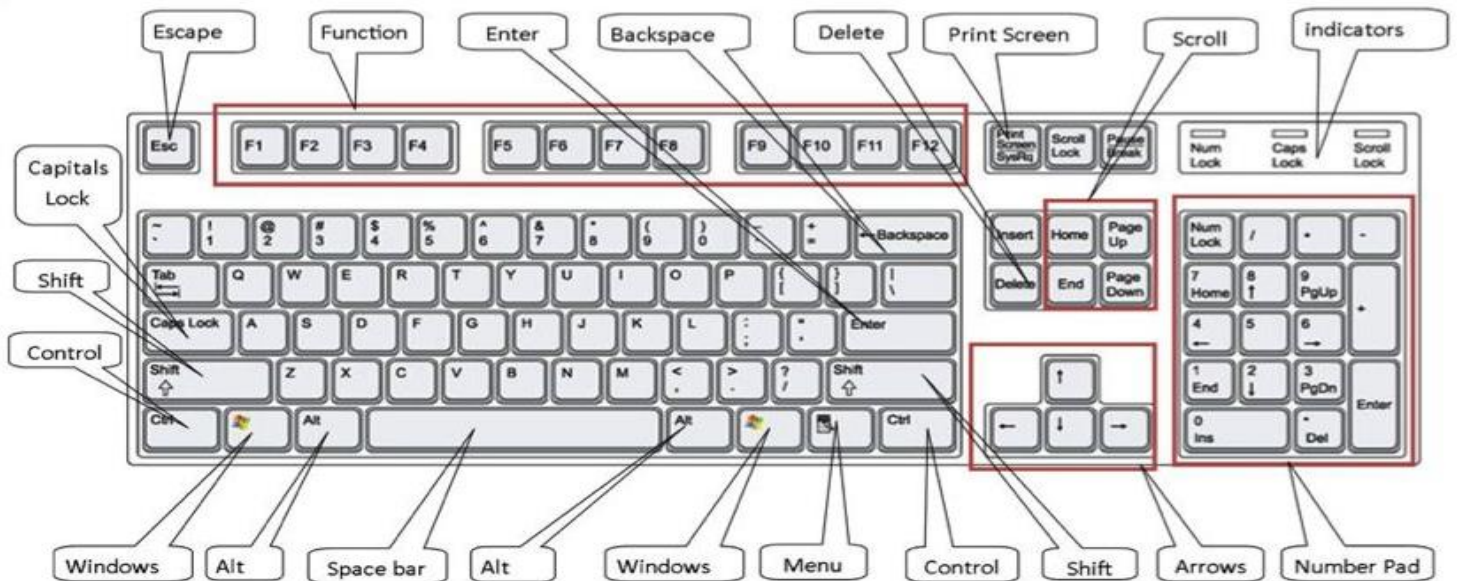
Flat panels are the only type of monitor you may purchase for a new computer, and more computers are now **touch screens**, which means you must purchase the monitor.

**Touch screens** use any combination of glass or other surfaces to track finger or stylus movement across the screen. These are the most intuitive to use, as there's no mouse. TFT is the newer technology of Thin Film Transfer. It improves contrast on the display.



## Keyboard

Full-size keyboard:



Touch screen keyboard:



## Mouse – It's unique!

A pointer device that is **both**:      **Hardware** – the piece you touch

**Software** – the indicator on the screen

USB mouse:



A touch pad:



A button mouse:



As you move the mouse, remember to always **focus on the computer screen**. Using the mouse takes a bit of hand-eye coordination and a lot of practice! We will practice later in class. **Note: touch screens have no mouse. Your finger is the pointer.**

## Computer Speed: Central Processing Unit (CPU) and RAM

### Speed:

It is a computer chip that funnels electricity through silicon circuits, carrying out command sequences. To complete this, CPUs need to **fetch** the instructions, **decode** them (break them up between parts of the chip that are needed to complete the instructions), **execute** the instructions (electricity runs through complete circuits in the chip), and **writeback** the results of the execution (to make sure the computer engineer knows the sequence completed successfully).

The speed of the chip is measured by how fast the electricity can finish its path through the chip and thus fulfill a single sequence of stored instructions.

Computer engineers make the chip work to the **tick of an internal clock**, and the processor generally performs **one circuit** (fetch/decode/execute/writeback) on **every tick**. This “clock speed” helps determine the speed of the computer and it's measured in **hertz**.

Today all processors are measured in **gigahertz (GHz)**. “One gigahertz” means the processor’s “clock ticks” **one billion times in one second** – one billion calculations (circuits) per second. Currently, AMD has one of the fastest Central Processing Units at over 4GHz. That means it can perform 4,00,000,000 (that's **billion**) calculations per second.

### Cores:

Processors may be **multicore** (two or more processing units integrated into one chip) so they run faster. For example, Intel produces a **quad core processor** (essentially 4 processors in one chip). Computer engineers are constantly working to improve a processor's speed; by using multiple processors it's possible to achieve **some level of parallel processing** (using parts of each processor to perform a single task, thereby making the computer faster).

The faster the processor (or the more cores it has), the less likely the computer will “freeze” from operational overload. The faster the processor, the more money you will spend on a computer – a single chip can cost as much as a low-end consumer computer (\$500 or more).

**The CPU is advertised as the first specification in a computer advertisement. “Core i7” “i3”**

## Memory: Two types built into the Computer

### Temporary Memory:

**RAM – Random Access Memory** is also located inside the computer. It is integrated circuitry that plugs into the motherboard and allows computer users to access stored data quickly and efficiently – as long as there's constant electricity. This data is permanently lost if a computer shuts down unexpectedly. **The more RAM a computer has, the more room the user has to “play.”** More RAM means the computer can store more information for quick access as the user operates the computer; the computer responds faster. **RAM is advertised as the second item in the specifications. “12GB.” “6GB.”**



**\*\*DDR4 SDRAM** (double data rate four synchronous dynamic RAM) is the newest form of RAM available with the fastest data transfer rate between it and the CPU (Wikimedia, DDR3 SDRAM, 2010). True still for 2020

### Permanent Memory:

**Hard Drive (C: drive, Hard Disk or Local Disk)** – located in the computer itself. It is made of **platters** (a hard drive may have from 1 to 6 platters inside its sealed compartment). This is a picture of the hard drive that is located **inside** the tower. You should never open the sealed case of the hard drive (you will ruin the data on the platters)



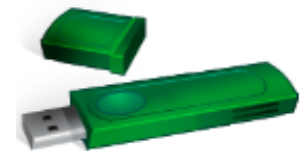
**SSD or Solid State Drives** are so named because they have no moving parts, unlike a hard drive. It has permanent, flash-type memory that uses electronic chips for data storage. They are extremely fast, physically small, and lightweight. SSDs have taken over for HDDs (Hard Disk Drives).

## Memory: Portable Memory

**Flash drives** (a.k.a. USB, thumb, jump drive, removable disk, or memory stick) plug into any available **USB** (Universal Serial Bus) **port** on the computer. They range in size from 16 to 512 Gb (16Gb costs \$15 or less. 512Gb costs about \$400).

Flash drives are the best way to store **anything** you would normally save on the computer: **text documents, music, pictures, or videos/movies**. They will store as much data as they have space for and are easily used – just plug them into a USB port on any computer. When they are plugged in, there is electricity that runs through the port to power the circuitry inside the drive. They are fairly tough, as well, meaning you can store them virtually anywhere and your data is safe.

Most computers come equipped with 4 to 8 built-in USB ports. Two of those ports are usually in the front of the computer for easy access. Even tablets are coming with USB ports on them, and they already have flash memory inside (replacing the bulkier hard drive for onboard storage).



