

PYTHON

ASSIGNMENT 1

Q1. Write a program in python to calculate the area of a triangle.

CODE:

```
from math import sqrt

print("**** PROGRAM TO FIND THE AREA OF TRIANGLE ****")

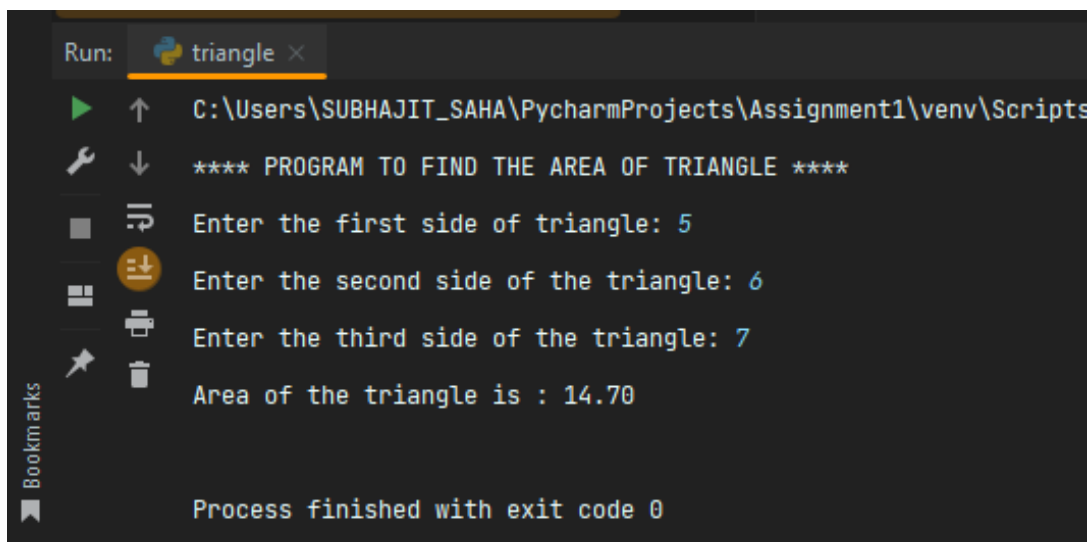
a = float(input("Enter the first side of triangle: "))
b = float(input("Enter the second side of the triangle: "))
c = float(input("Enter the third side of the triangle: "))

s = (a + b + c) / 2

# Calculating the area of the triangle
area = sqrt(s * (s - a) * (s - b) * (s - c))

print("Area of the triangle is : %0.2f" % area)
```

OUTPUT:



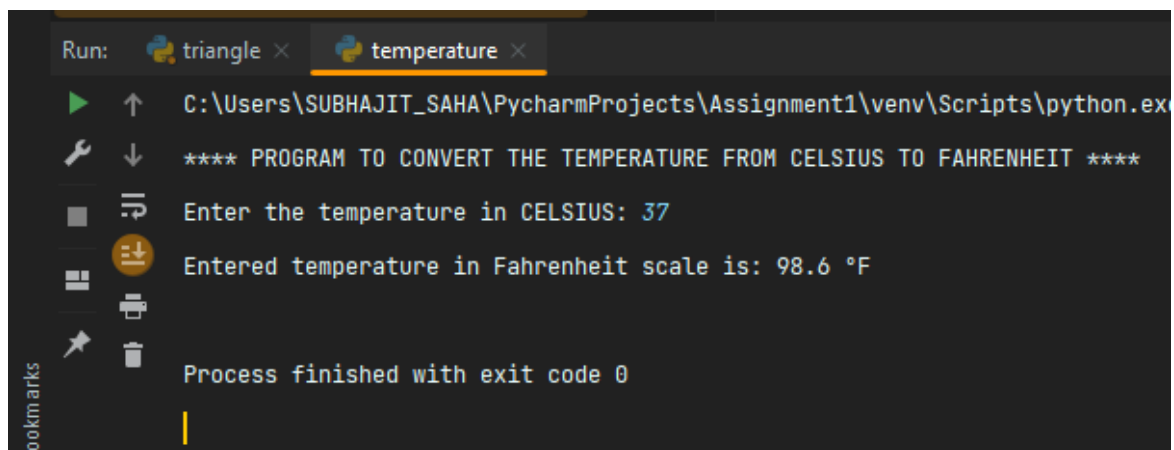
```
Run: triangle x
C:\Users\SUBHAJIT_SAHA\PycharmProjects\Assignment1\venv\Scripts
**** PROGRAM TO FIND THE AREA OF TRIANGLE ****
Enter the first side of triangle: 5
Enter the second side of the triangle: 6
Enter the third side of the triangle: 7
Area of the triangle is : 14.70
Process finished with exit code 0
```

Q2. Write a program in python to convert the temperature from Celsius to Fahrenheit.

CODE:

```
print("**** PROGRAM TO CONVERT THE TEMPERATURE FROM  
        CELSIUS TO FAHRENHEIT ****")  
  
c = float(input("Enter the temperature in CELSIUS: "))  
  
# Converting the temperature  
f = (c * (9 / 5)) + 32  
  
print("Entered temperature in Fahrenheit scale is:  
        %0.1f" % f, "°F")
```

OUTPUT:

A screenshot of a Python IDE's Run console. The console shows the execution of a program to convert Celsius to Fahrenheit. The output is as follows:
Run: triangle x temperature x
C:\Users\SUBHAJIT_SAHA\PycharmProjects\Assignment1\venv\Scripts\python.exe
**** PROGRAM TO CONVERT THE TEMPERATURE FROM CELSIUS TO FAHRENHEIT ****
Enter the temperature in CELSIUS: 37
Entered temperature in Fahrenheit scale is: 98.6 °F
Process finished with exit code 0
The console also shows a 'bookmarks' sidebar on the left with various icons.

Q3. Write a program in python to whether a number is EVEN or ODD.

