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#include <stdio.h>
#define MAX 10
#define INF 999

void dijkstra(int cost[MAX][MAX], int n, int start) {
   int dist[MAX], visited[MAX], count, minDist, nextNode, i, j;

   for (i = 0; i < n; i++) {
      dist[i] = cost[start][i];
      visited[i] = 0;
   }

   dist[start] = 0;
   visited[start] = 1;
   count = 1;

   while (count < n - 1) {
      minDist = INF;

      for (i = 0; i < n; i++)
         if (dist[i] < minDist && !visited[i]) {
            minDist = dist[i];
            nextNode = i;
         }

      visited[nextNode] = 1;

      for (i = 0; i < n; i++)
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            if (!visited[i])
                if (minDist + cost[nextNode][i] < dist[i])
                    dist[i] = minDist + cost[nextNode][i];

        count++;
    }

    printf("\nShortest distances from source %d:\n", start);
    for (i = 0; i < n; i++)
        if (i != start)
            printf("To %d = %d\n", i, dist[i]);
}

int main() {
    int n, i, j, start;
    int cost[MAX][MAX];

    printf("Enter number of vertices: ");
    scanf("%d", &n);

    printf("Enter the cost adjacency matrix (999 for no edge):\n");
    for (i = 0; i < n; i++)
        for (j = 0; j < n; j++)
            scanf("%d", &cost[i][j]);

    printf("Enter the starting vertex (0 to %d): ", n - 1);
    scanf("%d", &start);
```

```
    dijkstra(cost, n, start);


    return 0;
}
```