CFS2160: Programming Stream

Tutorial/Practical Week 13

Introduction

There is no Log Book this term.

The exercises in the lab will gradually build up a library of code that you will be able to draw on when you start work on the second assignment.

The purpose of this exercise is to practice using Java's Scanner, and to refresh your knowledge of Java Loops and ArrayLists.

Activities

We are going to revisit the Temperature Reader system from last term.

The system is to read in 5 temperatures from the weather station, each reading has a value of the temperature and is represented as an integer followed by a single character, such as 23C. The logic will loosely follow the Python weather station. **You will need to google some of this!**

Your programme will require at least:

- A Scanner to read in the data
- A loop to collect the 5 readings
- Some code to remove the trailing letter to give access to the integer value only
- An ArrayList to store the Integer values
- A process of printing the contents of the ArrayList (min, max, avg & count)

You can assume that all entered data has C as the trailing letter so there is no need to convert to or from F.

You can use a single class, and put your code in the Main method and any other methods you may need.

If required, write down a brief activity diagram of the process of the system.

Extra Activities

Add a TempratureReading Class to store the reading data, it should have the reading (an int), the type (C, F) and the date and time of the reading.

Edit your first programme to reflect this class and any other classes or methods required.

https://docs.oracle.com/en/java/javase/11/docs/api/index.html#

Link to Java Documentation. ArrayList, Collections and Scanner may be of interest to you.