Program Design Document

Project Title and Due Date: Ice Cream Math- Jan 17th 2020

*Answer these questions for the current upcoming project. In order to get credit for the programming part of the project, you need to complete this document beforehand, and check each box. This design document is worth 20 points.*

1. **WHAT** I can describe in my own words, in 1-3 sentences, what this program is supposed to do. Here is my description: The program will have the user insert their name, and their favorite flavor of ice cream. The program will print both of those, and calculate the volume of the ice cream tub, the volume of the scoop, and how many servings you’ll get from the tub.
2. **WHAT** I can list what are the inputs and outputs for the problem and/or the program. For each input and output, I can give an example value and a data type. Here is my list of data types and value

Inputs: Name, flavor,

Outputs: Name, flavor, size of tub, size of scoop, amount of servings.

Data type used: int

Value: 779.

1. **HOW** I can describe how I will design my program and how it will work without worrying about the exact steps. Here is my description:

The user will put in their name and their favorite flavor of ice cream.

I will have the program divide the volume of the tub ( 779.70) by the volume of the scoop (4.18) to get the amount of servings, 186.

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1. **HOW** I can write a high-level pseudocode outline of my program. My outline has enough steps and detail to show that I have thought about how to break up the whole problem into smaller problems. Here is my outline:
2. Print name
3. Print flavor
4. Calculate tub volume
5. Print tub volume
6. Calculate scoop volume
7. Print scoop volume
8. Calculate number of servings
9. Print servings
10. **HYPOTHESIZE** I can turn my example inputs and outputs from above into true/false assertions that could be used to test my program. Examples: “User must enter an integer between 2 and 30 for input years.” Or “name field cannot be empty.” Here are my 3 or more test cases:

Assert tub with diameter 9.5 and height 11 has volume approximately 779.7