

Computers 102

The Digital Machine

Objectives

- PC Terminology
 - Words are important
- Operating Systems
 - PCs vs iMac
- Mobile Devices
 - Android vs iPhone
- Operation an OS
 - Not a complete tutorial



What is PC hardware?

All the physical parts or components inside and outside the computer's case that allow different parts to function.



What is a computer?

A device that requires electricity to complete complex operations. Most people use a **computer (PCs)** that uses an **operating system (OS)**.

What is an Operating System (OS) ?

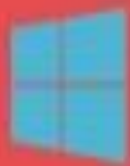
software that allows a user to run other applications and/or programs together.

What is software?

written instruction that runs and perform an application and/or program to complete a task.

“**Application**” and “**Program**” are two terms that can be interchanged with each other and both are **software**.





Operating Systems

Ubuntu

Mac

Windows

Android

ios

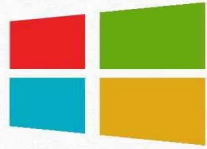
Linux

Tizen

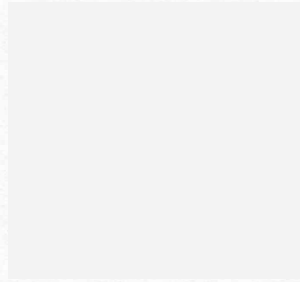
Debian

Chrome





Windows



Macintosh



Windows OS

Created by Microsoft since 1985.

- Windows Vista - 2006
- Windows 7 - 2009
- Windows 8 - 2012
- Windows 8.1 - 2013
- Windows 10 - 2015

“Most” PC and laptops come with a version of Windows already installed.



Macintosh

Created by Apple Inc. since 1984.

- OS X Mavericks 2013
- OS X Yosemite - 2014
- macOS Sierra - 2016
- macOS High Sierra - 2017
- macOS Mojave - 2018

Only available with purchase of Apple and Macintosh computers, laptops, and devices.

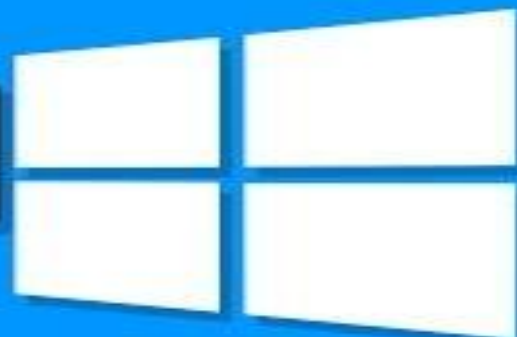


MAC



VS

PC



WHICH IS BETTER?

Video Summary

iMac

1. Great for everyday use
2. Good for business
3. Huge target audience for creatives:
 - a. Photo Management
 - b. Digital Artists
 - c. Video Creators
4. Less likely targeted by viruses
5. Works well with other Apple/iMac products
6. Small selection of programs and apps
 - a. Most will work as intended without problems
7. Higher price point than PCs.
8. Hard for standard user to modify the system.

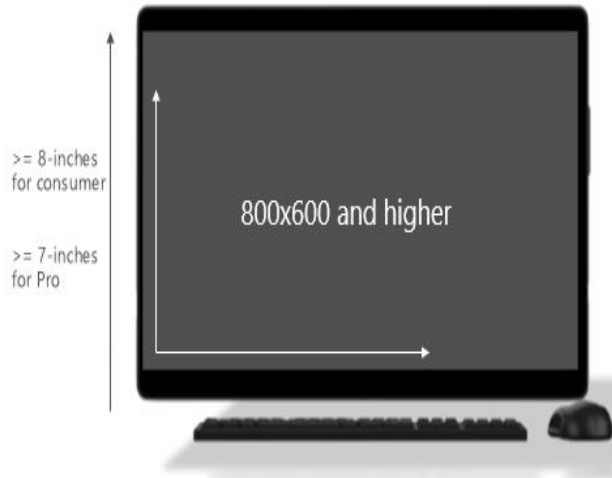
PCs

1. Great for everyday use
2. Good for business
3. Huge target audience for entertainment:
 - a. Gaming
 - b. Watching Videos
 - c. Customisable
4. Requires anti-virus and anti-malware
5. Compatible with other PC and parts.
 - a. Users have to be careful to not buy the wrong parts.
6. Lots of options for programs and apps
7. Various price points for what you want to achieve
8. PCs can be simplify modified and updated.

System Requirements:

The physical parts of your computer that allow the OS to actually work.

Windows Desktop Minimum Hardware Requirements



Firmware UEFI 2.3.1 Secure boot enabled
Memory 2GB for 64-bit 1GB for 32-bit
Storage >= 16GB for 32-bit OS >=20GB for 64-bit OS
Graphics DirectX 9
Tablet Buttons Required – Power, Volume Up/Down Optional – Start, Rotation lock

Memory:

RAM

Storage:

hard drive space

Firmware, Graphics, & Buttons:

should be built into the PCs motherboard or expansion card.

