## Project – Phase 3

Deliverables will include an updated **software design document**, revision 3, and the **code** (working) for handling the scheduling of processes (jobs) for each of the two additional algorithms (Shortest Process Next (SPN) and Shortest Remaining Task (SRT), test cases with explanations and screenshots demonstrating your solution for each algorithm. All capabilities from Phases 1 and 2 are assumed to be working and should be used, where possible.

# Overview

In this phase – at a minimum your solution needs to able to run two additional algorithms for scheduling of processes: Shortest Process Next (SPN) and Shortest Remaining Task (SRT), for simulating the Scheduler aspects of an Operating System. **You will be asked as a Team to present and demonstrate your solution from Phase 3**.

# Problem – Phase 3

The development effort of phase 3 focuses on additional scheduling options of processes in your simulator. SRT, which is a preemptive algorithm and SPN which is non-preemptive (once a process is assigned it runs until it completes); however, both algorithms will switch to a different process when an I/O event happens. Like Phase 2 the only machine you will need to manage will be a single processor; all other resources can be assumed to be unlimited (memory and I/O).

Also, all capabilities associated with Phase 2 remain valid such as your solution should have the ability to set the Context Switch penalty (time penalty for the to switch the running process) as described.

In terms of output, your scheduler must print out the order and when each process completes. It should also calculate the average Turnaround Time for the set of processes and the Throughput associated with the scheduling of the same processes (same as in Phase 2).

**Test Data**

In addition to your own Test data as defined by your Test Plan, it is required that your solution demonstrate SPN and SRT algorithms being applied to the test data covered in our class sessions. Lastly, your solution must also demonstrate the following data set:

Context Switch Penalty = 0

I/O Duration = 5

Process 1, arrival time=2, Service Time=6, I/Ofreq=3

Process 2, arrival time=3, Service Time=7, I/Ofreq=0

Process 3, arrival time=3, Service Time=4, I/Ofreq=5

Process 4, arrival time = 4, Service Time=8, I/Ofreq=3

Process 5, arrival time=8, Service Time=2, I/Ofreq=1

Process 6, arrival time=6, Service Time=5, I/Ofreq=0

**Coversheet (which is required along with all of your material):**

Name(s) of each member

1. Code
2. Test cases with screenshots, include an explanation of what is being verified and why it proves it works.
3. Updated Software Design Document
4. Project Status