Assignment 3

Code:

def add\_matrices(matrix1, matrix2):

result=[]

for i in range(len(matrix1)):

row =[]

for j in range(len(matrix1[0])):

row.append(matrix1[i][j] +matrix2[i][j])

result.append(row)

return result

def subtract\_matrices(matrix1, matrix2):

result=[]

for i in range(len(matrix1)):

row=[]

for j in range(len(matrix1[0])):

row.append(matrix1[i][j]-matrix2[i][j])

result.append(row)

return result

def multiply\_matrices(matrix1, matrix2):

result = []

for i in range(len matrix1)):

row = []

for j in range(len(matrix2[0])):

element = 0

for k in range(len(matrix2)):

element+= matrix1[i][k]\* matrix2[k][j]

row.append(element)

result.append(row)

return result

def transpose\_matrix(matrix):

result = []

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

row=[]

for i in range(len(matrix)):

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

result.append(row)

return result

def print\_matrix(matrix):

for row in matrix:

print(" ".join(map(str row)))

det main():

print("1. Addition")

print("2. Subtraction")

print("3. Multiplication")

print("4: Transpose")

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

print("\nEnter the first matrix: \n")

matrix1= []

for i in range(3):

row=list(map(int, input().split()))

matrix1.append(row)

print("\nEnter the second matrix:\n")

matrix2 =[]

for i in range(3):

row=list(map(int, input().split()))

matrix2.append(row)

if choice==1:

result = add\_matrices(matrix1, matrix2)

print("\nResult matrix (Addition):\n")

print\_matrix(result)

elif choice==2:

result = subtract\_matrices(matrix1, matrix2)

print("\nResult matrix (Subtraction):\n")

print\_matrix(result)

elif choice == 3:

result = multiply\_matrices(matrix1, matrix2)

print("\nResult matrix (Multiplication):\n")

print\_matrix(result)

elif choice== 4:

result = transpose\_matrix(matrix1)

print("\nTranspose of matrix:\n")

print\_matrix(result)

else:

print("invalid choice.")

if\_\_name\_\_==”\_\_main\_\_”:

main()