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| **COMP 2130**  **Assignment #1** |

## Due Date: Beginning of your lecture on January 23, 2019

**NOTE: Add these comments to the top of each file you create:**

/\*\*\*\*

\* Name: XXXX XXXXXXXX

\* Student Number: XXXXXXX

\* Seminar Number: X

\* Due Date: eg January 22, 2019

\* Program Description: include an appropriate one or more-line description here

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**Student Academic Integrity**

All assessments given for the computing science courses are governed by the academic honesty policy of both TRU and the Computing Science Department. Academic dishonesty is a serious offense. All work submitted must be of your own. Preliminary discussions may be held with other students, but the work produced finally must be your own. Jointly produced work will result in a zero for that assignment for all students involved in the joint work and may mean loss of a letter grade for the course. The student may also be expelled from the University.

**DO NOT SHARE CODE OR ANYTHING IN WRITING WITH YOUR CLASSMATES.**

**PROBLEM**: **Write a C program** that will produce the **EXACT** output shown at the end of the document.

1. Using initialization lists, create 2 arrays to hold the normal rainfall amounts (based on an average of the last 30 years data for that month) (1st column below) and the 2018 rainfall amounts.
2. Generate a graph that compares, on a month-by-month basis, the normal monthly rainfall for January to June versus the 2018 rainfall for Kamloops for the same months. Include the scale and the legend as shown below.

1. Compute the totals in each case, and state whether 2018 was wetter or drier than normal and by how much.
2. Determine which month in 2018 had the highest rainfall, and print the month, the rainfall amount and how that amount compares to the normal amount for that month.

Input will consist of 6 pairs of numbers representing the normal rainfall for the month and the 2018 rainfall amount for the same month. Use the exact data shown below:

* 1. 5.4 ← January data (normal first, then 2018 data)
  2. 4.4 ← February data
  3. 4.1

5.0 6.0

4.0 5.6

6.3 4.5

Rainfall comparison for January to June 2018

January |\*\*\*\*\*\*\*\*\*\*\*

|!!!!!!!!!!!!!!!!!!!!!!!!!

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February |\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

|!!!!!!!!!!!!!!!!!!!!!

|

March | etc for the rest of the months

|

June |\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

|!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

|----1----2----3----4----5----6----7----8

LEGEND: (numbers below are for illustration purposes only)

\* - normal rainfall for a given month

! - 2018 rainfall for a given month

Total normal rainfall was 69.7 mm.

Total rainfall for 2018 was 65.6 mm.

2018 was a drier year than normal by 4.1 mm.

The month and rainfall amount, with the highest rainfall was …

**Assignment Submission:**

Submit a print-out of your program’s source code, and the output window. Use File > Print to print the file and ALT + Print Screen to capture the output as a picture and paste it into a Word document. Change the text/background colors before you capture the output. You may crop the picture if you wish.

The assignment will be marked out of 2 using this marking scheme:

* 2 – program is generally written well, is efficient and produces correct output
* 1 – program needs some improvements (see below)
* 0 – program needs a lot of improvements

Well written programs have the following characteristics

* header is included
* a copy of the output is included
* proper indentation is used
* blank spaces and lines included where needed
* good variable names
* the code is efficient
* all elements of the problem are solved as described in the problem statement
* the output is correct

**Note: you will be rewriting this program several times so please save it.**