

DFS: Specification

Input Directed or undirected graph $G = (V, E)$

Output For each v , keep two timestamps and the predecessor:

- $v.d$ = discovery time
- $v.f$ = finishing time
- $v.\pi$ = predecessor of v in the depth-first ‘forest’

BFS gives us a shortest-path. DFS can be used in additional algorithms.

Depth-First Forest and Breadth-First Tree

- $DFS(G)$ is usually for finding relationship among vertices (timestamps), not the relationship w.r.t a particular source
Use $DFS(G, s)$ as a subroutine
- $BFS(G, s)$ is usually for finding shortest path distances from a given source.