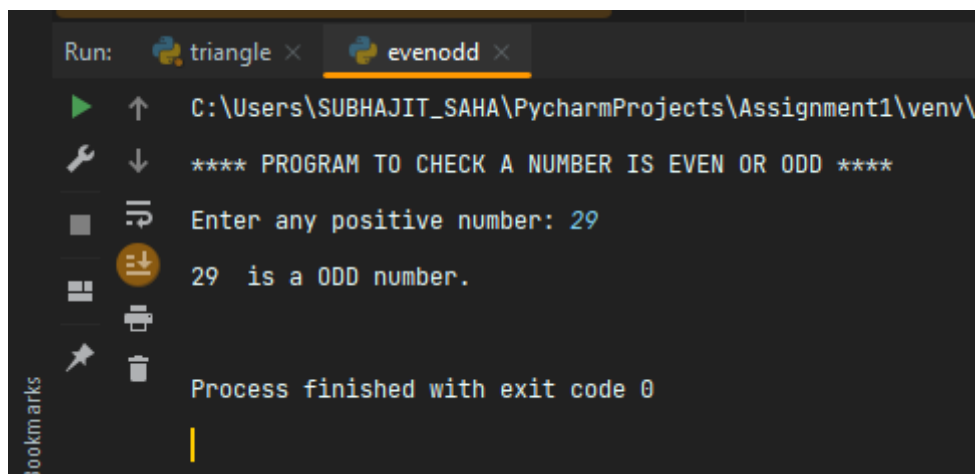
CODE:

```
print("**** PROGRAM TO CHECK A NUMBER IS EVEN OR ODD ****")

num = int(input("Enter any positive number: "))

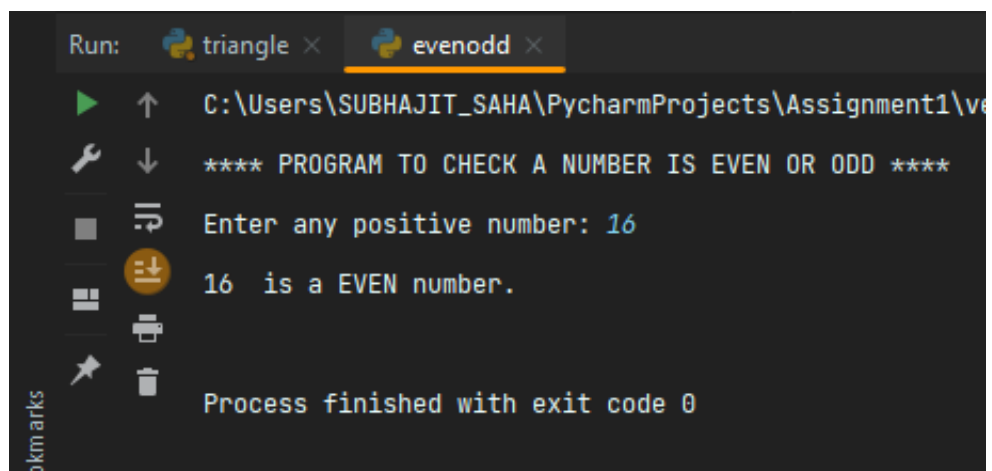
if num % 2 == 0:
    print(num, " is a EVEN number.")
else:
    print(num, " is a ODD number.")
```

OUTPUT:



The screenshot shows the PyCharm Run console for a file named 'evenodd'. The output is as follows:

```
Run: triangle x evenodd x
C:\Users\SUBHAJIT_SAHA\PycharmProjects\Assignment1\venv\Scripts\python.exe
**** PROGRAM TO CHECK A NUMBER IS EVEN OR ODD ****
Enter any positive number: 29
29 is a ODD number.
Process finished with exit code 0
```



The screenshot shows the PyCharm Run console for the same file 'evenodd'. The output is as follows:

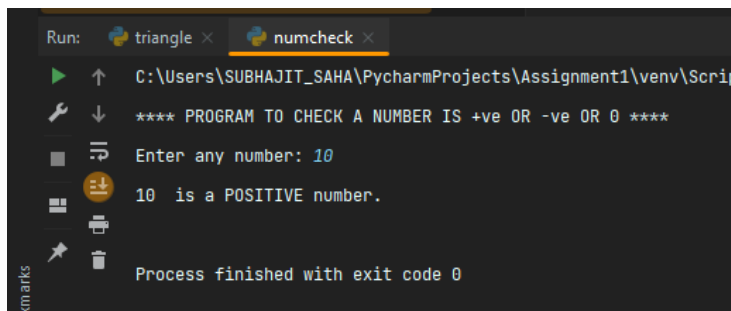
```
Run: triangle x evenodd x
C:\Users\SUBHAJIT_SAHA\PycharmProjects\Assignment1\venv\Scripts\python.exe
**** PROGRAM TO CHECK A NUMBER IS EVEN OR ODD ****
Enter any positive number: 16
16 is a EVEN number.
Process finished with exit code 0
```

Q4. Write a program in python to whether a number is POSITIVE or NEGATIVE or ZERO.