If your system exceeds the system requirements:

- + Operate Faster
- + Better at Multitasking

Windows 10 Minimum Requirements

- 1 GHz processor or faster
- 1 GB RAM for 32-bit; 2 GB for 64-bit
- Up to 20 GB available hard disk space
- 800 x 600 screen resolution or higher
- DirectX 9 graphics processor
- Internet access (fees may apply)
- Microsoft account required for some features
- Watching DVDs requires separate playback software



HP Business Desktop ProDesk 400 G5 4BW89UT#ABA Desktop Computer - Intel Core i5 (8th Gen) i5-8500 3.00 GHz - 8 GB DDR4 SDRAM - 1 TB HDD - Windows 10 Pro 64-bit (English) - Small Form Factor

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Sold and Shipped by Newegg

- Intel Core i5 8th Gen 8500 (3.00 GHz)
- 8 GB DDR
- 1 TB HDD
- Windows 10 Pro 64-bit
- No Screen
- Intel UHD Graphics 630
- DVD-Writer



“i” in iOS
stands for internet

Android:

- Long life battery
- Openness of Android

Both:

- Same Cellular Network
- Similar Interface

iPhone (iOS)

- Exclusive hardware and device
- iOS fast running speed

iOS



vs Android 6.0
Marshmallow



Observations of Mobile Devices

iPhone

- Cost more money
 - All options above the bottom line costs more money.
- Consistency
 - It works the same no matter the device.
- User Protection
 - Prevents the user from messing up the device by hiding certain options.
- Costly Apple Support
 - Can be “fixed” by Apple if your willing to pay.

Android

- More buying options and solutions
 - Not stuck with only one brand.
- Customizable
 - Organize the screen the way you want it.
- Support Options
 - More than one way to get support.
- Device Freedom
 - Gives the user more direct access to the files on the device.

WARNING: Beware of cheap tablets and phones.



TAKING
ACTION
FOR YOU

DON'T WASTE YOUR MONEY

BEWARE OF CHEAP TABLETS

These devices are only using the **minimum requirements** and **bad parts** to lower the PRICES.

Difference of Devices

PC / iMac

PRO

1. Management of documents and files
2. Working on projects
3. Operates MOST the programs and apps that are available on mobile.

CON

1. Mobility is based on physical hardware.
2. Can't use as phone

DURABILITY

- Desktops last for 5 years
- Laptops last for 4 years

SmartPhone / Tablet (Mobile Devices)

PRO

1. Lightweight and portable
2. Easy to use
3. Known for phone and texting

CON

1. **Might** require a PC to use certain features
2. Not the best for managing files and creating documents.

