#include <stdio.h>

#include <limits.h>

int minDistance(int dist[], bool sptSet[])

{

int min = INT\_MAX, min\_index;

for (int v = 0; v < 6; v++)

if (sptSet[v] == false && dist[v] <= min)

min = dist[v], min\_index = v;

return min\_index;

}

void printSolution(int dist[])

{

printf("Vertex \t\t Distance from Source\n");

for (int i = 0; i < 6; i++)

printf("%d \t\t %d\n", i, dist[i]);

}

void dijkstra(int graph[6][6], int src)

{

int dist[6];

bool sptSet[6];

for (int i = 0; i < 6; i++)

dist[i] = INT\_MAX, sptSet[i] = false;

dist[src] = 0;

for (int count = 0; count < 6 - 1; count++)

{

int u = minDistance(dist, sptSet);

sptSet[u] = true;

for (int v = 0; v < 6; v++)

if (!sptSet[v] && graph[u][v] && dist[u] != INT\_MAX

&& dist[u] + graph[u][v] < dist[v])

dist[v] = dist[u] + graph[u][v];

}

printSolution(dist);

}

int main()

{

int graph[6][6] = { { 0,73,22,0,21,0 },

{ 73,0,0,18,0,0 },

{ 22,0,0,11,44,44 },

{ 0,18,11,0,0,32 },

{ 21,0,44,0,0,45 },

{0,0,44,32,45,0} };

dijkstra(graph, 0);

return 0;

}

