Introduction

- What is an operating system?
- Where would I find them?
- What do they do?
- What happens if they do not work?
What is an OS?

- A layer of software that manages a computer's resources (software and hardware), as well as the interactions of the user.

- A management system for different programs running at the same time, allowing access the computer's central processing unit (CPU), memory, storage, and other resources in a controlled way. The operating system coordinates all access to resources to avoid system locks.

- In short: they run your computer, smart phone, mobile device, ipad, chip set, etc ...
What is an OS?

- The most important software on a device.
- Allows all software, processes and resources to run together.
- Software, memory and hardware to communicate.
- *Abstraction*: users control the machine without using direct machine language (more on this later!)
Major Types of OS’s?

- Three most common operating systems for personal computers are Microsoft Windows, macOS, and Linux.
- Modern operating systems use a graphical user interfaces to let you interact visually with software using a combination of graphics and text.
MS Windows

See all versions of MS Windows (video): https://www.youtube.com/watch?v=ckboyrXSgH8
MS Windows
MS Windows Blue Screens

A problem has been detected and Windows has been shut down to prevent damage to your computer.

The problem seems to be caused by the following file: kbdhid.sys

MANUALLY INITIATED CRASH

If this is the first time you've seen this stop error screen, restart your computer. If this screen appears again, follow these steps:

Check to make sure any new hardware or software is properly installed. If this is a new installation, ask your hardware or software manufacturer for any Windows updates you might need.

If problems continue, disable or remove any newly installed hardware or software. Disable BIOS memory options such as caching or shadowing. If you need to use safe mode to remove or disable components, restart your computer, press F8 to select Advanced Startup Options, and then select Safe Mode.

Technical Information:

*** STOP: 0x000000e2 (0x00000000, 0x00000000, 0x00000000, 0x00000000)

*** kbdhid.sys - Address 0x94ef1aa base at 0x94efb000 DateStamp 0x4a5bc705

See all “blue screen of death” of MS Windows (video):
https://www.youtube.com/watch?v=Q9B8XYKotDk
Linux and Some Varieties

- Budgie
- Mandriva Linux
- Sabayon Linux
- Bodhi Linux
- BackBox
- Ubuntu
- Arch Linux
- Fedora
- Deepin
- Ubuntu MATE
- SUSE Linux
- Kubuntu
- Mageia
More Unix Variants

MachTen from Tenon Intersystems
Bringing the Power of UNIX to Your Desktop
According to StatCounter Global Stats, MacOS users account for less than 10% of global operating systems. This is compared to the percentage of Windows users, 80%.
Other Types of OS’s?

- Variants of Linux, Unix, and lesser-known ones.
- Early development OSs
- Specific application types of OSs
- Mobile devices, specific hardware controllers, etc.
Ms DOS (1980's – 1990's)

- MS Disk Operating System (Before Windows)
- Single tasking (not multitasking)

See all versions of MSDOS (video):
https://www.youtube.com/watch?v=5cS-PIuyEhU
Other DOS's?

- Digital Research Dos
IBM OS/2 Warp (1990's)
BeOS (1990's)
Haiku (compatible with BeOS)
2001 - present

Learn more:
https://www.haiku-os.org/
Phones, Mobile devices

All devices need some kind of OS to function
Group Discussion

- Go online to find a small software that is an OS, or fulfills a role as one. Discuss as a group. You could even choose one from these slides.
  - What are the main differences between this OS and other popular OS’s? (i.e., MacOS, Windows, Linux)
  - Why was your OS developed?
  - What does the media report about the OS?
  - What sorts of functions does this OS provide?

Please write down your discussion points to help you introduce your OS to the class.