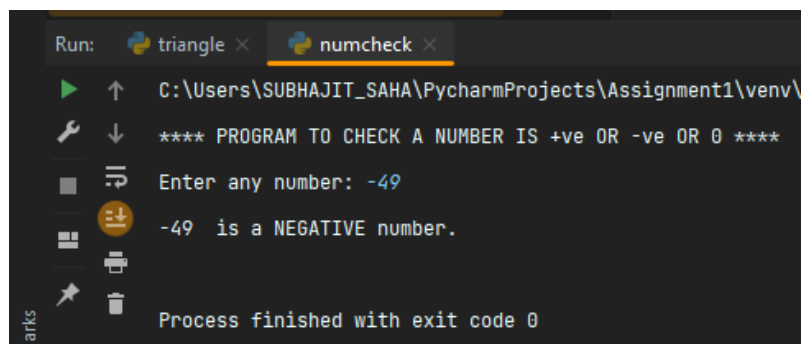
CODE:

```
print("**** PROGRAM TO CHECK A NUMBER IS +ve OR -ve OR 0  
****")  
  
num = int(input("Enter any number: "))  
  
if num > 0:  
    print(num, " is a POSITIVE number.")  
elif num < 0:  
    print(num, " is a NEGATIVE number.")  
elif num == 0:  
    print(num, " is ZERO")
```

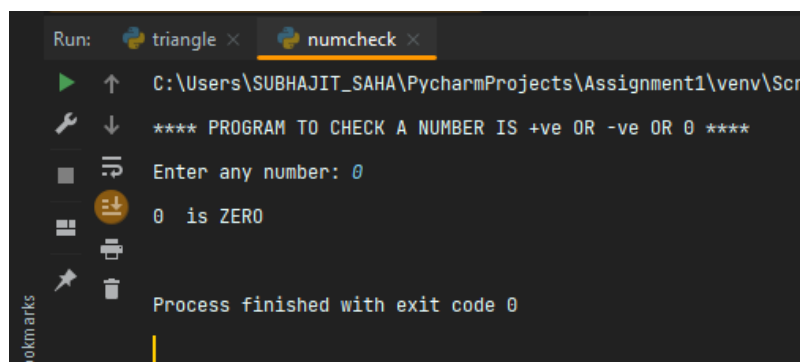
OUTPUT:



The screenshot shows the PyCharm Run console for a file named 'numcheck.py'. The output is as follows:
**** PROGRAM TO CHECK A NUMBER IS +ve OR -ve OR 0 ****
Enter any number: 10
10 is a POSITIVE number.
Process finished with exit code 0



The screenshot shows the PyCharm Run console for a file named 'numcheck.py'. The output is as follows:
**** PROGRAM TO CHECK A NUMBER IS +ve OR -ve OR 0 ****
Enter any number: -49
-49 is a NEGATIVE number.
Process finished with exit code 0



The screenshot shows the PyCharm Run console for a file named 'numcheck.py'. The output is as follows:
**** PROGRAM TO CHECK A NUMBER IS +ve OR -ve OR 0 ****
Enter any number: 0
0 is ZERO
Process finished with exit code 0

Q5. Write a program in python to find the Factorial.

CODE:

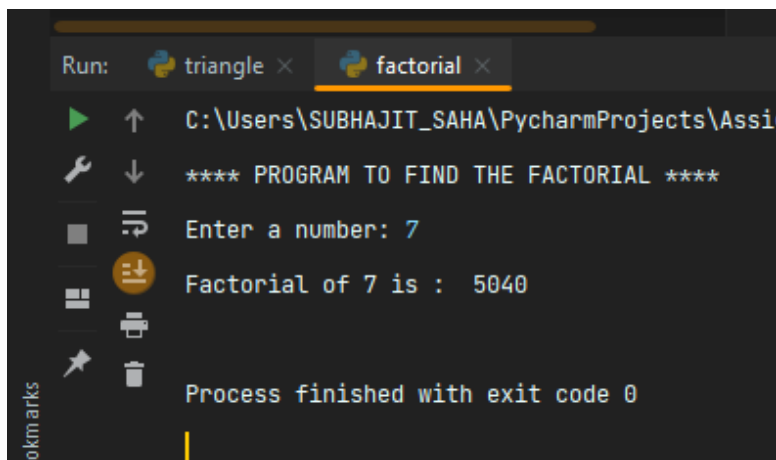
```
print("**** PROGRAM TO FIND THE FACTORIAL ****")

num = int(input("Enter a number: "))

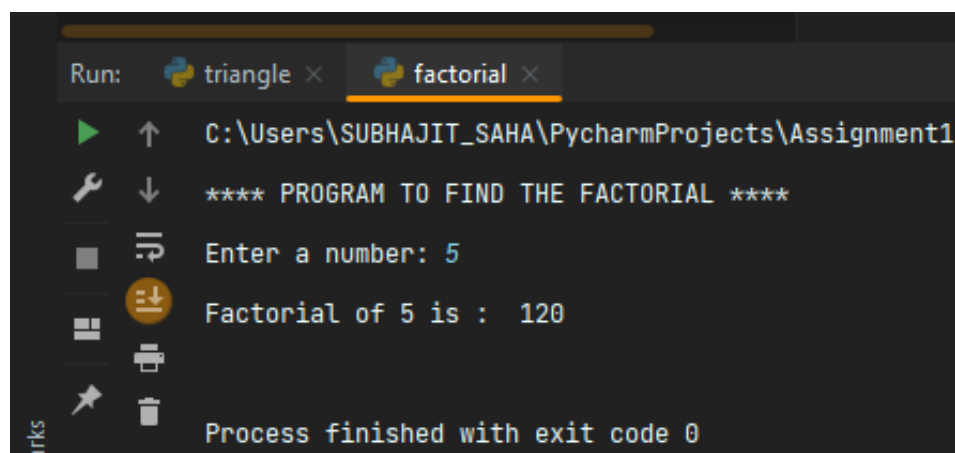
fact = 1

if num < 0:
    print("Factorial doesn't exist for NEGATIVE numbers.
          Try Again!! with a positive number.")
elif num == 0:
    print("Factorial of 0 is: ", fact)
else:
    for i in range(1, num + 1):
        fact = fact * i
    print("Factorial of", num, "is : ", fact)
```

OUTPUT:



A screenshot of the PyCharm Run console. The top bar shows two tabs: 'triangle' and 'factorial', with 'factorial' selected. The console output is as follows: a green play button icon, an upward arrow, the file path 'C:\Users\SUBHAJIT_SAHA\PycharmProjects\Assi...', a wrench icon, a downward arrow, the text '**** PROGRAM TO FIND THE FACTORIAL ****', a square icon, a refresh icon, the text 'Enter a number: 7', a square icon, a debug icon, the text 'Factorial of 7 is : 5040', a square icon, a print icon, and the text 'Process finished with exit code 0'. On the left side, there is a vertical toolbar with icons for bookmarks, run, and other actions.



