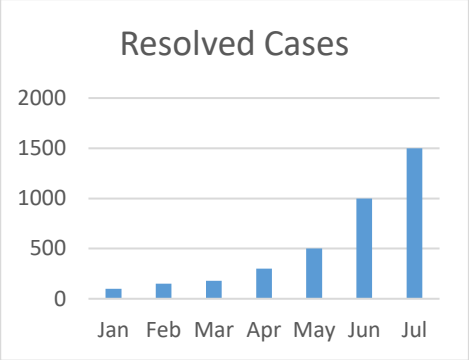
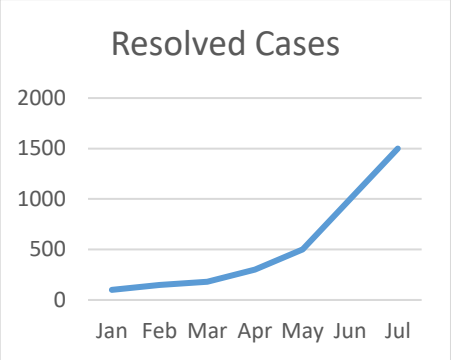
COMP10062: Assignment 1

The Assignment: Bar or Line Graph

This assignment is about variables, data types, arithmetic expressions, and flow of control. You will use the FXGraphicsTemplate for this assignment (or the FXAnimationTemplate if you decide to use animations).

Here are some example graphs. They were created in Excel, not by a Java program.





Instructions

Use the FXGraphicsTemplate for this assignment. Change the class name to something meaningful and change the window title, and size of the stage to whatever you want.

When your app runs, the first thing you should do is have a dialog with the user using System.in and System.out (don't show the JavaFX stage until after this dialog is over). The app should ask the user to enter the following information for a graph:

1. Graph Title
2. Range of values (e.g. 100 to 300) for the horizontal axis
3. A series of labels and values to be graphed either using points connected by lines or using vertical bars

Make sure the user cannot enter any values outside of the range they specified.

The title, and axes should be drawn on the screen as soon as they are entered by the user. The vertical axis should have labels for the minimum and maximum values, as well as at least one point between those values, positioned appropriately.

As the user is entering labels and (legal) values, you should be drawing either a bar for each value, or a point that is connected by a line to the last point entered. You will have to keep track of the current X value for each point or bar, and you'll have to compute the Y value for the point or top of the bar by scaling the value the user enters based on the range they specified.

Extra challenge 1: Use the `FXAnimationTemplate` instead and add some animation effects. For example, you could animate your programming credits to make them stand out.

For example, if the minimum value is 100 and the maximum is 300, then the range is 200. If the user enters 150, convert it to a decimal like this: (150-100)/200 = 0.25. Then if you know your graph is 500px high, multiply by 500 to figure out how far up the graph the point or bar should go.

You should display your own programming credits on the screen as well (i.e. “program by Josephine Smith” or something like that).

Finally, show the stage.

Documentation Standards

Don’t forget to follow the Documentation Standards for the course (i.e. Javadoc commenting, meaningful variable and class names, consistent indenting). See **Documentation Standards** on Canvas.

Handing In

See the due date and time on the Canvas Assignment. Hand in by attaching a zipped version of your**.java** (not .class) file to the Canvas Assignment.

Evaluation

Your assignment will be evaluated for performance (40%), structure (40%) and documentation (20%) using the rubric on the Canvas Assignment.

Extra challenge 2: Add images to your display to dress it up some more.

```
Image img = new Image("imagename.jpg");
gc.drawImage(img, x, y);
```