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USN 1BM19CS132 ADA LAB TEST 2

Program no:- 5

```
# include <stdio.h>
int specified_node = 2;
int minkey (int key [], int mstset[], int n)
{
  int min = 100, min_index;
  int v;
  for (v=0; v<n; v++)
      if (mstset[v] == 0 && key[v] < min)
          min = key[v], min_index = v;
    return min_index;
}
int printMST (int parent [10], int graph [10][10], int n)
{ int i;
  printf ("Edge \tWeight \n");
     for (i=1; i<n; i++)
              if (parent[i] > 10)
                 else
        printf ("%d - %d \t %d \n", parent[i], i,
        graph[i][parent[i]]);
}
void primMST (int graph [10][10], int n)
  { int parent[n];
     int key[n];
     int mstSet[n];
     int i, count, v, u;
for (i=0; i<n; i++)
        key[i] = 100, mstset[i] = 0;
```

```
key[0] = 0;
parent[0] = -1;
mstset[specified_node] = 1;
  for (int i=0; i<n; i++)
    { for (int j=0; j<n; j++)
        { printf("%d\t", graph[i][j]);
        }
      printf("\n"); }
for (count=0; count<n-1; count++){
    u = minkey(key, mstset, n);
    mstset[u] = 1;
  for (v=0; v<n; v++)
      if (graph[u][v] != 0 && graph[u][v] !=999
  && mstset[v] == 0 && graph[u][v] < key[v])
      parent[v] = u, key[v] = graph[u][v];
 }
print MST (parent, graph, n);
}
int main()
{  int graph[10][10];
   int i, j, n;
   printf("Enter no of nodes\n");
   scanf("%d", &n);
   printf("Enter adjency matrix);
   for (i=0; i<n; i++)
    { for (j=0; j<n; j++)
        scanf("%d", &graph[i][j]);
    }
for (int i=0; i<n; i++)
  { for (int j=0; j<n; j++)
      { if (i==specified_node || j==specified_node)
if (i=j); else graph[i][j] = 999;
  } } prim MST (graph n); return 0; }
```

modification:-

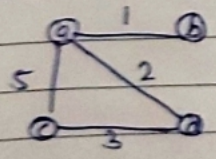
→ take the input from ~~user~~ user ~~to~~ which node has to be excluded eg:- excluded node :- c

→ in prims MST function set it has visited, then make its corresponding nodes as ∞

```
mstset[specified_node] = 2
for(i=0; i<n; i++)
{
    for(j=0; j<n; j++){
if(i == specified_node || j == specified_node)
    graph[i][j] = 999;
```

from above pseudocode we are excluding c by making its distance ∞ w.r.t other nodes

Eg:-



by excluding 'c' node