

CS100: CPADS

Operating Systems

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Operating Systems

- **What is an Operating System?**

- A 'program' that makes makes your computer work
- An OS:
 - Controls the various hardware components in your system
 - Provides an environment to run other programs
 - Provides programs access to the computer hardware



iOS



Installing an Operating System

- **Step #1 - Set boot order in BIOS to boot from CD/Flash drive first**
- **Step #2 - Partitioning the HD - dividing hard disk drive up into various pieces**
 - May or may not want to divide hard disk drive up into multiple pieces
 - Why partition into multiple pieces?
 - Dual booting multiple operating systems
 - Separate OS from data/media (just in case OS dies)

Installing an Operating System (Cont.)

- **Step #3 - Format the hard disk drive - what file system will the OS use?**
 - Not all file systems are compatible and not all OSes can read all file systems
 - File system provides features like permission to files
 - Types of file systems:
 - FAT / FAT32 (readable by most operating systems)
 - NTFS (originated with Windows NT, a Microsoft file system)
 - HFS/HFS+ (a Mac file system)
 - ext2 / ext3 (a Linux / Unix file system)

Installing an Operating System (Cont.)

- **Step #4 - Actually install the OS ("watching paint dry")**
 - Copies the system files for the operating system onto the hard disk
 - Usually requires some minor configuration
 - Selecting a partition on which to install the OS
 - Setting up a username/password
 - Setting the clock
 - Entering a serial key + activation

Installing an Operating System (Cont.)

- **Step #5 - Install drivers - the programs that allow the OS to communicate with installed hardware**
 - Many standard drivers included with Windows install (though they may be out of date)
 - Some may not be installed with windows and need to be installed manually
 - Drivers are operating system specific
 - Drivers are device specific
 - **Examples: chipset, video, audio, LAN, etc.**
 - Get the latest drivers from the **manufacturer's web page** ... NOT some random 'driver' download site on the Internet
 - **Drivers may come on a CD that came with your hardware, but they are almost always out of date**
 - **This is why you need to know all of the various components in your system**

Installing an Operating System (Cont.)

- **Step #6 - Install any OS updates**
 - Run Windows Update or other software update utility that comes with your OS

- **Step #7 - Install your applications**