Prims Algorithm

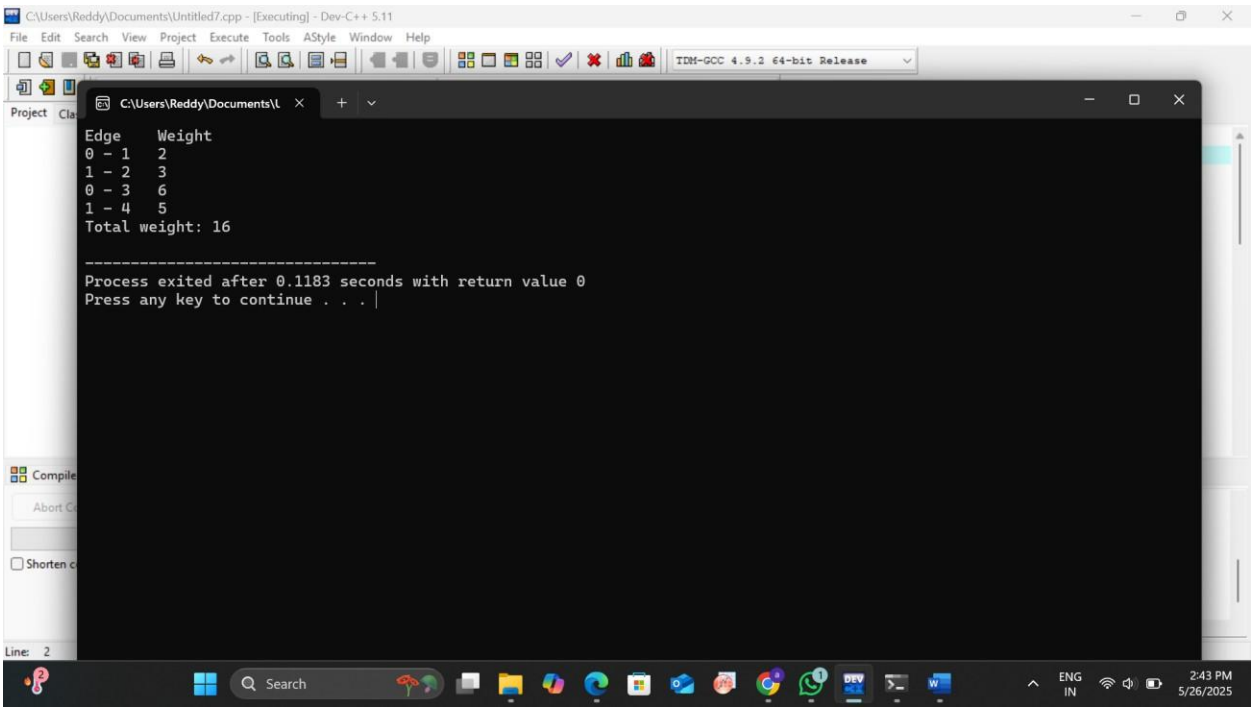
CODE:

```
#include <stdio.h>
#include <limits.h> #define V 5
int minKey(int key[], int mstSet[]) {
int min = INT_MAX, min_index;

   for (int v = 0; v < V; v++)        if
(mstSet[v] == 0 && key[v] < min)
min = key[v], min_index = v;

   return min_index;
}
void printMST(int parent[], int graph[V][V]) {
int totalWeight = 0;     printf("Edge
\tWeight\n");
   for (int i = 1; i < V; i++) {        printf("%d - %d \t%d \n",
parent[i], i, graph[i][parent[i]]);        totalWeight +=
graph[i][parent[i]];
   }
   printf("Total weight: %d\n", totalWeight);
}
void primMST(int graph[V][V]) {
   int parent[V];       int key[V];
int mstSet[V];       for (int i = 0; i < V;
i++)        key[i] = INT_MAX,
mstSet[i] = 0;     key[0] = 0;
parent[0] = -1;       for (int count = 0;
```

```
count < V - 1; count++) {        int u =
minKey(key, mstSet);
mstSet[u] = 1;        for (int v = 0; v <
V; v++)
          if (graph[u][v] && mstSet[v] == 0 && graph[u][v] < key[v])
parent[v] = u, key[v] = graph[u][v];
   }
   printMST(parent, graph);
}
int main() {     int
graph[V][V] = {
       {0, 2, 0, 6, 0},
       {2, 0, 3, 8, 5},
       {0, 3, 0, 0, 7},
       {6, 8, 0, 0, 9},
       {0, 5, 7, 9, 0}
   };
   primMST(graph);
   return 0;
}
```


C:\Users\Reddy\Documents\Untitled7.cpp - [Executing] - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
C:\Users\Reddy\Documents\L
Edge Weight
0 - 1 2
1 - 2 3
0 - 3 6
1 - 4 5
Total weight: 16
Process exited after 0.1183 seconds with return value 0
Press any key to continue . . .
Search
ENG
IN
2:43 PM
5/26/2025