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1BM19CS407

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Implement Dijkstra's algorithm to compute the shortest path through a graph.

```
#include <limits.h>
#include <stdio.h>
# define V 9

int minDistance (int dist[], bool sptSet[])
{ int min = INT_MAX, min_index;
  for (int v=0; v<V; 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<V; i++)
    printf ("%d \t\t %d\n", i, dist[i]);
}
void dijkstra (int graph[V][V], int src)
{  int dist[V];
   bool sptSet[V];
  for (int i=0; i<V; i++)
    dist[i] = INT_MAX, sptSet[i] = false;
  dist[src] = 0;
  for (int count=0; count<V-1; count++) {
    int u = minDistance (dist, sptSet);
    sptSet[u] = true;
    for (int v=0; v<V; 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];
}
```

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```
print solution(dist);
}
```