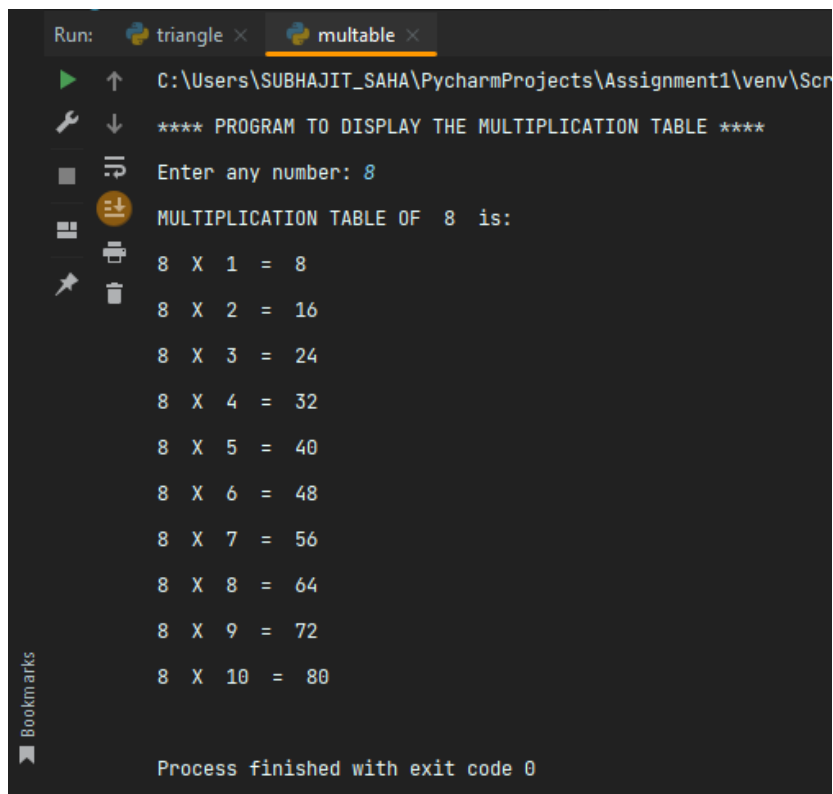
A screenshot of the PyCharm Run console, similar to the one above. The top bar shows 'triangle' and 'factorial' tabs, with 'factorial' selected. The console output is: a green play button icon, an upward arrow, the file path 'C:\Users\SUBHAJIT_SAHA\PycharmProjects\Assignment1...', a wrench icon, a downward arrow, the text '**** PROGRAM TO FIND THE FACTORIAL ****', a square icon, a refresh icon, the text 'Enter a number: 5', a square icon, a debug icon, the text 'Factorial of 5 is : 120', a square icon, a print icon, and the text 'Process finished with exit code 0'. The left sidebar shows a vertical toolbar with icons for bookmarks, run, and other actions.

Q6. Write a program in python to display the Multiplication Table.

CODE:

```
print("**** PROGRAM TO DISPLAY THE MULTIPLICATION TABLE  
****")  
  
num = int(input("Enter any number: "))  
  
if num < 0:  
    print("Enter a POSITIVE number.")  
elif num == 0:  
    print("Multiplication Table of 0 is : 0")  
elif num > 0:  
    print("MULTIPLICATION TABLE OF ", num, " is: ")  
    for i in range(1, 11):  
        print(num, " X ", i, " = ", num*i)
```

OUTPUT:



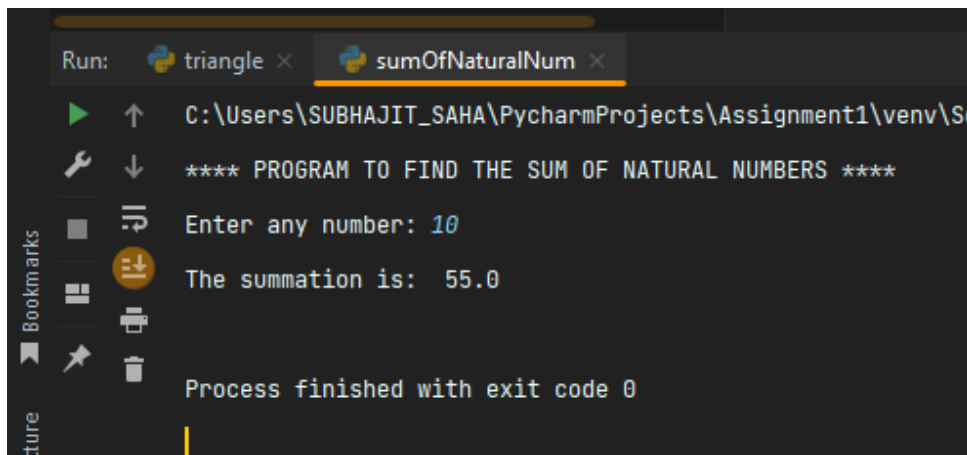
```
Run: triangle x multable x  
C:\Users\SUBHAJIT_SAHA\PycharmProjects\Assignment1\venv\Scr  
**** PROGRAM TO DISPLAY THE MULTIPLICATION TABLE ****  
Enter any number: 8  
MULTIPLICATION TABLE OF 8 is:  
8 X 1 = 8  
8 X 2 = 16  
8 X 3 = 24  
8 X 4 = 32  
8 X 5 = 40  
8 X 6 = 48  
8 X 7 = 56  
8 X 8 = 64  
8 X 9 = 72  
8 X 10 = 80  
Process finished with exit code 0
```

Q7. Write a program in python to find the sum of Natural Numbers.

