United International University

Department of Computer Science and Engineering

CSI 342: Artificial Intelligence Lab

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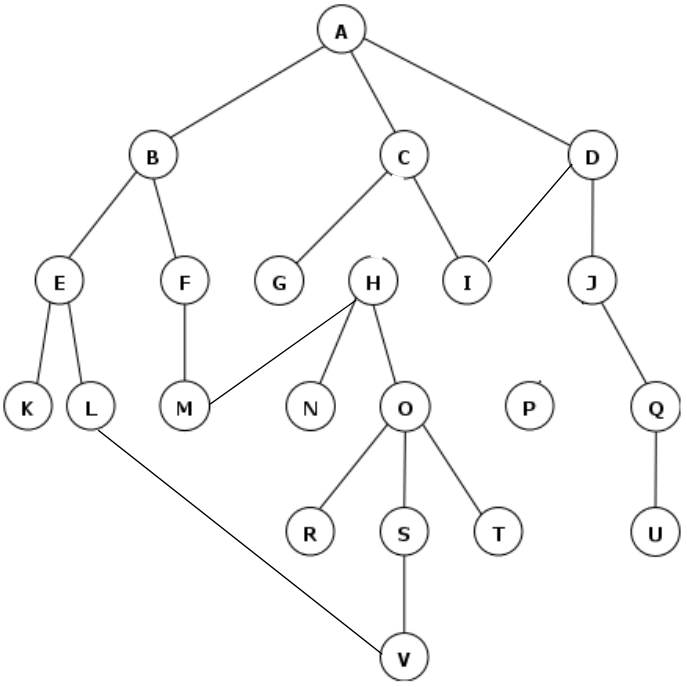
Lab Work # 01

Uninformed search algorithm generates the search tree without using any domain specific knowledge. Two of the basic uninformed graph search technique are Breadth First Search (BFS) and Depth First Search (DFS).



Task #1: Breadth First Search

Breadth-first search, also known as BFS, finds shortest paths from a given source vertex to other vertex, in terms of the number of edges in the paths. It is mainly works on un-weighted graph. The working procedure of BFS algorithm is spatial.

Input

Two vertices from the above graph. First one is the source and second one is the destination.

Output

Any shortest path from the source vertex to destination vertex.

Sample Input	Sample Output
E J	Path Length: 4 Path: E -> B -> A -> D -> J
G M	Path Length: 5 Path: G -> C -> A -> B -> F -> M

Task #2: Depth First Search

Depth-first search, also known as **DFS**, finds connectedness of two vertices in a graph. It extends the traversal links from one vertex until the other is found or there exist no link.

Input

Two vertices from the above graph. Determine whether the vertices are connected or not.

Output

Yes or No, according to the connectedness.

Sample Input	Sample Output
K U	Yes
M P	No