THE UNIVERSITY OF VERMONT
COLLEGE OF ENGINEERING &
MATHEMATICAL SCIENCES

Breadth-first Search

CS 124 / Department of Computer Science

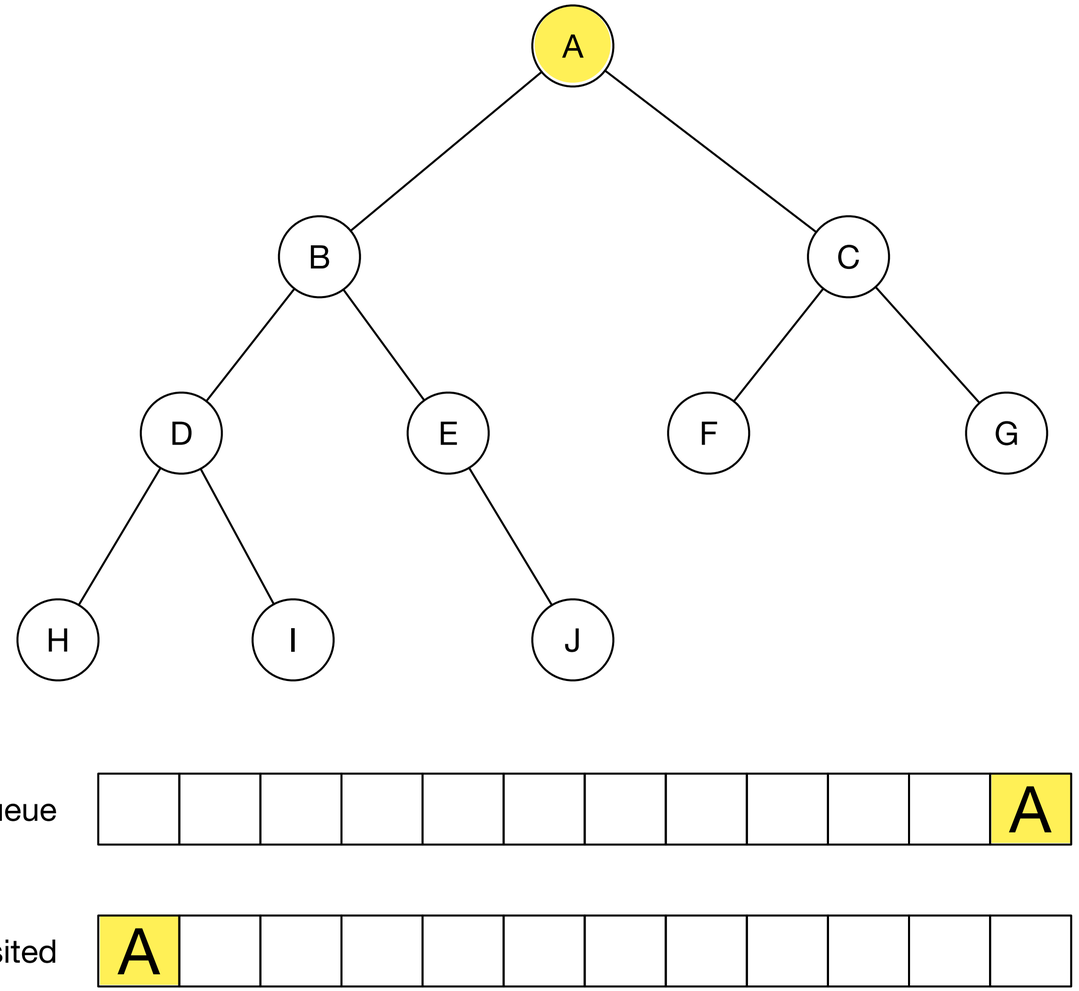
Breadth-first Search Use Cases

- Finding shortest path between two nodes in a graph
- Network flows
- Exploring mazes
- Web crawling / spiders
- Finding peers in peer-to-peer networks

