

TRISHUL 19  
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Labtest-2

① Point 1,

```
#include <stdio.h>
```

```
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[], int graph[][], int n)
```

```
{  
    int i;
```

```
    printf("Edge\tWeight\n");
```

```
    for (i = 1; i < n; i++)
```

```
        printf("%d - %d\t%d\n", parent[i], i, graph[i][parent[i]]);  
}
```

①

```
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;
```

```
    for(count=0; count<n-1; count++) {
```

```
        v = minKey(key, mstSet, n);
```

```
        mstSet[v] = 1
```

```
        for(u=0; u<n; u++)
```

```
            if(graph[v][u] && mstSet[u] == 0 &&
```

```
                graph[v][u] < key[u])
```

```
                parent[u] = v, key[u] = graph[v][u]; }
```

(2)

~~return MST(parent, graph, n);~~

}

printMST(parent, graph, n);

}

int main()

{

int graph[10][10];

int i, j, n;

printf("Enter number of nodes\n");

scanf("%d", &n);

printf("Enter adjacency matrix\n");

for (i=0; i<n; i++)

{ for (j=0; j<n; j++)

scanf("%d", &graph[i][j]);

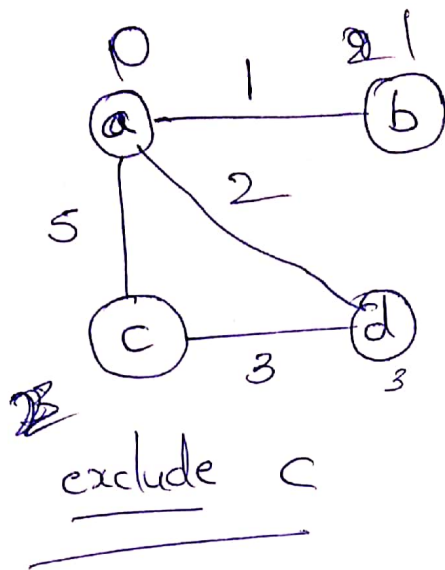
}

printMST(graph, n);

return 0;

}

## Modification 1



→ Matrix

	a	b	c	d
a	0	1	5	2
b	1	0	0	0
c	5	0	0	3
d	2	0	3	0

④ Take the input as c  
 Start the program by making visited[2] = 1  
 So that we can exclude c and start execution  
 of same prim's algorithm and make its corresponding  
 nodes as infinity.

mat. Set (specified node) = 2

for (i=0; i<n; i++)

{ for (j=0; j<n; j++) {

if ( $i == \text{specified-node}$  ||  $j == \text{specified node}$ )

$\text{graph}[i][j] = 999;$

from above pseudocode. we are excluding  $c$  by making it's distance 999 w.r.t other node.

