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CODE

```
#include<iostream>

#include<bits/stdc++.h>using
namespace std;
```

```
#define v 20

class Prims
{
    int a;

    int graph[v][v];

    public:

        void create(); void
        display();

        int min(int key[],bool set[]);void
        findPrim();

        void displayMST(int p[]);

};
```

```
void Prims::create()

{

    cout<<"Enter number of vertices: ";cin>>a;

    cout<<"Enter values for adjecency matrix"<<endl;
```

```

for(int i=0;i<a;i++)
{
    cout<<"Row "<<i+1<<" = ";for(int
    j=0;j<a;j++)
    {
        cin>>graph[i][j];
    }
}
}

```

```

void Prims::display()
{
    cout<<"\nGraph"<<endl;for(int
    i=0;i<a;i++)
    {
        for(int j=0;j<a;j++)
        {
            cout<<graph[i][j]<<" ";

```

```

        }

        cout<<" "<<endl;

    }

}

```

```

int Prims::min(int key[],bool set[])
{
    int min=9999,index;for(int
    i=0;i<a;i++)
    {
        if(set[i]==false && key[i]<min)
        {
            min=key[i],index=i;
        }
    }
    return index;
}

```

```

void Prims::findPrim()
{
    int p[a],key[a];int k;
    bool set[a]; for(int
    i=0;i<a;i++)
    {
        key[i]=999,set[i]=false;
    }
    key[0]=0;
    p[0]=-1;
    for(int i=0;i<a-1;i++)
    {
        k=min(key,set);
        set[k]=true; for(int
        j=0;j<a;j++)
        {
            if(graph[k][j] && set[j]==false &&
graph[k][j]<key[j])

```

```

        {
            p[j]=k,key[j]=graph[k][j];
        }
    }
}
displayMST(p);
}

```

```

void Prims::displayMST(int p[])

```

```

{
    cout<<"\nEdge \tWeight\n";for(int
    i=1;i<a;i++)
    {
        cout<<p[i]<<" - "<<i<<" \t"<<graph[i][p[i]]<<endl;
    }
}

```

```

int main()

```

```

{

    Prims P;

    P.create();

    P.display();

    P.findPrim();

}

```

Output:

The screenshot shows the Dev-C++ IDE with the file 'Prims.cpp' open. The code defines a 'Prims' class with methods 'create()', 'display()', and 'findPrim()'. The 'main' function creates a 'Prims' object 'P' and calls these methods. The output window shows the results of the program execution.

Source Code (Prims.cpp):

```

82 }
83
84 void Prims::displayMST(int p[])
85 {
86     cout<<"\nEdge \tWeight\n";
87     for(int i=1;i<a;i++)
88     {
89         cout<<p[i]<<" - "<<i<<"\n";
90     }
91 }
92
93 int main()
94 {
95     Prims P;
96     P.create();
97     P.display();
98     P.findPrim();
99 }

```

Output (C:\Users\hp\Downloads\Prims.exe):

```

4
5
6 Row 2 = 6
7
8
9 Row 3 = 4
10
11
12 Row 4 = 5
13
14
15 Graph
16 2 3 4 5
17 6 3 2 1
18 4 6 43 3
19 5 7 4 3
20
21 Edge Weight
22 0 - 1 6
23 1 - 2 6
24 1 - 3 7
25
26 -----
27 Process exited after 32.69 seconds with return value 0
28 Press any key to continue . . .

```

Compilation results...

```

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\hp\Downloads\Prims.exe
- Output Size: 1.83530426025391 Mib
- Compilation Time: 6.36s

```