Assignment 01

Question 1: Code Along

Problem: Write a Python program that takes a string as input and prints out the following:

1. The string in reverse order.

2. The number of vowels in the string.

Solution:

```
input_string = input("Enter a string: ")  # Taking input from the user
reversed_string = "" # Initialize an empty string to store the reversed string
vowels_count=0
vowels="aeiouAEIOU"
# Loop through the string in reverse order
for i in range(len(input_string) - 1, -1, -1):
    reversed_string += input_string[i] # Append each character in reverse order
    if input_string[i] in vowels:
        vowels_count +=1
print("Reversed string:", reversed_string) # Print the reversed string
print("Number of vowels:", vowels_count) #print the number of vowels in string
```

Input:

Enter a string: Hello World

Output:

Reversed string: dlroW olleH

Number of vowels: 3

Question 2: Hands-on Coding Project

Problem: Create a Python program that:

● Takes an input number from the user.

● Checks whether the number is even or odd.

● Prints the result.

Solution:

```
number = int(input("Enter a number: "))  # Taking input from user and converting it to an integer

# Check if the number is even or odd

if number % 2 == 0:

   print("The number ",number," is Even.")

else:

   print("The number ",number," is Odd.")
```

Input:

Enter a number: 5

Output:

The number 5 is Odd.

Question 3: Virtual Environment Application

Problem: Create a Python program that:

1. Takes a list of integers as input.

2. Creates a new virtual environment called sortenv.

3. Installs a package (such as numpy) in the virtual environment.

4. Sorts the list using a numpy method (numpy.sort()).

5. Prints the sorted list.

Solution:

#Creates a new virtual environment called sortenv

(base) C:\Users\TN6460532\python_programming>conda create -n sortenv python=3.10

#Activate the environment

#(base) C:\Users\TN6460532\python_programming>conda activate sortenv

#Installs a package (such as numpy) in the virtual environment.

#(sortenv) C:\Users\TN6460532\python_programming>pip install numpy==2.2

```
import numpy

# Taking a list of integers as input from the user

input_list = numpy.array(list(map(int, input("Enter a list of numbers separated by comas: ").split(','))))

sorted_num=numpy.sort(input_list) #Sorts the list using (numpy.sort()).

print("Sorted list:", list(map(int, sorted_num)) )
```

Input:

Enter a list of numbers separated by comas: [4, 2, 7, 1, 3]

Output:

Sorted list: [1, 2, 3, 4, 7]