

## **Python – Experiment 1**

**AIM :** Basics of python

**LO - 1 :** Basics of python including data types, operator, conditional statements, looping statements, input and output functions in Python

A) Write a python program to swap two numbers and check if the first number is positive, negative or zero.

**Code:**

```
num1 = int(input("Enter first number: "))
num2 = int(input("Enter second number: "))
a = num1
num1 = num2
num2 = a
print("After swapping: ")
print("First number: ", num1)
print("Second number: ", num2)
```

```
if num1 < 0:
    print("First number is negative")
elif num1 > 0:
    print("First number is positive")
else:
    print("First number is zero")
```

```
if num2 < 0:
    print("Second number is negative")
elif num2 > 0:
    print("Second number is positive")
else:
    print("Second number is zero")
```

**Output:**

```
Enter first number: 34
Enter second number: 56
After swapping:
First number: 56
Second number: 34
First number is positive
Second number is positive
```

B) Write a python program to print all the numbers divisible by 4 in the range 1 to n (use for loop).

**Code:**

```
r = int(input("Enter The Range (1-n) To Get The Number's Divisible By 4 : "))
if (r < 4):
    print("No Numbers Found, Enter Range Greater Than 3 To Get Some Output Number's.")
else:
    for i in range(1, r):
        if (i % 4 == 0):
            print(i , end=" ")
```

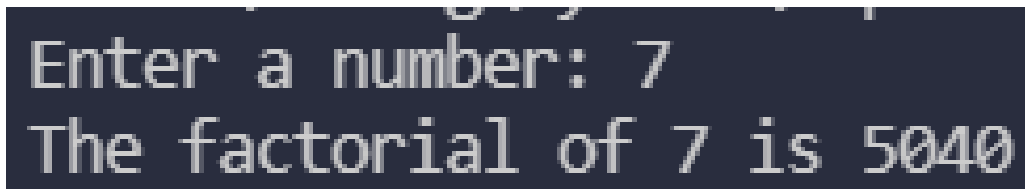
**Output:**

```
Enter The Range (1-n) To Get The Number's Divisible By 4 : 56
4 8 12 16 20 24 28 32 36 40 44 48 52
```

C) Write a python program to find the factorial of an input number (use while loop).

**Code:**

```
n = int(input("Enter a number: "))
factorial = 1
i = 1
while i <= n:
    factorial *= i
    i += 1
print("The factorial of", n, "is", factorial)
```

**Output:**

```
Enter a number: 7
The factorial of 7 is 5040
```

D) Write a menu-driven python program to build simple calculator functions.

**Code:**

```
while True:
    print("Select operation.")
    print("1. Add")
    print("2. Subtract")
    print("3. Multiply")
    print("4. Divide")
    print("5. Modulus")
    print("0. Exit")
    choice = int(input("Enter choice: "))
    if choice == 0:
        break
    num1 = float(input("Enter first number: "))
    num2 = float(input("Enter second number: "))
```

```
if choice == 1:
    print(num1, "+", num2, "=", num1 + num2)
elif choice == 2:
    print(num1, "-", num2, "=", num1 - num2)
elif choice == 3:
    print(num1, "*", num2, "=", num1 * num2)
elif choice == 4:
    print(num1, "/", num2, "=", num1 / num2)
elif choice == 5:
    print(num1, "%", num2, "=", num1 % num2)
else:
    print("Invalid input")
print("Thank you for using calculator.")
```

### Output:

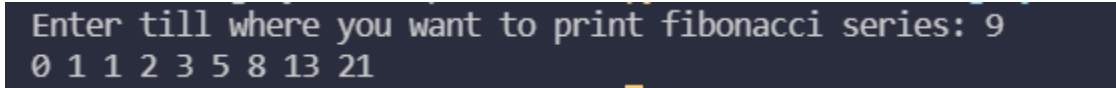
```
Select operation.
1. Add
2. Subtract
3. Multiply
4. Divide
5.Modulus
0. Exit
Enter choice: 1
Enter first number: 4
Enter second number: 6
4.0 + 6.0 = 10.0
Select operation.
1. Add
2. Subtract
3. Multiply
4. Divide
5.Modulus
0. Exit
Enter choice: 2
Enter first number: 3
Enter second number: 2
3.0 - 2.0 = 1.0
```

```
Select operation.
1. Add
2. Subtract
3. Multiply
4. Divide
5.Modulus
0. Exit
Enter choice: 3
Enter first number: 5
Enter second number: 3
5.0 * 3.0 = 15.0
Select operation.
1. Add
2. Subtract
3. Multiply
4. Divide
5.Modulus
0. Exit
Enter choice: 0
Thank you for using calculator.
```

E) Write a python program to display Fibonacci series of n number

**Code:**

```
def fibonacci(n):  
    if n == 0:  
        return 0  
    elif n == 1:  
        return 1  
    else:  
        return fibonacci(n - 1) + fibonacci(n - 2)  
  
num = int(input("Enter till where you want to print fibonacci series: "))  
for i in range(0, num):  
    print(fibonacci(i), end=" ")
```

**Output:**

```
Enter till where you want to print fibonacci series: 9  
0 1 1 2 3 5 8 13 21
```

**CONCLUSION:**

From this experiment I have understood the basics of python like data types, operator, conditional statements, looping statements, input and output functions.