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PSS3

PSS 3 - Use Jars / Jfreechart and Apache Stats library. Document results through a write up, screen shots, and code.

**Installation** of the libraries is needed. Navigate to the Jfreechart website: <https://www.jfree.org/jfreechart/> and the Apache Stats library website, on the menu bar located at the top of the site, select "Download". Follow the instructions listed and once completed proceed to the next installation.

**Setting up** the newly downloaded libraries. Import them to your classes

**Please note that only the Results section is different from PSS1**

The chosen function to display is **y = m \* x + b**, and this is used as a base graph plot. This function is interchangeable within the code shown here:

<insert code snippet of where the equation is held>

For this given function, the "m"," b", and "x" variables were needed to be created. The **"m" and "b" variables are randomly selected from a range of integers from 1 to 3**. While **"x" was set with a range of 100, lower bound of 0, and upper bound of 50**. These variables ranges and bounds are default values that I have placed in the current code but are interchangeable within the code shown here:

A screen shot of a computer code

Description automatically generated

The **Plotter** plots the generic graph

A graph with red lines

Description automatically generated

The **Salter** functionality plays off the base graph that was chosen to use, this is because it requires the y value from the original graph. The salt component uses a strength range of -2 to 2. This was emplaced specifically to ensure the graph remained within specified bounds. The salter does not provide a constant value uniformly to each point, rather salt strength is randomly distributed individually to every point.

A screen shot of a computer program

Description automatically generated

A graph with red lines

Description automatically generated

The **Smoother** functionality plays off the Salter graph, where it takes in the Salted Y value, and the window size. The window size determines the number of points grouped together to achieve a more rounded appearance from the salted graph.

A graph with a line going up

Description automatically generated

The Apache stats library is used to analyze the data, while the JfreeChart is used to visually represent the results.

The **Results** from the code output the Plotter, Salter, and Smoother

A graph showing a number of red lines

Description automatically generated