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ADS LAB 11a : Prim's Algorithm Graph

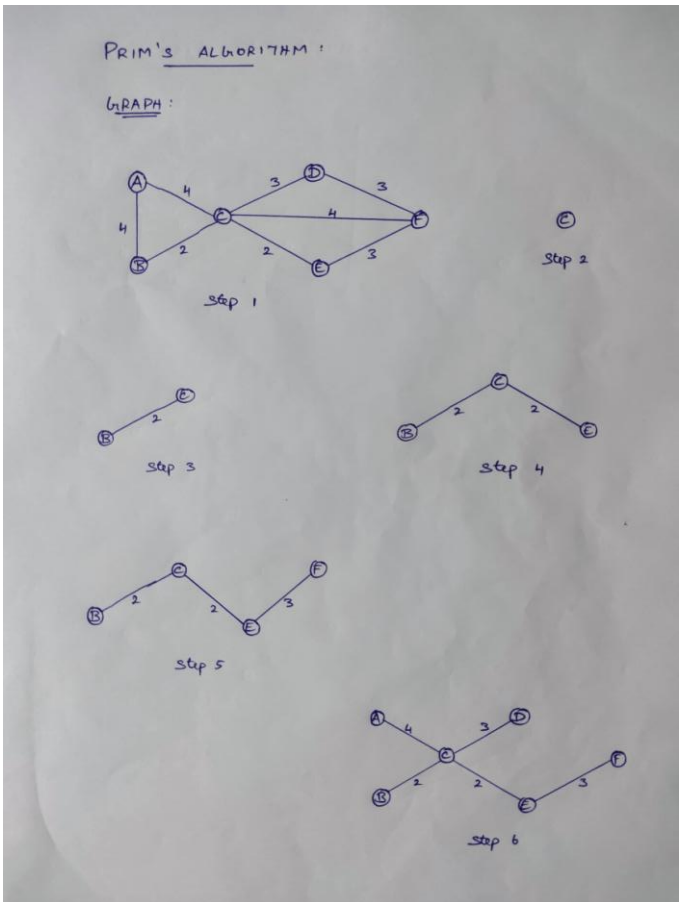
SOURCE CODE :

```
 #include <bits/stdc++.h>
#include <iostream>
using namespace std;
#define N 9999999
#define V 5
int G[V][V] = {
  {0, 9, 75, 0, 0},
  {9, 0, 95, 19, 42},
  {75, 95, 0, 51, 66},
  {0, 19, 51, 0, 31},
  {0, 42, 66, 31, 0}
};

int main() {
  int no_edge = 0;
  int x = 0;
  int y = 0;
  int min, weight = 0;
  int selected[V];
  memset(selected, false, sizeof(selected));
  selected[0] = true;
  cout << "Prim's Algorithm " << endl;
  while (no_edge < V - 1) {
    min = N;
    for (int i = 0; i < V; i++) {
      if (selected[i]) {
        for (int j = 0; j < V; j++) {
          if (!selected[j] && G[i][j]) {
            if (min > G[i][j]) {
              min = G[i][j];
              x = i;
              y = j;
            }
          }
        }
      }
    }
    cout << "Edge " << x << " - " << y << " and its Weight " << G[x][y] << endl;
    selected[y] = true;
    no_edge++;
    weight = weight + G[x][y];
```

```
  }
  cout << "Total weight of the graph is : " << weight << endl;
  return 0;
}
```

GRAPH:



OUTPUT :

```
Output

/tmp/Y8tPoh6FC1.o
Prim's Algorithm
Edge 0 - 1 and its Weight 9
Edge 1 - 3 and its Weight 19
Edge 3 - 4 and its Weight 31
Edge 3 - 2 and its Weight 51
Total weight of the graph is : 110
```