In [1]:
```
#1. Python Program to Calculate the Area of a Triangle
a = float(input('Enter first side: '))
b = float(input('Enter second side: '))
c = float(input('Enter third side: '))
s = (a + b + c) / 2
area = (s*(s-a)*(s-b)*(s-c)) ** 0.5
print('The area of the triangle is %0.2f' %area)
```

```
Enter first side: 2
Enter second side: 3
Enter third side: 4
The area of the triangle is 2.90
```

In [2]:
```
#2Python Program to Swap Two Variables
x = float(input('Enter value of X: '))
y = float(input('Enter value of Y: '))
temp = x
x = y
y = temp

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

```
Enter value of X: 3
Enter value of Y: 4
Value of x: 4.0
Value of y: 3.0
```

In [3]:
```
#.3 Python Program to Generate a Random Number
import random
n = random.randint(0,50)
print(n)
```

```
16
```

In [4]:
```
#1.Write a Python Program to Check if a Number is Positive, Negative or Zero
num = float(input("Enter a number: "))
if num >= 0:
   if num == 0:
       print("Zero")
   else:
       print("Positive number")
else:
   print("Negative number")
```

```
Enter a number: 4
Positive number
```

In [5]:
```
#2.Write a Python Program to Check if a Number is Odd or Even

num = int(input("Enter a number: "))
if (num % 2) == 0:
   print("{0} is Even".format(num))
else:
   print("{0} is Odd".format(num))
```

```
Enter a number: 5
5 is Odd
```

In [6]:
```
#3.Write a Python Program to Check Prime Number
num = int(input("Enter a number: "))
flag = False
if num > 1:
    for i in range(2, num):
        if (num % i) == 0:
            flag = True
            break
if flag:
 print(num, "is not a prime number")
else:
```

```
 print(num, "is a prime number")
```

```
Enter a number: 4
4 is not a prime number
```

In [7]:

```
#4.Write a Python Program to Check Armstrong Number
num = int(input("Enter a number: "))
sum = 0
temp = num
while temp > 0:
   digit = temp % 10
   sum += digit ** 3
   temp //= 10
if num == sum:
   print(num,"is an Armstrong number")
else:
   print(num,"is not an Armstrong number")
```

```
Enter a number: 2
2 is not an Armstrong number
```

In [9]:

```
#5.Write a Python Program to Find the Factorial of a Number
num = int(input("Enter a number: "))

factorial = 1
if num < 0:
   print("Sorry, factorial does not exist for negative numbers")
elif num == 0:
   print("The factorial of 0 is 1")
else:
   for i in range(1,num + 1):
       factorial = factorial*i
   print("The factorial of",num,"is",factorial)
```

```
Enter a number: 3
The factorial of 3 is 6
```

In [10]:

```
#1. Python Program to Convert Kilometers to Miles
kilometers = float(input("Enter value in kilometers: "))
conv_fac = 0.621371
miles = kilometers * conv_fac
print('%0.2f kilometers is equal to %0.2f miles' %(kilometers,miles))
```

```
Enter value in kilometers: 4
4.00 kilometers is equal to 2.49 miles
```

In [11]:

```
#2.Python Program to Convert Celsius To Fahrenheit
celsius = float(input("Enter value in celsius: "))
fahrenheit = (celsius * 1.8) + 32
print('%0.1f degree Celsius is equal to %0.1f degree Fahrenheit' %(celsius,fahrenheit))
```

```
Enter value in celsius: 5
5.0 degree Celsius is equal to 41.0 degree Fahrenheit
```

In [12]:

```
#3.Write a Python Program to Check Leap Year
year = int(input("Enter a year: "))
if (year % 400 == 0) and (year % 100 == 0):
    print("{0} is a leap year".format(year))
elif (year % 4 ==0) and (year % 100 != 0):
    print("{0} is a leap year".format(year))
else:
    print("{0} is not a leap year".format(year))
```

```
Enter a year: 2012
2012 is a leap year
```

In [13]:

```
#4.Write a Python Program to Print all Prime Numbers in an Interval
lower = int(input("Enter the lower number:"))
upper = int(input("Enter the upper number: "))
```

```
print("Prime numbers between", lower, "and", upper, "are:")
for num in range(lower, upper + 1):
     if num > 1:
       for i in range(2, num):
           if (num % i) == 0:
               break
       else:
           print(num)
```

```
Enter the lower number:1
Enter the upper number: 19
Prime numbers between 1 and 19 are:
2
3
5
7
11
13
17
19
```

In [14]:

```
#5.Write a Python Program to Print the Fibonacci sequence
n_terms = int(input ("How many terms the user wants to print? "))
n_1 = 0
n_2 = 1
count = 0
if n_terms <= 0:
    print ("Please enter a positive integer, the given number is not valid")
elif n_terms == 1:
    print ("The Fibonacci sequence of the numbers up to", n_terms, ": ")
    print(n_1)
else:
    print ("The fibonacci sequence of the numbers is:")
    while count < n_terms:
        print(n_1)
        nth = n_1 + n_2
        n_1 = n_2
        n_2 = nth
        count += 1
```

```
How many terms the user wants to print? 5
The fibonacci sequence of the numbers is:
0
1
1
2
3
```

In [15]:

```
#6.Write a Python Program to Find Armstrong Number in an Interval
lower = int(input("Enter the lower number:"))
upper = int(input("Enter the upper number:"))

for num in range(lower, upper + 1):

   # order of number
   order = len(str(num))

   # initialize sum
   sum = 0

   temp = num
   while temp > 0:
       digit = temp % 10
       sum += digit ** order
       temp //= 10

   if num == sum:
       print(num)
```

```
Enter the lower number:1
Enter the upper number:9
1
2
3
4
5
6
7
8
9
```

In [16]:

```
#7.Write a Python Program to Find the Sum of Natural Numbers
num = int(input("Enter the number:"))

if num < 0:
   print("Enter a positive number")
else:
   sum = 0
   # use while loop to iterate until zero
   while(num > 0):
       sum += num
       num -= 1
   print("The sum is", sum)
```

```
Enter the number:7
The sum is 28
```

In [ ]: