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Course: MCA 3 c

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Subject: Machine Learning Using Python

Ques 1: Write a Program to use mathematical operators?

Source Code:

```
a=9
b=2
c=a+b
print("Addition",c)
c=a-b
print("Subtraction",c)
c=a*b
print("Multiplication",c)
c=a/b
print("Divison",c)
c=a%b
print("Modulus",c)
c=a**b
print("Exponential",c)
c=a//b
```

print("Floor",c)

Output:

Addition 11

Subtraction 7

Multiplication 18

Divison 4.5

Modulus 1

Exponential 81

Floor 4

Ques 2: Write a program to take an input of numbers from the user and print the Fibonacci series to the terminal number?

Source Code:

```
n=int(input("Enter terminating number:"))
f=0
s=1
count=1
sum=0
print("Fibonacci Series:")
while (count<=n):
print(sum,end=" ")
count+=1
   f=s
   s=sum
sum=f+s</pre>
```

Output:

Enter terminating number:5

Fibonacci Series:

01123

Ques 3: Write a program to print factorial of the number input by the user

Source Code:

```
n=int(input("Enter number:"))
print("Factorial of number:",end=" ")
f=1
for i in range(1,n+1):
    f=f*i
print(f)
```

Output:

Enter number:5

Factorial of number: 120

Ques 4: Write a program tocheck whether a given number is prime or not using loops

Source Code:

```
n=int(input("Enter number greater than 0:"))
flag=0
num=n//2
for i in range (2,num+1):
if(n%i==0):
flag==0
break
else:
flag=1
if(flag==0 and n!=2):
print("Number is not prime")
elif(flag==1 or n==2):
print("Number is prime")
Output:
Enter number greater than 0:2
Number is prime
```

Ques 5.Write a program to demonstrate the importing of modules of python Source Code: Import.py import test print(test.display_message()) test.py defdisplay_message(): return "Hello World" Output: Hello World

Ques 6: Write a program to demonstrate the use of nested if statements.

Source Code: n=int(input("Enter any number:")) if(n>=0): print("number is positive") if(n<=50): print("number is greater than 0 and less than 50") if(n>=50 and n<=100): print("number is greater than 50 and less than 100") if(n<0): print("number is negative") **Output:** Enter any number:55 number is positive number is greater than 50 and less than 100

Ques 7. Write a program to demonstrate the use of the else clause.

Source Code:

n=int(input("Enter any number:"))

if(n%2==0):
print("number is even")

else:
print("number is odd")

Output:

Enter any number:5

number is odd

Ques8. Write a program to illustrate the usage of Tuples.

Source Code:

```
t=()
print("Type: ",type(t))
t=("Saumya",18.9,False,8,"Gupta")
print(t[0:])
```

Output:

Type: <class 'tuple'>

('Saumya', 18.9, False, 8, 'Gupta')

```
Ques 9:Write a program for searching an element and sorting a List.
Source Code:
I=[3,5,1,10,12,8,4,7]
n=int(input("Enter element to be search:"))
flag=0
for i in range(0,len(l)):
if I[i]==n:
flag=1
break
if flag==1:
print("Element Found")
else:
print("Element not Found")
I.sort()
print("List after sorting:",I[0:])
Output:
Enter element to be search:5
Element Found
```

List after sorting: [1, 3, 4, 5, 7, 8, 10, 12]

Ques 10:. Write a program to illustrate the usage of Dictionaries. **Source Code:**

```
d={
  "brand":"Maruti",
  "model":"suzuki",
  "year":2010
}
print("Type : ",type(d))
print(d)
print(d["brand"])
x=d.get("model")
print(x)
y=d["year"]
print(y)
Output:
Type: <class 'dict'>
{'brand': 'Maruti', 'model': 'suzuki', 'year': 2010}
Maruti
suzuki
2010
```