Flash Drive

### Optical Drives

Computers MAY come with an optical drive to read and write CDs and DVDs

**R/W – Read/Write** – reading means “play back” and writing means “saving” (burning; this is usually only done for music, if there’s a CD player in a car)

One drive does everything: **CD/DVDRW**

You may also find **BluRay** drives for sale. If you’d like one in your computer, it’s recommended you purchase a computer with one built-in. BluRay disks are also writeable.



An Optical drive



## Memory Space – What does it mean to you?

### Memory Space Measurements:

Name	Abbreviation	Size
Bit	b	1 bit (on or off, 1 or 0, electricity or no electricity – it's the lowest unit of measure – everything else is based on this)
Byte	B or b	8 bits – one typed letter ("F")
Kilobyte	Kb	1000 bytes – about 1/2 page of text
Megabyte	Mb	1000 kilobytes – 1 Mb is about 500 pages (about 2 books), 4Mb is <b>about</b> one digital photo, or 1 song
Gigabyte	Gb	1000 megabytes – 1 Gb is about 250 photos, or 2,000 ebooks. 5Gb is <b>about</b> one DVD (Hollywood movie with extra features) A Blu-ray is about 27Gb.
Terabyte	Tb	1000 gigabytes – about 225,000 digital photos or about 450 DVD movies

Above table based on the HowStuffWorks Web site (2009). DVD and Blu-ray info: Watson, 2010.

### Motherboard – the circuitry that ties everything together

The motherboard is the **main printed circuit board** in a computer; it carries the system buses (the circuitry that allows all the hardware devices in the computer to talk to each other).

Equipped with connections for:

- All processors (CPU)
- Memory modules (RAM)
- Plug-in Cards (Sound and Video)
- Any peripheral devices (USB ports)
- All power supply cables (electricity)

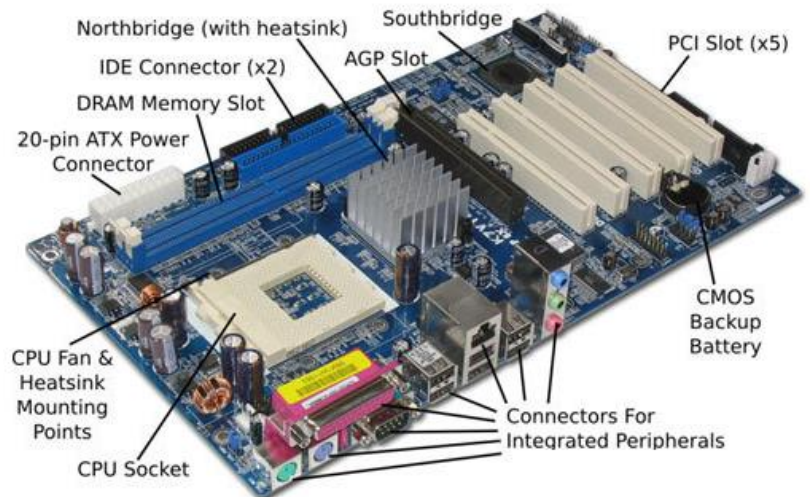


Image from Obsessible Web site

### Memory Space and Processing Speed In a Nutshell

There are **3 major things** to keep in mind when looking at computers:

1. **Processing speed/number of cores**
2. **RAM size**
3. **Hard Disk/Onboard storage size, HDD vs. SSD**

IN GENERAL:

The **larger** the RAM and faster the processor, the more **money** the computer will cost.

The **larger the laptop or tablet**, the more money it will cost. ("Larger" here refers to physical size).

**Solid State Drives** cost more than **Hard Disk Drives**





## The Operating System (Software)

### Operating Systems:

Controls the overall activity of your computer – it dictates what you see on the screen  
 Manages your hardware (“plug and play”)  
 Runs your software and controls the proper sequence of activity that takes place in the processor  
 Arranges your information on the hard drive and other storage areas; Runs multiple programs and shares information between programs  
 Represents programs, commands, and options visually

### Three Major OS's: Windows, Apple, Android

**Apple** controls all the hardware and software for its computers. This means that Apples are always more expensive than Windows or Androids.

**Apple** products are preferred by anyone in graphic design, fashion, music, or any other “art” major. However, because they are so expensive, consumers and businesses alike tend to favor Windows. This pattern holds steady from the 1980s through the 90s.

In 2001, Apple came out with the iPod for digital music. This really put Apple out in the mass market again.

**Windows** products are really “just” software. Bill Gates allowed other companies in the 1980s to make the hardware to fit his software. IBM is the most iconic. Now, you have multiple companies that “fit” Windows computers. This means competition. Competition means that the price drops, and more people adopt that computer. This is why Windows is still about 95% of the computer market.

Windows, along with all other software companies, updates its system.

For many, many years, all computers were “stand alone,” meaning that you used one computer and that was it.

Then: BOOM!!!!!!

THE INTERNET IS ONLINE!!  
 MASS HYSTERIA ENSUES



Windows went through many “iterations.” Generations.

1990s: Windows 3.1 and 3.2

Windows 1995, 98, XP (2000, “Experience”)

2007 Vista – bad system. Resource hog.

2009 Windows 7 – good system. Sleek, runs in background. Windows 7 is the last of the “stand alone” operating systems.

2012 Windows 8 came out. BAD!!!

2015 – Windows 10 First system that Microsoft offers FOR FREE.

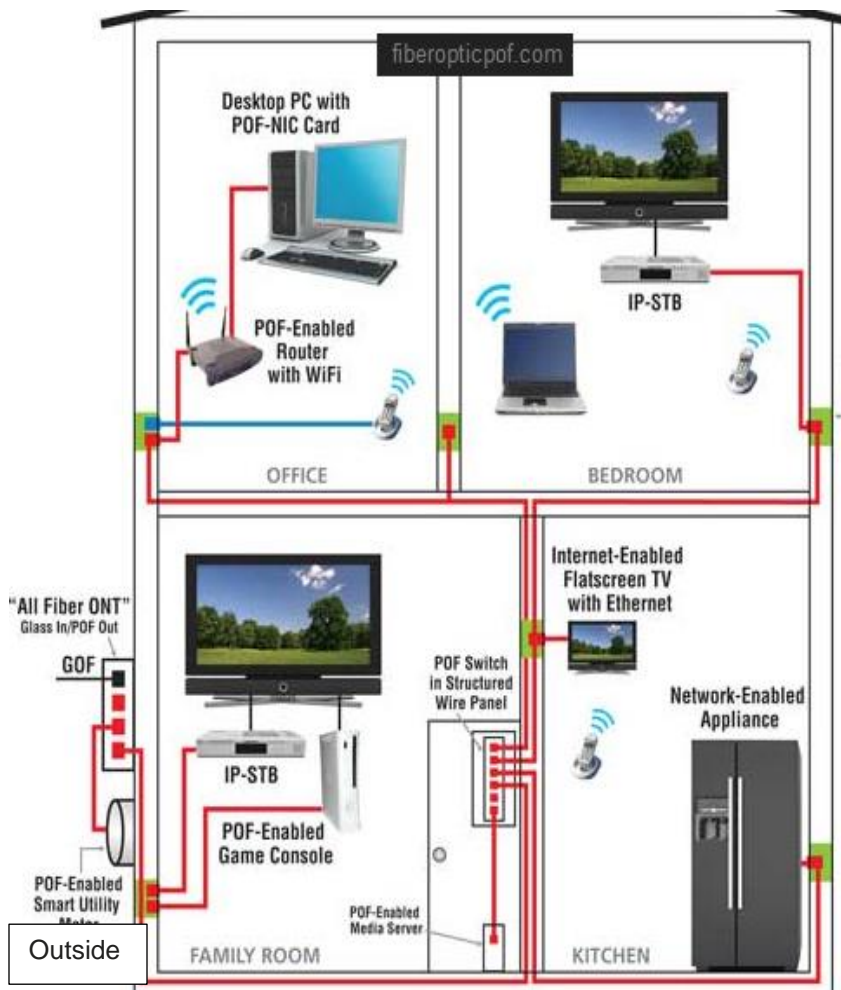
**Android** is the latest player in the computer game, and its focus is the **mobile** market. It first appeared on the market in 2008, fully 23 years after the Mac. It's still number 1 in the mobile market, followed closely by Apple (they trade spots a lot). Windows was late to the game, and so are still a distant third. **LOGOS:**



