

Assignment No-7

Name- PRAFUL SHEWALE

Roll no=SI-48

Class=SE-IT

Aim- KRUSKAL'S ALGORITHM

```
#include <bits/stdc++.h>
using namespace std;
#define V 5
int minKey(int key[], bool mstSet[])
{
    int min = INT_MAX, min_index;
    for (int i = 0; i < V; i++)
        if (mstSet[i] == false && key[i] < min)
            min = key[i], min_index = i;
    return min_index;
}
void printMST(int parent[], int graph[V][V])
{
    cout << "Edge \tWeight\n";
    for (int i = 1; i < V; i++)
        cout << parent[i] << " - " << i << " \t"
        << graph[i][parent[i]] << " \n";
}
void primMST(int graph[V][V])
{
    int parent[V];
    int key[V];
    bool mstSet[V];
    for (int i = 0; i < V; i++)
        key[i] = INT_MAX, mstSet[i] = false;
    key[0] = 0;
    parent[0] = -1;
    for (int count = 0; count < V - 1; count++) {
        int u = minKey(key, mstSet);
```

```

mstSet[u] = true;
for (int v = 0; v < V; v++)
if (graph[u][v] && mstSet[v] == false
&& graph[u][v] < key[v])
parent[v] = u, key[v] = graph[u][v];
}
printMST(parent, graph);
}
int main()
{
int graph[V][V] = { { 0, 2, 0, 6, 0 },
{ 2, 0, 3, 8, 5 },
{ 0, 3, 0, 0, 7 },
{ 6, 8, 0, 0, 9 },
{ 0, 5, 7, 9, 0 } };
primMST(graph);
return 0;
}

```

OUTPUT

```

Edge  Weight
0 - 1  2
1 - 2  3
0 - 3  6
1 - 4  5

```

=== Code Execution Successful ===