**PYTHON**

**CO-3 PROGRAMS**

**1.Design modules and packages – builtin and user defined packages.**

**MATH PROGRAM**

*import* math

print("The value of pi:",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)

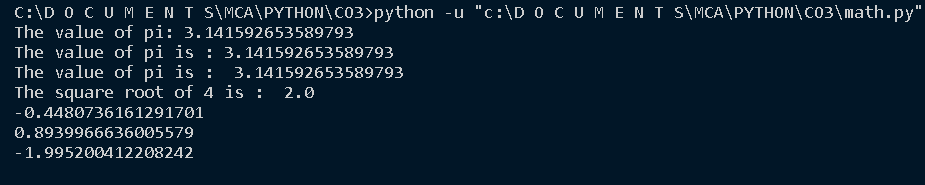
print("The square root of 4 is : ", sqrt(4))

print(math.cos(90))

print(math.sin(90))

print(math.tan(90))

**OUTPUT**



**CALENDAR PROGRAM**

*import* calendar

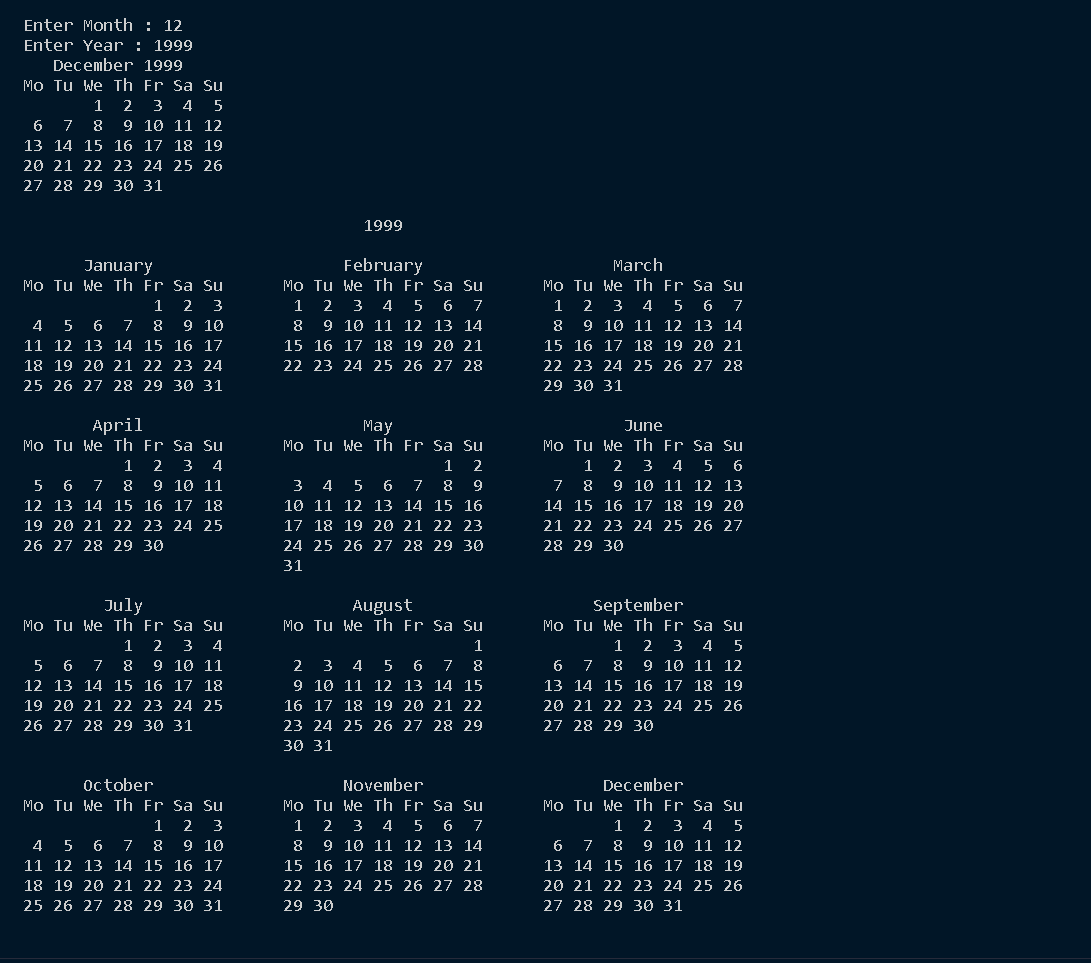
mm = int(input("Enter Month : "))