**\*\*You may use a different Operating System for your phone or tablet. Apple OS and Andriod are the two systems most popular in the mobile market. They each have their own learning curves!\*\***

### Internet Concepts – What is a Computer Network?

**A computer network** is a collection of devices that communicate with one another using wired and wireless technology. Here is an illustration of how your network at home or in the local library might work (see **definitions**)



Hybrid Modem with WAN and LAN ports (necessary for Internet access) and wireless access

Any device that connects to the Internet requires these things:

1. An Internet Service Provider
2. An Access Point
3. NIC card
4. Browsing software

Home network connected to the Internet through an ISP (Internet Service Provider). Also known as a LAN

**Definitions:**

**LAN: Local Area Network.** Computers and peripheral devices connected together “for the purpose of facilitating the exchange and sharing of information and resources normally within a floor or building” (Infigro, 2007).

**WAN: Wide Area Network.** One or more LANs connected together. The Internet is a world-wide WAN.

**Router/Modem (in the home, these are most often converged in a single device – Hybrid Modem):** A device that forwards data packets along networks. A router is connected to at least two networks, commonly two LANs (QuinStreet, Inc, 2010). A modem (modulator/demodulator) is a device that enables a computer to transmit data” over any network along telephone or cable lines or wirelessly (QuinStreet, 2010).

**Client:** a computer that connects to a server and relies on it for some functionality (for example, displaying Web pages). Client devices are usually used by end-users of the Internet – us!

**Internet Service Provider:** A company that charges a monthly fee for WAN access. They connect client computers to servers around the world. This is how the Internet works.

**Peripheral Devices:** anything external to the computer itself (a mouse, speakers, keyboard, flash drive, etc). Cameras, printers, PDAs (personal digital assistants), microphones and smart phones are peripheral devices, too. VoIP: Voice over Internet Protocol: use an Internet connection to make phone calls.

### Smart Devices – What are they?

Most companies are putting out Smart devices. Basically, anything labeled “smart” is something that can connect to the Internet and be controlled by another device with an account and software. Before we get into that, here are some examples of smart devices (taken from Amazon.com web site)



**Fire Stick:** Fire TV Stick, the #1 best-selling streaming media player, with Alexa Voice Remote (2nd Gen). Use the dedicated power, volume, and mute buttons to control your TV, soundbar, and receiver. Launch and control content with the Alexa Voice Remote. Watch favorites from Netflix, YouTube, Prime Video, STARZ, SHOWTIME, or CBS All Access, plus stream for free with Pluto TV, IMDb TV, and others. Fire TV Stick devices have more storage for apps and games than any other streaming media stick. Experience tens of thousands of channels, apps, and Alexa skills, plus browse millions of websites like Facebook and Reddit using Firefox or Amazon Silk.



**Camera:** Echo Look | Hands-Free Camera and Style Assistant with Alexa—including Style Check to get a second opinion on your outfit



**Felix & Fido Petbot Interactive App Controlled Treat Dispensing Smart Mobile Robot, with HD WiFi Pet Camera, Bluetooth, 2-Way Audio,...**

★★★★☆ ~ 15

**\$199<sup>99</sup>**

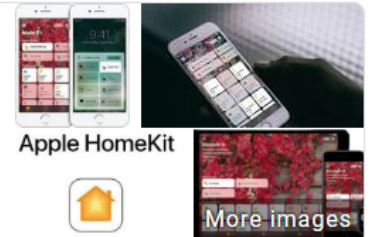


### **LifeShield, an ADT Company - 14-Piece Easy, DIY Smart Home...**

When you arm your LifeShield System, you'll be notified when motion is detected, a door or window is opened, or your fire alarm has gone off. \*24/7 professional monitoring for emergency services is optional. Easy to Set Up Sensors & Smart Camera: 2 pet-friendly Motion Sensors, 4 Door/Window Sensors, and a Fire Safety Sensor that works with your existing fire/CO alarms. The Indoor Smart Camera has motion detection, live video, & video recording. Our patented Base uses high-speed internet, cellular signal, cellular text, or a landline phone to ensure that its signal makes it out to you. And, with 24-hour battery backup, you don't have to worry if the power is out



**Google Home: Base and voice-activated assistant. Connects with other Google-sold switches and wall sockets. Android-based**



# HomeKit

## HomeKit

Software

HomeKit is a software framework by Apple that lets users set up their iOS Device to configure, communicate with, and control smart-home appliances. By designing rooms, items, and actions in the HomeKit service, users can enable automatic actions in the house through a simple voice dictation to Siri or through apps. [Wikipedia](#)

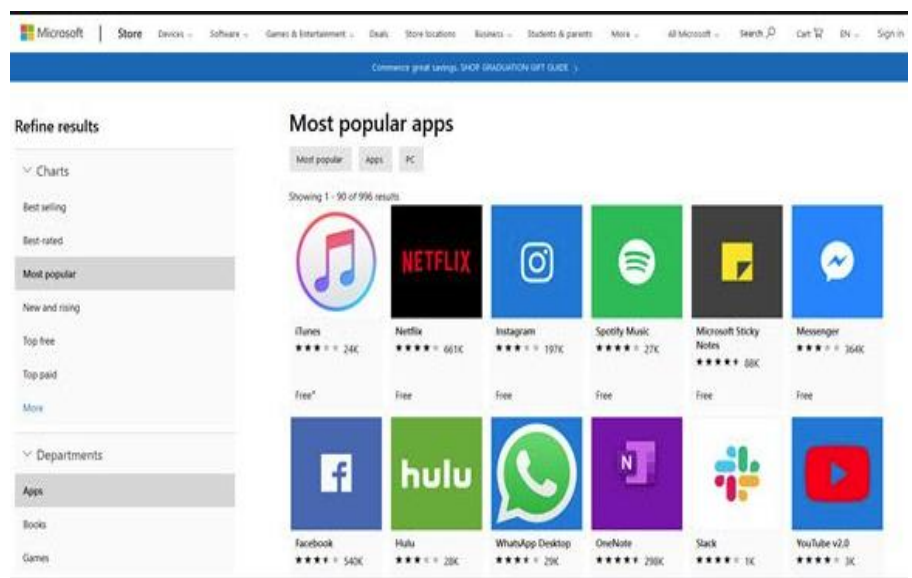
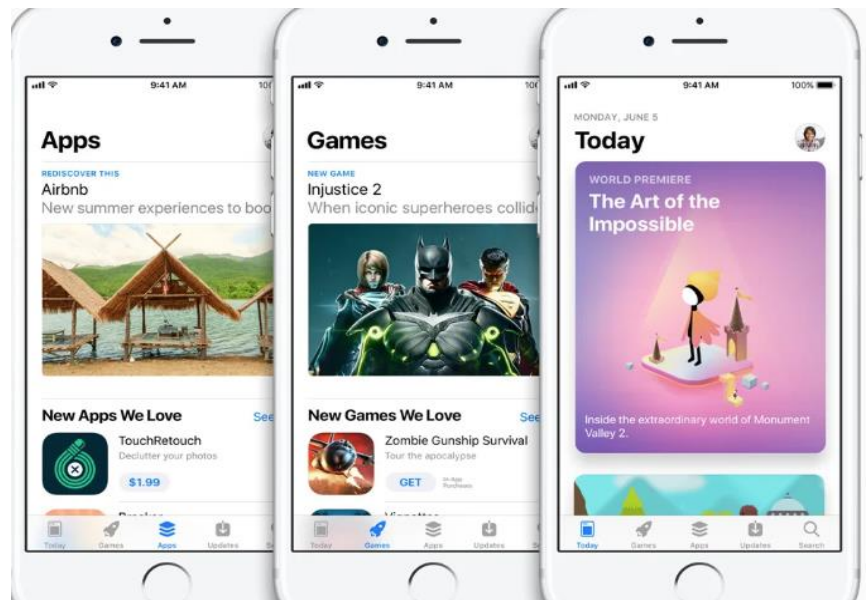
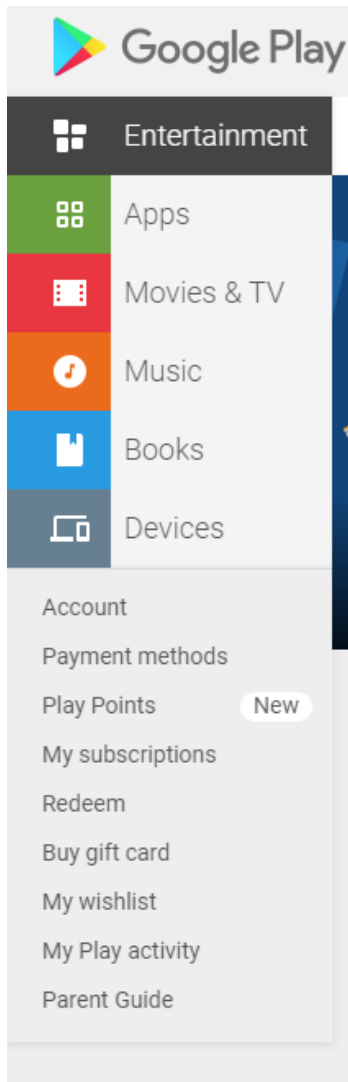
**Apple Home: voice-activated whole-house system works with Wi-Fi and iOS**



