

Programming Assignment #3

Prepare a Lab Report

CS 1428.254, Spring 2012

Instructor: Jill Seaman

Due: in class Tuesday, 2/21/2012 (upload electronic copy by 9:00am)

Problem:

Your friend the lab assistant needs to calculate the average time it takes each of his rats to run through a given maze. For three days he runs each rat through the maze once, and records the amount of time it takes. Write a C++ program that will, after the test runs are all complete, calculate the average time it took for each of his 3 rats to run the maze, and print a report to a file.

Input: The user should be prompted to input the ID number and 3 maze times for each of 3 rats (for each rat, the 4 values can be input on one line). The ID number has the following format: an "A" or a "B" or a "C" followed by 4 digits. The three input maze times will be positive integers.

Processing: Compute the average maze time for each of the rats by computing the mean of their 3 maze times.

Output: The program should output a lab report to a file named "lab_report.txt". The first row of the report should be a list of column headers that label the data to be output. This should be followed by a row for each rat that lists their ID number, each of the three maze times, and the average. This should be followed by the word "Smart" if the average is less than 30. If it is 30 or above, it should be followed by the word "Normal". The numerical data in each column should line up under its column header. The final average should be output to 1 decimal place.

ID Number	Time 1	Time 2	Time 3	Avg	Rating
A1234	28	40	29	32.3	Normal
B0007	28	31	25	28.0	Smart
C1110	25	27	39	30.3	Normal

Style:

See the Style Guidelines document on the course website. The grader will deduct points if your program violates the style guidelines.

Logistics:

Your program must be free of compiler errors.

Include the file documentation header at the top of your source file (as described in the Style Guidelines document).

Do not use any features of C++ that we have not yet covered in class (use features from Chapters 1-4 only).

Name your file **assign3_XXXXX.cpp** where XXXXX is your TX State NetID (your txstate.edu email id). The file name should look something like this: assign3_js236.cpp

There are two steps to the turn-in process:

1. Submit an electronic copy using the upload link on the course webpage (or go directly to <https://hwupload.cs.txstate.edu>)
by 9:00am, Tuesday 2/21/2012
2. Submit a printout of the file at the **beginning of class on Tues 2/21/2012**.
Please print your name on the front page, staple if there is more than one page.