

Week #5: Processes
Exam Review Question
CS 241: Fall 2013

These questions are provided to you to help you study material covered in CS 241 that may appear on the final exam. These exact questions may or may not appear on the final exam, but the topics they cover will almost certainly be on the final exam.

1. Consider the code below:

```
void main() {  
    int x = 0;  
    x++;  
    if (fork()) x++;  
    x++;  
  
    printf("%d\n");  
}
```

What is the output of running this program?

2. Name three things that are unique to each process and contained in the Process Control Block (PCB)?
3. In lecture, we modeled the state of a process using a five-state model.
 - a. Draw the five-state diagram. Make sure to label the transitions between states.
 - b. What does it mean if a process transitioned from the RUNNING to READY state?
 - c. What does it mean if a process transitions from the BLOCKED to READY state?
 - d. Why is it not possible to transition between BLOCKED and RUNNING?
4. In terms of processes, what is an orphan? Write a piece of code that creates an orphaned process.
5. In terms of processes, what is a zombie? Write a piece of code that creates a zombie process.