## Apps – Software Applications

Each of the three major companies – Windows, Apple, and Android/Google – offer their own unique “App Stores” that allow customers to download software. Some software is free, others cost money, but almost all apps (games, book readers, news apps, etc) allow for “in-app purchases.” That is, you can buy “power ups” in games, or buy books in ereading software.

This is where you also find the apps that work the objects listed previously.



## Web Browsers and Web Sites

“**Browsers** are software programs that allow you to search for and view various kinds of information on the Web, such as Web sites, video, audio, etc.” (Boswell, 2008).

**Edge** is one type of Web browser. There are many different kinds of browsers, but they function similarly. Examples include **Firefox**, **Chrome**, **Opera**, and **Safari** (Mac).



Using a **browser** allows you to access Web pages which are stored on a server. **Web page(s)** make up **Web sites**. A single Web site may consist of one page to thousands of pages, just like books.

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### Open the Browser

There are two ways to open the Internet:

Double click on the **icon** on the **desktop** or

Single click on the **taskbar**




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### Web Sites – Home Page

The anchor page of ANY Web site is called the **Home page**. It is the starting point of the site, much like the cover of a book. A good Home page will have an easy-to-remember web address, introduce you to the company or person who owns the site, and will clearly point the way to additional pages in the site – like the table of contents in a book.

If you know the Home Page address of a Web site, it's very easy to find the site!

Have any questions? [MobileTech@Nioga.org](mailto:MobileTech@Nioga.org)

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**Request**

We immediately see an email link to the owner of the site, and a revolving banner. There are multiple **hyperlinks**. Those are elements in a Web page that allow users to see new items or Web pages. Your mouse indicator  will change its shape to a hand  when you move it over the link.

**Links** may be **words, images, or animation**.

A **link bar** is an element on a page that is usually **across the top** (like the words we see here) or along the **left** side. **Link bars** are a common way to navigate in a web site, so be sure to look along the top or left side of a page to find important information.

Clicking on links and following them from page to page and site to site is called **Web surfing**. This is how anyone may access available information from the Internet (and spend hours in front of a computer screen)!

### The Toolbar – Buttons Make Life Easier!

Any **toolbar** presents some of the most common functions of the program as **buttons** (visual aids that allow you to move from one place to another quickly)

We will discuss the **most frequently used** buttons

Use your **mouse** to click the buttons

#### Back

Goes backward to the **first** page viewed

May be used after viewing at least two Web pages



#### Forward

Goes forward to the **last** page viewed

Can only be used **after** using the **Back** button

These buttons work in conjunction with one another – like flipping pages in a book

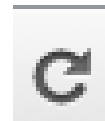


#### Refresh

Re-requests the same web page from the server

Automatically **updates** any information on the page (stock quotes, weather, sports scores, school closings)

Functions like “redial” on your telephone



#### Button Placement Overview:



## URLs and the Web Address Bar

A **URL** (Uniform Resource Locator) is a string of characters (letters, punctuation, or numbers) typed into the **Web address bar** WITHOUT spaces. (The address bar is the only place you type without using your space bar – you should use proper word spacing everywhere else on the Internet.)

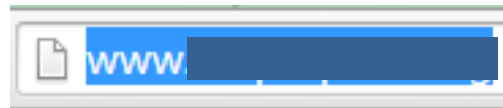
URLs can be **hundreds** of characters long. In any Web browser, the **address bar** will display the URL of the web page you are currently viewing.

Every single Web page has a **unique** web address that the **browser** uses to “call” a web page. “[T]he number of individual web pages out there is **growing by several billion pages per day**” (Alpert, 2008). The search engine Google has an index of over 1 trillion **unique** URLs (see Alpert, 2008).

“Eric Schmidt, the CEO of Google, the world’s largest index of the Internet, estimated the size at roughly 5 million terabytes of data. Schmidt further noted that in its years of operations, Google has indexed roughly 200 terabytes of that, or .004% of the total size” (McGuigan, 2011).

If you know the **exact address** of a web site, type it directly into the address bar. For example, let’s look at Yahoo.

Click once in the bar, right on top of the “www.” This will turn the lettering white and blue.



Type right over the blue:  
[www.yahoo.com](http://www.yahoo.com) and press **Enter** on your keyboard.

[/www.yahoo.com](http://www.yahoo.com)



See how the Yahoo home page loads?

**YAHOO!** [Search Bar] [Search]

My Yahoo [Sign In] [Mail]

Mail Autos News Sports Finance Weather Games Homes Food Tech

**Sophia Loren dazzles on Cannes red carpet**  
Nearly 60 years after her debut at the Cannes Film Festival, the legendary actress makes a triumphant return. [▶ Her special plus-one »](#)

**Trending Now** [▶ Watch the show »](#)

1 Nikki Reed	6 Burt Reynolds Ranch
2 Don Rickles	7 Ann Coulter
3 Danica Patrick	8 Hummus recall
4 Crazy Horse monument	9 Satellite TV
5 Elizabeth Smart	10 Gina Tognoni

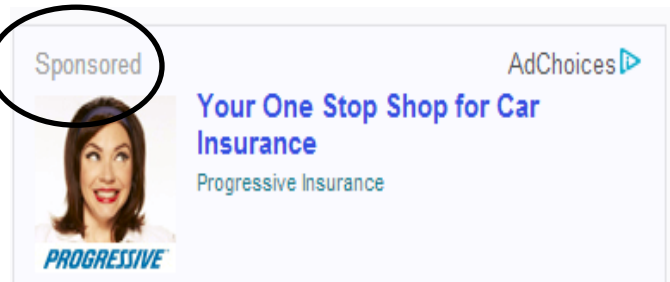
Sponsored **Your One Stop Shop for Car Insurance** Progressive Insurance



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Regardless of where on a page the ad appears, it will be marked as such, with the word **sponsored** or **ad** above it.

This ad is for Progressive Car Insurance.