Breadth-first Search vs Depth-first Search

BFS	DFS
"shallow" approach	"deep" approach
Proceeds level by level	Proceeds to leaves then backtracks
Uses queue	Uses stack
May use more memory	May use less memory

Breadth-first search



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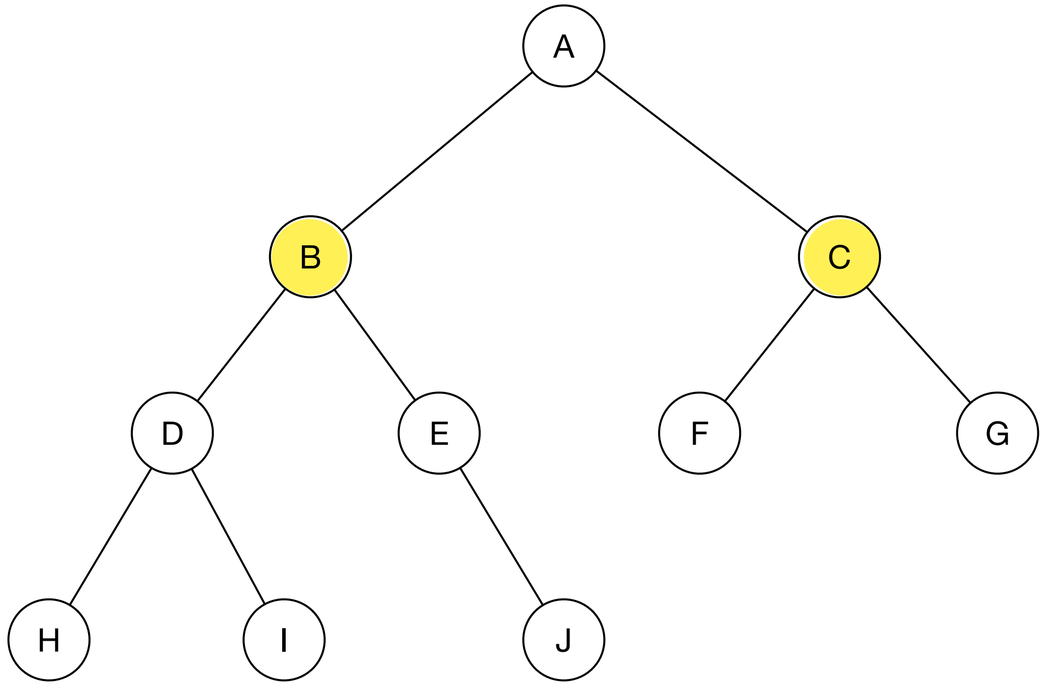

