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**Programming Project 2**

The goal of this assignment was to assign the user with a house from Hogwarts. First the user inputs a number that is associated with their animal familiar, either an owl, cat, or rat. Then the user inputs four numbers, that associate with personality traits, bravery, loyalty, intelligence, and cunning. The program then calculates what percentage of each house they are depending on their choices. The last step is the program outputs a sentence telling them which house they are along with which animal familiar they had. For error handling, I had to ensure that all four numbers the user inputted were positive, so that my calculation can be accurate.

For my design, I first started with getting the animal familiar from the user, then used a switch statement to assign a string according to the animal picked. Then I set float variables for each character trait and got the variables from the user. In addition, I set a while statement to ensure that all inputs were positive. Then I calculated the percentages for each trait and used if else statements to assign a string to determine which house the character belongs to. Lastly, I print out a statement telling the user which house and animal the user picked. All of my variables were either floats or strings, and to calculate my percentage, I used a float value for my total, and divided each input by that total number. The pro of my choice is that my algorithm was easy to code, because I only had to find the total once. The con on my choice is that I have to use an extra variable to calculate my percentages.

In order to implicate my code, I started blocking out each section of what I needed to do with comments, and then filled out my program from there. I started with no sample code and built my program from scratch. I used the rubric as my guide, wrote the simplest program I could, and then expanded my program as needed. I worked for about an hour creating the basic code one day, then the next day I polished up the program for about thirty minutes.

For testing, I started using every sample code that was provided. Then I tried out using negative variables to ensure that my error coding worked. The main problem that I had with my code was getting the spacing right. I was trying to space all my code out like the sample code was. Once I got all of that, my code worked exactly as expected. The only part other than that where I had any trouble with was ensuring that, in the event of a tie between two houses, the first house on the list would be picked. I fixed that using greater than or equal to signs for the first runaround of each pair, and only greater signs the second time the pair goes around. Here is a sample output from my code.

Input Output

You’re a wizard Harry! Pick an animal familiar to deliver your mail and strike down your enemies. Here are the options:

1. Owl

2. Cat

3. Rat

Your choice of animal familiar: 99

Now we must sort you into a House. For each category, please enter a positive integer. The highest integer will determine which house you are sorted into.

Bravery: 50

Loyalty: 3

Intelligence: 50

Cunning: 16

You are:

42.02% Gryffindor

2.52% Hufflepuff

42.02% Ravenclaw

13.45% Slytherin

Congratulations! You are a Gryffindor with a beautiful pet Default.

Overall, the assignment was a success. I was able to output exactly what the code was expecting. I can’t think of anything that I could do differently next time. The entire project took about an hour and a half to complete. The assignment had a few bumps to finish, mostly just ascetics, but nothing to hard, and at the end it was finished perfectly.