Write a program for matrix multiplication?

Sample Input:

Mat1 =

Mat2 =

Sample Output:

Mat Sum =

CODE:

def matrix\_multiply(A, B):

rows\_A = len(A)

cols\_A = len(A[0])

rows\_B = len(B)

cols\_B = len(B[0])

if cols\_A != rows\_B:

print("Matrix multiplication is not possible. Number of columns in Matrix A must be equal to the number of rows in Matrix B.")

return None

result = [[0 for \_ in range(cols\_B)] for \_ in range(rows\_A)]

for i in range(rows\_A):

for j in range(cols\_B):

for k in range(cols\_A):

result[i][j] += A[i][k] \* B[k][j]

return result

# Get user input for matrices

def get\_matrix\_from\_user(rows, cols):

matrix = []

for i in range(rows):

row = []

for j in range(cols):

element = int(input(f"Enter element at position ({i + 1}, {j + 1}): "))

row.append(element)

matrix.append(row)

return matrix

# Get dimensions of matrices from the user

rows\_A = int(input("Enter the number of rows for Matrix A: "))

cols\_A = int(input("Enter the number of columns for Matrix A: "))

rows\_B = int(input("Enter the number of rows for Matrix B: "))

cols\_B = int(input("Enter the number of columns for Matrix B: "))

# Get matrices from the user

matrix\_A = get\_matrix\_from\_user(rows\_A, cols\_A)

matrix\_B = get\_matrix\_from\_user(rows\_B, cols\_B)

# Perform matrix multiplication

result\_matrix = matrix\_multiply(matrix\_A, matrix\_B)

# Display the result

if result\_matrix:

print("\nResultant Matrix:")

for row in result\_matrix:

print(row)

OUTPUT:

Enter the number of rows for Matrix A: 2

Enter the number of columns for Matrix A: 2

Enter the number of rows for Matrix B: 2

Enter the number of columns for Matrix B: 2

Enter element at position (1, 1): 1

Enter element at position (1, 2): 2

Enter element at position (2, 1): 5

Enter element at position (2, 2): 3

Enter element at position (1, 1): 2

Enter element at position (1, 2): 3

Enter element at position (2, 1): 4

Enter element at position (2, 2): 1

Resultant Matrix:

[10, 5]

[22, 18]

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