1. Python program to add two Matrices

def add\_matrices(matrix1, matrix2):

result = []

for i in range(len(matrix1)):

row = []

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

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

result.append(row)

return result

matrix1 = [[1, 2, 3], [4, 5, 6], [7, 8, 9]]

matrix2 = [[9, 8, 7], [6, 5, 4], [3, 2, 1]]

result\_matrix = add\_matrices(matrix1, matrix2)

print("Resultant matrix after addition:")

for row in result\_matrix:

print(row)

1. Python program to multiply two matrices

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

matrix1 = [[1, 2, 3], [4, 5, 6]]

matrix2 = [[7, 8], [9, 10], [11, 12]]

result\_matrix = multiply\_matrices(matrix1, matrix2)

print("Resultant matrix after multiplication:")

for row in result\_matrix:

print(row)

1. Python program for Matrix Product

import numpy as np

matrix1 = np.array([[1, 2, 3], [4, 5, 6]])

matrix2 = np.array([[7, 8], [9, 10], [11, 12]])

result\_matrix = np.dot(matrix1, matrix2)

print("Resultant matrix after matrix product:")

print(result\_matrix)

1. Adding and Subtracting Matrices in Python

def add\_matrices(matrix1, matrix2):

result = []

for i in range(len(matrix1)):

row = []

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

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[i])):

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

result.append(row)

return result

matrix1 = [[1, 2, 3], [4, 5, 6], [7, 8, 9]]

matrix2 = [[9, 8, 7], [6, 5, 4], [3, 2, 1]]

addition\_result = add\_matrices(matrix1, matrix2)

subtraction\_result = subtract\_matrices(matrix1, matrix2)

print("Resultant matrix after addition:")

for row in addition\_result:

print(row)

print("Resultant matrix after subtraction:")

for row in subtraction\_result:

print(row)

1. Transpose a matrix in Single line in Python

matrix = [[1, 2, 3], [4, 5, 6], [7, 8, 9]]

transpose = [[matrix[j][i] for j in range(len(matrix))] for i in range(len(matrix[0]))]

print("Original matrix:")

for row in matrix:

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5. Python program to check whether the string is Symmetrical or Palindrome