Algorithm : Boruvkas to find Minimum Spanning Tree

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1) **Example 1**

```
PS C:\Users\sansk\Desktop\Sanskriti\College\GraphTheory\BoruvkasAlgo> gcc BoruvkasAlgo.c
PS C:\Users\sansk\Desktop\Sanskriti\College\GraphTheory\BoruvkasAlgo> ./a.exe
Number of vertices: 5
Number of edges: 5
Graph with 5 Edges 5 Vertices
Enter vertex pairs with edge in between : Eg. (0 1 w) -> Edge between V0 and V1 with weight w
Edge 1  :0 3 6
Edge 2  :0 2 9
Edge 3  :2 3 4
Edge 4  :3 1 26
Edge 5  :3 4 20

MST construction
Edge 0-3 included in MST
Edge 3-1 included in MST
Edge 2-3 included in MST
Edge 3-4 included in MST
Number of components after iteration: 1
Weight of MST is 56
```

2) **Example 2**

```
PS C:\Users\sansk\Desktop\Sanskriti\College\GraphTheory\BoruvkasAlgo> ./a.exe
Number of vertices: 5
Number of edges: 7
Graph with 7 Edges 5 Vertices
Enter vertex pairs with edge in between : Eg. (0 1 w) -> Edge between V0 and V1 with weight w
Edge 1  :0 1 8
Edge 2  :0 2 5
Edge 3  :1 2 9
Edge 4  :1 3 11
Edge 5  :2 3 15
Edge 6  :2 4 10
Edge 7  :3 4 7

MST construction
Edge 0-2 included in MST
Edge 0-1 included in MST
Edge 3-4 included in MST
Number of components after iteration: 2
Edge 2-4 included in MST
Number of components after iteration: 1
Weight of MST is 30
```

3) Example 3

```
PS C:\Users\sansk\Desktop\Sanskriti\College\GraphTheory\BoruvkasAlgo> ./a.exe
Number of vertices: 7
Number of edges: 9
Graph with 9 Edges 7 Vertices
Enter vertex pairs with edge in between : Eg. (0 1 w) -> Edge between V0 and V1 with weight w
Edge 1  :0 1 1
Edge 2  :0 4 2
Edge 3  :1 4 3
Edge 4  :1 2 4
Edge 5  :5 6 5
Edge 6  :2 6 6
Edge 7  :1 5 7
Edge 8  :2 3 8
Edge 9  :3 6 9

MST construction
Edge 0-1 included in MST
Edge 1-2 included in MST
Edge 2-3 included in MST
Edge 0-4 included in MST
Edge 5-6 included in MST
Number of components after iteration: 2
Edge 2-6 included in MST
Number of components after iteration: 1
Weight of MST is 26
```

4) Example 4

```
PS C:\Users\sansk\Desktop\Sanskriti\College\GraphTheory\BoruvkasAlgo> ./a.exe
Number of vertices: 5
Number of edges: 6
Graph with 6 Edges 5 Vertices
Enter vertex pairs with edge in between : Eg. (0 1 w) -> Edge between V0 and V1 with weight w
Edge 1  :0 1 3
Edge 2  :1 2 9
Edge 3  :2 3 8
Edge 4  :0 3 4
Edge 5  :0 4 13
Edge 6  :4 2 2

MST construction
Edge 0-1 included in MST
Edge 4-2 included in MST
Edge 0-3 included in MST
Number of components after iteration: 2
Edge 2-3 included in MST
Number of components after iteration: 1
Weight of MST is 17
```

5) Example 5

```
PS C:\Users\sansk\Desktop\Sanskriti\College\GraphTheory> gcc BoruvkasAlgo.c
PS C:\Users\sansk\Desktop\Sanskriti\College\GraphTheory> ./a.exe
Number of vertices: 9
Number of edges: 14
Graph with 14 Edges 9 Vertices
Enter vertex pairs with edge in between : Eg. (0 1 w) -> Edge between V0 and V1 with weight w
Edge 1  :0 1 4
Edge 2  :0 7 8
Edge 3  :1 7 11
Edge 4  :1 2 8
Edge 5  :2 8 2
Edge 6  :7 8 7
Edge 7  :8 6 6
Edge 8  :7 6 1
Edge 9  :2 5 4
Edge 10  :6 5 2
Edge 11  :2 3 7
Edge 12  :3 5 14
Edge 13  :3 4 9
Edge 14  :5 4 10

MST construction
Edge 0-1 included in MST
Edge 2-8 included in MST
Edge 2-3 included in MST
Edge 3-4 included in MST
Edge 6-5 included in MST
Edge 7-6 included in MST
Number of components after iteration: 3
Edge 0-7 included in MST
Edge 2-5 included in MST
Number of components after iteration: 1
Weight of MST is 37
```