

TOPIC: Python Basics Variable

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

```
x = 5
y = 10
x = x + y
y = x - y
x = x - y
print("After swapping, x =", x)
print("After swapping, y =", y)
```

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.

```
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)
```

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.

```
celsius = float(input("Enter the temperature in Celsius: "))
fahrenheit = (celsius * 9/5) + 32
print("The temperature in Fahrenheit is:", fahrenheit)
```

TOPIC: String Based Questions

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

```
string = input("Enter a string: ")
print("Length of the string:", len(string))
```

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.

```
sentence = input("Enter a sentence: ")
vowels = "aeiou"
count = 0
for char in sentence:
    if char.lower() in vowels:
        count += 1
print("Number of vowels in the sentence:", count)
```

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

```
string = input("Enter a string: ")
reversed_string = string[::-1]
print("Reversed string:", reversed_string)
```

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

```
string = input("Enter a string: ")
if string == string[::-1]:
    print("The string is a palindrome.")
else:
    print("The string is not 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.

```
string = input("Enter a string: ")
string_without_spaces = string.replace(" ", "")
print("String without spaces:", string_without_spaces)
```