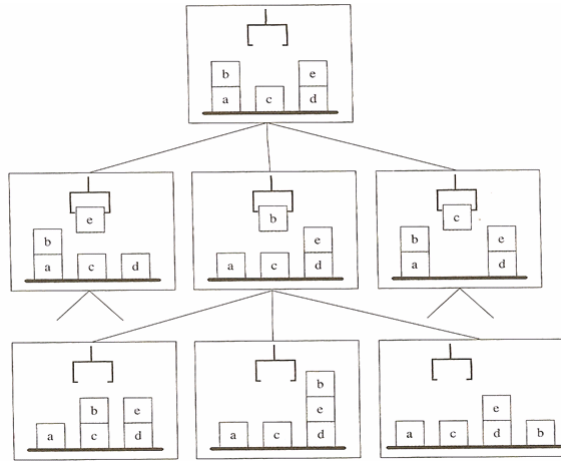
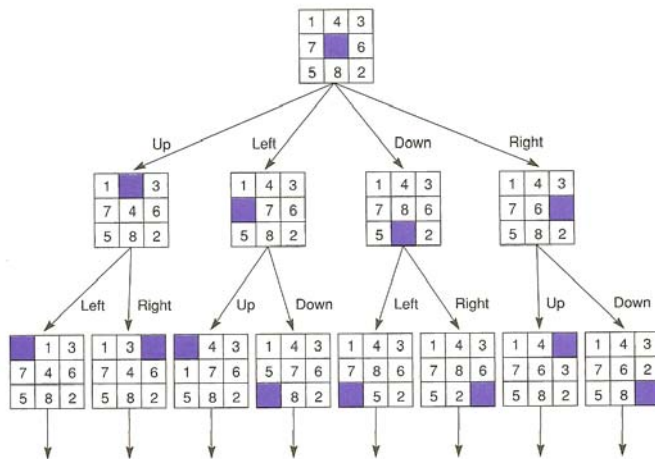


Blocks World



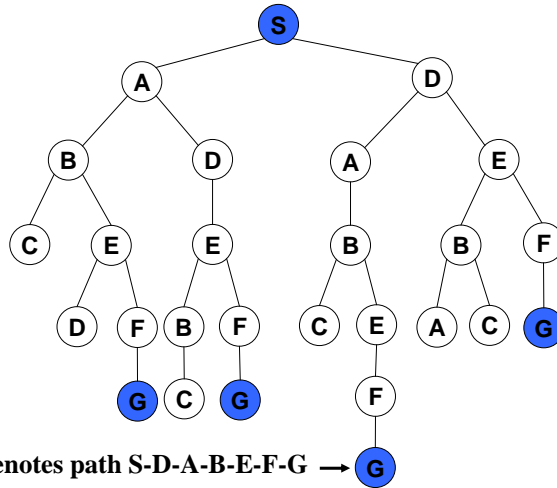
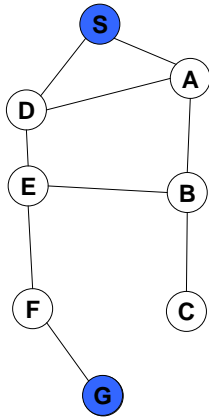
Planning action sequences

9-squares puzzle



Search Problem

Search: Find path from start node S to goal node G

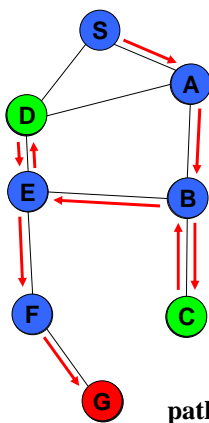


denotes path S-D-A-B-E-F-G → G

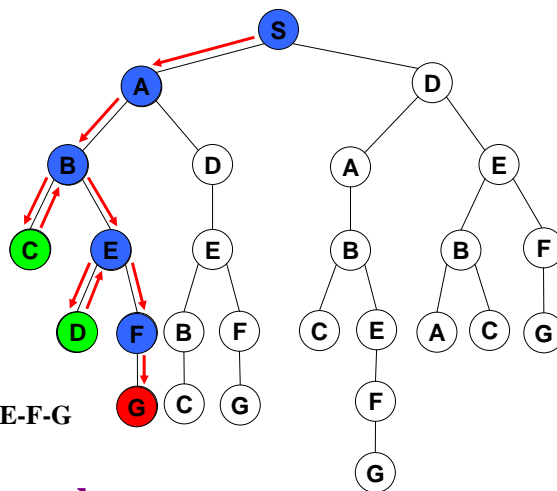
Search tree: enumerates all possible paths

