**NAME:PRIYANKA RANA**

**COURSE:MCA**

**Roll:2001107**

**1.Write a python program to use of mathematical operation.**

**Source Code:**

a=40

b=20

sum=a+print("sum of two numbers:",sum)

subtract=a-b

print("subtract of two numbers", subtract)

multiply=a\*b;

print("multiply of two numbers",multiply)

divide=a//b

print("divide of two numbers",divide)

**Output:**

sum of two numbers: 60

subtract of two numbers 20

multiply of two numbers 800

divide of two numbers 2

**2.Write a python program to take an input of number from the user and print the Fibonacci series**.

**Source code.**

nterms = int(input("How many terms? "))

n1, n2 = 0, 1

count = 0

if nterms <= 0:

print("Please enter a positive integer")

elif nterms == 1:

print("Fibonacci sequence upto",nterms,":")

print(n1)

else:

print("Fibonacci sequence:")

while count < nterms:

print(n1)

nth = n1 + n2

n1 = n2

n2 = nth

count += 1

**Output:**

How many terms? 6

Fibonacci sequence:

0

1

1

2

3

**Q3**:**Write a python program to calculate factorial of a number**.

**Source Code:**

num = int(input("Enter a number: "))

factorial = 1

if num < 0:

print(" factorial does not exist for negative numbers")

elif num == 0:

print("The factorial of 0 is 1")

else:

for i in range(1,num + 1):

factorial = factorial\*i

print("The factorial of",num,"is",factorial)

**Output:**

Enter a number: 5

The factorial of 5 is 120

**Q4Write a progarm to input a number and check the number is prime or not.**

**Source Code**:

num = int(input("Enter a number: "))

flag = False

if num > 1:

for i in range(2, num):

if (num % i) == 0:

flag = True

break

if flag:

print(num, "is not a prime number")

else:

print(num, "is a prime number")

**Output**: Enter a number: 14

14 is not a prime number

Output: Enter a number: 2

2 is a prime number

**Q5:Write aprogram toimporting the demonstrate the importing of modules of python.**

**Source Code:**

from math import \*

print(pi)

print(factorial(5))

**Output:**

3.141592653589793

120

**Q6: Write a program to importing the demonstrate the use of nested if statement .**

**Source Code:**

num =int(input("enter a number"))

if num > 0:

print("Number is positive")

elif num == 0:

print("number is equal to zero")

else:

print("number is negative")

**Output:**

enter a number110

Number is positive

**Output** :

enter a number-9

number is negative

**Q.7 Write a program to demonstrate the use of else statement.**

**Source Code:**

num = int(input("enter no: "))

if num >= 50:

print("greater than 50")

else:

print("less than 50")

**Output:**

enter no: 10

less than 50

**Q8:Write a program to illustrate the usage of tuples.**

**Source Code:**

tuples='Apple','Banana','Mango','papaya'

print(tuples)

print(len(tuples))

**Output:**

('Apple', 'Banana', 'Mango', 'papaya')

4

**Q:9 Write a program to searching an element and sorting a list.**

**Source Code:**

str1 = [20, 10, 150, 80, 40]

print(sorted(str1)) # with sorting

print(str1) # without sorting

index = str1.index(40)

print(index)

index = str1.index(80)

print(index)

**Output:**

[10, 20, 40, 80, 150]

[20, 10, 150, 80, 40]

4

3

**Q10: Write a program to illustrate the usage of dictionaries.**

Source Code:

dict = {

"Fruit": "apple", "color": "red", "Eat": 2

}

print(dict["Fruit"])

**Output:**

apple

B:

1.Write a program to calculate mean, median, mode in python.

a={1,2,3,4,4,4,4,5,6,7,7,8,8,9}

b=numpy.mean(a);

c=numpy.median(a)

d=scipy.mode(a);

print(a);

print(b)

print(c)

Q2.2 .Write a python program to calculate the standard deviation of given set of numbers.

Source Code:

Output:

#2.2# standard deviation

import statistics

sample = [1, 2, 3, 4, 5]

print(statistics.stdev(sample))

Q2.3.Write a python program to calculate thr addition of two 3\*3 matrices.

Source Code:

Output:

#2.3# addition of a matrix

arr=[[1,2,3],

[5,6,7]

,[9,10,11]];

A = [[12, 7, 3],

[4, 5, 6],

[7, 8, 9]]

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

[0, 0, 0, 0],

[0, 0, 0, 0]]

sum=0;

for i in range(len(arr)):

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

sum=arr[i][j]+A[i][j]

result[i][j]=sum

print(result)

Q2.4Write a python program to calculate the multiply of two 3\*3 matrices.

Source Code:

Output:

#2.4#multiplication of two matrix

arr=[[1,2,3],

[5,6,7]

,[9,10,11]];

Y = [[1, 1, 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(arr)):

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

for k in range(len(Y)):

result[i][j]+=arr[i][k]\*Y[k][j]

print(result)

Q2.6Write a program to calculate thr transpose of given matrix

Source Code:

Output:

# 2.6 transpose of a matrix

arr=[[1,2,3,4],

[5,6,7,8]

,[9,10,11,12]];

a=len(arr[0])

b=len(arr)

transpose=[[0,0,0],

[0,0,0],

[0,0,0],

[0,0,0]]

for i in arr:

print(i)

for i in range(len(arr)):

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

transpose[j][i]=arr[i][j]

print("\n")

print(transpose)