**PRACTICAL NO:03**

**PROGRAM**:

def add(m1,m2):

result=[[0,0,0],

[0,0,0],

[0,0,0]]

for i in range(len(m1)):

for j in range(len(m1[0])):

result [i][j]=m1[i][j]+m2[i][j]

for r in result:

print(r)

def mul(m1,m2):

result=[[0,0,0],

[0,0,0],

[0,0,0]]

for i in range(len(m1)):

for j in range(len(m2[0])):

for k in range(len(m2)):

result[i][j] +=m1[i][k]\*m2[k][j]

for r in result:

print(r)

def sub(m1,m2):

result=[[0,0,0],

[0,0,0],

[0,0,0]]

for i in range(len(m1)):

for j in range(len(m2[0])):

result[i][j]=m1[i][j]-m2[i][j]

for r in result:

print(r)

def tran(m1):

result=[[0,0,0],

[0,0,0],

[0,0,0]]

for i in range(len(m1)):

for j in range(len(m1[0])):

result[j][i]=m1[i][j]

for r in result:

print(r)

def tran2(m2):

result=[[0,0,0],

[0,0,0],

[0,0,0]]

for i in range(len(m2)):

for j in range(len(m2[0])):

result[j][i]=m2[i][j]

for r in result:

print(r)

m1=[]

print("enter the 1st matrices:")

r1=int(input("enter the number of rows:"))

c1=int(input("enter the number of columns:"))

print("emter the entries rowwise:")

for i in range(r1):

a1=[]

for j in range(c1):

a1.append(int(input()))

m1.append(a1)

for i in range(r1):

for j in range(c1):

print(m1[i][j],end=" ")

print()

m2=[]

print("enter the 2nd matrices:")

r2=int(input("enter the number of rows:"))

c2=int(input("enter the number of columns:"))

print("enter the entries rowwise:")

for i in range(r2):

a2=[]

for j in range(c2):

a2.append(int(input()))

m2.append(a2)

for i in range(r2):

for j in range(c2):

print(m2[i][j],end=" ")

print("the 1st matrix is:",m1)

print("the 2nd matrix is:",m2)

flag=1

while flag==1:

print("\n\n------------MENU---------------\n")

print("1.Addition of two matrices")

print("2.subtraction of two matrices")

print("3.multiplication of two matrices")

print("4.transpose of matrix 1")

print("5,Transpose of matrix 2")

print("6.EXIT")

ch=int(input("enter your choice:"))

if ch==1:

print("Additon of two matrices is:")

add(m1,m2)

a=input("do you want to continue(yes/no)")

if a=="yes":

flag=1

else:

flag=0

print("Thanks for using this program")

elif ch==2:

print("the subtraction of two matrices is:")

sub(m1,m2)

a=input("do you want to continue(yes/no)")

if a=="yes":

flag=1

else:

flag=0

print("Thanks for using this program")

elif ch==3:

print("the multiplication of two matrices is:")

mul(m1,m2)

a=input("do you want to continue(yes/no)")

if a=="yes":

flag=1

else:

flag=0

print("Thanks for using this program")

elif ch==4:

print("the transpose of matrix 1 is:")

tran(m1)

a=input("do you want to continue(yes/no)")

if a=="yes":

flag=1

else:

flag=0

print("Thanks for using this program")

elif ch==5:

print("the transpose of matrix 2 is:")

tran2(m2)

a=input("do you want to continue(yes/no)")

if a=="yes":

flag=1

else:

flag=0

print("Thanks for using this program")

elif ch==6:

print("EXIT:")

print("thanks for using this program")

else:

print("wrong entry,please enter a correct choice:")

a=input("do you want to continue(yes/no)")

if a=="yes":

flag=1

else:

flag=0

print("Thanks for using this program")

**OUTPUT**:

enter the 1st matrices:

enter the number of rows:3

enter the number of columns:3

emter the entries rowwise:

7

8

9

4

5

6

1

2

3

7 8 9

4 5 6

1 2 3

enter the 2nd matrices:

enter the number of rows:3

enter the number of columns:3

enter the entries rowwise:

0

1

4

2

5

3

6

9

7

0 1 4 2 5 3 6 9 7 the 1st matrix is: [[7, 8, 9], [4, 5, 6], [1, 2, 3]]

the 2nd matrix is: [[0, 1, 4], [2, 5, 3], [6, 9, 7]]

------------MENU---------------

1.Addition of two matrices

2.subtraction of two matrices

3.multiplication of two matrices

4.transpose of matrix 1

5,Transpose of matrix 2

6.EXIT

enter your choice:1

Additon of two matrices is:

[7, 9, 13]

[6, 10, 9]

[7, 11, 10]

do you want to continue(yes/no)yes

------------MENU---------------

1.Addition of two matrices

2.subtraction of two matrices

3.multiplication of two matrices

4.transpose of matrix 1

5,Transpose of matrix 2

6.EXIT

enter your choice:2

the subtraction of two matrices is:

[7, 7, 5]

[2, 0, 3]

[-5, -7, -4]

do you want to continue(yes/no)yes

------------MENU---------------

1.Addition of two matrices

2.subtraction of two matrices

3.multiplication of two matrices

4.transpose of matrix 1

5,Transpose of matrix 2

6.EXIT

enter your choice:3

the multiplication of two matrices is:

[70, 128, 115]

[46, 83, 73]

[22, 38, 31]

do you want to continue(yes/no)yes

------------MENU---------------

1.Addition of two matrices

2.subtraction of two matrices

3.multiplication of two matrices

4.transpose of matrix 1

5,Transpose of matrix 2

6.EXIT

enter your choice:4

the transpose of matrix 1 is:

[7, 4, 1]

[8, 5, 2]

[9, 6, 3]

do you want to continue(yes/no)yes

------------MENU---------------

1.Addition of two matrices

2.subtraction of two matrices

3.multiplication of two matrices

4.transpose of matrix 1

5,Transpose of matrix 2

6.EXIT

enter your choice:5

the transpose of matrix 2 is:

[0, 2, 6]

[1, 5, 9]

[4, 3, 7]

do you want to continue(yes/no)yes

------------MENU---------------

1.Addition of two matrices

2.subtraction of two matrices

3.multiplication of two matrices

4.transpose of matrix 1

5,Transpose of matrix 2

6.EXIT

enter your choice:6

EXIT:

thanks for using this program

------------MENU---------------

1.Addition of two matrices

2.subtraction of two matrices

3.multiplication of two matrices

4.transpose of matrix 1

5,Transpose of matrix 2

6.EXIT

enter your choice:7

wrong entry,please enter a correct choice:

do you want to continue(yes/no)