INPUT:

```
#include <iostream>
using namespace std;
class cost{
	int n, graph[10][10], v1, v2, visited[100];
public:
   int total_cost=0;
	cost()
	{
		n=0;
		cout<<"\nEnter number of Offices: ";
		cin>>n;
		for(int i=0; i<n;i++)
		{
			visited[i]=0;
			graph[i][i]=0;
		}
	}
	void create();
	void display();
	void Prims_Algo();
};
void cost::create()
{
	int ans=1, c=0;
	do{
		cout<<"\nEnter two office numbers in range 0 to "<<n-1<<" :";
		cin>>v1>>v2;
		cout<<"Enter cost(in denomination of 1000rs) of leasing a phone line between above
two offices: ";
		cin>>c;
		graph[v1][v2]=graph[v2][v1]=c;
		cout<<"\tDo you want to continue(1/0): ";
		cin>>ans;
	}while(ans==1);
}

void cost::display()
{
	cout<<"\nAdjacency matrix of graph having "<<n<<" offices is: "<<endl<<"   ";
	for(int i=0; i<n; i++)
	{
		cout<<endl;
		for(int j=0; j<n; j++)
			cout<<graph[i][j]<<"  ";
	}
}

void cost::Prims_Algo()
{
	int sv;
```

```
	cout<<"\nEnter starting office number: ";
	cin>>sv;
	visited[sv]=1;
	int min=999;
	for(int e=0; e<n-1; e++)
	{
		min=999;
		for(int i=0; i<n; i++)
		{
			if(visited[i]==0)
				continue;
			for(int j=0; j<n; j++)
			{
				if(visited[j]==0 && i!=j)
				{
					if(graph[i][j]<min)
					{
						min=graph[i][j];
						v1=i;
						v2=j;
					}
				}
			}
		}
		cout<<"\nPhone line "<<e+1<<" selected between office-> "<<v1<<"-"<<v2<<" with
cost: "<<graph[v1][v2]<<"000 RS";
		visited[v2]=1;
		total_cost+=graph[v1][v2];
	}
}
int main() {
	cost c;
	c.create();
	c.display();
	c.Prims_Algo();
	cout<<"\nTotal cost required for leasing all above selected lines is "<<c.total_cost<<"000 RS
Only!";
	return 0;
}
```

OUTPUT:

```
Enter number of Offices: 3

Enter two office numbers in range 0 to 2 :0
1
Enter cost(in denomination of 1000rs) of leasing a phone line between above two offices: 2
    Do you want to continue(1/0): 1

Enter two office numbers in range 0 to 2 :1
2
Enter cost(in denomination of 1000rs) of leasing a phone line between above two offices: 1
```

Do you want to continue(1/0): 1

Enter two office numbers in range 0 to 2 :2
0
Enter cost(in denomination of 1000rs) of leasing a phone line between above two offices: 3
Do you want to continue(1/0): 0

Adjacency matrix of graph having 3 offices is:

0 2 3
2 0 1
3 1 0
Enter starting office number: 0

Phone line 1 selected between office-> 0-1 with cost: 2000 RS
Phone line 2 selected between office-> 1-2 with cost: 1000 RS
Total cost required for leasing all above selected lines is 3000 RS Only!