PROGRAMMING ASSESSMENT

10. Write a Python function that takes a 2D list (matrix) and returns its transpose.

def transpose(matrix):

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

def get\_matrix\_input():

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

matrix = []

for i in range(rows):

row = input(f"Enter row {i + 1} (space-separated values): ").split()

matrix.append([int(value) for value in row])

return matrix

# Get matrix from user

matrix = get\_matrix\_input()

# Transpose the matrix

transposed\_matrix = transpose(matrix)

print("Transposed matrix:")

for row in transposed\_matrix:

print(row)