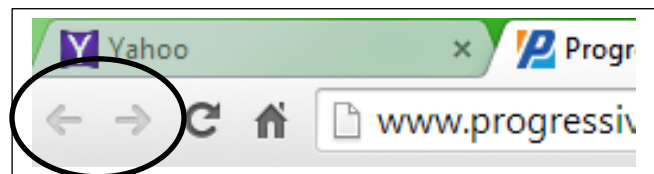


When you click on an ad, it usually opens up in a **new tab**.

Tabs are at the top of your screen.



**Tabs** are important, because once you are in a new one, the **back** and **forward** buttons will no longer move you anywhere. A **new tab is like a brand-new window**.

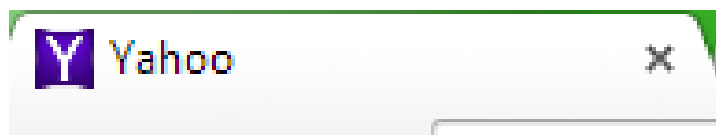


This is important to note, because new Internet users can sometimes click on an advertisement accidentally, and get "lost." They can't "get back" to the page they were viewing.

To get back to where you were, just **close the new tab** by clicking the small grey "X" on that tab.



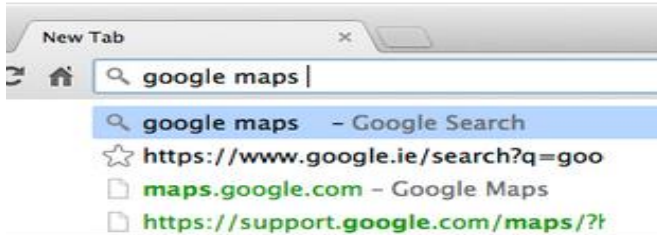
Now we're back to one tab!



## Address bar (Omnibox) (Google Support, 2014)

Located at the top of the Window, above the menu bar, it's used to navigate to a particular **Web page**:

1. Type in the **exact** Web Address (Each page has a unique address!)
2. **Search** the Web: Simply type your search term in the address bar and press Enter to see results from **your default search engine**. (Could be Google, Yahoo, or Bing as a default).



3. Search and browse the web faster by trying the **Instant** feature for the address bar. With Instant enabled, search results and webpages appear as you type in the address bar, even before you press Enter. If you don't see the results you want, just keep typing and the results dynamically update.
4. Search for bookmarks, browsing history, and related items: When you type in the address bar, it automatically shows you matches from your bookmarks and browsing history:
  - ☆ appears next to bookmarked sites.
  - 🔍 appears next to searches, including related searches if you have the [prediction service](#) turned on.
  - 📄 appears next to matches from your browsing history, or related sites when you have the [prediction service](#) turned on.

### ★ Create bookmarks

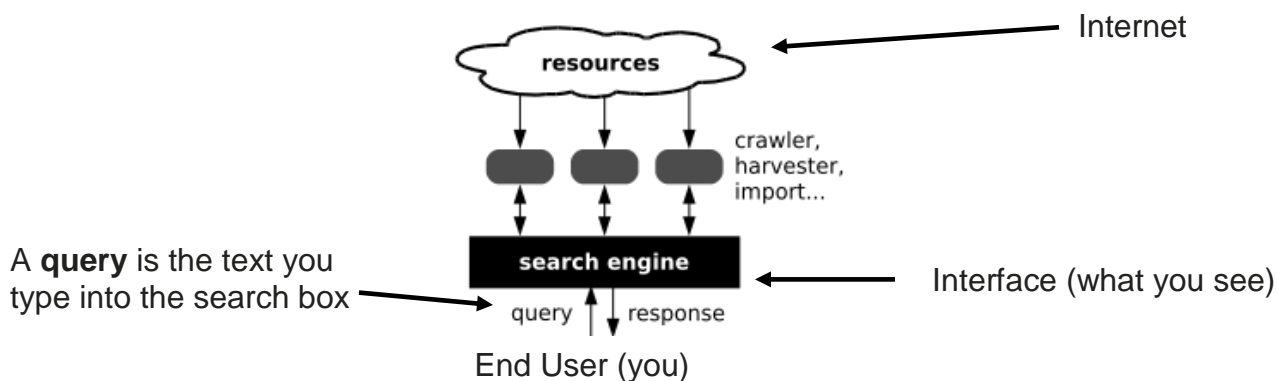
Click ☆ at the right end of the address bar to [create a bookmark](#).

## Search Engines – Your key to finding URLs

So knowing a Home Page address is all well and good, but what do you do if you know what you're looking for but don't know the exact Web address? Use a search engine!

A **search engine** is an information retrieval system that is designed to assist people in finding data (Web sites, images, audio, etc.) stored on a computer system.

**Search engines** function similarly to the **yellow pages** – they allow you to look up information without knowing the **exact** business name ("carpenters," "plumbers," "auto repair," etc).



Examples of **commonly used** search engines (there are thousands of different ones in existence):

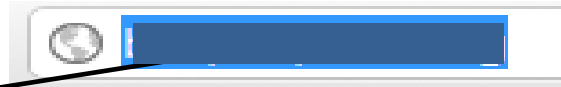
[www.google.com](http://www.google.com)  
[www.yahoo.com](http://www.yahoo.com)  
[www.bing.com](http://www.bing.com)

[www.ask.com](http://www.ask.com)  
[www.about.com](http://www.about.com)  
[www.eHow.com](http://www.eHow.com)

[www.dogpile.com](http://www.dogpile.com)  
[www.mamma.com](http://www.mamma.com)  
[www.duckduckgo.com](http://www.duckduckgo.com)

### .....Practice.....

Click once in the **Address** bar  
 (lettering turns blue)



TYPE YOUR SEARCH HERE.

### Omnibox Search

Let's look for information on the US presidents. **Begin typing** (without the quotes) "US presidents" in the omnibox.

You will also be given a suggestion list (**Google Suggest**) below the search box.

**If you are conducting a search and see your choice, you may click on it with your mouse)** If you don't see your particular search, type in what you want and press the Enter key on the keyboard

**Click** on any blue link on the **results page** to view the information on that **web page**



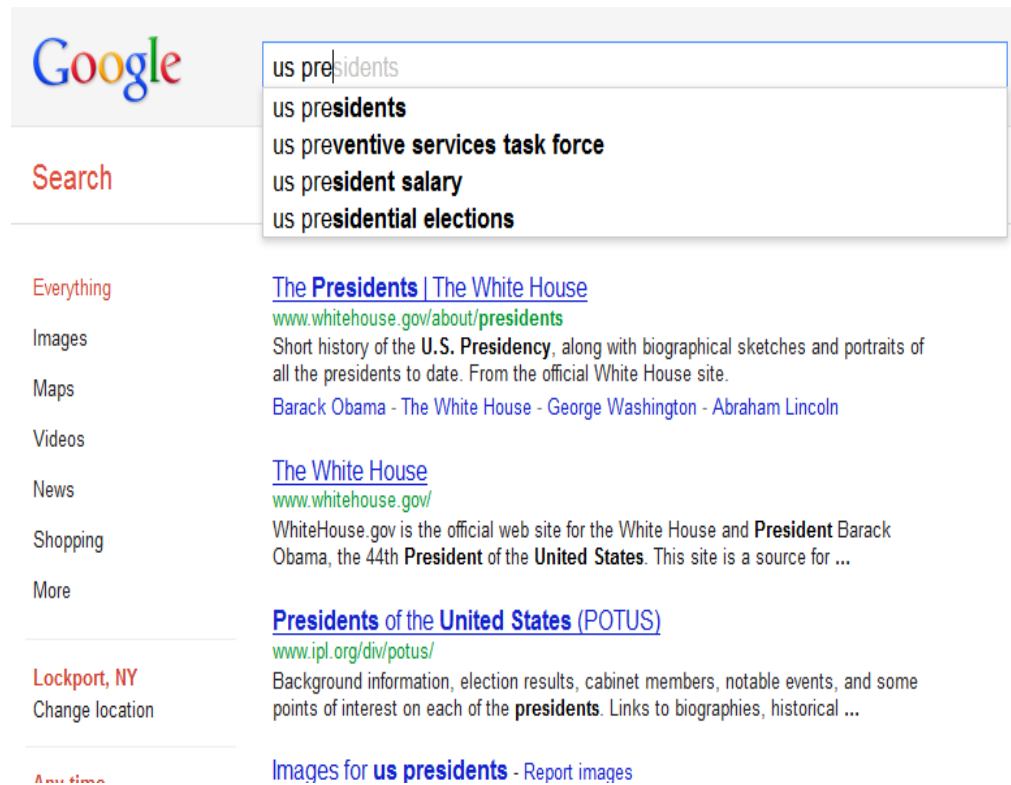
Notice:

