

What is an OS?

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Have you ever wondered...

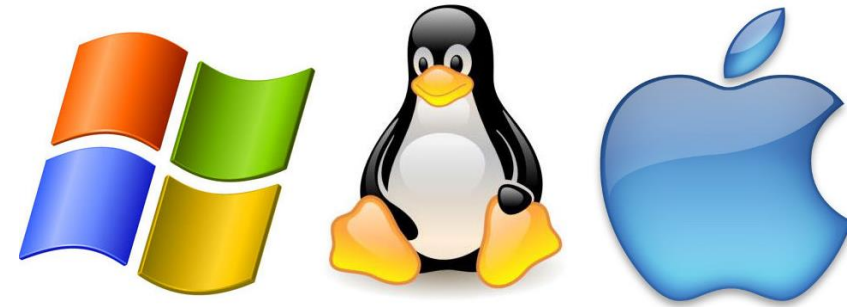
- Why you need a different type of file to install the same program on a Windows computer versus a Mac computer?
- Why you can't install a program made for your computer onto your phone or tablet?
- Answer... These different devices don't use the same OS

What is an OS?

- OS stands for **Operating System**
- Merriam-Webster defines an operating system as ***software that controls the operation of the computer and directs the processing of programs***
- An operating system is needed for you to install and interact with all the programs on your computer

Popular operating systems

- Well-known computer operating systems
 - Microsoft Windows
 - Apple MacOS
 - Linux



Popular operating systems

- Mobile devices (phones and tablets) use different operating systems
 - iPhone and iPads use Apple's iOS
 - Android phones and tablets use Google's Android OS
- Other device manufacturers may use a different OS
 - Amazon's Fire tablets use Fire OS



Operating system variants

- Popular operating systems often have variations made for different devices
- Set Top Boxes
 - Google Android TV
 - Apple TV tvOS
- Wearables
 - Google Wear OS
 - Apple WatchOS

What is an OS?



 WATCH



Where else do we find operating systems?

- If you think about all the devices you use which enable you to install software, that device is likely running some type of OS
- Fitbit smartwatch?
 - Fitbit OS
- Chromebook?
 - Google's Chrome OS



Why does this matter to you?

- Different operating systems typically use different file types to install and run programs on the device
- Windows software will not recognize the file type of a program that is meant to be installed and run on a Mac
- The software of the iPhone will not be able to install an application (app) made for an Android phone

Why does this matter to you?

- If there is one program which is available on all of these platforms:
 - Windows
 - Mac
 - Android
 - iPhone
- These are actually 4 different pieces of software - developed specifically for each of these platforms
- This may explain why a program (or update to a program) may be available on one platform, but not another

What about video game consoles?

- Video game consoles
 - Nintendo Switch
 - Sony PlayStation
 - Microsoft Xbox
- Video game consoles have specific system software unique to that console
- This system software is the operating system of the device



What is firmware?

- A special type of software that interacts with and controls the hardware of the device
- In some less complex devices, the firmware also acts as the operating system
 - Printers
 - Routers

What is an emulator?

- Wikipedia describes an emulator as *software that allows one computer system (the host) to behave like another computer system (the guest)*
- For example, an emulator can allow you to run Android apps on your Windows computer
- A developer may use an emulator when creating a new app
- There are emulators that allow a user to play old video game console games on a computer
 - Use of emulators in this way may not be legal!

What have we learned?

- Operating systems are needed for you to interact with a device and install and use programs
- Different operating systems use different file types to run and install programs
- The same program is likely separately developed for different platforms