

Weekly Assignment Report

Objective Questions

Question 1:

Answer- A) 3,1

Question 2:

Answer- D) All of the above

Question 3:

Answer- C) True and False are valid Boolean literals

Question 4:

Answer- A) [2, 3, 4]

Question 5:

Answer- A) set()

Coding Questions

Python

1. Basic Operations with Numbers

```
def basic_operations():  
  
    x = 10 # integer  
  
    y = 5.5 # float  
  
    # Sum, Difference, Product, Quotient  
  
    print("Sum:", x + y)  
  
    print("Difference:", x - y)  
  
    print("Product:", x * y)  
  
    print("Quotient:", x / y)  
  
    # Shorthand operator  
  
    x += 5  
  
    print("Updated x (after += 5):", x)
```

2. String Manipulation

```
def format_string(name, age):  
  
    formatted1 = "My name is {} and I am {} years old.".format(name, age)  
  
    formatted2 = f"My name is {name} and I am {age} years old."  
  
    return formatted1, formatted2
```

3. List Operations

```
def list_operations():  
    numbers = list(range(1, 11))  
  
    # Squares using list comprehension  
    squares = [n ** 2 for n in numbers]  
    print("Squares:", squares)  
  
    # Extract even numbers  
    evens = numbers[1::2] # Even numbers using slicing  
    print("Even numbers:", evens)
```

4. Dictionary Manipulation

```
def dictionary_operations():  
    students = {"Alice": 85, "Bob": 90, "Charlie": 78}  
  
    # Add a new student  
    students["David"] = 92  
  
    # Retrieve marks  
    print("Marks of Bob:", students.get("Bob"))
```

```
# Print sorted dictionary

for name in sorted(students):

    print(f"{name}: {students[name]}")


# 5. Set Operations

def set_operations():

    set1 = {1, 2, 3, 4}

    set2 = {3, 4, 5, 6}


# Union, Intersection, Difference

print("Union:", set1 | set2)

print("Intersection:", set1 & set2)

print("Difference:", set1 - set2)


# Unique elements

unique_elements = list(set1 ^ set2)

print("Unique elements:", unique_elements)


# 6. Tuples and Functions

def tuple_operations(t):

    if not t:

        return None, None, 0

    return max(t), min(t), sum(t)
```

```
# Sample function calls

print("Basic Operations:")

basic_operations()

print("\nString Manipulation:")

print(format_string("John", 25))

print("\nList Operations:")

list_operations()

print("\nDictionary Manipulation:")

dictionary_operations()

print("\nSet Operations:")

set_operations()

print("\nTuple Operations:")

print(tuple_operations((10, 20, 30, 40)))
```

Output:

```
(base) └─(thenetherwatcher@kali) - [~/Documents/CS352-Lab/Lab-1]
● └─$ python coding_questions.py
Basic Operations:
Sum: 15.5
Difference: 4.5
Product: 55.0
Quotient: 1.8181818181818181
Updated x (after += 5): 15

String Manipulation:
('My name is John and I am 25 years old.', 'My name is John and I am 25 years old.')

List Operations:
Squares: [1, 4, 9, 16, 25, 36, 49, 64, 81, 100]
Even numbers: [2, 4, 6, 8, 10]

Dictionary Manipulation:
Marks of Bob: 90
Alice: 85
Bob: 90
Charlie: 78
David: 92

Set Operations:
Union: {1, 2, 3, 4, 5, 6}
Intersection: {3, 4}
Difference: {1, 2}
Unique elements: [1, 2, 5, 6]

Tuple Operations:
(40, 10, 100)
```