**The Link (Blue):** The first line of any search result is the title of the webpage.

**The URL (Green):** The webpage's address.

**The snippet (Black):** A description of or an excerpt from the webpage.

**Similar links (Light Blue):** A link to a page within the site that is similar to your search. Click here if the page you wanted isn't available.



**The URL is important** because it gives you important **domain** information:

**Domains:**

- ✓ **.com** – for standard sites and commercial sites, usually designed to sell things
- ✓ **.biz** – also for selling items, stands for business
- ✓ **.edu** – education, for schools, colleges, and universities (big difference from [www.buffalo.com](http://www.buffalo.com) and [www.buffalo.edu](http://www.buffalo.edu))
- ✓ **.org** – for nonprofit organizations (like public libraries)
- ✓ **.net** – for a specific network (like Verizon)
- ✓ **.gov** – usually stands for United States government bodies
- ✓ **.mil** – for the United States military departments
- ✓ **State Codes** – for US State departments (Motor Vehicles, Department of Labor, etc.)
- ✓ **Country Codes** – specific to the country, for example .ca (Canada), .uk (United Kingdom), .au (Australia)
- ✓ **.xxx** (yes, really, I won't explain here).

Domains give quick and easy information as to what kind of site you will visit and, sometimes, how trustworthy the data will be. I wouldn't necessarily trust medical information from a **.com** site, I'd probably be more inclined to trust a **.gov** site.

The **link** is the **most important feature** on the results page because it allows you to actually view a chosen web page. **Use your mouse to click the link to the official White House web site.**

I know this is the White House web site because it says so here (URL).

[The Presidents | The White House](http://www.whitehouse.gov/about/presidents)

[www.whitehouse.gov/about/presidents](http://www.whitehouse.gov/about/presidents)

Short history of the U.S. Presidency, along with biographical sketches and portraits of all the presidents to date. From the official White House site.

[Barack Obama - The White House - George Washington - Abraham Lincoln](#)

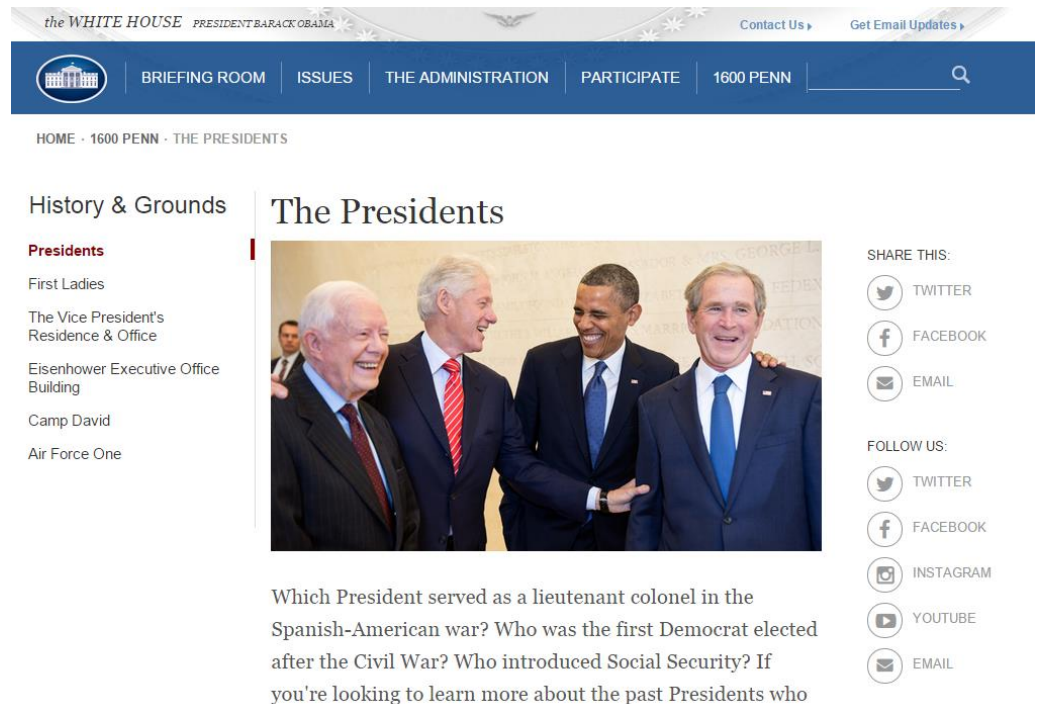


Several important things to note:

There is a fancy **link bar** across the top. Mouse over it to find more navigation options.

There is a **scroll bar** on the right side of the page. This means that the Web page is longer than your screen. Use your mouse to scroll down the page to see the whole thing.

Every word on the left side of the screen is a **link to another page** with more information. Clicking on links is how you **navigate** the Internet.



You can follow links anywhere on the Net; you will know something is a link because it is generally BLUE, might be underlined, or your mouse indicator will turn into a hand. A **button or picture** can be a link too.

## PRACTICE: Windows Desktop

When you begin working on any library computer, this **desktop** is your base. It really is just like an actual desktop that you organize.

**Icons** on the desktop are pictorial representations of items you can use. For example:

**Computer** allows you to browse and search your entire computer system.



**File Explorer** allows you to find files stored on your computer, flash drive, or cloud storage.



**Recycle bin** stores all the files you choose to delete and allows you to recover them later.



Empty

Full

**Program Icons** (or **software applications**) help you get your work done. Some popular examples include:

Web browsers:



Edge



Mozilla Firefox



Google Chrome



Safari (Apple)



Microsoft  
Word



Microsoft  
Excel



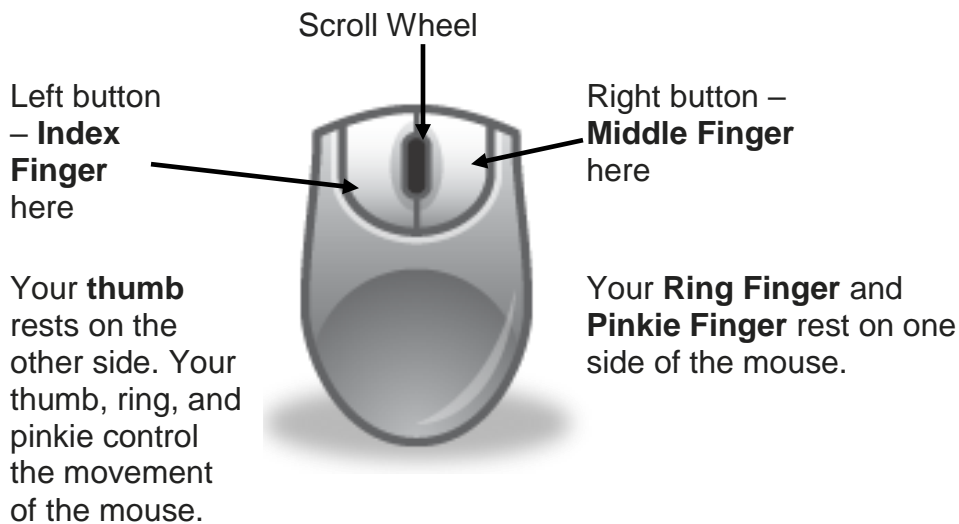
Microsoft  
Power Point



Microsoft  
Publisher

# Mouse Skills Require Practice!

- **Left Click** (Used most often)
  - Used to select something in a program
- **Double-click** (on left button)
  - Used to start programs.
- **Right Click**
  - Context sensitive as it generally brings up submenus
- **Scroll Wheel**
  - Used to move a file up and down in a window (when it is too big for the window) so you may see everything
- Different options become available depending on where the mouse is when you click.  
Remember: **Mouse skills require practice!**



