**Zeal College of Engineering and Research**

**Subject: DSL**

Name: Chinmay S Gaikwad                 Class: SE Div: A                  Batch: A3

Roll\_No: S211055

**Group B: Practical No: 04**

**Program Statement**:

Write a Python program to compute following computation on matrix:

1. Addition of two matrices
2. Subtraction of two matrices
3. Multiplication of two matrices
4. Transpose of a matrix

**Code:**

#Addition of matrix

#Taking of array a

a = []

n = int(input("Enter the No of Row of Array 1:"))

m = int(input("Enter the No of Column of Array 1:"))

for i in range(n):

t = []

for j in range(m):

p = int(input("Enter Element for ARRAY1:"))

t.append(p)

a.append(t)

print("--- Array 1 ---")

for i in range(n):

for j in range(m):

print(a[i][j],end=" ")

print()

#Taking of array b

b = []

v = int(input("Enter the No of Row of Array 2:"))

w = int(input("Enter the No of Column of Array 2:"))

for i in range(v):

t = []

for j in range(w):

p = int(input("Enter Element for ARRAY1:"))

t.append(p)

b.append(t)

print("--- Array 2 ---")

for i in range(v):

for j in range(w):

print(b[i][j],end=" ")

print()

def sum():

#Adding Both Array

c = []

for i in range(len(a)):

for j in range(len(b)):

sum=a[i][j]+b[i][j]

c.append(sum)

print("--- Sum of Given matrix ---")

print("\n",c)

def sub():

#Subtraction Both Array

d = []

for i in range(len(a)):

for j in range(len(b)):

subt=a[i][j]-b[i][j]

d.append(subt)

print("--- Sub of Given matrix ---")

print("\n",d)

def multi():

#Multiplication of 2 array

result = []

for i in range(n):

row = []

for j in range(m):

sum = 0

for k in range(m):

sum += a[i][k] \* b[k][j]

row.append(sum)

result.append(row)

print("Your resultant matrix is: \n", result)

def trans():

#Transpose of two array

choice=int(input("1.For transpose of matrix 1:\n"

"2.For transpose of matrix 2:\n"))

if(choice==1):

temp1=[]

for i in range (n):

w=[]

for j in range(m):

temp3=a[j][i]

w.append(temp3)

temp1.append(w)

print("Your Transpose matrix 1 is:",temp1)

else:

print("END")

print("Enter the choice you want \n1.Addition\n2.Subtraction\n3.Multiplication\n4.Transpose\n5.Exit")

x = int(input())

if x == 1:

sum()

elif x == 2:

sub()

elif x == 3:

multi()

elif x == 4:

trans()

else:

print("Thank you")

**Output (Screenshot):**

