Week 6

1. Write a Python program that inputs two tuples and creates a third that contains all elements of the first followed by all elements of the second.

```
def concatenate_tuples(tup1, tup2):
    return tup1 + tup2

tup1 = tuple(input("Enter Elements of first tuple: ").split())
tup2 = tuple(input("Enter Elements of first tuple: ").split())
tup3 = concatenate_tuples(tup1, tup2)
print(tup3)
```

```
PS D:\LabWeeks\MCA-III_LAB\Week-6> & C:/Users/CSD/AppData/Local/Microsoft/W
indowsApps/python3.12.exe d:/LabWeeks/MCA-III_LAB/Week-6/Q1.py
Enter Elements of first tuple: 1 2 3 4 5
Enter Elements of first tuple: 9 8 7 6
('1', '2', '3', '4', '5', '9', '8', '7', '6')
PS D:\LabWeeks\MCA-III_LAB\Week-6>
```

---

2. Write a Python program to create a dictionary with names and phone numbers. Then ask the user for a name and print the corresponding phone number.

```
def create_phonebook():
    phonebook = {}
    phonebook["Alice"] = "123-456-7890"
    phonebook["Bob"] = "234-567-8901"
    phonebook["Charlie"] = "345-678-9012"
    return phonebook
```

```
def get_phone_number(phonebook, name):
    return phonebook.get(name, "Name not found")


phonebook = create_phonebook()
name = input("Enter a name: ")
print("Phone number:", get_phone_number(phonebook, name))
```

```
PS D:\LabWeeks\MCA-III_LAB\Week-6> & C:/Users/CSD/AppData/Local/Microsoft/W
indowsApps/python3.12.exe d:/LabWeeks/MCA-III_LAB/Week-6/Q2.py
Enter a name: Bob
Phone number: 234-567-8901
PS D:\LabWeeks\MCA-III_LAB\Week-6>
```

3. Write a Python program to calculate the sum of squares of the first two digits and the last two digits of a 4-digit number, e.g., for 1233, calculate 12^2 + 33^2.

```
def sum_of_squares(num):
    if num<=9999 and num >= 1000:
        first_two = int(str(num)[:2])
        last_two = int(str(num)[-2:])
        return first_two**2 + last_two**2
    else:
        print("Enter 4 digit number")
        return
number = int(input("Enter Number: "))
print("Sum of squares:", sum_of_squares(number))
```

```
PS D:\LabWeeks\MCA-III_LAB\Week-6> & C:/Users/CSD/AppData/Local/Microsoft/W
indowsApps/python3.12.exe d:/LabWeeks/MCA-III_LAB/Week-6/Q3.py
Enter Number: 2432
Sum of squares: 1600
PS D:\LabWeeks\MCA-III LAB\Week-6>
```

4. Write a program that inputs a main string and creates an encrypted string by embedding a short symbol-based string after each character. The program should also decrypt the string.

```
def encrypt_string(main_str, symbol_str):
    encrypted = ''.join([char + symbol_str for char in main_str])
    return encrypted

def decrypt_string(encrypted_str, symbol_str):
    return encrypted_str.replace(symbol_str, '')

main_str = input("Enter a String: ")
symbol_str = input("Enter symbol: ")
encrypted = encrypt_string(main_str, symbol_str)
print("Encrypted string:", encrypted)
decrypted = decrypt_string(encrypted, symbol_str)
print("Decrypted string:", decrypted)
```

```
PS D:\LabWeeks\MCA-III_LAB\Week-6> & C:/Users/CSD/AppData/Local/Microsoft/W
indowsApps/python3.12.exe d:/LabWeeks/MCA-III_LAB/Week-6/Q4.py
Enter a String: hello world
Enter symbol: #
Encrypted string: h#e#l#l#o# #w#o#r#l#d#
Decrypted string: hello world
PS D:\LabWeeks\MCA-III_LAB\Week-6>
```

5. Write a program to get roll numbers, names, and marks of students and store these details in a file called "Marks. data".

```
def store_student_details(filename):
    with open(filename, 'a') as file:
        while True:
            roll_number = input("Enter roll number: ")
            name = input("Enter name: ")
            marks = input("Enter marks: ")
            file.write(f"{roll_number},{name},{marks}\n")
            cont = input("Enter y if you want to add another student: ")
            if cont.lower() != 'y':
                break

store_student_details("Marks.data")
```

```
PS D:\LabWeeks\MCA-III_LAB\Week-6> & C:/Users/CSD/AppData/Local/Microsoft/W
indowsApps/python3.12.exe d:/LabWeeks/MCA-III_LAB/Week-6/Q5.py
Enter roll number: 12
Enter name: hammad
Enter marks: 98
Enter y if you want to add another student: y
Enter roll number: 40
Enter name: ayan
Enter marks: 40
Enter y if you want to add another student: y
Enter roll number: 34
Enter name: tayyab
Enter marks: 12
Enter y if you want to add another student: n
PS D:\LabWeeks\MCA-III_LAB\Week-6>
```

Marks.data × Q5.py

Marks.data

```
1   12,hammad,98
2   40,ayan,40
3   34,tayyab,12
4
```

6. Write a program to accept a string and display:

a. Number of uppercase characters

b. Number of lowercase characters

c. Total number of alphabets

d. Number of digits

```
def char_counts(s):
    uppercase = sum(1 for c in s if c.isupper())
    lowercase = sum(1 for c in s if c.islower())
    alphabets = sum(1 for c in s if c.isalpha())
    digits = sum(1 for c in s if c.isdigit())
    return uppercase, lowercase, alphabets, digits

s = input("Enter a string: ")
uppercase, lowercase, alphabets, digits = char_counts(s)
print("Uppercase characters:", uppercase)
print("Lowercase characters:", lowercase)
print("Total alphabets:", alphabets)
print("Digits:", digits)
```

```
PS D:\LabWeeks\MCA-III_LAB\Week-6> & C:/Users/CSD/AppData/Local/Microsoft/W
indowsApps/python3.12.exe d:/LabWeeks/MCA-III_LAB/Week-6/Q6.py
Enter a string: hello 123 @ world
Uppercase characters: 0
Lowercase characters: 10
Total alphabets: 10
Digits: 3
PS D:\LabWeeks\MCA-III_LAB\Week-6>
```