Ques 11:Write a program to find the mean. mode and median of the given range of numbers. Source Code:

```
sum=0
x=[2,3,4,6,2,6,5,6,7,7]
for i in x:
sum=sum+i
mean=sum/len(x)
print(mean)
n=len(x)
x.sort()
if(n%2==0):
  med1=n//2
  med2=(n//2)+1
final_median=(x[med1-1]+x[med2-1])/2
else:
final_median=x[n//2]
print(final_median)
import statistics
mode2=statistics.mode(x)
print(mode2)
Output:
4.8
5.5
6
```

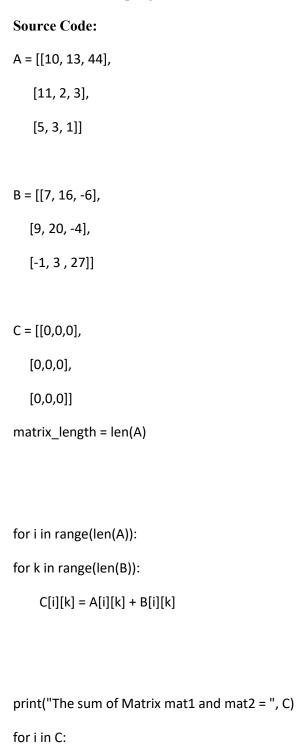
Ques 12:Write a program to calculate the standard deviation of a given set of numbers. Source Code:

```
ob = [1,5,4,2,3]
sum=0
for i in range(len(ob)):
sum+=ob[i]
mean= sum/len(ob)
sum_of_squared_deviation = 0
for i in range(len(ob)):
sum_of_squared_deviation+=(ob[i]- mean)**2
sd = ((sum_of_squared_deviation)/len(ob))**0.5
print("Standard Deviation of sample is ",sd)
```

Output:

Standard Deviation of sample is 1.4142135623730951

Ques 13:. Write a program to calculate the addition of two 3x 3 matrices.



print (i)

```
Output:
```

```
The sum of Matrix mat1 and mat2 = [[17, 29, 38], [20, 22, -1], [4, 6, 28]]
[17, 29, 38]
[20, 22, -1]
[4, 6, 28]
```

Ques 14. Write a program to calculate the multiplication of two 3x 3 matrices.

```
Source code:

X = [[12,7,3],
        [4,5,6],
        [7,8,9]]

Y = [[5,8,1,2],
        [6,7,3,0],
        [4,5,9,1]]

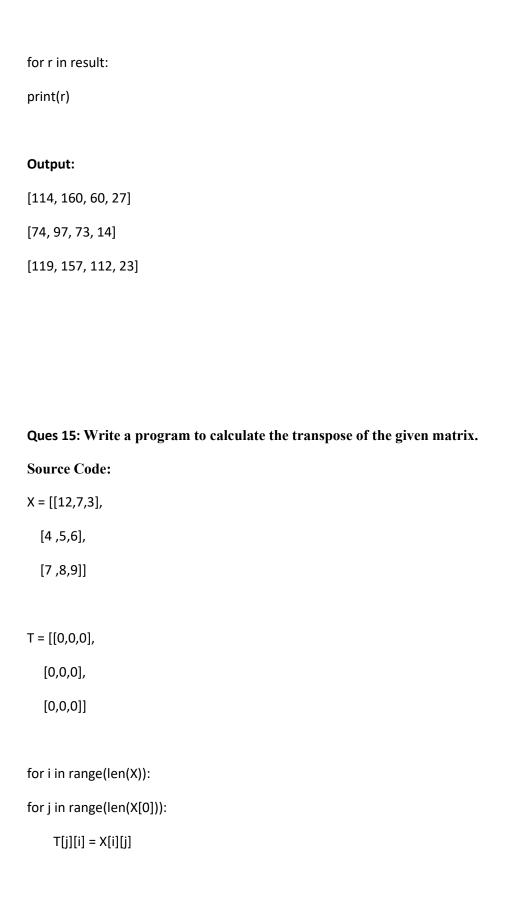
result = [[0,0,0,0],
        [0,0,0,0]]
```

```
for i in range(len(X)):

for j in range(len(Y[0])):

for k in range(len(Y)):
```

result[i][j] += X[i][k] * Y[k][j]



for t in T:

print(t)

Output:

[12, 4, 7]

[7, 5, 8]

[3, 6, 9]