

**Grayson Martin**  
**Data Structures and Algorithms II**  
**Project 2**  
**User 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:
  - analytical.cpp
  - analytical.hpp
  - customer.cpp
  - customer.hpp
  - main.cpp
  - Makefile
  - README.txt
  - serviceCenter.cpp
  - serviceCenter.hpp
  - UML.png (UML Diagram)
  - UsersManual.pdf (this file)
3. Environment: This program has been tested in the multi-platform lab and will run there. It has also been tested in VScode.
4. Compiling: This program includes a **Makefile**. At the command line in Linux, type **make**. The program produces an executable called **main**.

**Running the program.** Be sure **ALL** files are in the same directory as the executable. Issue the command **./main**. No command line arguments are required or checked.

User input: You **MUST** enter the values the program prompts you to. You will first enter **n**, followed by **lambda**, followed by **mu**, and finally **M**. Ensure **M** is a number between 1 & 10.

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

```
[grm16@cs-ssh proj2]$ ./main
Enter n: 1000
Enter lambda: 2
Enter mu: 3
Enter M: 2
----- Simulation Data -----
  Total Wait Time: 157.129
  # of Customers Waited: 998
  Total Service time: 320.607
  Total idle time: 1

  Po: 0.622613
  W: 0.477736
  WQ: 0.157444
  Rho: 0.998071
  % of Waiting: 99.8%

----- ANALYTICAL MODEL -----
  Po: 0.5
  L: 0.75
  W: 0.375
  LQ: 0.083333
  WQ: 0.041667
  Rho: 0.333333
[grm16@cs-ssh proj2]$
```