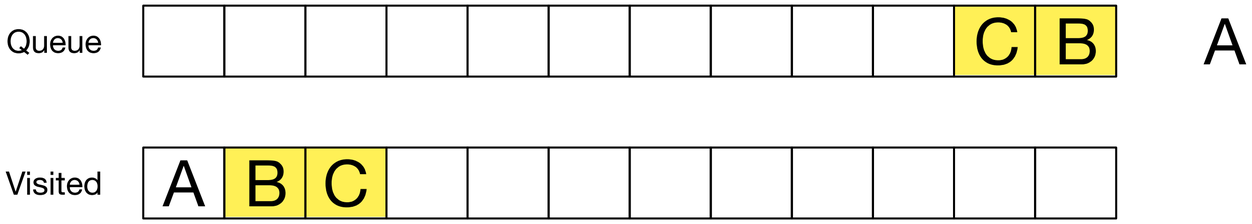

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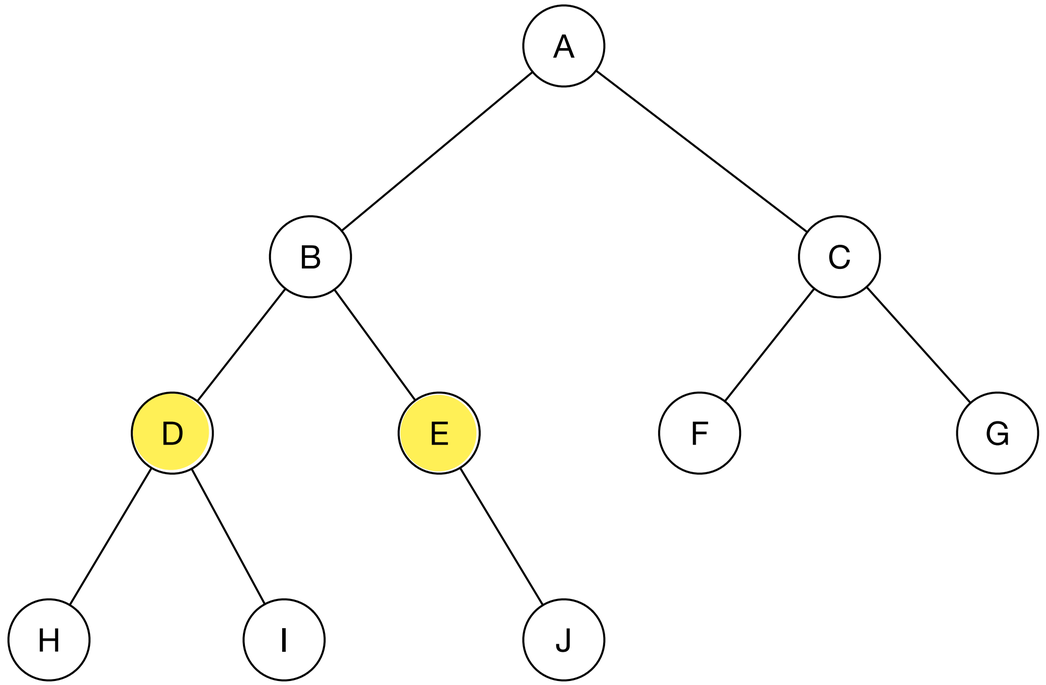

