Practical 3

def main():

while True:

print("Matrix Operations Menu:")

print("1. accept Matrices")

print("2. Display Matrices")

print("3. Add Matrices")

print("4. Subtract Matrices")

print("5. Multiply Matrices")

print("6. Transpose Matrices")

print("7. Exit")

choice = int(input("Enter your choice: "))

if choice == 1:

row1=int(input("Enter total number of rows for matrix 1: "))

col1=int(input("Enter total number of colummns for matrix 1: "))

m1=[]

print("fisrt matrix=")

res=accept(row1,m1,col1)

row2=int(input("Enter total number of rows for matrix 2 : "))

col2=int(input("Enter total number of colummns for matrix 2: "))

m2=[]

print("second matrix=")

res1=accept(row2,m2,col2)

elif choice == 2:

display(row1,res,col1)

display(row2,res1,col2)

elif choice == 3:

add(row1,res,col1,res1,row2,col2)

elif choice == 4:

sub(row1,res,col1,res1,row2,col2)

elif choice == 5:

mul(row1,col1,row2,col2,res,res1 )

elif choice == 6:

transpose(res)

elif choice == 7:

break

else:

print("Invalid choice. Please enter a valid option.")

def accept(row,m,col):

for i in range(0,row):

x=[]

for j in range(0,col):

x.append(int(input("enter elements :\n")))

m.append(x)

return(m)

def display (row,res,col):

print("\n")

for i in range(0,row):

for j in range(0,col):

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

print("\n")

def add(row1,res,col1,res1,row2,col2):

if(row1==row2 and col1==col2):

print("addition of two matries=")

for i in range(0,row1):

for j in range(0,col1):

print(res[i][j]+res1[i][j],end=" ")

print("\n")

else:

print ("number of col and row is difffrent so addition is not possible")

def sub(row1,res,col1,res1,row2,col2):

if(row1==row2 and col1==col2):

print("substraction of two matries=")

for i in range(0,row1):

for j in range(0,col1):

print((res[i][j])-(res1[i][j]),end=" ")

print("\n")

else:

print ("number of col and row is difffrent so substraction is not possible")

def mul(row1,col1,row2,col2,res1,res2):

if (col1==row2):

result=[]

print("multiplication of matries")

for i in range(0,row1):

row = []

for k in range(0,col2):

element=0

for j in range(0,col1):

element += (res1[i][j] \* res2[j][k])

row.append(element)

result.append(row)

#return (result)

for row in result:

for element in row:

print(element,end=" ")

print()

else:

print("mul is not possible")

def transpose(matrix):

tran=[]

for i in range (len (matrix)):

r=[]

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

r.append(matrix[j][i])

tran.append(r)

print("transpose of matrix")

for row in tran:

for element in row:

print(element,end=" ")

print()

main()

oupput



