1. Manages computer hardware and software resources, provides common services
2. 64bit allows for different hardware to run like more RAM
3. allows the device to better communicate with the computer
4. instance of a computer program being executed, small sequence of program instructions, multiple threads make up a process
5. optimization
6. windows, OS X, Ubuntu, Damn Small Linux, Arch, Gentoo, Minix, Puppy Linux, FreeBSD, Nextstep