



GRAPHIC ERA HILL UNIVERSITY

Department of Computer Application

Name: GAGAN SINGH NAYAL

Course: MCA 3 C

Student id: 20711149

Student roll no: 2001060

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
```

Output:

Enter terminating number:5

Fibonacci Series:

0 1 1 2 3

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 to check 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

```
def display_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:

```
l=[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 l[i]==n:

        flag=1

        break

if flag==1:

    print("Element Found")

else:

    print("Element not Found")

l.sort()

print("List after sorting:",l[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.

Source Code:

```
A = [[10, 13, 44],
```

```
      [11, 2, 3],
```

```
      [5, 3, 1]]
```

```
B = [[7, 16, -6],
```

```
      [9, 20, -4],
```

```
      [-1, 3, 27]]
```

```
C = [[0,0,0],
```

```
      [0,0,0],
```

```
      [0,0,0]]
```

```
matrix_length = len(A)
```

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

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

```
        C[i][k] = A[i][k] + B[i][k]
```

```
print("The sum of Matrix mat1 and mat2 = ", C)
```

```
for i in C:
```

```
    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],
```

```
          [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 r in result:

print(r)

Output:

[114, 160, 60, 27]

[74, 97, 73, 14]

[119, 157, 112, 23]

Ques 15: Write a program to calculate the transpose of the given matrix.

Source Code:

X = [[12,7,3],

[4 ,5,6],

[7 ,8,9]]

T = [[0,0,0],

[0,0,0],

[0,0,0]]

for i in range(len(X)):

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

T[j][i] = X[i][j]


```
for t in T:
```

```
    print(t)
```

Output:

```
[12, 4, 7]
```

```
[7, 5, 8]
```

```
[3, 6, 9]
```