

# I/O Software

CS 537 – Introduction to Operating Systems

# Programmed I/O

- Basic idea:
  - CPU does all communication directly with device
  - CPU waits for device to complete one operation before issuing another request
- Flow of events
  - user program issues a request for I/O
  - OS copies a single byte (word) to/from device
  - OS waits for device to become ready again
  - OS then copies the next byte (word) to/from device
  - repeat this process until all the data copied
  - return control to the user

# Programmed I/O

- psuedo-code for reading from device

```
for(i=0; i<count; i++) {  
    while(device_status_register != READY);  
    device_data_register = buffer[i];  
}  
return_to_user();
```