Week 4 Exercise: Looping and Control Flow

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Instructions

This assignment has two sections. The first section includes 5 short answer questions. The second part of the assignment is a coding exercise.

If you have any questions on how to start or if you get stuck, refer to the discussion board and ask your questions there. You are allowed to use your notes, lectures and the internet. Students can work together on the question portion and discuss the coding exercise. For the coding exercise, you are allowed to talk to other classmates but you cannot have the same code.

Once complete, please save your assignment as a PDF and submit it both to the online course and tag your instructor on Github.

Short Answer (1 point each)

1. Lists can be ____**ordered**____ and ____**changeable**____.

2. Lists are always___**arbitrary**____. That is, a list can contain any type of object and the objects in a list do not even all have the to be the same data type.

3. In your own words, describe "for loops" and "while loops" You can provide an example to explain your answer.

- **"For Loops" generate specified patterns of assigned values for a set number of sequences.**

    o **Example of a "For Loop":**

        ▪ **sports = ["football", "basketball", "baseball", "hockey"]**

        for x in sports:
        ** if x == "baseball":**
        **   continue**
        ** print(x)**

- **"While Loops" also generate specified values of assigned values just like "for loops", with the only drawback being that "while loops" will only produce a set number of sequences for as long as the conditions that were indicated continue to hold true.**

    - **Example of a "While Loop":**

        - **y = 8**

            while y >= 5:
              y -= 2
              if y == 4:
                  continue
              print(y)

4. What does the command range () do in Python?

The "Command Range()" function in Python generates a set amount of numbers which begin with "0" and sequentially increases by "+1" with each consecutive integer until eventually arriving at an indicated set value.

5. In your own words, complete this sentence: "Iterables are ___**sets of values that can be repetitively produced in sequential as well as consecutive patterns within both "for loops" and "while loops"____.**"

Coding Exercise (5 points)

For this exercise, you will be required to write a code to give the following output.

```
15
55
75
150
```

Hint: Create a list and use both a for loop and if statements.

```python
numlist = [15, 55, 75, 150]

for x in numlist:
    if x == 25:
        print(x[2])
    elif x != 50:
        print(x)
    else:
        print(x[:3])
```