**Week 2:**

1. Python Program to Find the Square Root

2. Python Program to Calculate the Area and Perimeter of Triangle and Circle.

3. Python Program to Solve Quadratic Equation

4. Python Program to Swap Two Variables

5. Python Program to Convert Kilometres to Miles

6. Python Program to Convert Celsius To Fahrenheit

1. **Python Program to Find Square Root of a Number**

* Find square root of a number using **\*\*** operator
* Using **math.sqrt()** inbuilt function
* Using **math.pow()**
* Using user-defined function
* Using class

**1.Find Square Root of a Number using \*\***

To find square root of any number given by user in Python, you have to ask from user to enter a number, then find and print its square root(using idle)

print("Enter a Number: ")

num = int(input())

squareroot = num \*\* 0.5

print("\nSquare Root =", squareroot)

2. # Using the sqrt() function to calculate a square root(using terminal)

**from** *math* **import** sqrt

number = 25

square\_root = sqrt(number)

print(square\_root)

**2.Find Square Root using math.sqrt() Inbuilt Function**

*#Import the math library*

**import** math

*#Print the square root of 36*

**print**("Square root of 36 is: ", math.sqrt(36))

*#Print the square root of 6*

**print**("Square root of 6 is: ",math.sqrt(6))

*#Print the square root of 1.5*

**print**("Square root of 1.5 is: ",math.sqrt(1.5))

**3.** **Find Square Root using math.pow()**

import math

print("Enter a Number: ", end="")

num = int(input())

res = math.pow(num, 0.5)

print("\nSquare Root of %0.2f = %0.2f" %(num, res))

Python number method pow() returns x to the power of y. If the third argument (z) is given, it returns x to the power of y modulus z, i.e. pow(x, y) % z.

Syntax

Following is the syntax for pow() method −

import math

math.pow( x, y[, z] )

**Note** − This function is not accessible directly, so we need to import math module and then we need to call this function using math static object.

Parameters

* **x** − number which is to be powered.
* **y** − number which is to be powered with x
* **z** − (Optional) number which is to be used for modulus operation

Return Value

This method returns value of xy.

Example:

**import** math

number = int(input("enter a number:"))

sqrt = math.pow(number, 0.5)

print("square root: ", sqrt)

**2.Python Program to Calculate the Area and Perimeter of Triangle and Circle.**

**Perimeter and area of a triangle:**

If *s1*, *s2* and *s3* are the lengths of three sides of a triangle, its perimeter and area can be calculated using the below two formulae:3

Perimeter =s1+s2+s3

Area=sqrt(s\*(s-s1)\*(s-s2)\*(s-s3))

Where s=(s1+s2+s3)/2

Model-1

PI = 3.14

# Getting input from user

R = float(input("Enter radius of the circle: "))

# Finding the area and perimeter of the circle

area = (PI\*R\*R)

perimeter = (2\*PI\*R)

# Printing the area and perimeter of the circle

**print**("The area of circle is", area)

**print**("The perimeter of circle is", perimeter)

model-2

# Python program to find the

# area and perimeter of a circle in python

**from** math **import** pi

# Getting input from user

R = float(input("Enter radius of the circle: "))

# Finding the area and perimeter of the circle

area = (pi\*R\*R)

perimeter = (2\*pi\*R)

# Printing the area and perimeter of the circle

**print**("The area of circle is ", "%.2f" %area)

**print**("The perimeter of circle is", "%.2f" %perimeter)

**3.Python Program to Solve Quadratic Equation**

a = float(input('Enter a: '))

b = float(input('Enter b: '))

c = float(input('Enter c: '))

# calculate the discriminant

d = (b\*\*2) - (4\*a\*c)

e=d\*\*0.5

# find two solutions

sol1 = (-b-e)/(2\*a)

sol2 = (-b+e)/(2\*a)

print('The solution are {0} and {1}'.format(sol1,sol2))

4. Python program to swap two variables

# Python program to swap two variables

x = 5

y = 10

# To take inputs from the user

#x = input('Enter value of x: ')

#y = input('Enter value of y: ')

# create a temporary variable and swap the values

temp = x

x = y

y = temp

print('The value of x after swapping: {}'.format(x))

print('The value of y after swapping: {}'.format(y))

5.**Python Program to Convert Kilometres to Miles**

kilometre\_1 = float (input ("Please enter the speed of car in Kilometre as a unit: "))

conversion\_ratio\_1 = 0.621371

miles\_1 = kilometre\_1 \* conversion\_ratio\_1

**print** ("The speed value of car in Miles: ", miles\_1)

6 **.Python Program to Convert Celsius To Fahrenheit**

celsius\_1 = float(input("Temperature value in degree Celsius: " ))

Fahrenheit\_1 = (celsius\_1 \* 1.8) + 32

**print**('The %.2f degree Celsius is equal to: %.2f Fahrenheit'  %(celsius\_1, Fahrenheit\_1))

**print**("----OR----")

celsius\_2 = float (input("Temperature value in degree Celsius: " ))

Fahrenheit\_2 = (celsius\_2 \* 9/5) + 32

**print** ('The %.2f degree Celsius is equal to: %.2f Fahrenheit'  %(celsius\_2, Fahrenheit\_2))