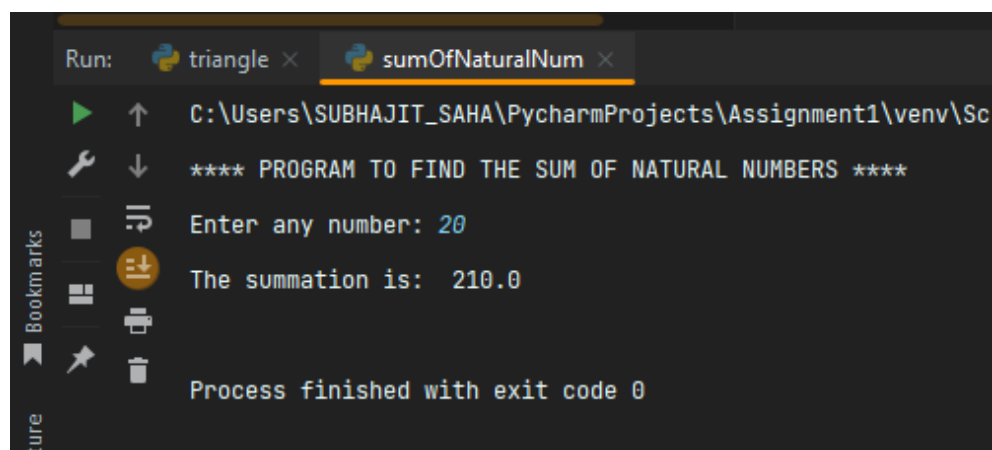
CODE:

```
print("**** PROGRAM TO FIND THE SUM OF NATURAL NUMBERS  
****")  
  
num = int(input("Enter any number: "))  
  
if num < 0:  
    print("Enter a positive number.")  
else:  
    sum = 0  
    sum = num * (num + 1) / 2  
    print("The summation is: ", sum)
```

OUTPUT:



A screenshot of the PyCharm Run console. The top bar shows two tabs: 'triangle' and 'sumOfNaturalNum', with the latter selected. The console output is as follows:
C:\Users\SUBHAJIT_SAHA\PycharmProjects\Assignment1\venv\Sc
**** PROGRAM TO FIND THE SUM OF NATURAL NUMBERS ****
Enter any number: 10
The summation is: 55.0
Process finished with exit code 0



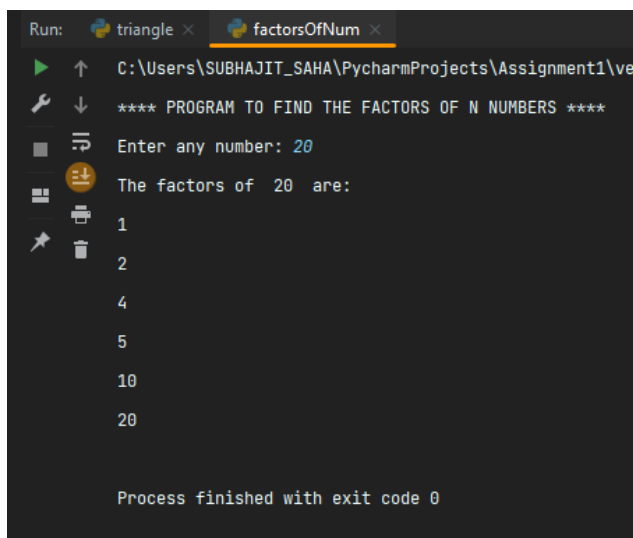
A screenshot of the PyCharm Run console, similar to the one above. The top bar shows the same tabs. The console output is as follows:
C:\Users\SUBHAJIT_SAHA\PycharmProjects\Assignment1\venv\Sc
**** PROGRAM TO FIND THE SUM OF NATURAL NUMBERS ****
Enter any number: 20
The summation is: 210.0
Process finished with exit code 0

Q8. Write a program in python to find the factors of N number.

CODE:

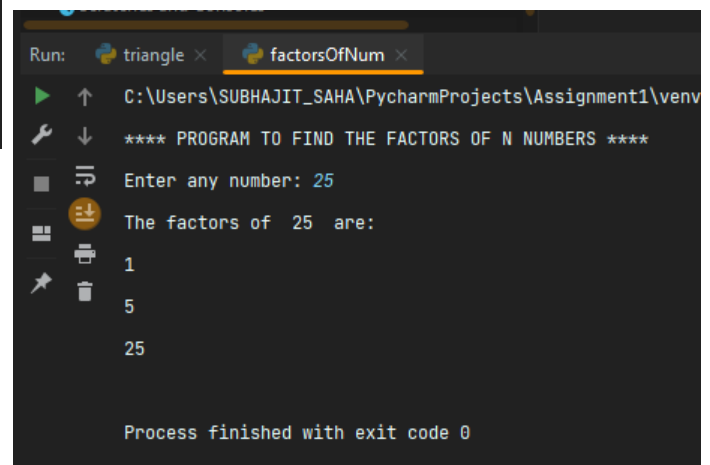
```
print("**** PROGRAM TO FIND THE FACTORS OF N NUMBERS  
****")  
  
num = int(input("Enter any number: "))  
  
if num < 0:  
    print("Enter a Positive number.")  
else:  
    print("The factors of ", num, " are:")  
    for i in range(1, num+1):  
        if num % i == 0:  
            print(i)
```

OUTPUT:



The screenshot shows the PyCharm Run console for a file named 'factorsOfNum.py'. The output is as follows:

```
Run: triangle x factorsOfNum x  
C:\Users\SUBHAJIT_SAHA\PycharmProjects\Assignment1\venv  
**** PROGRAM TO FIND THE FACTORS OF N NUMBERS ****  
Enter any number: 20  
The factors of 20 are:  
1  
2  
4  
5  
10  
20  
Process finished with exit code 0
```



The screenshot shows the PyCharm Run console for the same file 'factorsOfNum.py'. The output is as follows:

```
Run: triangle x factorsOfNum x  
C:\Users\SUBHAJIT_SAHA\PycharmProjects\Assignment1\venv  
**** PROGRAM TO FIND THE FACTORS OF N NUMBERS ****  
Enter any number: 25  
The factors of 25 are:  
1  
5  
25  
Process finished with exit code 0
```

PYTHON

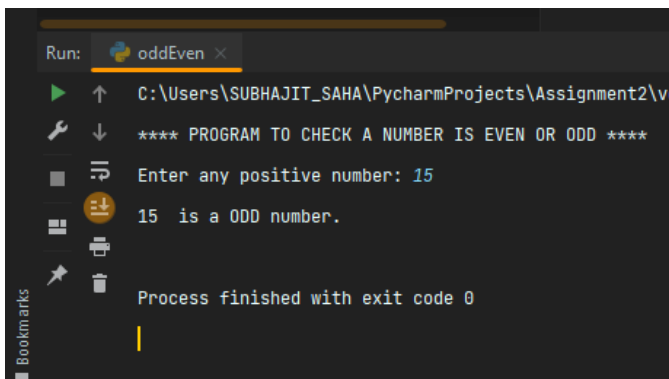
ASSIGNMENT 2

Q1. Write a program in python to check a number whether it is ODD or EVEN using functions.

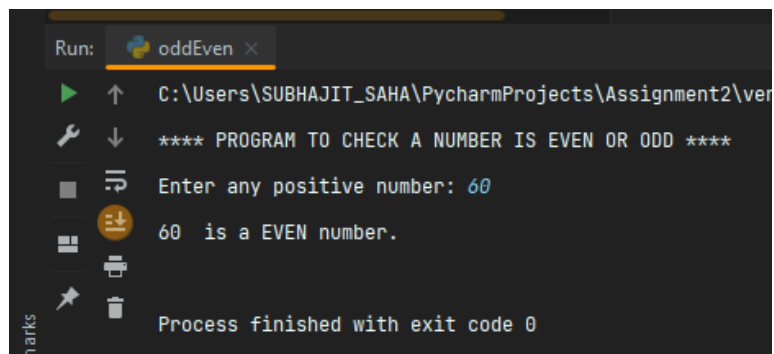
CODE:

```
print("***** PROGRAM TO CHECK A NUMBER IS EVEN OR ODD  
*****")  
  
def checkEvenOdd(n):  
    if n % 2 == 0:  
        print(n, " is a EVEN number.")  
    else:  
        print(n, " is a ODD number.")  
    return 0  
  
num = int(input("Enter any positive number: "))  
  
checkEvenOdd(num)
```

OUTPUT:



The screenshot shows the PyCharm Run console for a file named 'oddEven'. The output is as follows:
C:\Users\SUBHAJIT_SAHA\PycharmProjects\Assignment2\venv\Scripts\python.exe
***** PROGRAM TO CHECK A NUMBER IS EVEN OR ODD *****
Enter any positive number: 15
15 is a ODD number.
Process finished with exit code 0



The screenshot shows the PyCharm Run console for a file named 'oddEven'. The output is as follows:
C:\Users\SUBHAJIT_SAHA\PycharmProjects\Assignment2\venv\Scripts\python.exe
***** PROGRAM TO CHECK A NUMBER IS EVEN OR ODD *****
Enter any positive number: 60
60 is a EVEN number.
Process finished with exit code 0

Q2. Write a program in python to find the sum of numbers in a list using functions.

CODE:

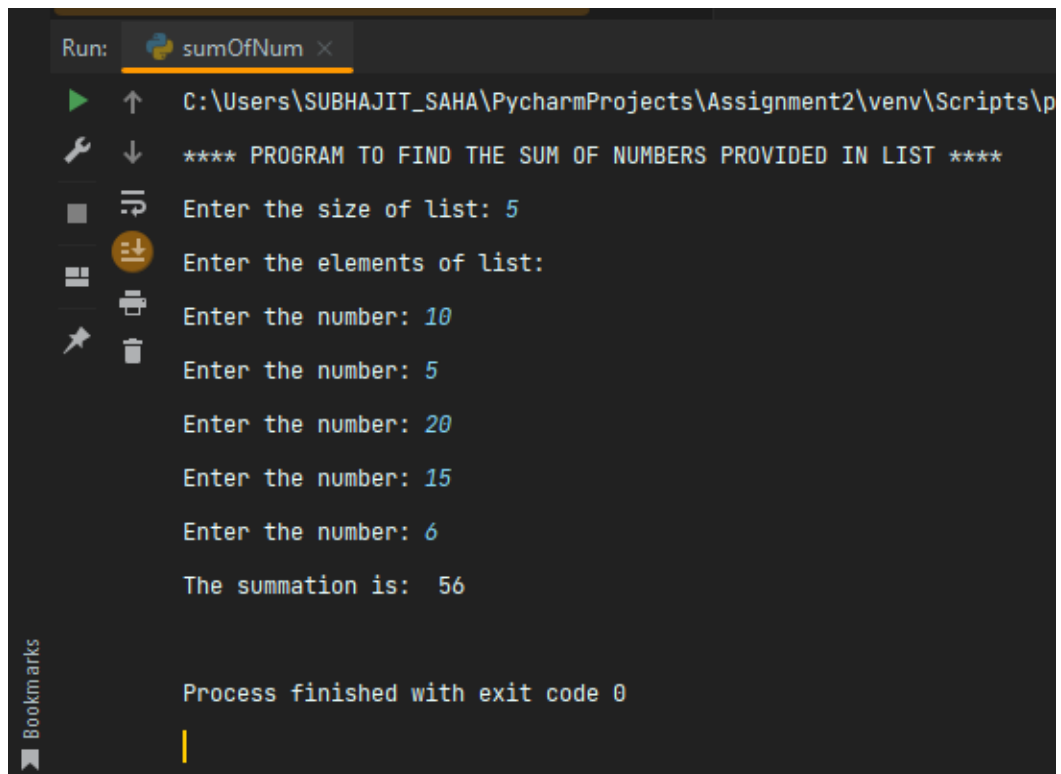
```
print("**** PROGRAM TO FIND THE SUM OF NUMBERS PROVIDED IN  
LIST ****")

def SumOfNum(list1):
    sum = 0
    for i in list1:
        sum = sum + i
    return sum

def ListContent(n):
    list1 = []
    print("Enter the elements of list: ")
    for i in range(n):
        num = int(input("Enter the number: "))
        list1.append(num)
    return list1

lstSize = int(input("Enter the size of list: "))
if lstSize < 0:
    print("Enter a POSITIVE number.")
else:
    list2 = ListContent(lstSize)
    print("The summation is: ", SumOfNum(list2))
```

