Metropolitan State University

ICS 140 Computational Thinking with Programming

Class Exercise 7

**Lecture Section**

1. What is a count-controlled loop?

For loop

1. How do you create a list in python?

Variable = []

1. What function can you use to create an iterable object with a predetermined set of values?

Range()

1. How can you loop through each item in a list?

For loops

Or map()

1. What are the 3 arguments for the range function?

Range(start, stop, steps)

**Range sequences**

Provide a range statement that will generate the requested sequence of numbers.

Example: 0,1,2,3,4 = range(5)

1. 0,1,2,3,4,5,6,7 = range(8)
2. 2,4,6,8 = range(2, 9, 2)
3. 7,8,9 range(7,10)
4. -1,-2,-3 range(-1, -4, -1)
5. 5,10,15,20 range(5, 21, 5)
6. 3,6,9,12 range(3,13,3)
7. 1,3,5,7 range(1, 8, 2)

**Writing For Loops**

Write the python code for the following situations. I have highlighted variable names in bold.

1. Start with **total** set to 0. Write a for loop that prompts the user to enter a dollar amount stored as **cost** exactly 5 times. Add the **cost** of each item to **total.** Print the **total** cost at the end.

Total = 0

For i in range(5):

cost = input(‘Enter dollar amount’)

total+= cost

print(total)

1. Start with **total** set to 0. Create a list of integers called **my\_int\_list** with the following values 1,2,3,4,5. Write a for loop to iterate through the **my\_int\_list** and add each number to the **total**. Print **total** when done.

Total = 0

My\_int\_list = [1,2,3,4,5]

For number in my\_int\_list:

Total += number

Print(total)

1. Use for loops to print the following pattern:  
   \*  
   \*\*  
   \*\*\*  
   \*\*\*\*  
   \*\*\*\*\*
2. Use for loops to print the following pattern:  
   \*\*\*\*\*  
   \*\*\*\*  
   \*\*\*  
   \*\*  
   \*
3. Use a for loop to print the following pattern:  
   ##  
   # #  
   # #  
   # #  
   # #  
   # #

**Programming Exercise - FizzBuzz**

For the following exercise, you will write the FizzBuzz problem. The program will run through each number 1 through 30 and print each number on its own line with the following exceptions.

* If the number is divisible 3, print “Fizz”
* If the number is divisible by 5, print “Buzz”
* If the number is divisible by 3 and 5, print “FizzBuzz”

It should look something like this when run:

Text

Description automatically generated with medium confidence

Copy the python code in the section below.

**Python Code**

A screen shot of a computer program

Description automatically generated

Take a screenshot of an example run of the program and paste it below.

**Example Output**

**A screenshot of a computer

Description automatically generated**