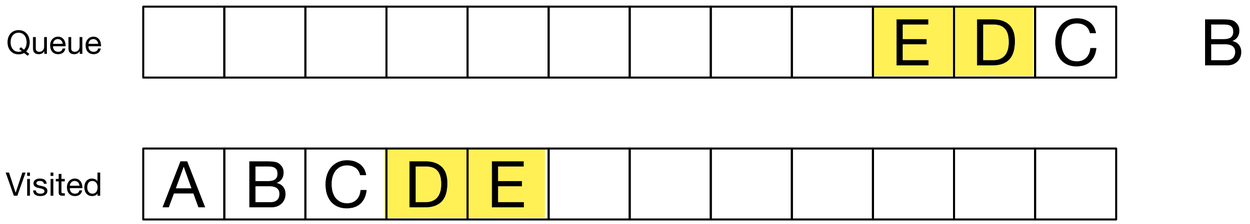

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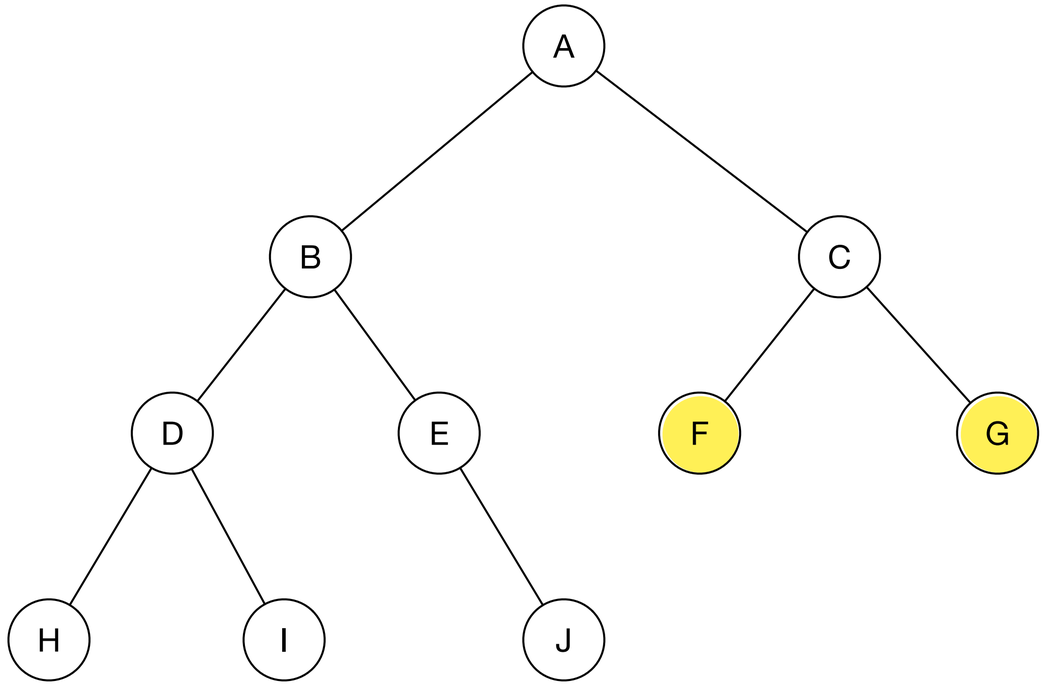

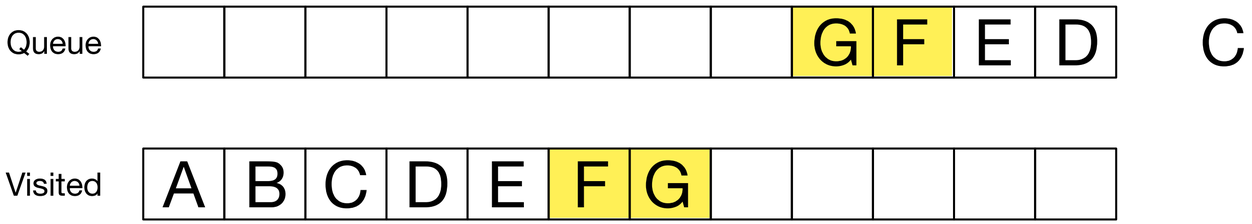

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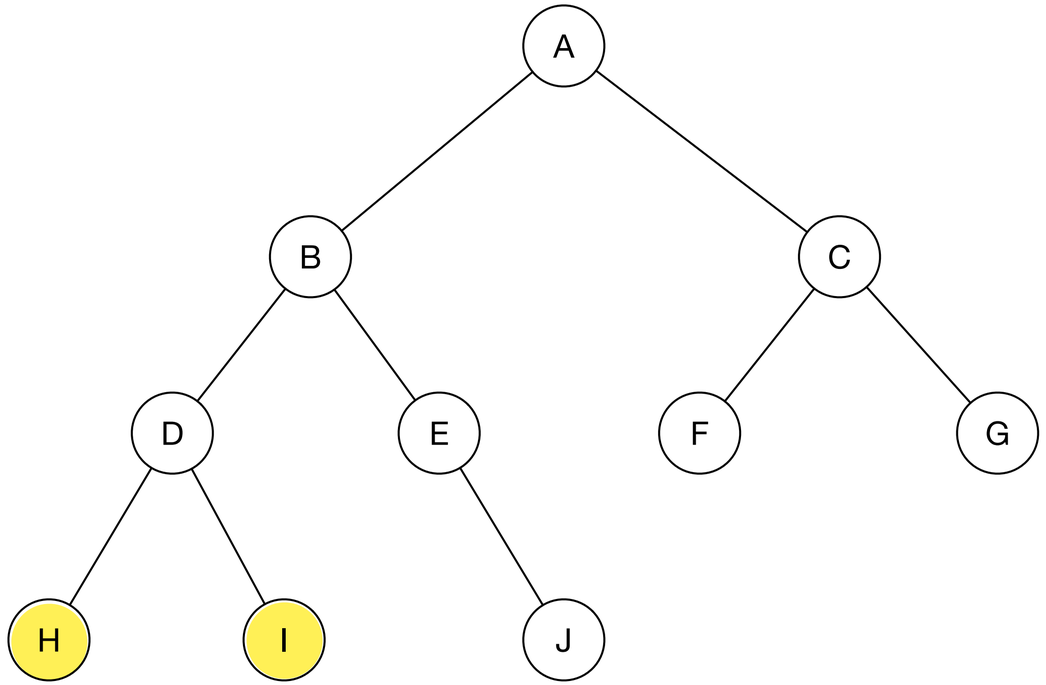

