

# CSCI 4061 Discussion 2

1/29/18



UNIVERSITY OF MINNESOTA  
**Driven to Discover<sup>SM</sup>**

# Overview

- More C
- Unix Commands
- The Process Life Cycle
- Blocking
- More Programming/Quiz



# More C

- Pointers can be moved mathematically
  - `p++;`            `// Increment by sizeof(int)`
  - `p--;`            `// Decrement by sizeof(int)`
- Arrays can be treated like pointers
  - `array[i]`        `// Access index i of array`
  - `*(array + i)` `// Same as above`



# Cmd Arguments in C

- `int argc` - # of arguments + 1
- `char** argv` - Array of strings from cmd
- `argc` is the length of `argv`
- `argv[0]` is the name of the program



# Example

```
int main(int argc, char** argv) {  
    // Print the name of the program.  
    printf("Program name is: %s", argv[0]);  
    // Print all cmd line arguments.  
    for (int i=1; i < argc; ++i) {  
        printf("Argument[%d] = %s", i, argv[i]);  
    }  
}
```

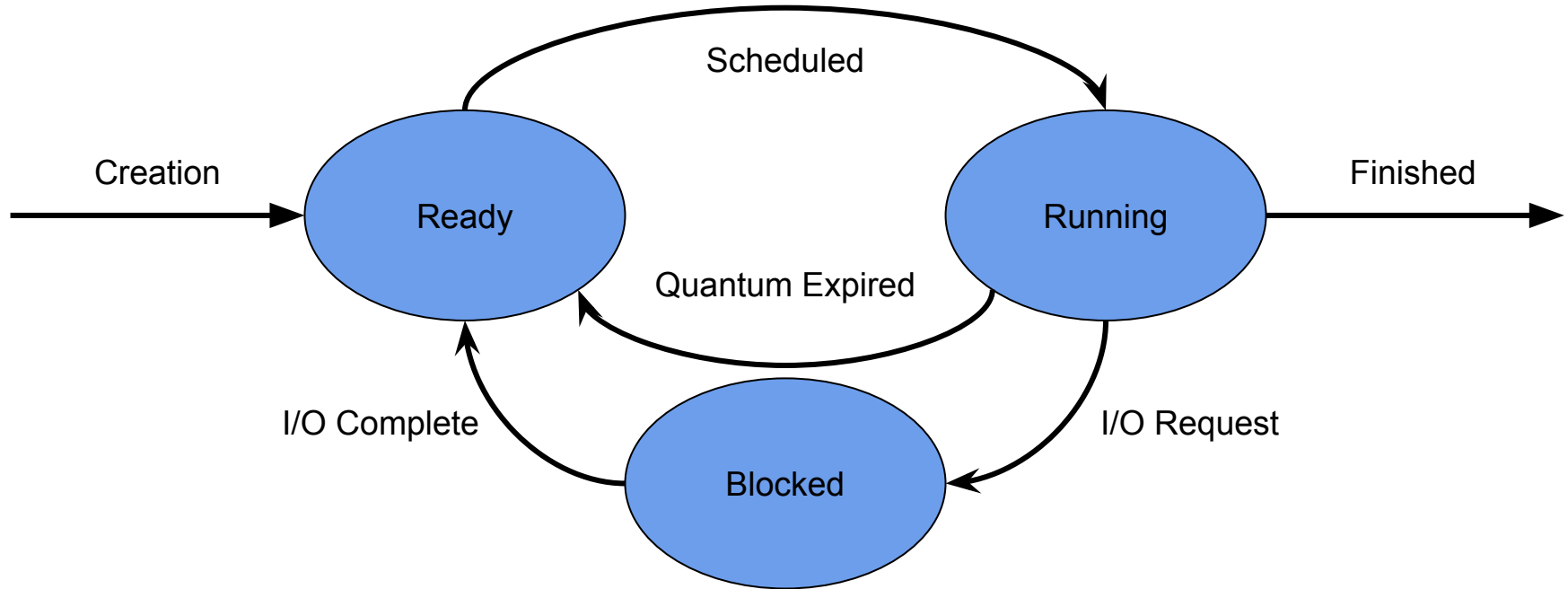


# Unix Commands

- `top` - Task manager interface
- `ps` - Display all running processes
- `pgrep` - Display processes with properties
  - `pgrep -n`
  - `pgrep -u user0001`
- `kill <pid>` - Kill a running process



# The Process Lifecycle



# Common Reasons for Blocking

- File read/write
- Waiting on packet from network
- Waiting for signal/IPC





# Work for Today

- Files included in recitation tar.
  - Implement insert and random populate functions for binary tree.
  - Create makefile that supports **make**, **debug**, and **clean**.
- Show to TA before leaving (70%)
- Take Quiz on Canvas (30%)
- Quiz due by **midnight Wednesday**.

