

For vs While Loops -- Practice Problems

(Included as a repl assignment in GWC PDX Class)

Question 1: Filtering Numbers

Take a list, say for example this one:

```
master_list = [1, 47, 2, -10, 5, 3, 8, 13, 21, 34, 55, 89]
```

Write a program that, saves all the elements of master_list that are less than 20 in a new list, called small_list.

HINTS:

1. Create a variable called max_number and assign it 20 since that is our max
2. Don't forget to initiate your new list, called small_list!
3. Use a loop to iterate through your master list! You decide if you are going to use a for loop or a while loop!

Follow up problems:

- Sort small_list so you start from smallest to largest number! Assign the sorted list to a new variable, called sorted_small_list.
 - Print sorted_small_list.
 - Print the sum of all the numbers in small_list.

HINT: To calculate the sum of a list, use sum(listname)

- If you used a for loop, try the problem using a while loop!
- If you used a while loop, try the problem with a for loop!

Starting code in repl assignment:

```
master_list = [1, 47, 2, -10, 5, 3, 8, 13, 21, 34, 55, 89]

# Create a variable called max_number can assign it to 20

# Initiate your new list, called small_list

# Write your loop! Are you using a for or a while loop?
```

```
# Print small_list
```

```
# Print the sum of small_list
```

```
# OK! NOW, Try it again but use the other kind of loop!
```

```
# Comment out your code and start over down here so you don't lose it!
```