**CO3 PYTHON**

**1. Work with built-in packages**

**A) math module**

import math

print("the value of pi is",math.pi)

import math as m

print("the value of pi is",m.pi)

from math import pi,sqrt

print("the value of pi is ",pi)

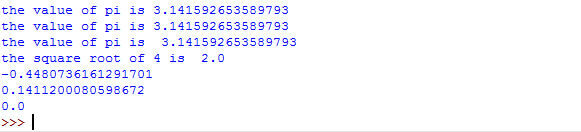
print("the square root of 4 is ",sqrt(4))

print(math.cos(90))

print(math.sin(3))

print(math.tan(0))

OUTPUT:



**B) time module**

import time

print("current time in sec:",time.time())

print("current time:",time.ctime())

print("current time after 30 sec:",time.ctime(time.time()+30))

t=time.localtime()

print("time:",t)

print("current Year:",t.tm\_year)

print("current Month:",t.tm\_mon)

print("current Day:",t.tm\_mday)

print("current Hour:",t.tm\_hour)

print("current week:",t.tm\_wday)

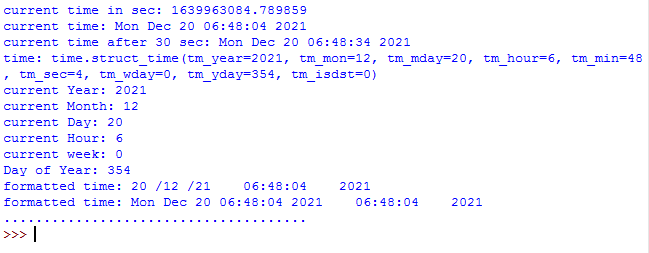
print("Day of Year:",t.tm\_yday)

print("formatted time:",time.strftime("%d /%m /%y %H:%M:%S %Y ",t))

print("formatted time:",time.strftime("%c %H:%M:%S %Y ",t))

print("......................................")

OUTPUT:



**C) calendar module**

import calendar

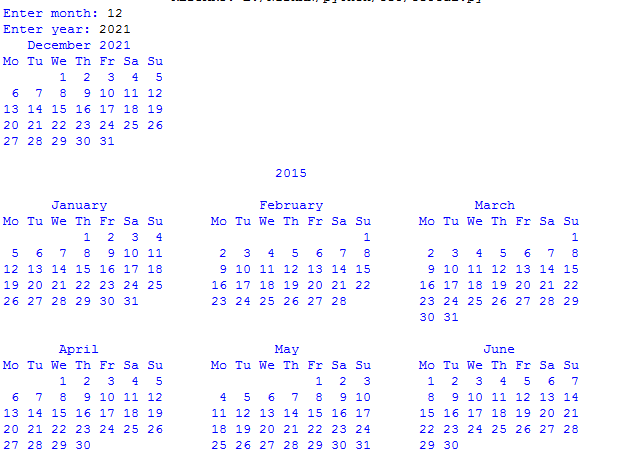
mm = int(input("Enter month: "))

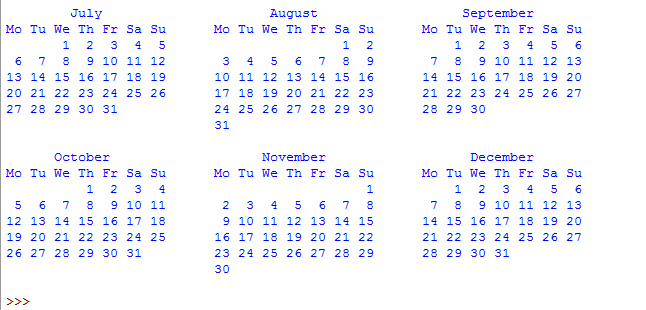
yy = int(input("Enter year: "))

print(calendar.month(yy,mm))

print(calendar.calendar(2015))

OUTPUT:





**D) random module**

import random

list1 = [1, 2, 3, 4, 5, 6]

print(random.choice(list1))

print("\*\*\*\*\*\*\*\*\*\*\*\*\*")

import random

random.seed(5)

print(random.random())

print(random.random())

print("\*\*\*\*\*\*\*\*\*\*\*")

import random

r1 = random.randint(5, 15)

print("Random number between 5 and 15 is % s" % (r1))

r2 = random.randint(-10, -2)

print("Random number between -10 and -2 is % d" % (r2))

print("\*\*\*\*\*\*\*\*\*\*\*\*\*\*")

import random

list1 = [1, 2, 3, 4, 5, 6]

print(random.choice(list1))

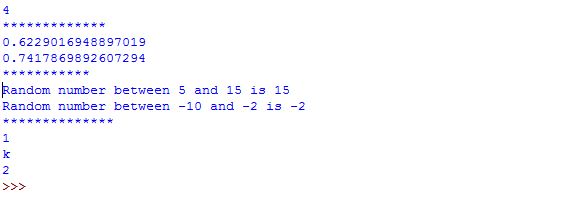
string = "geeks"

print(random.choice(string))

tuple1 = (1, 2, 3, 4, 5)

print(random.choice(tuple1))

