10.1 Operating System Security

Notebook:	How Computers Work [CM1030]		
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Cornell Notes	**Topic:** 10.1 Operating System Security	Course: BSc Computer Science Class: How Computer Work [CM1030]-Lecture Date: November 28, 2019

Essential Question:

What are security measures are in place on an Operating System to make sure the environment and the user are safe?

Questions/Cues:

- What is a login?
- What is a user?
- What is an administrator?
- What are the two levels of machine instruction?

Notes

- Login = most security function OS provides, so that you don't the right to access comp, you can't do it because you have to enter a password or in case of a phone a pin #
- User = Can access own files, change their own personal data & use all the apps on comp
    - One user cannot access other user's files or install software or make changes to the comp
- Administrator= has complete rights to comp, can install new apps, add new users, delete user accounts and even sometimes go in and change user files
- So another key function of OS is defining who can changes to comp and who is simply able to just "use" it.
- Two levels of machine instruction:
    1. Instructions any bit of code can execute ADD, LOAD, STORE, JUMP
    2. Special instructions that only certain bits of code can do like changing memory area than an app can access
        - They can called Privileged Instructions, means they are restricted to Privileged Code. Simple way of thinking of privileged code is that it is the code that exists inside the kernel of OS
- Kernel like admin, it can do whatever it feels like and apps are like users. Apps are restricted in what can do, have to follow rules of OS. If apps need to access privileged instructions, they do it via kernel
- Privilege levels are part of hardware of CPU, not part of OS, so impossible to get around.

Summary

In this week, we learned about the types of different users on an OS and building on this further, we explored how a similar relationship exists in the levels of machine instruction.