



## ACADEMY OF TECHNOLOGY

### Lab Assignment 9

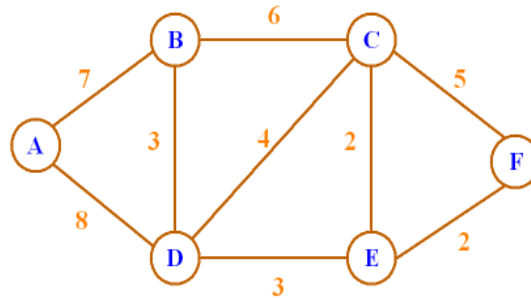
Paper name: Design and Analysis of Algorithms Lab  
Code: PCC-CS494  
Discipline: CSE

Semester: 4<sup>th</sup>  
Time: 2 Hours

*Date: April 10, 2023*

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1. Given an undirected weighted graph, write a program in C or C++ to find a minimum spanning tree by applying Kruskal's Algorithm.



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#### *Algorithm 1: MST-Kruskal( $G, w$ )*

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1  $A := \Phi$ ;  
2 for each vertex  $v \in G(V)$  do  
3   | MAKE-SET( $V$ );  
4 end  
5 Sort the edges of  $E$  in non-decreasing order by weight  $w$ ;  
6 for each edge  $(u, v) \in E$ , taken in non-decreasing order by weight do  
7   | if FIND-SET( $u$ )  $\neq$  FIND-SET( $v$ ) then  
8     |    $A := A \cup \{u, v\}$ ;  
9     |   UNION( $u, v$ );  
10  | end  
11 end
```

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