OUTPUT:



**E) Statistics module**

import statistics

list1 = [5,2,5,6,1,2,6,7,2,6,3,5,5]

x = statistics.mean(list1)

print(x)

y = statistics.median(list1)

print(y)

z = statistics.mode(list1)

print(z)

a = statistics.stdev(list1)

print(a)

b = statistics.variance(list1)

print(b)

OUTPUT:



**F) Datetime module**

import datetime

t=datetime.time(22,56,44)

print(t)

print("Hour:",t.hour)

print("Minute:",t.minute)

print("Second:",t.second)

print("microsecond:",t.microsecond)

print(".........,,,...........")

d=datetime.date.today()

print(d)

print("Year:",d.year)

print("Month:",d.month)

print("Day:",d.day)

print("timeandcalmodule.py")

d1=datetime.date.today()

print(d1)

td=datetime.timedelta(days=2)

print(td)

d2=d1+td

print(d2)

print("d2-d1=",d2-d1)

print("d2>d1=",d2>d1)

print(".........,,,,,..........")

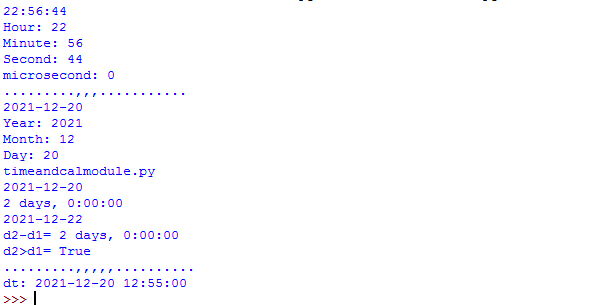
d1=datetime.date.today()

t1=datetime.time(12,55,0)

dt=datetime.datetime.combine(d1,t1)

print('dt:',dt)

OUTPUT:



**# 2. Create a package graphics with modules rectangle, circle and sub-package 3D-graphics with modules cuboid and sphere. Include methods to find area and perimeter of respective figures in each module. Write programs that finds area and perimeter of figures by different importing statements. (Include selective import of modules and import \* statements)**

**graphicsuse.py**

*Gfrom graphics import rectangle*

from graphics import circle

from graphics.ThreeD\_graphics import cuboid

from graphics.ThreeD\_graphics import sphere

l=int(input("Enter the length of rectangle: "))

b=int(input("Enter the breath of rectangle: "))

rectangle.area(l,b)

rectangle.perimeter(l,b)

print()

r=int(input("Enter the Radius of Circle: "))

circle.area(r)

circle.perimeter(r)

print()

l=int(input("Enter the length of Cuboid: "))

b=int(input("Enter the breadth of Cuboid: "))

h=int(input("Enter the height of Cuboid: "))

cuboid.area(l,b,h)

cuboid.perimeter(l,b,h)

print()

r=int(input("Enter the radius of Sphere: "))

sphere.area(r)

sphere.volume(r)

**PACKAGE:graphics**

**cirice.py**

def area(r):

print("Area of Circle: ",3.14\*r\*r)

def perimeter(r):

print("Perimeter of Circle: ", 2\*3.14\*r)

**rectangle.py**

def area(l,b):

print("Area of Rectangle: ", l\*b)

def perimeter(l,b):

print("Perimeter of Rectangle: ", 2\*(l+b))

**SUBPACKAGE:Threed\_graphics**

**cuboid.py**

def area(l,b,h):

print("Area of Cuboid: ",(2\*l\*b)+(2\*l\*h)+(2\*h\*b))

def perimeter(l,b,h):

print("Perimeter of Cuboid: ", 4\*(l+b+h))

**sphere.py**

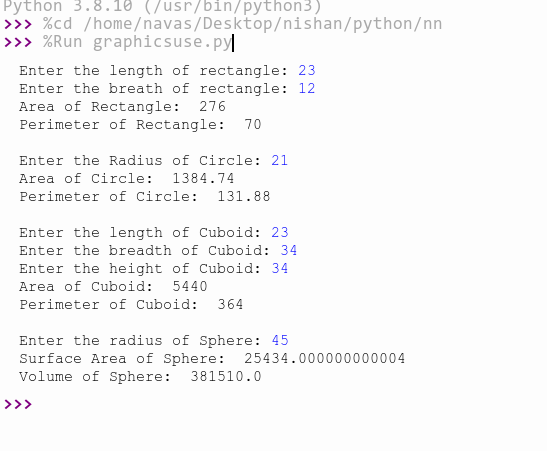
def area(r):

print("Surface Area of Sphere: ",4\*3.14\*r\*r)

def volume(r):

print("Volume of Sphere: ",(4/3)\*3.14\*r\*r\*r)

**OUTPUT**

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