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**Data Structures and Algorithms II**

**Project 2**

**User's Manual**

**Setup and Compilation**

1. Download and unzip the submission from eLearning on a Linux box in the multi-platform lab.
2. The submission includes:
   * main.cpp
   * Shell.cpp
   * Shell.hpp
   * Customer.hpp
   * Customer.cpp
   * EventQueue.cpp
   * EventQueue.hpp
   * FIFOQueue.cpp
   * FIFOQueue.hpp
   * Event.cpp
   * Event.hpp
   * EventLoop.cpp
   * EventLoop.hpp
   * analytics.cpp
   * analytics.hpp
   * UsersManual.docx (this file)
   * UMLDiagram.pdf
   * Makefile
3. Environment: This program has been tested on the SSH server and will run there.
4. Compiling. This program includes a Makefile. At the command line in Linux, type make. The program produces an executable entitled main. In order to remove the executable as well as all the object files type make clean.

**Running the program**. Issue the command ./main No command line arguments are required or checked.

User input: The program is interactive which means it will prompt the user for input. The user will be required to enter values for “n”(number of arrivals to be simulated), lambda(average number of arrivals), mu(average number of customers served per unit of time) and “M”(the number of servers).

**Output:** All output goes to the console. Output will be similar to this:

Enter average number of arrivals per time unit(lambda): 3

Enter average number of people served in a time period(mu): 2

Enter the number of service channels(M), min = 1, max = 10: 5

Starting the simulation...

Simulated Results:

Total Idle Time: 0

The average time a customer spends in the system: 0.355046

The average time a customer spends waiting in the queue: 0.00672039

The utilization factor for the system: 0.3