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1st Project Bundle

For the Stats Library, I created nine sections, each with the tester class so that I ensure that there are minimum lines of code on the main method. I created one package with all methods for mean, median, mode, and a separate one for the standard deviation, and variance. I organized my work so that anyone viewing my library can easily navigate to whichever section one is searching for.

I created one program that calculates permutations and combinations. This program was simple. It only required a method that calculates factorials, and from there all I needed to do was set up the formulas. One can define n and r according to whatever problem is needed to be solved. The program is especially useful for quickly solving homework problems. Instead of typing into a handheld calculator.

The Fish Market program was more of a challenge for me as I spent hours working on it. However, it was an excellent learning experience since I was able to figure out how to efficiently write data to a csv file and also using the try method to close resources without using the close method i.e. for the Buffered Reader, it was usually the norm to create an object to close resources but with the recent upgrade in Java, one doesn't need to do that as you can simply close your resources in the try catch clause.

For the Distributions package, I included four programs, namely, Binomial, Geometric, Hypergeometric and Poisson Distributions. Coding these programs was rather exciting as I was able to turn the formula into code and use it to solve problems from the text. The accuracy with the result was outstanding, and now I am proud to have my own built-in program that I can use whenever, I am doing homework and makes work easier especially when handling calculations with large factorials.

For the Graph programs, I was able to create 5 classes. I split each problem into different classes so that I can have an easier time debugging whenever an error arises in the code. I created a salter, smoother, and a linear class to plot the graphs. The Plot Graph Tester is where I stored the main method which prints all my coordinates in a Gaphing.csv file and from there, I was able to open excel and plot the graphs from the input I received from my program.

For the Monty Hall game show program, I had two methods, and the main method called the static method of the class. I created a method for calculating the wins of never switching and just sticking to the original door, and the wins of always switching the originally chosen door. The game was played 10,000 times, and each time the program runs it outputs a very similar result. Never switching the door wins one-third of the time, while always switching the door wins two-thirds of the time.

The final program in the Programs package calculated the probability of any two people sharing a birthday in a class. I created two classes for this project, a Person class, and the Main, which extends the Person class. I used Big Integer for this problem because getting the factorial of 365 almost broke my calculator. The program was a good learning opportunity since beforehand I never knew of big integer and always thought that long datatype was the alpha and omega for handling large numbers.

The first histogram that we did in class was using data from a problem in our textbook. It was a very similar assignment to the second portion of the CSV Writer assignment. However, instead of a program outputting the values we manually entered the data into a spreadsheet. From

there, the wind speed data was put into a pivot table and a histogram. The data was grouped by 2, making it even easier to understand.