OUTPUT:



The screenshot shows a PyCharm Run console window for a file named 'sumOfNum'. The console output is as follows:

```
C:\Users\SUBHAJIT_SAHA\PycharmProjects\Assignment2\venv\Scripts\python.exe
**** PROGRAM TO FIND THE SUM OF NUMBERS PROVIDED IN LIST ****
Enter the size of list: 5
Enter the elements of list:
Enter the number: 10
Enter the number: 5
Enter the number: 20
Enter the number: 15
Enter the number: 6
The summation is: 56

Process finished with exit code 0
```

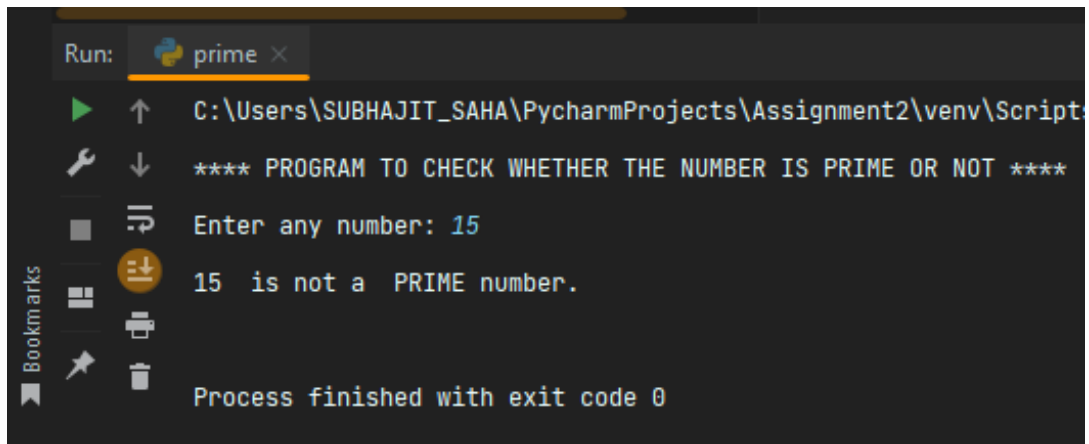
The left sidebar of the PyCharm IDE is visible, showing the 'Bookmarks' tab.

Q3. Write a program in python to check whether a number is PRIME or not using functions.

CODE:

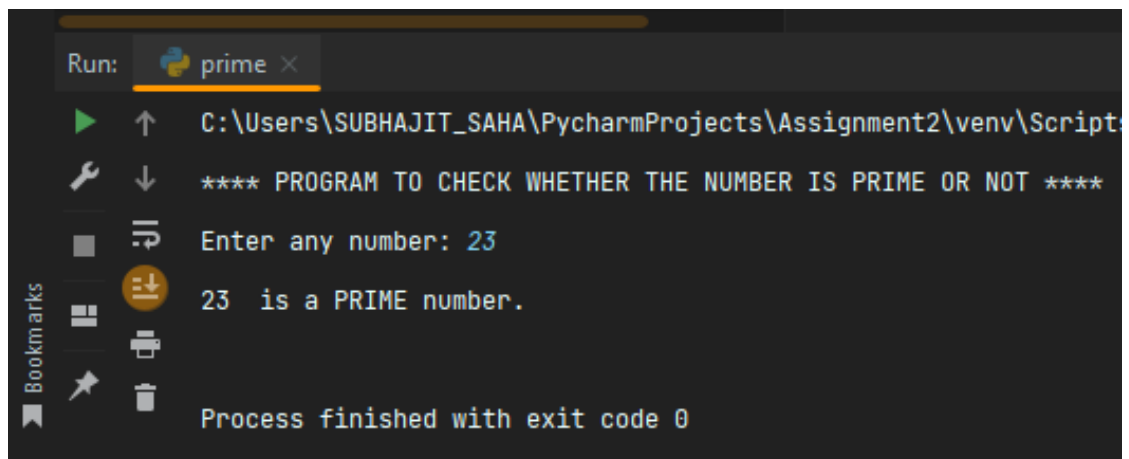
```
print("***** PROGRAM TO CHECK WHETHER THE NUMBER IS PRIME  
OR NOT *****")  
  
def PrimeCheck(n):  
    flag = False  
    for i in range(2, n):  
        if n % i == 0:  
            flag = True  
            break  
    return flag  
  
num = int(input("Enter any number: "))  
if num > 1:  
    if PrimeCheck(num):  
        print(num, " is not a PRIME number.")  
    else:  
        print(num, " is a PRIME number.")  
else:  
    print("PRIME numbers can't be negative and it should  
        be always greater than 1")
```

OUTPUT:



The image shows a PyCharm Run console window for a Python script named 'prime'. The console output is as follows:

```
Run: prime ×
C:\Users\SUBHAJIT_SAHA\PycharmProjects\Assignment2\venv\Script
**** PROGRAM TO CHECK WHETHER THE NUMBER IS PRIME OR NOT ****
Enter any number: 15
15 is not a PRIME number.
Process finished with exit code 0
```



The image shows a PyCharm Run console window for the same Python script 'prime'. The console output is as follows:

```
Run: prime ×
C:\Users\SUBHAJIT_SAHA\PycharmProjects\Assignment2\venv\Script
**** PROGRAM TO CHECK WHETHER THE NUMBER IS PRIME OR NOT ****
Enter any number: 23
23 is a PRIME number.
Process finished with exit code 0
```

Q4. Write a program in python to reverse a string using functions.

