Netaji Subhash Engineering College

Department of Computer Science & Engineering
B. Tech CSE 2nd Year 3rd Semester
2023-2024

Name of the Course: IT Workshop (Python)

Course Code: PCC-CS393

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Assignment No : 1

Problem Statement : Write a program to convert temperature from degree Celsius to degree Fahrenheit.

Python Code :

```
celsius = float(input("Enter the temperature in degrees Celsius: "))
fahrenheit = celsius * 9 / 5 + 32
print(f"{celsius} degrees Celsius is equal to {fahrenheit} degrees Fahrenheit.")
```

Sample Outputs :

Enter the temperature in degrees Celsius: 45.7
45.7 degrees Celsius is equal to 114.26 degrees Fahrenheit.

Enter the temperature in degrees Celsius: 35
35.0 degrees Celsius is equal to 95.0 degrees Fahrenheit.

Assignment No : 2

Problem Statement : Write a program to calculate the area and perimeter of a rectangle.

Python Code :

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

area = width*height
perimeter = 2*width*height
```

```
print(f"The area of the rectangle is {area}.")
print(f"The perimeter of the rectangle is {perimeter}.")
```

Sample Outputs :

Enter the width of the rectangle: 20
Enter the height of the rectangle: 12
The area of the rectangle is 240.0.
The perimeter of the rectangle is 480.0.

Enter the width of the rectangle: 45
Enter the height of the rectangle: 98
The area of the rectangle is 4410.0.
The perimeter of the rectangle is 8820.0.

Assignment No : 3

Problem Statement : Write a program to swap the value of two variables using a third variable and without Using a third variable.

Python Code :

```
# Swapping using a third variable

a = int(input("Enter First Number : "))
b = int(input("Enter Second number : "))
temp = a
a = b
b = temp
print("After swapping (using third variable):")
print("a =", a)
print("b =", b)
```

```
# Swapping without using a third
variable

a = int(input("Enter First Number : "))
b = int(input("Enter Second number : "))

a = a + b
b = a - b
a = a - b
print("After swapping (without using
third variable):")
print("a =", a)
print("b =", b)
```

Sample Outputs :

Enter First Number : 50
Enter Second number : 75
After swapping (using third variable):
a = 75
b = 50

Enter First Number : 32
Enter Second number : 16
After swapping (without using third
variable):
a = 16
b = 32

Assignment No : 4

Problem Statement : Write a program to swap two numbers using bitwise operators.

Python Code :

```
# Python program to demonstrate
# Swapping of two variables

x = 10
y = 50
```

```
# Swapping using xor
x = x ^ y
y = x ^ y
x = x ^ y

print("Value of x:", x)
print("Value of y:", y)
```

Sample Output :

Value of x: 50
Value of y: 10

Assignment No : 5

Problem Statement : Write a program to rotate the value of x, y, and z such that x has the value of y, y has the value of z and z has the value of x.

Python Code :

```
x = int(input("Enter First Number : "))
y = int(input("Enter Second number : "))
z = int(input("Enter Third Number : "))

# Rotate the values
temp = x  # Store the value of x in a temporary variable
x = y     # Assign the value of y to x
y = z     # Assign the value of z to y
z = temp  # Assign the original value of x (stored in temp) to z
# Print the rotated values
print("x:", x)
print("y:", y)
print("z:", z)
```

Sample Outputs :

Enter First Number : 5
Enter Second number : 8
Enter Third Number : 0
x: 8
y: 0
z: 5

Enter First Number : 90
Enter Second number : 60
Enter Third Number : 30
x: 60
y: 30
z: 90

Assignment No : 6

Problem Statement : Write a program to take input from the user and display input number like this following numbers: 5678, 678, 78, 8, where the given number is 5678(for example only)

Python Code :

```
user_input = input("Enter a number: ")

input_number = int(user_input)
num_str = str(input_number)
length = len(num_str)

for i in range(length):
    print(num_str[i:], end="")
    if i < length - 1:
        print(",", end="")

print()
```

Sample Outputs :

Enter a number: 89790
89790,9790,790,90,0

Assignment No : 7

Problem Statement : Write a program to add two complex number

Python Code :

```
c1 = complex(input("Enter First Complex Number: "))
c2 = complex(input("Enter second Complex Number: "))
print("Sum of both the Complex number is", c1 + c2)
```

Sample Outputs :

Enter First Complex Number: 5
Enter second Complex Number: 7
Sum of both the Complex number is (12+0j)

Enter First Complex Number: 7+5j
Enter second Complex Number: 9+9j
Sum of both the Complex number is
(16+14j)

Assignment No : 8

Problem Statement : Write a program to accept the principal amount, rate of interest, and duration from the user. Calculate the interest amount and the total amount (principal + interest)

Python Code :

```
# Accepting input from the user
principal = float(input("Enter the principal amount: "))
```

```python
rate_of_interest = float(input("Enter the rate of interest (%): "))
duration = float(input("Enter the duration (in years): "))

# Calculating the interest amount
interest_amount = (principal * rate_of_interest * duration) / 100

# Calculating the total amount
total_amount = principal + interest_amount

# Printing the results
print(f"Interest amount: {interest_amount:.2f}")
print(f"Total amount: {total_amount:.2f}")
```

Sample Outputs :

Enter the principal amount: 34000
Enter the rate of interest (%): 5
Enter the duration (in years): 2
Interest amount: 3400.00
Total amount: 37400.00

Enter the principal amount: 550000
Enter the rate of interest (%): 7
Enter the duration (in years): 5
Interest amount: 192500.00
Total amount: 742500.00