A touch pad:



A button mouse:



Left Click

Right Click

## Mouse Tutorials and Using the Internet

There are many different tutorials on the Internet, and sometimes getting to them can be a trick in itself! Follow these instructions to get to **one particular tutorial**:

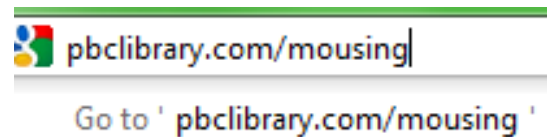
Open Chrome (double click the icon)



Click once in the Address bar (the letters turn blue)



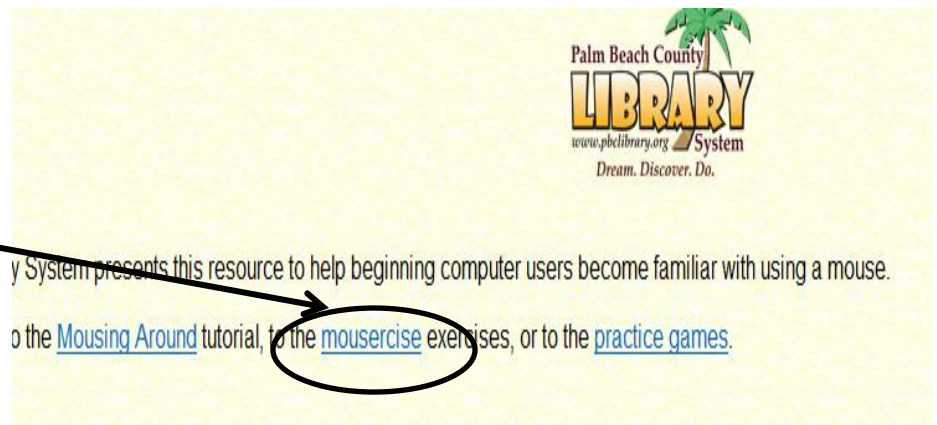
Type **pbclibrary.com/mousing** in the address bar



Press the **Enter** key on the keyboard



Click on the **mousercise** link in the middle of the page



**Begin the self-paced tutorial! Good luck and have fun!**

## Hand Position on Mouse

To hold the mouse, rest the palm of your right hand on the mouse so your index finger is positioned over the left mouse button. Grasp the mouse lightly using your thumb and ring finger to control the movement of the mouse on the surface or mouse pad.





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## Resources

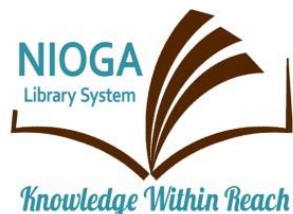
\*\*These items are available in the NIOGA Library System!\*\*

\*\*Contact your local library for assistance!\*\*

Author	Title
McFedries, P	Teach yourself visually Windows 11
Miller, M	Computer basics : now covers Windows 11
Simmons, C	Windows 11 for seniors for dummies
Vandome, N	Windows 11 in easy steps : for PCs, laptops and tablets

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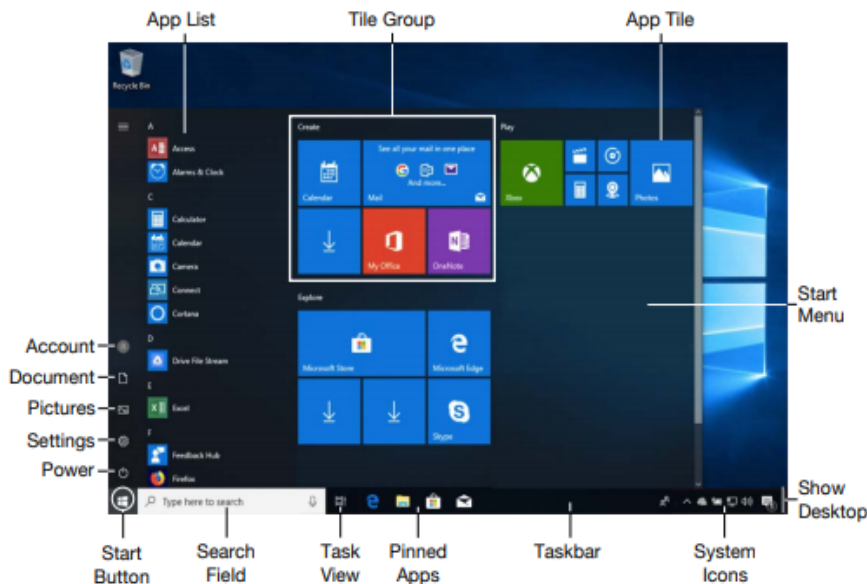
Microsoft®

# Windows 10

## Quick Reference Card



### Windows Desktop and Start Menu



#### Start Menu

**Open the Start Menu:** Click the **Start** button on the taskbar, or, press the **Windows** key.

**Resize an App Tile in the Start Menu:** Right-click a tile, select **Resize**, and select a size.

**Rearrange Tiles:** Click and drag a tile to a new location in a group. Or, drag a tile between groups to start a new group.

**Remove a Tile from the Start Menu:** Right-click a tile and select **Unpin from Start**.

**Add a Tile to the Start Menu:** Right-click an app and select **Pin to Start**.

**Turn off an App's Live Tile:** Right-click a tile, select **More**, and select **Turn Live Tile off**.

**Rename Tile Groups:** Click a tile group's name, type a new name, and click outside the name field to save the changes.

**Lock Your Computer:** Click the **Account** button and select **Lock**.

**Sign Out of Windows:** Click the **Account** button and select **Sign Out**.

**Shut Down or Restart Your PC:** Click the **Power** button and select either **Shut down** or **Restart**.

#### Apps

**Launch an App:** Click the app's tile in the Start menu. Or, scroll through the list of apps at the left of the Start Menu and select the app you want to open.

**Search for an App:** Click within the **Search** field and type a keyword for the app you want to open.

**Jump to an Open App:** Click the **Task View** button on the taskbar and select an open app. Or, press **Windows** + **Tab**. **Note:** You can also right-click an app in Task view to see additional options for viewing and closing the app.

**Install an App:** Click the **Microsoft Store** icon on the taskbar. Browse or search for the app you want and click it. Click **Get** to install a free app or **Buy** to install a paid app.

**Update an App:** Click the **Microsoft Store** icon on the taskbar and click the **See more** button at the top-right of the window. Select **Downloads and updates** and click the **Get updates** button at the top of the window.

**Uninstall an App:** Click the **Start** button and click the **Settings** button at the left of the Start menu. Click the **Apps** category and select **Apps & features** at the left. Select the app you want to remove and click the **Uninstall** button.