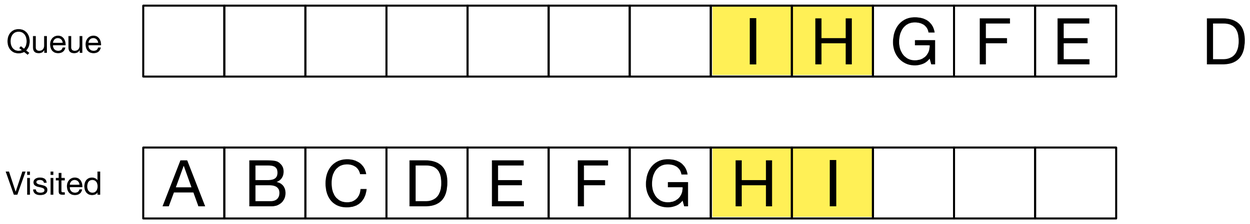

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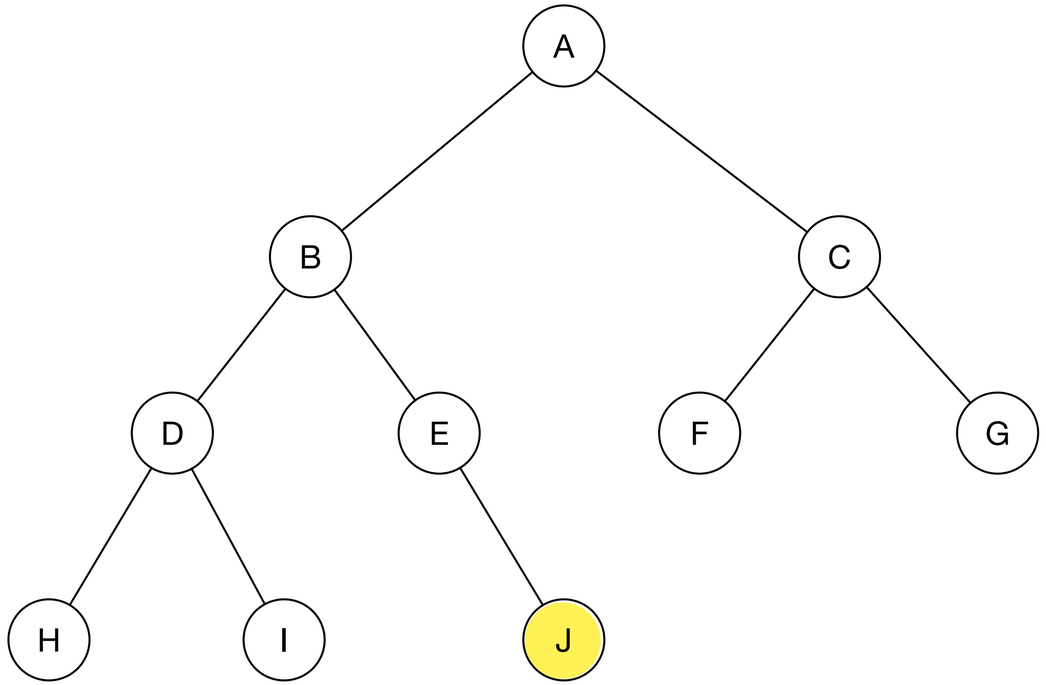

