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**Data Structures and Algorithms II**

**Project 4**

**Functional Decomposition**

**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.c
* part1.c
* part2.c
* functions.c
* main.h
* part1.h
* part2.h
* functions.h
* SimParameters.txt
* c1.txt
* c2.txt
* c3.txt
* c4.txt
* FunctionalDecomposition.txt
* makefile
* Users Manual for Project 4.docx (This document)

1. Environment: This program was designed and tested on Eclipse. It has also been tested in in the Linux lab and does work as expected.
2. This program includes a Makefile. At the command line in Linux, type make. The program produces an executable entitled “project4”.

**Running the program**

Be sure the following files are in the same directory as the executable: “c1.txt” “c2.txt” “c3.txt” “c4.txt” and “SimParameters.txt”. While in the Linux Lab, navigate to the folder containing all of the files associated with Project4 and issue the command “make” followed by “./project4”. User input is required to select whether Part1 or Part2 should run. A menu will be displayed

**Output:** All output goes to the console. Output for Part 1 will be similar to this:

Simulation 1

N: 10

Simulated Result: 2.70

Expected Result: 3.67

Error percent: 0.26364

Final output for Part2 will be similar to this:

Run 1:

Number of batches of items: 100

Number of items in each batch: 2000

Percentage of batches containing bad items: 24%

Percentage of items that are bad in a bad set: 7%

Items sampled from each set: 30

Base = 0.930000 exponent = 30

P(failure to detect bad item) = 0.113367

P(batch is good) = 0.886633

Percentage of bad batches detected = 92%