### Keyboard Shortcuts

#### General

Start menu .....	<b>Windows</b>
Copy a file or folder .....	<b>Ctrl + C</b>
Cut a file or folder .....	<b>Ctrl + X</b>
Paste a file or folder .....	<b>Ctrl + V</b>
Action Center .....	<b>Windows</b> + <b>A</b>
Task view .....	<b>Windows</b> + <b>Tab</b>
Close an app .....	<b>Alt + F4</b>
Lock computer .....	<b>Windows</b> + <b>L</b>
Print .....	<b>Ctrl + P</b>
File Explorer .....	<b>Windows</b> + <b>E</b>
Run dialog box .....	<b>Windows</b> + <b>R</b>
Ease of Access Center .....	<b>Windows</b> + <b>U</b>
Task Manager .....	<b>Ctrl + Shift</b> <b>Esc</b>
Capture screenshot .....	<b>Windows</b> + <b>PrtScn</b>
Open Search .....	<b>Windows</b> + <b>S</b>
Open Narrator .....	<b>Windows</b> + <b>Enter</b>

#### Settings Shortcuts

Windows settings .....	<b>Windows</b> + <b>I</b>
Connect pane .....	<b>Windows</b> + <b>K</b>
Sharing pane .....	<b>Windows</b> + <b>H</b>
Display options for second screen .....	<b>Windows</b> + <b>P</b>
Quick Link menu .....	<b>Windows</b> + <b>X</b>

#### Desktop Shortcuts

Show/hide desktop .....	<b>Windows</b> + <b>D</b>
Maximize window .....	<b>Windows</b> + <b>↑</b>
Minimize/Restore window .....	<b>Windows</b> + <b>↓</b>
Minimize all windows .....	<b>Windows</b> + <b>M</b>
Snap window to left .....	<b>Windows</b> + <b>←</b>
Snap window to right .....	<b>Windows</b> + <b>→</b>
View open apps .....	<b>Ctrl + Alt + Tab</b>
Switch between apps .....	<b>Alt + Tab</b>
New desktop .....	<b>Windows</b> + <b>Ctrl + D</b>
Switch desktops .....	<b>Windows</b> + <b>Ctrl +</b> <b>← / →</b>
Close active desktop .....	<b>Windows</b> + <b>Ctrl + F4</b>
Peek at desktop .....	<b>Windows</b> + <b>,</b>
Minimize all but the active window .....	<b>Windows</b> + <b>Home</b>
Refresh active window .....	<b>F5</b>

Your Organization's Name Here

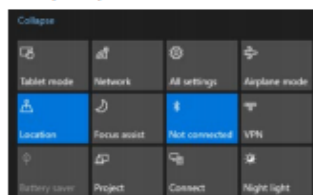
Add your own message, logo, and contact information!

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## New Features

**The Action Center:** Gathers recent notifications. Click the **Action Center** button on the taskbar, or slide your finger in from the right side of the screen on a touchscreen device to view it. It also includes some helpful quick commands:



**Edge:** Microsoft's faster, more secure web browser. While Internet Explorer is still available in Windows 10, Edge is the preferred browser. Click the **Edge** icon on the taskbar to start browsing.

**Task View:** Allows you to add and switch between multiple desktops. Click the **Task View** button on the taskbar, then click the **New Desktop** button for each additional desktop you'd like to add. Click a desktop's thumbnail in Task view to switch to it.



**Tablet Mode:** A new mode in Windows, optimized for touch, that automatically engages when a touchscreen device or hybrid computer is in use. Manually turn Tablet mode on or off in the Action Center.

**The Settings App:** An application that includes a number of new options to control how your Windows 10 operating system behaves. Click the **Start** button, then click the **Settings** icon to open and modify the system settings.

**Quick Access:** A new, customizable view in File Explorer that includes a few pinned folders, as well as some other folders and files that you've used the most. Click the **File Explorer** icon on the taskbar to see the Quick Access screen.

**Windows Ink:** Used for touch screen devices with a stylus, Windows Ink allows you to write on your screen or create sticky notes and drawings. Click the **Windows Ink Workspace** icon on the taskbar to enable drawing with a stylus.

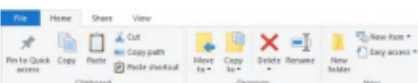


**Windows Hello:** A new, secure sign in feature that allows you to sign into Windows 10 using facial recognition or a fingerprint. Click the **Start** button and click the **Settings** icon. Then click **Accounts**, and select **Sign-in options** at the left. Under Windows Hello, select **Set up**. **Note:** Windows Hello is not available for use on every device.

## Folders and Files

**Open File Explorer:** Click the **File Explorer** icon on the taskbar. Double-click a file or folder to open it.

**The File Explorer Ribbon:** Contains options you'll need to work with your files. Click a ribbon tab (i.e. Home, Share, View) to see related commands.



**Move or Copy Files and Folders:** Select the file or folder you want to move, then click the **Home** tab on the ribbon. Click the **Move To** or the **Copy To** button and select the destination folder.

**Rename Files and Folders:** Select the file or folder you want to rename in File Explorer and click the **Home** tab on the ribbon. Click **Rename** in the Organize group. Type a new name for the file or folder, then press **Enter**.

**Delete Files or Folders:** Select a file or folder to delete in File Explorer. Click the **Home** tab on the ribbon and click the **Delete** button list arrow. Select **Recycle** to move it to the recycle bin or **Permanently Delete** to completely remove the file or folder from your computer.

**Search File Explorer:** Click in the **Search** field in the upper-right corner of the File Explorer window. Type your search term(s). Use the options in the Location group of the Search tab to change the search location.

**File Explorer Views:** Click the **View** tab in the File Explorer window. Use the options here to change how your files are viewed and organized.

**Compress Files or Folders:** Select the files or folders you want to compress and click the **Share** tab on the ribbon. Click the **Zip** button and type a name for the compressed folder, then press **Enter**.

**Create a Desktop Shortcut:** Right-click a file, folder, or program, then select **Send To**. Select **Desktop (Create Shortcut)** in the menu.

**Sort Desktop Icons:** Right-click the desktop and select **Sort By** in the menu. Select a sort option.

## Personalize Windows

**Change the Desktop Background:** Click the **Start** button and click the **Settings** icon. Click **Personalization** and then use the options in the Background category to select a new background color or image.

**Pin a Program to the Taskbar:** With the program running, right-click its icon on the taskbar and select **Pin to taskbar**.

## Personalize Windows

**Customize System Icons:** Click the **Start** button and click the **Settings** icon. Click **Personalization** and then click **Taskbar** at the left. If needed, scroll down and click **Turn system icons on or off**. Toggle a system icon on or off.

**Move the Taskbar:** Right-click the taskbar, if Lock the taskbar has a check mark next to it, click it to unlock the taskbar. Click and drag the taskbar to the top, bottom, or side of the screen.

**Customize the Lock Screen:** Click the **Start** button and click the **Settings** icon. Click **Personalization** and then click **Lock screen** at the left. Here, select the desired background, app status icons, and settings.

**Customize Account Settings:** Click the **Start** button and click the **Settings** icon. Click **Accounts** and then click **Sign-in options** at the left. Modify your account settings here.

## Maintain Your Computer

**Check for Windows Updates:** Click the **Start** button and click the **Settings** icon. Click **Update & Security** and then click the **Check for updates** button.

**Open the Task Manager:** Right-click the **Start** button and select **Task Manager**. Or, press **Ctrl + Shift + Esc**. If an open task is no longer responding, select it here and click the **End task** button.

**Improve Battery Life:** Click the **Battery status** icon in the system tray and click **Battery settings**. Adjust the settings here to improve the battery life of your computer.

**Secure Windows:** Click the **Security Center** icon in the system tray. A few options for ensuring Windows is secure include:

- **Virus & threat protection** periodically checks your computer for viruses and other malicious files.
- **Account protection** provides security for your account and sign-in.
- **Firewall & network protection** configures network firewalls for private and public networks, to keep your computer safe from network attacks.
- **App & browser control** is where you configure warnings for suspicious files, applications, and websites that you download and visit.
- **Device performance & health** keeps track of system, software, and driver updates, while monitoring storage space and battery life.
- **Family options** lets you set up parental controls for this computer, as well as connected devices.