1. Write a Python Program to Add Two Matrices?

Sol:- # create two matrices

matrix1 = [[1, 2, 3],

[4, 5, 6],

[7, 8, 9]]

matrix2 = [[10, 11, 12],

[13, 14, 15],

[16, 17, 18]]

# initialize the result matrix with all zeros

result = [[0, 0, 0],

[0, 0, 0],

[0, 0, 0]]

# iterate through each element of the matrices and add them

for i in range(len(matrix1)):

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

result[i][j] = matrix1[i][j] + matrix2[i][j]

# display the result matrix

print("The sum of the two matrices is:")

for row in result:

print(row)

1. Write a Python Program to Multiply Two Matrices?

Sol:- # function to multiply two matrices

def multiply\_matrices(matrix1, matrix2):

# get dimensions of matrices

rows1 = len(matrix1)

cols1 = len(matrix1[0])

rows2 = len(matrix2)

cols2 = len(matrix2[0])

# check if multiplication is possible

if cols1 != rows2:

return "Multiplication not possible"

# initialize result matrix with 0s

result = [[0 for j in range(cols2)] for i in range(rows1)]

# multiply matrices

for i in range(rows1):

for j in range(cols2):

for k in range(cols1):

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

return result

# example matrices

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

matrix2 = [[10, 11, 12], [13, 14, 15], [16, 17, 18]]

# print result

print(multiply\_matrices(matrix1, matrix2))

1. Write a Python Program to Transpose a Matrix?

Sol:- # Function to transpose a matrix

def transpose(matrix):

# Create a new empty matrix with the number of rows equal to the number of columns in the original matrix

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

# Loop through the rows and columns of the original matrix

for i in range(len(matrix)):

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

# Set the value of the current element in the new matrix to the value of the current element in the original matrix

result[j][i] = matrix[i][j]

return result

# Example usage

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

print("Original Matrix:")

for row in matrix:

print(row)

transposed\_matrix = transpose(matrix)

print("Transposed Matrix:")

for row in transposed\_matrix:

print(row)

1. Write a Python Program to Sort Words in Alphabetic Order?

Sol:- def sort\_words(sentence):

words = sentence.split()

words.sort()

return ' '.join(words)

sentence = input("Enter a sentence: ")

sorted\_sentence = sort\_words(sentence)

print("Words in alphabetical order:", sorted\_sentence)

1. Write a Python Program to Remove Punctuation From a String?

Sol:- import string

def remove\_punctuation(input\_string):

# create a string of all punctuation marks

punctuations = string.punctuation

# create a translation table with all punctuations mapped to None

translation\_table = str.maketrans('', '', punctuations)

# use the translation table to remove punctuations from the input string

input\_string\_without\_punctuations = input\_string.translate(translation\_table)

return input\_string\_without\_punctuations