# CSCE 311

## Programming Assignment #1

### Logistics

This is the first Programming assignment for the course. This will be due on the department dropbox (https://dropbox.cse.sc.edu/login/index.php) on ***07 September 2017***.

### Objective

The objective of this assignment is to familiarize you with the basics of the OSP2 simulator. You will execute a working version of the simulator. Students should familiarize themselves with the contents of chapter 1 of the OSP2 manual. While the information in these sections may not be needed to complete this assignment, the next assignment will follow shortly and will require some knowledge of the inner-workings of OSP2 that may not be covered directly in lecture.

### Required to Turn In

You must turn in a "writeup" including a table of the simulation results you are asked to provide in the following sections. This will be an electronic copy (PDF) uploaded to the department dropbox. You should include any pertinent information from the steps of the project described below. ***This will not be the normal turn in procedure for OSP2 assignments***. Future assignments will require that the source code and any write-ups be tarred and zipped before being uploaded to the department dropbox.

### Steps

1. Create a project directory for your file, e.g., "Project1".

2. Create a subdirectory called "Misc".

3. From the 311 assignments page ( Homework_Tab ) download the Demo version of the OSP2 simulator. Note that the Demo.jar file should not have a ".zip" file extension. It must be saved as "Demo.jar".

4. Download the parameter files (params, params1, params2 and params3) to the "Misc" subdirectory.

5. Instructions on running the demo can be found on page 21 of the OSP2 text. In a nutshell, they are:
   **(windows)** *java –classpath .;Demo.jar osp.OSP*
   **(unix/linux)** *java –classpath .:Demo.jar osp.OSP*

6. When the “OSP Parameter Setup” GUI pops up, click on the “Load Parameters” button. This allows you select which parameter file you want to use. By default, it looks in the “Misc” subdirectory. Start by selecting the “params1.osp” file.

7. Click on the “Run” button to start the simulation.

8. Open the output/log file (OSP1.log) in your text editor of choice.

9. Find the values to complete the table below in the log file.

| **Measured Param** | **OSP1** | **OSP2** | **OSP3** |
|---|---|---|---|
| **CPU Utilization** | | | |
| **Average Service Time per Thread** | | | |
| **Average Normalized Service Time per Thread** | | | |
| **Total Number of Tasks** | | | |
| **Threads Summary** | | | |

10. Run the simulator twice more using in turn the parameter files “params2.osp” and “params3.osp”.

11. Fill in the columns of the chart for each run. Use the observations copied in the table to answer the following questions:

    a. What changed between the three parameter files?

    b. How did this affect the simulation results?

12. Make a copy of “params1.osp” and rename it as “params4.osp”. Using your text editor of choice, choose a parameter used in the simulation and change it. Run the simulator using “params4.osp” and add the results to your table.

    a. What parameter did you vary?

    b. What does the parameter you varied do?

    c. Can you determine how the resulting simulator run was affected? If so, describe how it was affected. If not, then explain why not.