Uninformed (Blind) Search

Search: Find path from start node S to goal node G



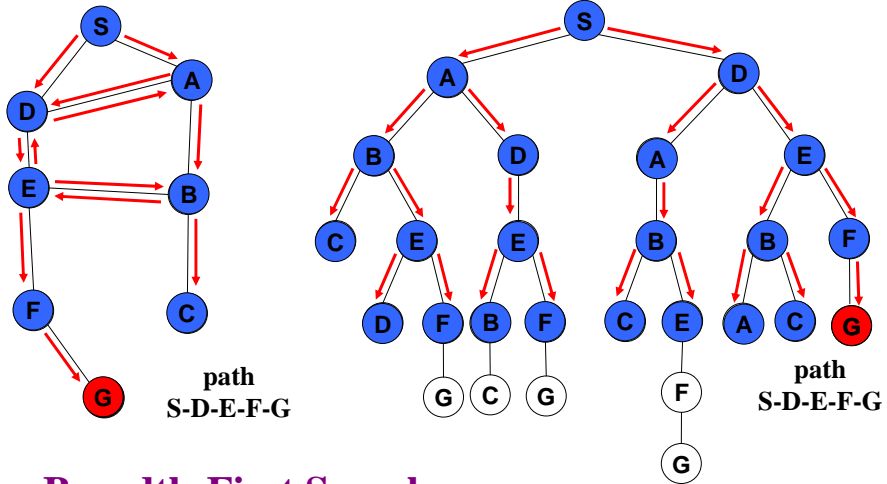
path S-A-B-E-F-G



Depth-First Search

Uninformed (blind) Search

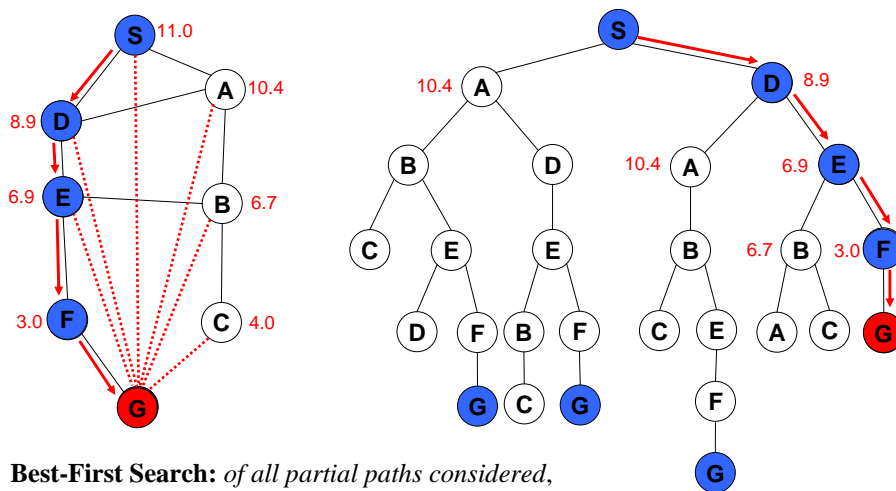
Search: Find path from start node S to goal node G



Breadth-First Search

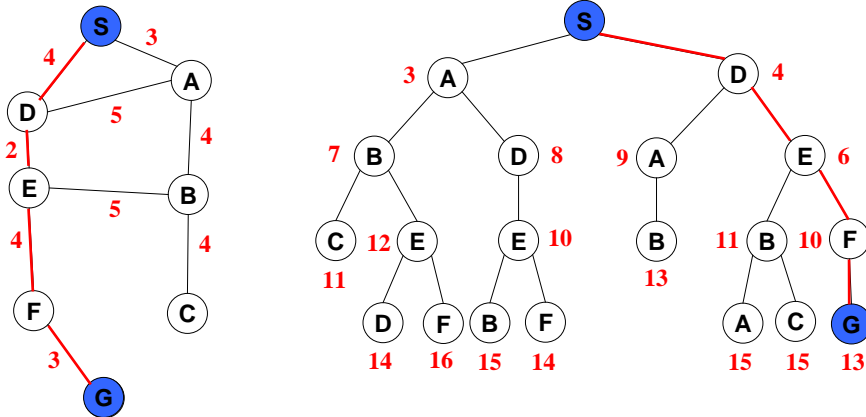
Informed Search: Hill-Climbing

Search: Find path from start node S to goal node G



Informed Search: Branch & Bound

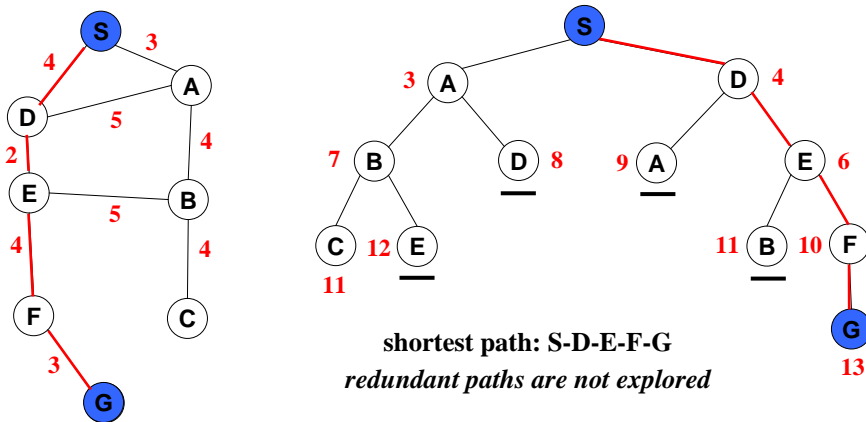
Search: Find *shortest* path from start node S to goal node G



shortest path: S-D-E-F-G

Improving efficiency with *dynamic programming*

Search: Find *shortest* path from start node S to goal node G



shortest path: S-D-E-F-G
redundant paths are not explored

A* search:

branch&bound + estimate of remaining distance + dynamic programming