ENGR 200 FALL, 2017

**A5: RAINFALL ANALYSIS**

**(using input/output files, if structures, for loops, and one-dimensional arrays)**

DUE: October 10, 2017 at 11:59 pm, CDT POINTS: 55

**INTRODUCTION:**

You are an engineer working as an urban planner for the city of Metropolis. Data has been collected dealing with rainfall amounts for the city and you are required to develop a computer program that will perform rainfall averaging, and minimum/maximum analysis for storm sewer pipe sizing. The input data file is called **rain\_fall**, and it is a space delimited file. As you examine the input file, you notice that the first record line contains the control number. The remaining record lines are the rainfall amounts; 12 rows (January – December) and 5 years (2013 – 2017).

**ASSIGNMENT:**

Write a C program that will read the control number, and the program will read the rainfall amounts into 5 one-dimensional arrays (years 2013-2017). Manipulate the one-dimensional arrays to calculate the total rainfall for each year, the average rainfall for each year, and determine the minimum and maximum rainfall values for the year 2015.

Print the output to the computer screen and to an output file called **rain\_fall\_report**. Illustrated below is the output style for the computer screen and the output file.

**OUTPUT FORMAT:**

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METROPOLIS RAINFALL DATA

2013 2014 2015 2016 2017

Month 1 x.xx x.xx x.xx x.xx x.xx

Month 2 . . . . .

Month 3 . . . . .

Month 4 . . . . .

Month 5

Month 6

Month 7

Month 8

Month 9

Month 10

Month 11

Month 12 x.xx x.xx x.xx x.xx x.xx

Averages: x.xx x.xx x.xx x.xx x.xx

REPORT SUMMARY:

Minimum rainfall for 2015 is x.xx inches.

Maximum rainfall for 2015 is x.xx inches.

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