Experiment No: 9

Name: Aniket Balendra Tiwari

Roll No: 21143285

Program:

Implement any scheme to find the optimal solution for the traveling salesperson problem-Code

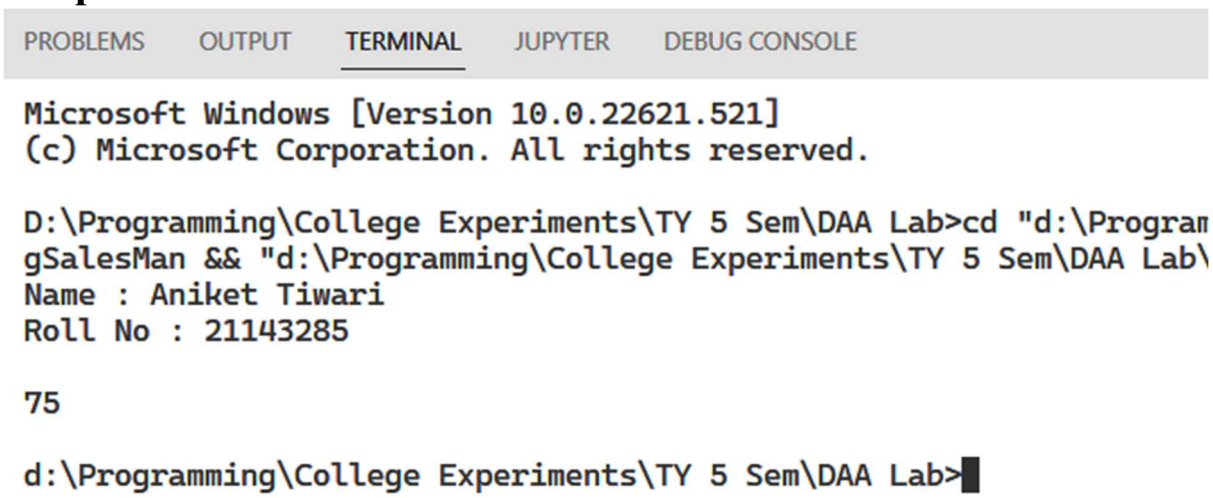
```
#include <bits/stdc++.h>
using namespace std;
#define V 4
int travllingSalesmanProblem(int graph[][V], int s)
{
   vector<int> vertex; for (int i = 0; i < V; i++)
      if (i != s)
         vertex.push_back(i);
   int min_path = INT_MAX;
   do {
      int current_pathweight = 0; int k = s;
      for (int i = 0; i < vertex.size(); i++) {
         current_pathweight += graph[k][vertex[i]];
         k = vertex[i];
      }
      current_pathweight += graph[k][s];
      min_path = min(min_path, current_pathweight);
   } while (next_permutation(vertex.begin(), vertex.end()));
   return min_path;
}

int main()

{
   cout << "Name : Aniket Tiwari\n";
   cout << "Roll No : 21143285\n\n";
   int graph[][V] = { { 0, 8, 10, 20 },
                      { 10, 0, 25, 25 },
                      { 15, 35, 0, 30 },
                      { 20, 25, 30, 0 } };

   int s = 0;
   cout << travllingSalesmanProblem(graph, s) << endl; return 0;
}
```

Output:


PROBLEMS
OUTPUT
TERMINAL
JUPYTER
DEBUG CONSOLE
Microsoft Windows [Version 10.0.22621.521]
(c) Microsoft Corporation. All rights reserved.
D:\Programming\College Experiments\TY 5 Sem\DAA Lab>cd "d:\Program
gSalesMan && "d:\Programming\College Experiments\TY 5 Sem\DAA Lab\
Name : Aniket Tiwari
Roll No : 21143285
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d:\Programming\College Experiments\TY 5 Sem\DAA Lab>