Darshan UNIVERSITY
योगः कर्मसु कौशलम्

Python Programming - 2101CS405

Lab - 10

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Modules

A

01) WAP to create Calculator module which defines functions like add, sub,mul and div. create another file that uses the Calculator module.

In [2]:
```
import Calculator as calc

print("Addition=",calc.add(3,4))
print("Subtraction=",calc.sub(3,4))
print("Multiplication=",calc.multi(3,4))
print("Division=",calc.div(3,4))
```

```
Addition= 7
Subtraction= -1
Multiplication= 12
Division= 0.75
```

02) WAP to Pick a random character from a given String.

In [6]:
```
import random
str=input("Enter String : ")
print("Random Character = ",random.choice(str))
```

```
Random Character =  y
```

03) WAP to Pick a random element from a given list.

In [31]:
```
l1=[i for i in range(1,51)]
print("Random element from list = ",random.choice(l1))
```

```
Random element from list =  13
```

04) WAP to demonstrate the use of the math module.

In [45]:
```
import math
print("e = ", math.e)
print("PI = ", math.pi)
print("Tau = ", math.tau)
print("infinity = ", math.inf)
print("NaN = ", math.nan)
print("Ceil = ",math.ceil(5.6))
print("Floor = ",math.floor(5.6))
print("Factorial = ",math.factorial(5))
print("GCD = ",math.gcd(15,30))
print("Absolute = ",math.fabs(-15))
print("Exp = ",math.exp(1))
print("Exp = ", math.pow(5,3))
print("Log = ",math.log(10,2))
print("Log2 = ",math.log2(10))
print("Log10 = ",math.log10(10))
print("Sqrt = ",math.sqrt(81))
print("sin = ",math.sin(math.pi/2)," cos = ",math.cos(math.pi/4)," tan = ",math.tan(math
print("Radians = ",math.radians(90))
print("Degree = ",math.degrees(1.5))
print("Gamma = ",math.gamma(5))
print("isinf= ",math.isinf(math.pi))
print("isnan = ",math.isnan(float('nan')))
print("erf = ",math.erf(5))
```

```
e =  2.718281828459045
PI =  3.141592653589793
Tau =  6.283185307179586
infinity =  inf
NaN =  nan
Ceil =  6
Floor =  5
Factorial =  120
GCD =  15
Absolute =  15.0
Exp =  2.718281828459045
Exp =  125.0
Log =  3.3219280948873626
Log2 =  3.321928094887362
Log10 =  1.0
Sqrt =  9.0
sin =  1.0  cos =  0.7071067811865476  tan =  -1.2246467991473532e-16
Radians =  1.5707963267948966
Degree =  85.94366926962348
Gamma =  24.0
isinf=  False
isnan =  True
erf =  0.9999999999984626
```

05) WAP to demonstrate the use of date time module.

In [48]:
```
import datetime
d = datetime.date(2024,3,31)
print(d)
```

```
t = datetime.date.today()
print(t)
print(t.year)
print(t.month)
print(t.day)
t = datetime.time(10,30,5,1)
print(t)
print(t.hour)
print(t.minute)
print(t.second)
print(t.microsecond)
dt = datetime.datetime(2024,3,31)
print(dt)
x = datetime.datetime.now()
print(x)
y = x+datetime.timedelta(days=2)
print(y)
print(x.strftime("%A"))
print(x.strftime("%a"))
print(x.strftime("%M"))
print(x.strftime("%m"))
print(x.strftime("%Y"))
print(x.strftime("%y"))
```

```
2024-03-31
2024-03-31
2024
3
31
10:30:05.000001
10
30
5
1
2024-03-31 00:00:00
2024-03-31 17:02:03.693457
2024-04-02 17:02:03.693457
Sunday
Sun
02
03
2024
24
```

B

01) WAP to Roll dice in such a way that every time you get the same number.

In [7]:
```
l1=[1,2,3,4,5,6]
random.seed(6)
random.choice(l1)
```

Out[7]:
```
5
```

02) WAP to generate 3 random integers between 100 and 999 which is divisible by 5.

In [86]:
```
for i in range(3):
    print(random.randrange(100,999,5))
```

```
620
420
665
```

03) WAP to generate 100 random lottery tickets and pick two lucky tickets from it as a winner.

In [158…
```
li = []
for i in range(100):
    li.append(random.randint(1,10000000))
print(random.sample(li,2))
```

```
[7446788, 3017502]
```

04) WAP to print current date and time in Python.

In [105…
```
dt1=datetime.datetime.now()
print(dt1)
```

```
2024-03-31 18:32:30.673788
```

05) Subtract a week (7 days) from a given date in Python.

In [112…
```
dt2=dt1-datetime.timedelta(weeks=1)
print(dt2)
```

```
2024-03-24 18:32:30.673788
```

06) WAP to Calculate number of days between two given dates.

In [113…
```
print(dt1.day-dt2.day)
```

```
7
```

07) WAP to Find the day of the week of a given date.

In [116…
```
print(dt1.strftime("%A"))
print(dt1.strftime("%a"))
```

```
Sunday
Sun
```