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

Name of the Student:

Class Roll No.:

University Roll No.:

Date of Experiment:

Date of Submission:

Assignment No. : 9
Problem Statement: Write a program to sort three numbers using if-elif-else.
Python Code:

```
num1 = int(input("Enter the first number: "))
num2 = int(input("Enter the second number: "))
num3 = int(input("Enter the third number: "))

# Using if-elif-else to sort the numbers
if num1 <= num2 and num1 <= num3:
    smallest = num1
    if num2 <= num3:
        middle = num2
        largest = num3
    else:
        middle = num3
        largest = num2
elif num2 <= num1 and num2 <= num3:
    smallest = num2
    if num1 <= num3:
        middle = num1
        largest = num3
    else:
        middle = num3
        largest = num1
```

```
else:
    smallest = num3
    if num1 <= num2:
        middle = num1
        largest = num2
    else:
        middle = num2
        largest = num1

# Print the sorted numbers
print("Sorted numbers:", smallest, middle, largest)
```

Sample Output:

```
Enter the first number: 47
Enter the second number: 19
Enter the third number: 73
Sorted numbers: 19 47 73
```

Assignment No. : 10

Problem Statement: Write a program to calculate simple interest with the following conditions:

- If the principal amount is less than 2,00,000 the interest rate is 10%.
- If the principal amount is 2,00,000 -10,00,000 the interest rate is 12%.
- If the principal amount is greater than 10,00,000 the interest rate is 15%.

Python Code:

```
prin=int(input("Enter the principal amount: "))
roi=0
y=int(input("Enter the no. of years: "))

if prin<200000:
    roi=10
elif prin>=200000 and prin<1000000:
    roi=12
else:
    roi=15

res=((prin*roi/100)*y)
result=prin+((prin*roi/100)*y)
print(f"The Simple Interest of {prin} for {y} years is {res}")
print(f"For an investment of {prin} rupees, after {y} years, the return on investment amount will be {result}")
```

Sample Output:

```
Enter the principal amount: 500000
Enter the no. of years: 5
The Simple Interest of 500000 for 5 years is 300000.0
For an investment of 500000 rupees, after 5 years, the return on investment amount will be 800000.0
```

Assignment No. : 11(a)

Problem Statement: Write a program to print the following pattern:

1
2 , 3
4, 5, 6
7 , 8, 9, 10
11, 12, 13, 14, 15

Python Code:

```
rows = int(input("Enter the no. of rows: "))
num = 1

for i in range(1, rows + 1):
   for j in range(i):
      print(num, end=" ")
      num += 1
   print()
```

Sample Output:

```
Enter the no. of rows: 5
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
```

Assignment No. : 11(b)

Problem Statement: Write a program to print the following pattern:

```
* * * * * * * * *
 * * * * * * *
  * * * * *
   * * *
    *
```

Python Code:

```
rows = int(input("Enter the no. of rows: "))
for i in range(1, rows + 1):
   print(" " * (i - 1), "* " * (rows - i + 1))
```

Sample Output:

```
Enter the no. of rows: 5
* * * * *
 * * * *
  * * *
   * *
    *
```

Assignment No. : 12

Problem Statement: Write a program using a while loop to print all the odd numbers within a given range.

Python Code:

```
n = int(input("Enter the range: "))
if n%2==1:
   n=n+1
for i in range(1,n):
   if i%2==1:
      print(i)
```

Sample Output:

```
Enter the range: 17
1
3
5
7
9
11
13
15
17
```

Assignment No. : 13

Problem Statement: Write a program to compute the GCD of two integer numbers.

Python Code:

```
def gcd(a, b):
   while b:
      a, b = b, a % b
   return a

num1 = int(input("Enter the first number: "))
num2 = int(input("Enter the second number: "))

result = gcd(num1, num2)
print(f"The GCD of {num1} and {num2} is {result}")
```

Sample Output:

```
Enter the first number: 17
Enter the second number: 23
The GCD of 17 and 23 is 1
```

```
Enter the first number: 32
Enter the second number: 8
The GCD of 32 and 8 is 8
```

Assignment No. : 14

Problem Statement: Write a program to print the decimal equivalents of 1/2, 1/3, 1/4,. ..... , 1/10 using for loop.

Python Code:

```
num = int(input("Enter the range: "))
for i in range(2,num+1):
   print(abs(1/i))
```

Sample Output:

```
Enter the range: 10
0.5
0.3333333333333333
0.25
0.2
0.16666666666666666
0.14285714285714285
0.125
0.1111111111111111
0.1
```
