**Python Tasks – Day13**

1. **Write a Python Code to count the Number of Each Vowel in a given string**

**Ans:**

def count\_vowels(string):

vowels = 'aeiou'

count = {}.fromkeys(vowels, 0)

for char in string:

if char in count:

count[char] += 1

return count

string = "Hello World"

print(count\_vowels(string))

1. **Write a Python Code to count number of words, characters and number of spaces in a given stirng**

**Ans:**

def count(string):

words = len(string.split())

characters = len(string)

spaces = string.count(' ')

return words, characters, spaces

string = "Hello World"

words, characters, spaces = count(string)

print("Number of words:", words)

print("Number of characters:", characters)

print("Number of spaces:", spaces)

1. **Write a Python Program to remove punctuation from a given string (using loop)**

**Ans:**

import string

def remove\_punctuation(string):

no\_punct = ""

for char in string:

if char not in string.punctuation:

no\_punct = no\_punct + char

return no\_punct

string = "Hello, World!"

no\_punct = remove\_punctuation(string)

print(no\_punct)

1. **Write a Python Program to take a mxn matrix input from user and stored in nested list**

**Ans:**

m = int(input("Enter the number of rows: "))

n = int(input("Enter the number of columns: "))

matrix = []

for i in range(m):

row = []

for j in range(n):

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

row.append(element)

matrix.append(row)

print(matrix)

1. **Write a Python Program to add, multiply and transpose two matrices given by user**

**Ans:**

def matrix\_addition(X, Y):

result = [[X[i][j] + Y[i][j] for j in range(len(X[0]))] for i in range(len(X))]

return result

def matrix\_multiplication(X, Y):

result = [[sum(a\*b for a,b in zip(X\_row,Y\_col)) for Y\_col in zip(\*Y)] for X\_row in X]

return result

def matrix\_transpose(X):

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

return result

rows1 = int(input("Enter the number of rows of matrix 1: "))

cols1 = int(input("Enter the number of columns of matrix 1: "))

matrix1 = []

for i in range(rows1):

row = []

for j in range(cols1):

row.append(int(input(f"Enter element {i+1},{j+1} of matrix 1: ")))

matrix1.append(row)

rows2 = int(input("Enter the number of rows of matrix 2: "))

cols2 = int(input("Enter the number of columns of matrix 2: "))

matrix2 = []

for i in range(rows2):

row = []

for j in range(cols2):

row.append(int(input(f"Enter element {i+1},{j+1} of matrix 2: ")))

matrix2.append(row)

print(f"\nMatrix 1:\n{matrix1}")

print(f"\nMatrix 2:\n{matrix2}")

addition\_result = matrix\_addition(matrix1, matrix2)

print(f"\nAddition Result:\n{addition\_result}")

multiplication\_result = matrix\_multiplication(matrix1, matrix2)

print(f"\nMultiplication Result:\n{multiplication\_result}")

transpose\_result\_matrix1 = matrix\_transpose(matrix1)

transpose\_result\_matrix2 = matrix\_transpose(matrix2)

print(f"\nTranspose Result Matrix 1:\n{transpose\_result\_matrix1}")

print(f"\nTranspose Result Matrix 2:\n{transpose\_result\_matrix2}")