CODE:

```
print("**** PROGRAM TO REVERSE A STRING ****")

def StringReverse(str1):
    list1 = []
    for i in str1:
        list1.append(i)

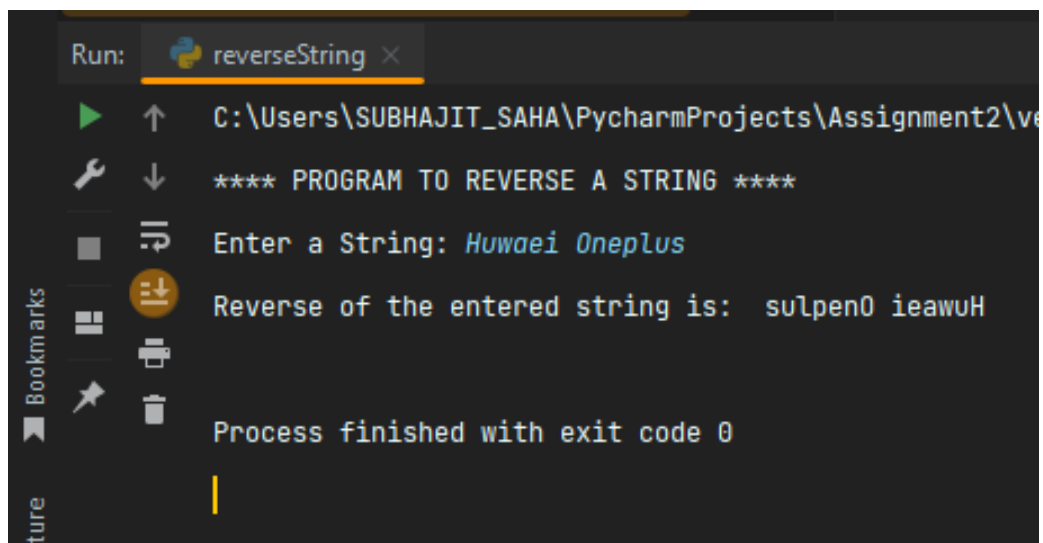
    # print(list1)

    str2 = ""
    for i in list1[::-1]:
        str2 = str2 + i

    return str2

string1 = input("Enter a String: ")
print("Reverse of the entered string is: ",
      StringReverse(string1))
```

OUTPUT:



The screenshot shows a terminal window titled 'Run: reverseString'. The output of the program is as follows:

```
C:\Users\SUBHAJIT_SAHA\PycharmProjects\Assignment2\venv>python reverseString.py
**** PROGRAM TO REVERSE A STRING ****
Enter a String: Huwaei Oneplus
Reverse of the entered string is: sulpenO ieawuH
Process finished with exit code 0
```


Q5. Write a program in python to find the factorial using functions.

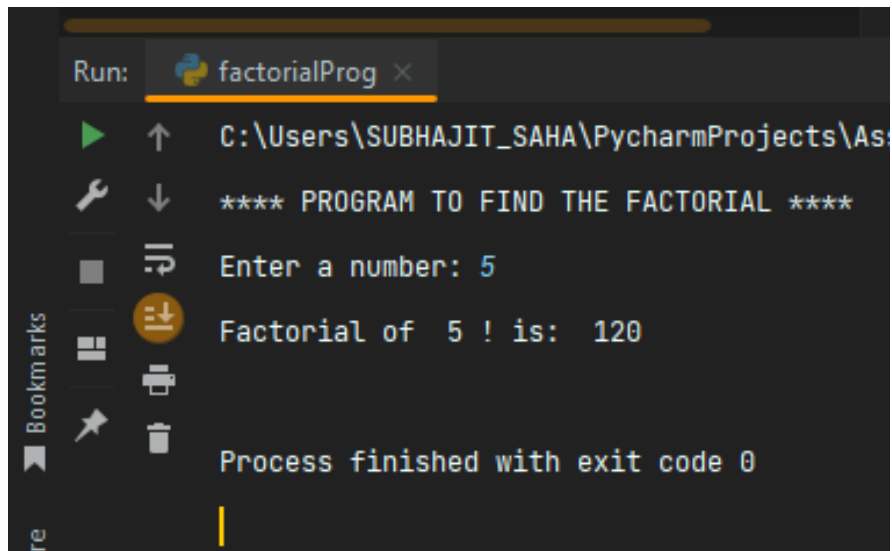
CODE:

```
print("**** PROGRAM TO FIND THE FACTORIAL ****")

def Factorial(n):
    if n == 1 or n == 0:
        return 1
    else:
        return n * Factorial(n - 1)

num = int(input("Enter a number: "))
if num < 0:
    print("Please Provide a Positive number.")
else:
    print("Factorial of ", num, "! is: ", Factorial(num))
```

OUTPUT:

A screenshot of a Python IDE's Run console. The window title is 'Run: factorialProg x'. The output shows the program's execution: it prints '**** PROGRAM TO FIND THE FACTORIAL ****', prompts 'Enter a number: 5', and then outputs 'Factorial of 5 ! is: 120'. At the bottom, it states 'Process finished with exit code 0'. The left sidebar shows icons for Run, Debug, and Bookmarks.