TOPIC: Python Basics Variable

1. Aim:- Declare two variables, `x` and `y`, and assign them integer values. Swap the values of these variables without using any temporary variable.

Python code:-

x = 5

y = 10

x = x + y

y = x - y

x = x - y

print("After swapping:")

print("x =", x)

print("y =", y)

output:-

After swapping:

x = 10

y = 5

2. Create a program that calculates the area of a rectangle. Take the length and width as inputs from the user and store them in variables. Calculate and display the area.

Python code:-

length = float(input("Enter the length of the rectangle: "))

width = float(input("Enter the width of the rectangle: "))

area = length * width

print("The area of the rectangle is:", area)

output:-

Enter the length of the rectangle: 5

Enter the width of the rectangle: 3

The area of the rectangle is: 15.0

3. Write a Python program that converts temperatures from Celsius to Fahrenheit. Take the temperature in Celsius as input, store it in a variable, convert it to Fahrenheit, and display the result.

Python code:-

```
celsius_temperature = float(input("Enter the temperature in Celsius: "))

fahrenheit_temperature = (celsius_temperature * 9/5) + 32

print("Temperature in Fahrenheit:", fahrenheit_temperature)
```

output:-

Enter the temperature in Celsius: 15

Temperature in Fahrenheit: 59.0

TOPIC: String Based Questions

1. Write a Python program that takes a string as input and prints the length of the string.

Python code:-

```
input_string = input("Enter a string: ")
```

```
string_length = len(input_string)

print("Length of the string:", string_length)
```

output:-

Enter a string: 456123

Length of the string: 6

2. Create a program that takes a sentence from the user and counts the number of vowels (a, e, i, o, u) in the string.

Python code:-

```
sentence = input("Enter a sentence: ")

sentence = sentence.lower()

vowel_count = sum(1 for char in sentence if char in 'aeiou')

print("Number of vowels in the sentence:", vowel_count)
```

output:-

Enter a sentence: aeio

Number of vowels in the sentence: 4

3. Given a string, reverse the order of characters using string slicing and print the reversed string.

Python code:-

```
input_string = input("Enter a string: ")

reversed_string = input_string[::-1]

print("Reversed string:", reversed_string)
```

output:-

Enter a string: 456231

Reversed string: 132654

4. Write a program that takes a string as input and checks if it is a palindrome (reads the same forwards and backwards).

Python code:-

```
input_string = input("Enter a string: ")

cleaned_string = ''.join(input_string.split()).lower()

is_palindrome = cleaned_string == cleaned_string[::-1]

if is_palindrome:

    print("The entered string is a palindrome.")

else:

    print("The entered string is not a palindrome.")
```

output:-

Enter a string: 2

The entered string is a palindrome.

5. Create a program that takes a string as input and removes all the spaces from it. Print the modified string without spaces.

Python code:-

```
input_string = input("Enter a string: ")

modified_string = ''.join(input_string.split())

print("Modified string without spaces:", modified_string)
```

output:-

Enter a string: 2

Modified string without spaces: 2