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**CSL 356: Analysis and Design of Algorithms**

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1. Argue that there is a path from  $s$  to a vertex  $v$  if and only if  $v$  is visited while executing  $DFS(s)$  (or  $BFS(s)$ ).
2. Review DFS. Run DFS on example graph and show back edges, and label each vertex with the time at which it is visited.
3. Design an algorithm that uses DFS to find a topological ordering of a DAG.
4. Design an algorithm that uses DFS to find all strongly connected components of a directed graph.