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Prob & Applied Stats Project 1 Report

The first section of this report, I wanted to write about the Monty Hall problem. Knowing that the problem was that I had to create a program that allows me to find out the chance that I have selected the correct door. This program primarily runs off the runTrials method that has a for loop run with as many trials that the user selects. After the host reveals a door that is not containing the prize, the user is then told in the command prompt what the chance was of that many trials occurring.

The birthday program was the program that shockingly gave me the most trouble. At first, I tried to create it so that it would randomly generate the desired amount of people to use as a test group and then each of those individuals would have a birthday. However, it was difficult to try and compare the actual birthday like (12/16/1999 == 01/23/2003). Therefore, by making them numbers, it allows for me to compare something like (214 == 214) or (213 =/= 214). After figuring out how to compare the individuals and compare them together, it was simple to then set up a counter. From this program, I learned that syntax is very important, and you must think about the program before you write it. It also reminded me that Java is quite a picky language compared to Python.

The mean, median, and mode were very simple programs. These three programs were created before when I first started coding. Most of the formulas such as the combinations, permutations, geometric distribution, standard deviation, variance, and binomial distribution are created using a similar fashion. There is a test or tester class and then there is a main class. Within the main class there is a method that contains a few variables as well as the formula that is used in that specific program. Within the tester, we have the user input a few of the variables and then have the method in the main class run with the given variables. The only “cool” work-around that I had was with the variance. I noticed that the variance is just the standard deviation (S) but squared. Therefore, when I was creating the variance program, I used the same exact program for the standard deviation however, in the final answer I squared the standard deviation. That was able to give me the same answer as if I were to use the variance equation. It allowed me to think about how I could solve a problem with doing the least amount of work.

The FishMarket program has its own report that was created for it. From this project, I learned that I am rusty in Java! I believe that using an object-oriented-language is a lot more difficult that using something such as Python. However, I believe that if I did all the programming and studying while it was being assigned, I would do a lot better in terms of having all the formulas and all the programs fully operational. For the next project, starting on all the assigned work ahead of time is going to be a lot better for me in the long run. Something that I realized is that the textbook can get a little confusing at times.