Class 2 Homework

If Statements, Classes, and Functions

1. (Conceptual) Objects, Functionality, Attributes, and State

Sometimes, the behavior of an object changes based on its *state*. State in programs usually is specified as what the **Attribute Variables** contain for values, such as whether an object is ***on or off***, or whether we can buy an object, when we compare ***its price*** to ***how much money we have***, etc.

For the objects listed, try to come up with what its **Functions** might be, its **Attributes**, and how it might behave differently in different cases.

Example
Baby Object
> The Baby functions are: Eat, Sleep, Cry, and Poop.
>
> The Baby will Cry if it needs something – If its hungry, sleepy, or has pooped.
> Because the reaction of the baby changes based on those, we might have variables that range from 0 to 10 for "hunger", "energy", and "digestion".
>
> If you feed the baby, it will Eat, and then its hunger will decrease (subtraction, "hunger" will get closer to 0).

Define

Email   Mario

Microwave   Flower

2. Write a class to symbolize a fraction

A fraction is made up of a numerator and denominator. Write a class with these as **attributes**. If you want to write a working program, you can create a new Fraction in main(), then let the user input the numerator and denominator.

3. Program to check the user's age

This is a zoo program. We charge based on the person's age, so write a program to ask the user for their age.
Then, figure out the price based on the criteria:

- Under 3 – Free
- Under 18 - $5.99
- Over/Equal to 18 - $8.99

4. Write a looping program

Create a variable to hold a counter, and start it at 0. Using a **while** statement, keep adding to that, and stop looping when the counter hits 100.