

# **Spatial Programming Lab 2**

**Seth Opatz**

(Python script attached with assignment submission)

## **Script output example:**

```
"C:\Program Files\ArcGIS\Pro\bin\Python\envs\arcgispro-py3\python.exe"  
C:\Users\sopat\PycharmProjects\Lab02\lab02.py
```

Question 1:

30 feet in meters = 9.144

Question 2:

The sum of these scores is 170.

Their average is 85.0.

Question 3:

The second largest number of the list is 32

Question 4:

List test1 contains duplicate values

List test2 does not contain duplicate values

Question 5:

39129021402

Question 6:

The list contains 4 names.

The third member of the band is Ringo Starr.

The last name of each band member is:

Lennon

McCartney

Starr

Harrison

Question 7:

First random number (1-6): 5

Second random number (1-6): 6  
2nd number - 1st number = 1  
Try again.

Question 8:

10  
9  
8  
7  
6  
5  
4  
3  
2  
1  
0

Process finished with exit code 0

### **Source code script written using PyCharm as my IDE:**

```
# Spatial Programming Lab 02: Python language fundamentals
# Seth Opatz
# 03/25/2025

# Question 1
print("\nQuestion 1:") #'\\n' is the newline character
length = 30
meter_length = length * 0.3048
print("30 feet in meters = " + str(meter_length))

# Question 2
print("\nQuestion 2:")
score1 = 90
score2 = 80
print(f"The sum of these scores is {score1 + score2}.")
print(f"Their average is {(score1 + score2) / 2}.")

# Question 3
print("\nQuestion 3:")
numbers = [1, 32, 17, 46, 23, 10]
numbers.sort() #sort list in ascending order
```

```

print(f"The second largest number of the list is {numbers[len(numbers) - 2]}")
#get element at index second from the end

# Question 4
print("\nQuestion 4:")
test1 = [15, 10, 8, 23, 15, 12, 28, 10]
test2 = [2, 8, 12, 25, 28, 13, 21, 15]

# Boolean function to check for duplicates
def duplicate_checker(number_list):
    number_list.sort()
    last_number = None #declaring last_number variable with nothing in it for
now
    for number in number_list:
        if number == last_number:
            return True
        last_number = number
    return False

# Print results for test1
if duplicate_checker(test1):
    print("List test1 contains duplicate values")
else:
    print("List test1 does not contain duplicate values")

# Print results for test2
if duplicate_checker(test2):
    print("List test2 contains duplicate values")
else:
    print("List test2 does not contain duplicate values")

# Question 5
print("\nQuestion 5:")
geoid = "1400000US39129021402"
us_index = geoid.find("US") #find index in string where 'US' happens
if us_index != -1:
    substring = geoid[us_index+2:] #creates substring from 2 indices after 'US'
is found to the end of the string
    print(substring)
else: print("'US' not found in GEOID")

# Question 6
print("\nQuestion 6:")
Beatles = ["John Lennon", "Paul McCartney", "Ringo Starr", "George Harrison"]
print(f"The list contains {len(Beatles)} names.")
print(f"The third member of the band is {Beatles[2]}")
print("The last name of each band member is: ")
for member in Beatles:

```

```
    print(member.split()[-1]) #split each name on a space and print the last
element of each resulting list

# Question 7
print("\nQuestion 7:")
import random
num1 = random.randint(1, 6)
num2 = random.randint(1, 6)
print(f"First random number (1-6): {num1}")
print(f"Second random number (1-6): {num2}")
difference = num2 - num1
print(f"2nd number - 1st number = {difference}")
if difference < 0:
    print("You lose.")
elif difference > 0: # "else if" statement
    print("Try again.")
else: # if the difference is zero
    print("You win!")

# Question 8
print("\nQuestion 8:")
for i in reversed(range(11)): # loops through reversed list of numbers from 10
to 0
    print(i)
```