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

print(calendar.month(yy,mm))

print(calendar.calendar(1999))

**OUTPUT**



**TIME PROGRAM**

*import* time

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

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

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

t = time.localtime()

print("Time : ", t)

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

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

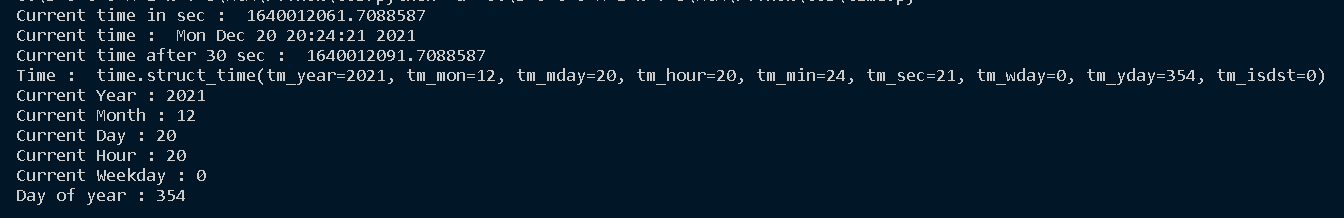
print("Current Day :", t.tm\_mday)

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

print("Current Weekday :", t.tm\_wday)

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

**OUTPUT**



**DATETIME PROGRAM**

*import* datetime

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

print(t)

print("Hour : ", t.hour)

print("Minute : ", t.minute)

print("Second : ", t.second)

print("==============================")

d = datetime.date.today()

print(d)

td = datetime.timedelta(days=2)

print(td)

d2 = d+td

print("After adding two days :",d2)

print("d2-d",d2-d)

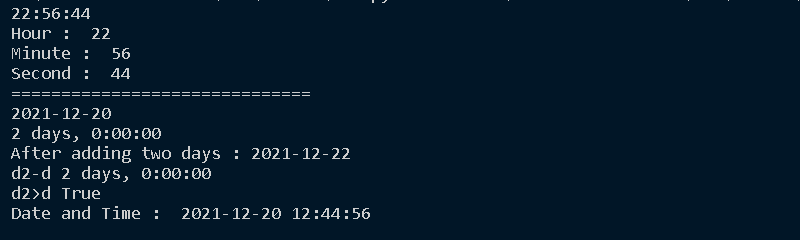
print("d2>d",d2>d)

d1 = datetime.date.today()

t1 = datetime.time(12,44,56)

print("Date and Time : ",d1, t1)

**OUTPUT**



**STATISTICS PROGRAM**

*import* statistics

# *Calculate average values*

print("Mean : ",statistics.mean([1, 3, 5, 7, 9, 11, 13]))

print("Mean : ",statistics.mean([1, 3, 5, 7, 9, 11]))

print("Mean : ",statistics.mean([-11, 5.5, -3.4, 7.1, -9, 22]))

print("===============================")

# *Calculate middle values*

print("Median : ",statistics.median([1, 3, 5, 7, 9, 11, 13]))

print("Median : ",statistics.median([1, 3, 5, 7, 9, 11]))

print("Median : ",statistics.median([-11, 5.5, -3.4, 7.1, -9, 22]))

print("===============================")

