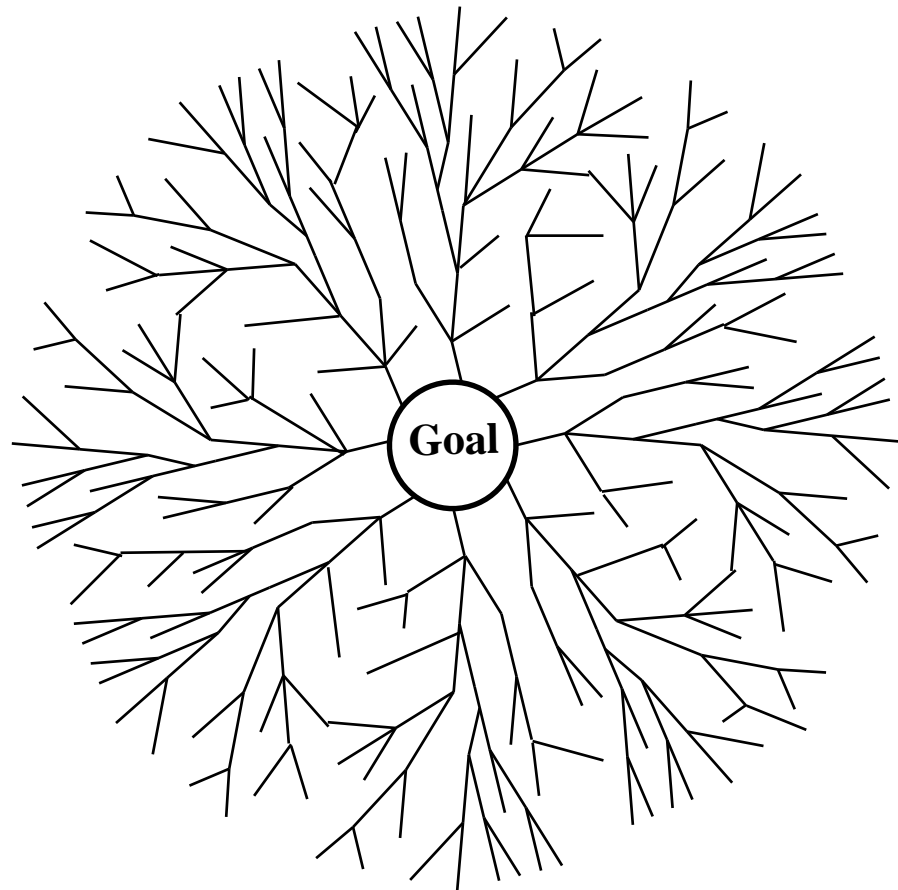
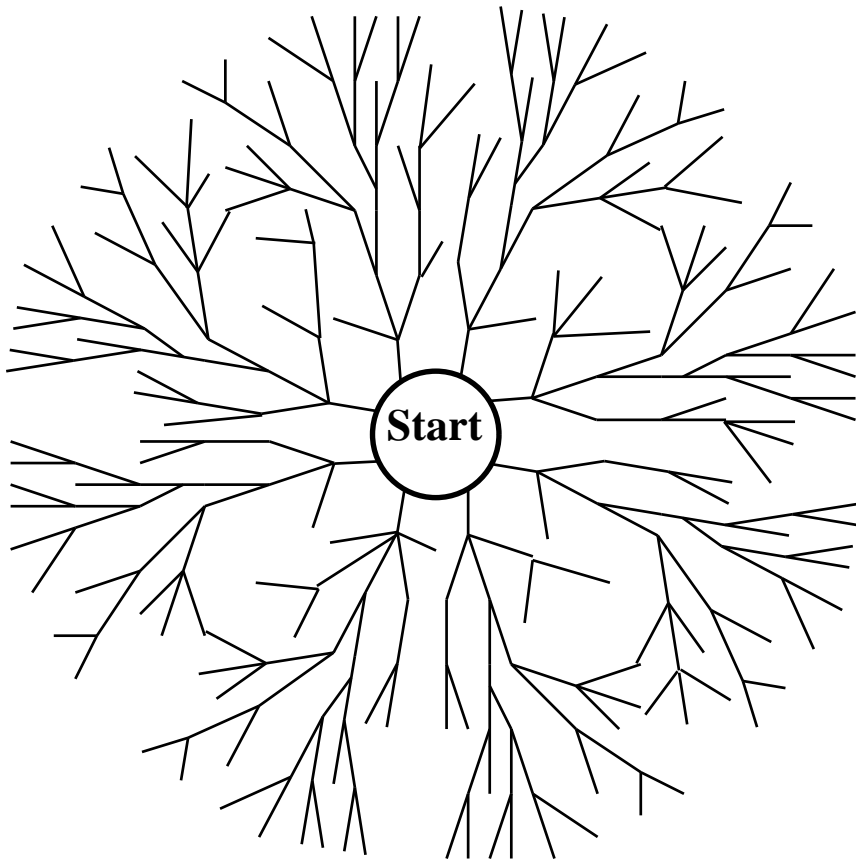


BI-DIRECTIONAL SEARCH SUPPLEMENT

Bi-directional search

start searching at both ends simultaneously (not always possible)



Properties of bi-directional search

Complete??

Properties of bi-directional search

Complete?? Yes

Time??

Properties of bi-directional search

Complete?? Yes

Time?? $O(b^{d/2})$, like breadth-first, but to half the depth

Space??

Properties of bi-directional search

Complete?? Yes

Time?? $O(b^{d/2})$, like breadth-first, but to half the depth

Space?? $O(b^{d/2})$, need to retain at least that many nodes
to guarantee completeness

Optimal??

Properties of bi-directional search

Complete?? Yes

Time?? $O(b^{d/2})$, like breadth-first, but to half the depth

Space?? $O(b^{d/2})$, need to retain at least that many nodes to guarantee completeness

Optimal?? Yes, if step cost = 1

Can be modified to explore uniform-cost tree