EXPERIMENT 12

Python program for implementing travelling sales man problem

from sys import maxsize

from itertools import permutations

V = 4

# implementation of traveling Salesman Problem

def travellingSalesmanProblem(graph, s):

# store all vertex apart from source vertex

vertex = []

for i in range(V):

if i != s:

vertex.append(i)

# store minimum weight Hamiltonian Cycle

min\_path = maxsize

next\_permutation=permutations(vertex)

for i in next\_permutation:

# store current Path weight(cost)

current\_pathweight = 0

# compute current path weight

k = s

for j in i:

current\_pathweight += graph[k][j]

k = j

current\_pathweight += graph[k][s]

# update minimum

min\_path = min(min\_path, current\_pathweight)

return min\_path

# Driver Code

if \_\_name\_\_ == "\_\_main\_\_":

# matrix representation of graph

graph = [[0, 10, 15, 20], [10, 0, 35, 25],

[15, 35, 0, 30], [20, 25, 30, 0]]

s = 0

print(travellingSalesmanProblem(graph, s))

OUT PUT

