

## CSCE 311

Spring 2020

### Assignment #1

Assigned: January 30, 2020

Due: February 6, 2020

**Objective:** To familiarize students with the basics of the OSP2 simulator. Students 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 a hard copy, not an electronic copy.** 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 hard copy and electronic versions be handed in.

**Preliminary step:** Verify that you have java JDK installed on the machine that you plan to use for the project.

0. Open a command line window.
1. Type the command “javac”.
2. The result should be something like: "Usage: <options> <source files>" followed by a long list of possible options. If you see this then java JDK is installed on this machine and the environment path variable is set.
3. If instead you get something like "command not found" or "javac is not recognized as an internal command..." then either the JDK is not installed or the environment path variable does not specify the location of the JDK. If it is not installed then download it from the internet and set the path variable as required by the operating system of the machine you are using. If the path variable does not specify the location of the JDK, then modify the definition of the path variable as per the operating system on the machine you are using.

### Follow these steps to become familiar with the OSP2 simulator:

0. Create a project directory for your files, e.g., "Project1".
1. Create a subdirectory called “Misc”.
2. Using a browser, go to the 311 homework webpage:  
<http://www.cse.sc.edu/~rose/311/311homework.html>
3. Download the demo version of the OSP2 simulator. **Special instructions for those still using old versions of IE: right-click on the Demo hyperlink. Select the "save target as..." option from the menu into your project directory "Project1". Note: Internet Explorer recognizes that this is an archive file but mistakenly believes that it should have a ".zip" file extension. Change the file name in the "Save as" popup window from "Demo" to "Demo.jar" before clicking on the "save" button.**
4. Download the parameter files params1, params2, and params3 to your

subdirectory "Misc".

5. To run the demo from your own directory (page 21 in OSP2 text):  
(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 "params1.osp"
7. Click on the "Run" button to start the simulation.
8. The output log will be written to OSP1.log
9. Examine the file to find values to complete the OSP1 column of this table. The log file will contain two "snapshots" of the system. Use the values in the *last* snapshot to fill out the following table:

Measured parameter	OSP1
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 file "params2.osp" and then "params3.osp"

11. Add new columns for each run (i.e. OSP2 and OSP3) to the chart you created in step 9 and fill in the corresponding values. Observe the following trying to answer the succeeding questions:

*Compare params1.osp, params2.osp and params3.osp*

- 11a. What changed between the three parameter files?

- 11b. How did this affect the simulation results?

12. Make a copy of "params1.osp" renaming it "params4.osp". Using an editor vary one more parameter of the simulator. Compare and include it in your chart results.

- 12a. What parameter did you vary?

- 12b. What does the parameter do?

- 12c. Can you determine how the resulting simulator run was affected? If so, then how? If not, then why not?