Queue

							J	I	H	G	F

E

Visited

A	B	C	D	E	F	G	H	I	J		

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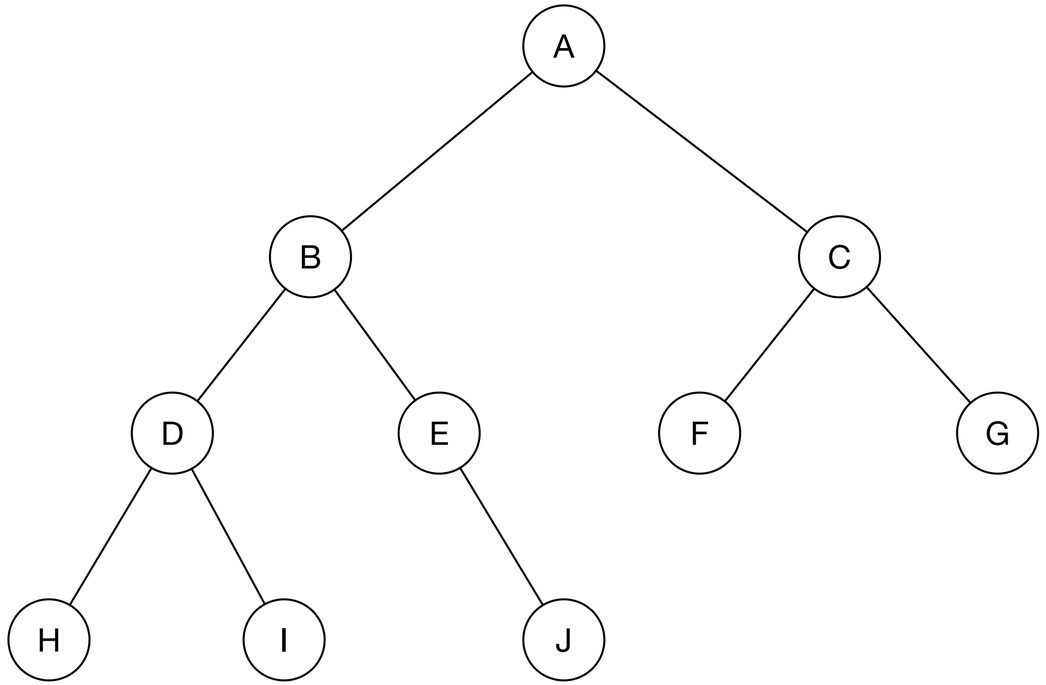

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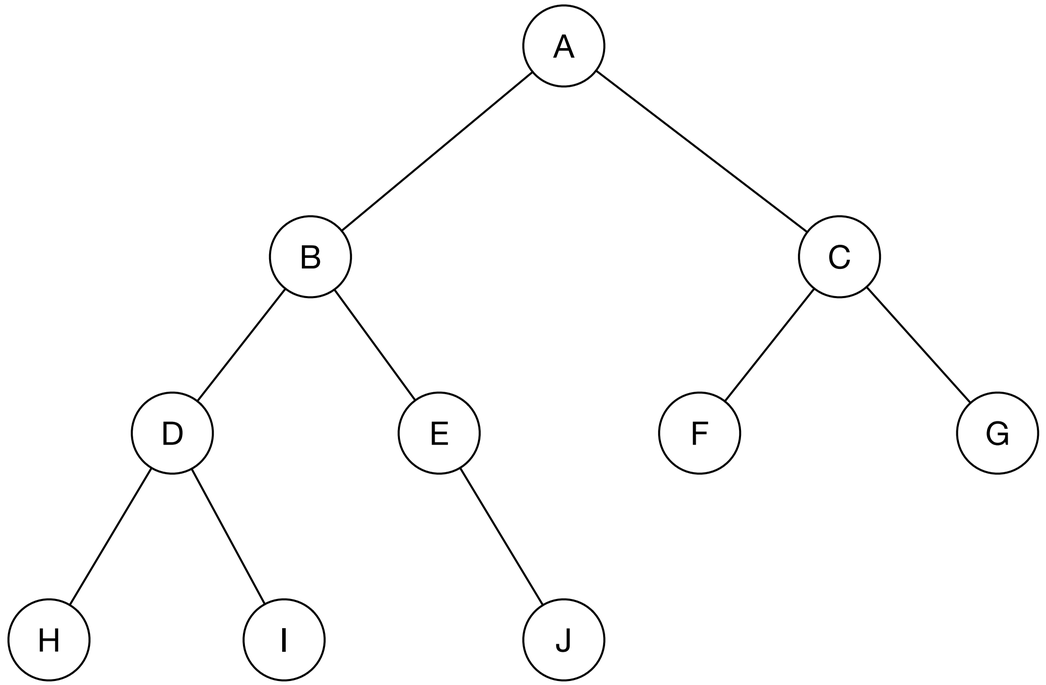

