

# CSC369 Week 2 Notes

Hyungmo Gu

May 19, 2020

## 1 System Calls

- Bootstrapping
  - Bootstrapping



- \* executes **Bootstrap Program**
  - is the first code that runs when the computer system is started
- \* Entire operating system depends on the bootstrap program to work correctly
- \* Locates and loads kernel (code of operating system) onto RAM
  - kernel = code of the operating system
  - kernel is in HDD
- \* Bootstrap program is in ROM
- ROM
  - \* is called **read-only-memory**
  - \* Is also called **BIOS chip** (Basic Input/Output System)

- \* is non-volatile
- \* is stored in motherboard



- Operating System Startup



- Initializes OS

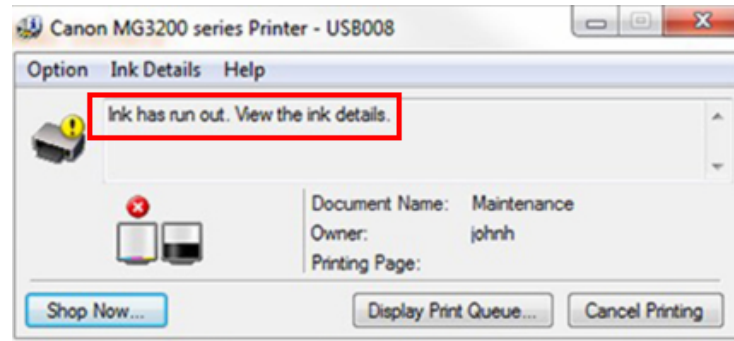
- \* Initialize internal data structures
- \* Create first process
- \* Switch mode to user and start running first process
- \* Wait for something to happen

- Requesting OS Services

- Some services offered by OS are:

- \* Program execution
  - Loading program to memory and executing program

- \* I/O operations
  - Keyboard, mouse, speaker
- \* File system manipulation
  - Reading and writing files and directories to HDD
- \* Error Detection
  - Error that pops when printer ink is empty



- Operating system and user programs are isolated
  - How do they communicate?
- Boundary Crossings
  - System Calls for Process Management
  - System Calls for File Management