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| **COMP 1130**  **Seminar #5** |

## Due Date: Section 1 – Tuesday October 23, 2018; Section 4 – Wednesday October 24, 2018

**NOTE: This is a tough problem. Give yourself lots of time to solve it. Start early.**

**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 Java program** that will produce the **EXACT** output shown at the end of the document.

1. In addition to the Java program, you will use 2 .txt files—one for input and one for output. (You might call them RainIn.txt and RainOut.txt. RainIn.txt will contain the data below. RainOut.txt will be created when the program runs and it will contain the output from your program) Read data from the input file. **Use Notepad to create RainIn.txt.**
2. Generate a graph that compares, on a month-by-month basis, the monthly rainfall for Kamloops for the first half of 2018 (i.e. Jan – June) versus the 30 year average rainfall for Kamloops for the same months. Include the scale and the legend as shown below.

1. Compute the totals in each case (i.e. the 2018 rainfall total for Jan. to June, and the 30 year average half-year total), and state whether 2018 was wetter or drier than average 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 30 year average amount for that month.

Input will consist of 6 pairs of numbers representing the 30-year average rainfall for the month and the 2018 rainfall amount for the same month. Use the exact data shown below:

* 1. 5.4 ← January data (30 year average comes 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 |\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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March | etc for the rest of the months

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

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

LEGEND:

\* - 30 year average rainfall for a given month (normal rainfall)

! - 2018 rainfall for a given month

Total 30 year average 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 with the highest rainfall in 2018 was …

**Assignment Submission:**

Submit a print-out of your program’s source code, and the output file.