

**Program 1 :**

- I used classes instead of struct for my ease
- In the Ascend Function I used the sort function of STL library for sorting a structured Array using compare function as argument to the function

**Input :**

SSSKKBBBHHJJJKKK

Store

Print

Ascend

Remove 3

Quit

**Output :**

S K

S 3 K 6 B 4 H 3 J 4

KBJHS

SSSKKBBBHHJJJKKK

**Program 2 :**

- I used classes instead of struct for my ease
- I haven't used any other Libraries

**Input :**

25 20 36 10 22 30 40 5 12 28 38 48 1 8 15 45 50

M 10

M 40

M 12

P 10

P 38

S 10

S 36

C 38 50

C 25 38

Q

**Output :**

1 15

38 50

12 15  
8  
36  
12  
38  
40  
25

**Program 3 :**

- I used classes instead of struct for my ease
- I haven't used any other Libraries

**Input :**

17  
E 0 2 5  
E 0 1 11  
E 2 1 3  
E 2 3 7  
E 1 4 1  
E 4 3 2  
E 4 5 7  
E 3 5 3  
E 6 7 7  
E 6 8 11  
E 7 8 5  
E 7 9 5  
E 8 9 3  
E 8 10 5  
E 16 11 5  
E 16 14 3  
E 11 12 11  
E 11 15 7  
E 12 13 5  
a 0  
b  
c 0 1  
d 0  
e 0 1  
Q

**Output :**

2 1  
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16  
11  
The vertex 0 Exists  
The Edge Exist

**Program 4:**

- I used classes instead of struct for my ease
- I used a part of Dijkstra's algorithm from geeks for geeks
- I haven't used any other Libraries

**Input :**

17  
E 0 2 5  
E 0 1 11  
E 2 1 3  
E 2 3 7  
E 1 4 1  
E 4 3 2  
E 4 5 7  
E 3 5 3  
E 6 7 7  
E 6 8 11  
E 7 8 5  
E 7 9 5  
E 8 9 3  
E 8 10 5  
E 16 11 5  
E 16 14 3  
E 11 12 11  
E 11 15 7  
E 12 13 5  
Find  
SP 0  
Quit

**Output :**

0 1 2 3 4 5  
6 7 8 9 10

11 12 13 14 15 16  
3 components  
0 0 0  
0 1 8  
0 2 5  
0 3 11  
0 4 9  
0 5 14

**Program 5 :**

- I used MergeSort function for sorting edges from Geeks for Geeks which sorts the structured linked list using one of the components in the structure.
- I haven't used any other Libraries

**Input :**

3  
E 1 0 5  
E 1 2 5  
Kruskal  
Quit

**Output :**

(1,2) (1,0)