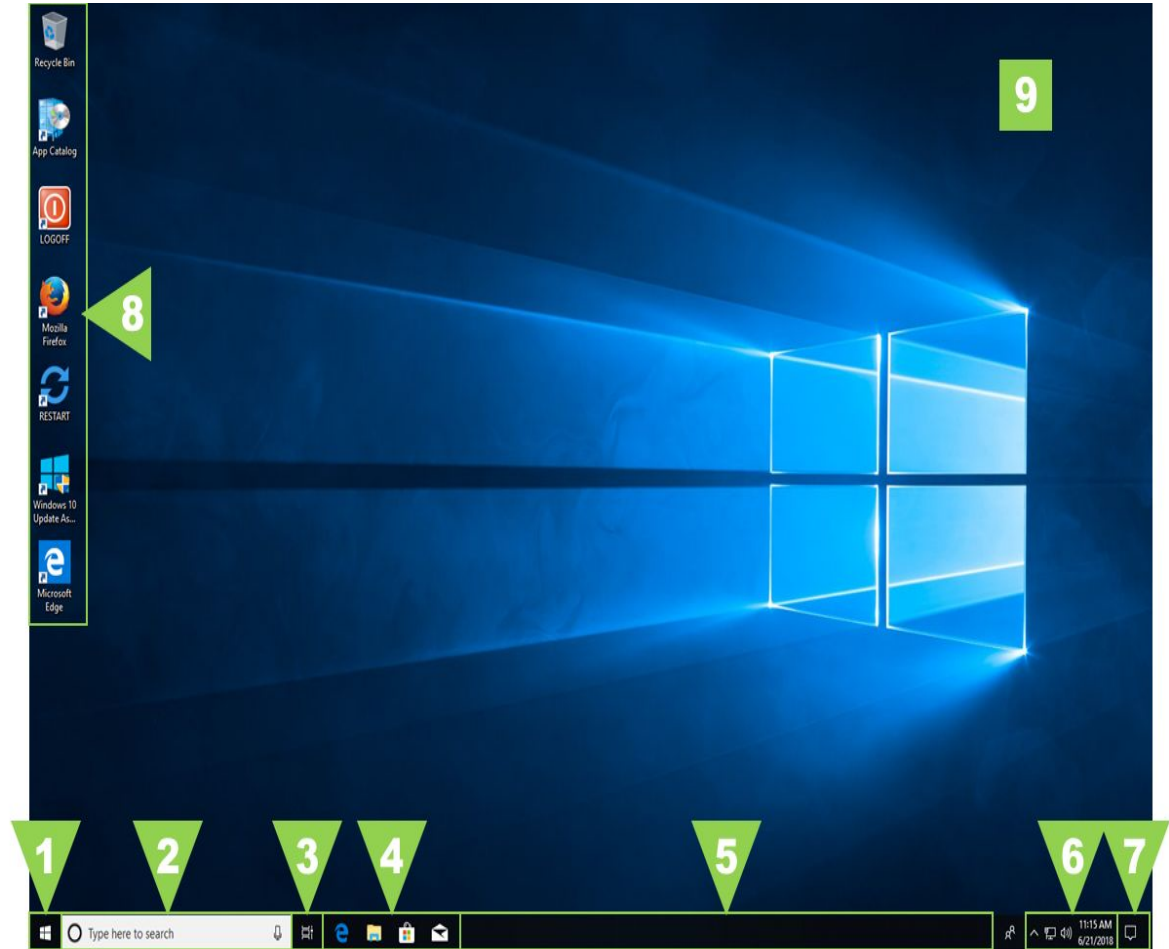
DURABILITY

- All mobile devices last for 2 - 3 year
 - Maybe 4 based on how much its used.

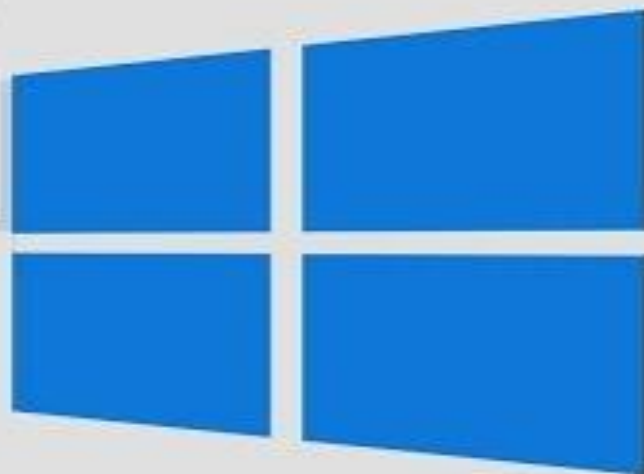
Operating the OS



1. Start Menu
2. Search Box
3. Task View / Timeline
4. Pinned Apps
5. Task Tray
6. Notification Tray & Clock
7. Action Center
8. Desktop Icons
9. Desktop



WINDOWS 10
GET STARTED
WITH
WINDOWS 10



1. Apple Menu
2. Application Menu
3. Menu Bar
4. Status Menu
5. Spotlight Icon
6. Notification Center
7. Desktop
8. The Dock



**MAC OS X
GETTING
STARTED WITH
THE DESKTOP**



Power interruptions can be catastrophic.

A UPS (***Uninterruptable Power Supply***) protects against certain power problems.

Blackouts occur when the system experiences a total crash of the power grid. Sometimes this could be a total blackout, while other times a controlled shutdown is applied to a specific area to avoid a complete blackout.

Brownouts are a drop in voltage. This can last anywhere from a few minutes to a few hours. While this sounds innocent enough, a brownout is capable of ruining your electronic devices within a few minutes.

Noise is caused by interference between lightning and generators. While this sounds minor, it can cause malfunctions throughout your computer operating systems. This lesser-known power problem has also been known to corrupt files.

Spikes Usually, these are short-lived flare-ups in electric current caused by lightning. Another cause for spikes is when power is restored after a blackout. When power is restored it takes some time for the current to normalize. If electronics are plugged in when a spike occurs, they could suffer negative effects.

A **Power Surge** are an increase in power. Like brownouts, these are short-lived, however, they still cause significant damage, especially to large appliances like refrigerators or air conditioners.

Sleep:

All open files and applications are saved into RAM and only retains information as long as the system has power.

Use Sleep if you want to stop working for a short period of time. The PC doesn't use much power, but it does use some.

Hibernation:

Puts your work and settings puts on your hard drive disk and then turns off your computer.

Uses this Hibernation if you won't be using your Pc for an extended period of time, and don't want to close your documents.

Hybrid Sleep:

Combination of both Hibernation and Sleep mode

Use Hybrid Sleep for PCs in case of a power outage. When power resumes work can restore from the hard drive if memory is not accessible.