Metropolitan State University

ICS 140 Computational Thinking with Programming

Class Exercise 7

**Lecture Section**

1. What is a count-controlled loop?

A loop that will run a

1. How do you create a list in python?

List = [1,2,3,4]

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 item in list:

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

Starting value, ending limit, step value

**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)

1. 2,4,6,8

Range(0,9,2)

1. 7,8,9

Range(7,10)

1. -1,-2,-3

*for* i *in* range(-1,-4,-1):

print(i)

1. 5,10,15,20

Range(5,21,5)

1. 3,6,9,12

Range(3,13,3)

1. 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 = int(input("Please enter a number"))

total = cost + total

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.

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

total = 0

*for* int *in* my\_int\_list:

total += int

print(total)

1. Use for loops to print the following pattern:  
   \*  
   \*\*  
   \*\*\*  
   \*\*\*\*  
   \*\*\*\*\*

*for* i *in* range(5):

print("\*" \* (i + 1))

1. Use for loops to print the following pattern:  
   \*\*\*\*\*  
   \*\*\*\*  
   \*\*\*  
   \*\*  
   \*

*for* i *in* range(5):

i = 5 - i

print("\*" \* i)

1. Use a for loop to print the following pattern:  
   ##  
   # #  
   # #  
   # #  
   # #  
   # #

*for* i *in* range(5):

print(f"#"," " \* i, "#", *sep*="")

**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**

*for* i *in* range(1,31):

*if* i % 3 == 0 *and* i % 5 == 0:

print(f"{i} - FizzBuzz")

*elif* i % 3 == 0:

print(f"{i} - Fizz")

*elif* i % 5 == 0:

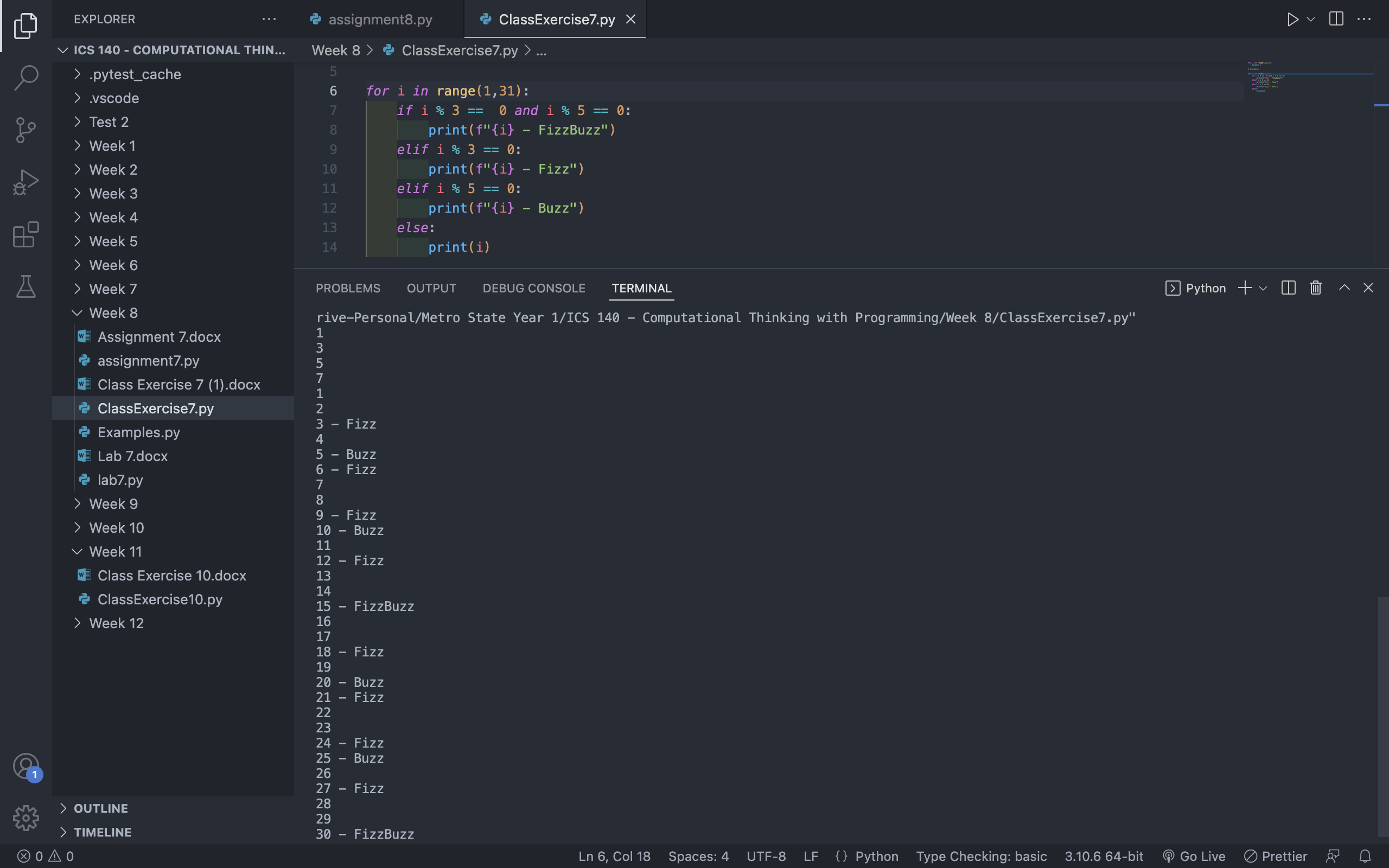
print(f"{i} - Buzz")

*else*:

print(i)

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

**Example Output**

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