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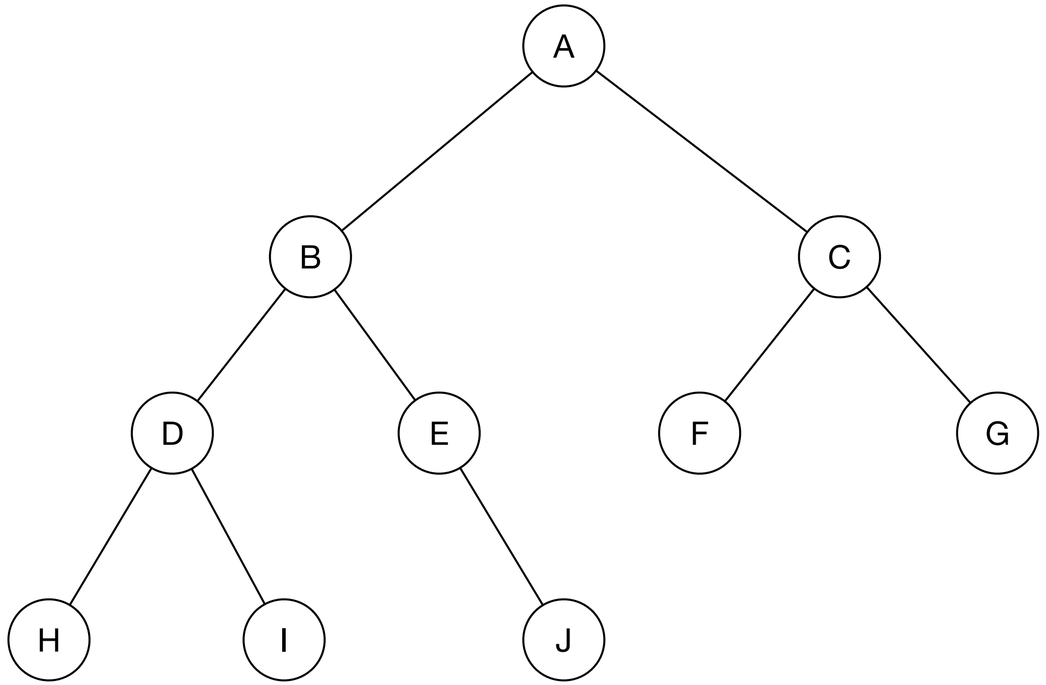

