**Week 4 Exercise: Looping and Control Flow**

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**Instructions**

**Short Answer (1 point each)**

1. Lists can be mutable and changeable.

2. Lists are always abstract data types. 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” are “used to repeat over a sequence (i.e., an ordered set of variables).

**Here is an example:**

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“while loops” are used for repeating an entire section of code.

In the example below, while is the test condition and statement(s) is the code that is repeated. I set the count to “count = count + 1” to avoid an infinite loop of block code:

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

The range () command will execute the integers between the start and the stop of a set of numbers. So if the start is 1 and the stop is 25, running the range () command will return all integers between 0 and 25:

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5. In your own words, complete this sentence: “Iterables are .”

Iterables are python elements that can return each of its variables one at a time.

In my example below I ran an iterable command on a tuple collection (immutable objects). When I executed the first print command it brought up the first character in my exact order of the tuple list. When I did it again, it brought back the second and so on:

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**Coding Exercise (5 points)**

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

|  |
| --- |
| 15  55  75  150 |

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