1. Write a Python Program to Add Two Matrices?

def add\_matrices(matrix1, matrix2):

if len(matrix1) != len(matrix2) or len(matrix1[0]) != len(matrix2[0]):

print("Error: Matrices should have the same dimensions.")

return None

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

# Example matrices

matrix1 = [[1, 2, 3],

[4, 5, 6],

[7, 8, 9]]

matrix2 = [[9, 8, 7],

[6, 5, 4],

[3, 2, 1]]

# Add matrices

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

# Print result

if result\_matrix:

print("Result:")

for row in result\_matrix:

print(row)

1. Write a Python Program to Multiply Two Matrices?

def multiply\_matrices(matrix1, matrix2):

if len(matrix1[0]) != len(matrix2):

print("Error: The number of columns in the first matrix should be equal to the number of rows in the second matrix.")

return None

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

# Example matrices

matrix1 = [[1, 2, 3],

[4, 5, 6]]

matrix2 = [[7, 8],

[9, 10],

[11, 12]]

# Multiply matrices

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

# Print result

if result\_matrix:

print("Result:")

for row in result\_matrix:

print(row)

1. Write a Python Program to Transpose a Matrix?

def transpose\_matrix(matrix):

rows = len(matrix)

columns = len(matrix[0])

# Create a new matrix with swapped rows and columns

transpose = [[matrix[j][i] for j in range(rows)] for i in range(columns)]

return transpose

# Example matrix

matrix = [[1, 2, 3],

[4, 5, 6],

[7, 8, 9]]

# Transpose the matrix

transposed\_matrix = transpose\_matrix(matrix)

# Print the original matrix

print("Original Matrix:")

for row in matrix:

print(row)

# Print the transposed matrix

print("\nTransposed Matrix:")

for row in transposed\_matrix:

print(row)

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

def sort\_words(words):

sorted\_words = sorted(words)

return sorted\_words

# Example list of words

words = ['banana', 'apple', 'cherry', 'date', 'grape']

# Sort the words in alphabetical order

sorted\_words = sort\_words(words)

# Print the sorted words

print("Sorted Words:")

for word in sorted\_words:

print(word)

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

import string

def remove\_punctuation(input\_string):

# Create a string of all punctuation characters

punctuation = string.punctuation

# Remove punctuation characters from the input string

no\_punct = ''.join(char for char in input\_string if char not in punctuation)

return no\_punct

# Example string with punctuation

input\_string = "Hello, World! This is a sample string."

# Remove punctuation from the string

no\_punctuation = remove\_punctuation(input\_string)

# Print the string without punctuation

print("String without Punctuation:")

print(no\_punctuation)