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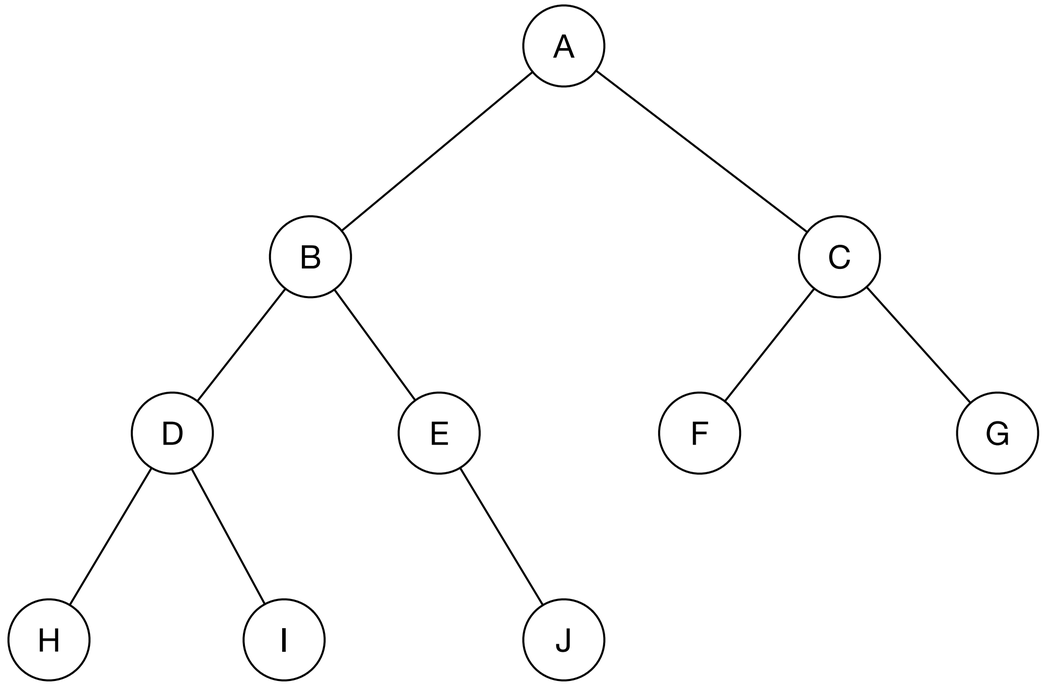

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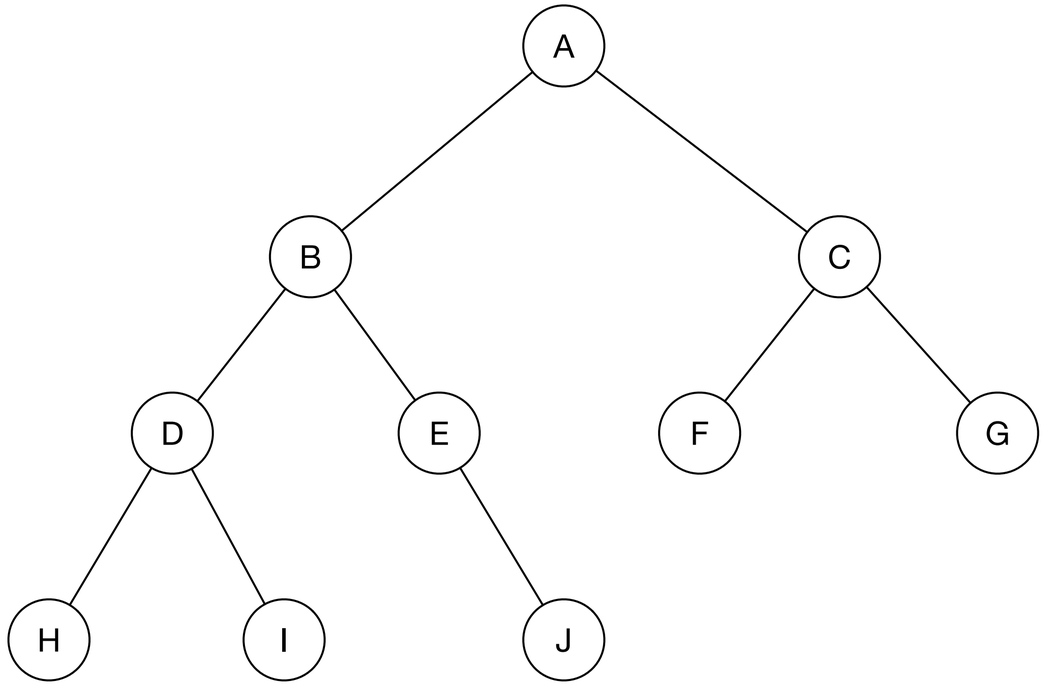

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