# *Calculate the mode*

print("Mode :",statistics.mode([1, 3, 3, 3, 5, 7, 9, 11]))

print("Mode :",statistics.mode([1, 1, 3, -5, 7, -9, 11]))

print("Mode :",statistics.mode(['red', 'green', 'blue', 'red']))

print("===============================")

# *Calculate the variance from a sample of data*

print("Varience :",([1, 3, 5, 7, 9, 11]))

print("Varience :",statistics.variance([2, 2.5, 1.25, 3.1, 1.75, 2.8]))

print("Varience :",statistics.variance([-11, 5.5, -3.4, 7.1]))

print("Varience :",statistics.variance([1, 30, 50, 100]))

print("===============================")

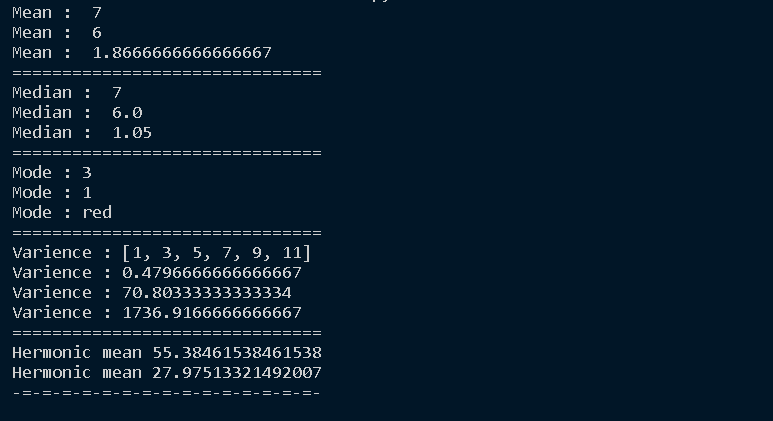
# *Calculate harmonic mean*

print("Hermonic mean",statistics.harmonic\_mean([40, 60, 80]))

print("Hermonic mean",statistics.harmonic\_mean([10, 30, 50, 70, 90]))

print("-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-")

**OUTPUT**



**RANDOM PROGRAM**

*import* random

print(random.random())

print("===============================")

mylist = ["apple", "banana", "cherry"]

random.shuffle(mylist)

print(mylist)

print("===============================")

random.seed(10)

print(random.random())

print("===============================")

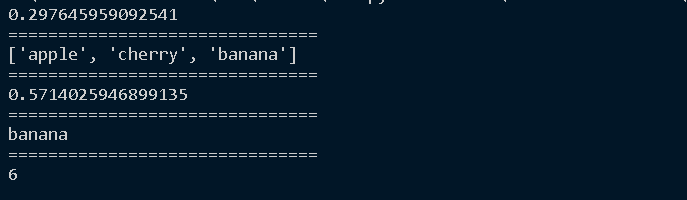
mylist = ["apple", "banana", "cherry"]

print(random.choice(mylist))

print("===============================")

print(random.randrange(3, 9))

**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)

rectangle.py

def *rectangle*(l,b):

    print("Area of rectangle :",l\*b)

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

    print("----------------------------------")

circle.py

def *circle*(r):

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

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

    print("----------------------------------")

cuboid.py

def *cuboid*(l,b,h):

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

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

    print("----------------------------------")

sphere.py

def *cuboid*(l,b,h):

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

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

    print("----------------------------------")

appackage\_views.py

*from* Graphics *import* circle

*from* Graphics *import* rectangle

*from* Graphics *import* cuboid

*from* Graphics *import* sphere

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

b = int(input("Enter breadth of rectangle :"))

rectangle.rectangle(l,b)

r = int(input("Enter Radius of circle :"))

circle.circle(r)

l = int(input("Enter length of cuboid :"))

b = int(input("Enter breadth of cuboid :"))

h = int(input("Enter height of cuboid :"))

cuboid.cuboid(l,h,b)

r = int(input("Enter Radius of sphere :"))

sphere.sphere(r)

**OUTPUT**

