**Priya Pilla**

**Data Structures and Algorithms 2**

**Project 4**

**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:
   1. main.cpp
   2. datasets.cpp
   3. datasets.hpp
   4. simulation.cpp
   5. simulation.hpp
   6. monteCarlo.cpp
   7. monteCarlo.hpp
   8. t1.txt
   9. t2.txt
   10. t3.txt
   11. t4.txt
   12. UML
   13. User’s Manual (this document)
   14. Make file
3. Environment: This program has been tested on the ssh linux server, so will probably run in the multi-platform lab.
4. Compiling: This program includes a Make file. At the command line in Linux, type “make -f makefile.mk”. The program produces an executable entitled main.

**Running the program:** Be sure t1.txt, t2.txt, t3.txt and t4.txt are in the same directory as the executable. Issue the command ./main to run the program.

**User input:** No user input needed.

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

Simulation 2:

Number of batches of items: 200

Number of items in each batch: 1000

Percentage of batches containing bad items: 10%

Percentage of items that are bad in a bad set: 10%

Items sampled from each set: 50

Generating data sets:

Create bad set batch # 1, totBad = 102 total = 1000 badpct = 10

Create bad set batch # 2, totBad = 98 total = 1000 badpct = 10

Create bad set batch # 3, totBad = 103 total = 1000 badpct = 10

Create bad set batch # 4, totBad = 116 total = 1000 badpct = 10

Create bad set batch # 5, totBad = 88 total = 1000 badpct = 10

Create bad set batch # 6, totBad = 88 total = 1000 badpct = 10

Create bad set batch # 7, totBad = 128 total = 1000 badpct = 10

Create bad set batch # 8, totBad = 97 total = 1000 badpct = 10

Create bad set batch # 9, totBad = 104 total = 1000 badpct = 10

Create bad set batch # 10, totBad = 88 total = 1000 badpct = 10

Create bad set batch # 11, totBad = 91 total = 1000 badpct = 10

Create bad set batch # 12, totBad = 103 total = 1000 badpct = 10

Create bad set batch # 13, totBad = 101 total = 1000 badpct = 10

Create bad set batch # 14, totBad = 102 total = 1000 badpct = 10

Create bad set batch # 15, totBad = 99 total = 1000 badpct = 10

Create bad set batch # 16, totBad = 91 total = 1000 badpct = 10

Create bad set batch # 17, totBad = 93 total = 1000 badpct = 10

Create bad set batch # 18, totBad = 94 total = 1000 badpct = 10

Create bad set batch # 19, totBad = 102 total = 1000 badpct = 10

Create bad set batch # 20, totBad = 101 total = 1000 badpct = 10

Total bad sets = 20

Analyzing Data Sets:

batch #1 is bad

batch #2 is bad

batch #3 is bad

batch #4 is bad

batch #5 is bad

batch #6 is bad

batch #7 is bad

batch #8 is bad

batch #9 is bad

batch #10 is bad

batch #11 is bad

batch #12 is bad

batch #13 is bad

batch #14 is bad

batch #15 is bad

batch #16 is bad

batch #17 is bad

batch #18 is bad

batch #19 is bad

batch #20 is bad

Base = 0.9 exponent = 50

P(failure to detect bad batch) = 0.00515378

Percentage of bad batches actually detected = 100%