## ENGR 225: Practice Problems (For and While Loops)

Hi 225, some students have asked for practice problems with for and while loops. Things that you should note: 1) These questions are set up in what I feel are least to most challenging, 2) If you have any questions please feel free to email me at elp48@humboldt.edu. Anyway here are the problems:

**1)** Create a list with 10 random numbers in it and then print it out. This list should contain numbers that range from -10 to 10. An example of an output could look like this: [1, -2, 5, 2, 3, 7, 3, -4, -6, -1]

**2)** Create two lists that will take the list that we created in Problem 1 and separate the positive numbers from the negative numbers and then print it out like this. (This problem requires more than one for loop.)

Positive Numbers: 1, 5, 2, 3, 7, 3

Negative Numbers: -2, -4, -6, -1

**3)** Given a random number from 1 to 100, print out all the multiples of that number. An example would look like this:

The number 84 is divisible by: 1, 2, 3, 4, 6, 7, 12, 14, 21, 28, 42, 84,

(**Challenge:** See if you can make it so that the output doesn't have a comma at the end after 84 in this case)

**4)** Create a simple calculator with a while loop. This calculator will take 2 numbers and a sign (+,-,/, and \*) as input and will output a what those 2 numbers equal depending on what the sign is. For example if I put in the number 2, the number 4, and the sign \* the output should be 8. You can get fancy with the output and say something like: 'Num1 \* Num2 is: 8' if you want but it is not necessary. Then after you calculate the output ask the user if they want to do another calculation and if they 'yes' then they should be able to run the loop again.

I have made a solution sheet so if you want to check and see how I did it or if you get stuck you can go [here](https://colab.research.google.com/drive/1e__HuELpAhZ1qQDfYPotX6iQq3rpWZ9Q?usp=drive_link)

. (If you want more you can email me privately)