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**Data Structure and Algorithms II**

**Project 1**

**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 includes:
   1. main.c
   2. Analytical.c
   3. Analytical.h
   4. Queue.c
   5. Queue.h
   6. makefile
   7. FunctionalDecomposition.docx
   8. UsersManual.docx
3. Environment: This program was tested on a combination of the Eclipse and jGrasp IDE. However, also works in the schools ssh server.
4. Compiling. This program includes a makefile. At the command line in Linux in the folder with the extracted files, type make into the command line. The program produces an executable: rook-j-p2

**Running the program:** Issue the command ./rook-j-p2. No command line arguments are required or checked.

User input: Program is user interactive. At the beginning of the program the program will ask the user for four statistic values. After the user inputs all of the values the program will take over and run the simulation. Warning: there is no input validation, so any incorrect input will cause a run time error.

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

Please enter the number of arrivals to simulate: 5000

Please enter the average arrivals in a time period: 2

Please enter the average number served in a time period: 3

Please enter the number of service channels: 2

Analytical Model Calculations

Po = 0.500

L = 0.750

W = 0.375

Lq = 0.083

Wq = 0.042

rho = 0.333

Simulated Model Calculations

PoSim = 0.503

Wsim = 0.376

WqSim = 0.042

rhoSim = 0.330

waitProb = 0.171

Simulation Comparisons

Po Percent Error = % 0.547

W Percent Error = % 0.195

Wq Percent Error = % 1.596

rho Percent Error = %-0.926