

CENG 462

Artificial Intelligence

Spring 2023-2024

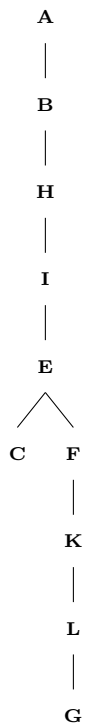
Assignment 1

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Answer for Q1

- a. The order of nodes visited: A B H I E C F K L G

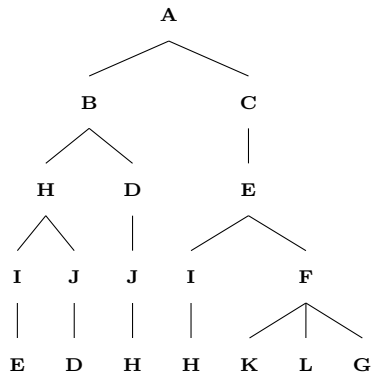
The resulting search tree:



- b. The order of nodes visited for iteration with depth 3: A B H I J D J C E I F D B H J H

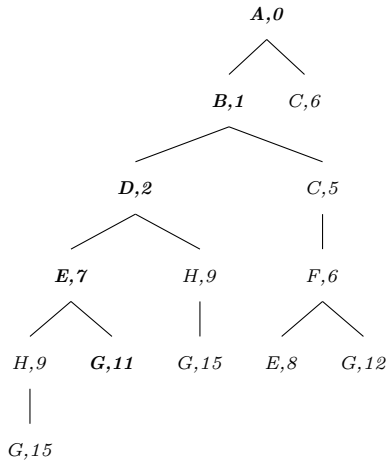
The order of nodes visited for iteration with depth 4: A B H I E J D D J H C E I H F K L G

The resulting search tree for the last iteration:



Answer for Q2

The resulting search tree:



The resulting path: A B D E G

The order of nodes visited: A B D C F E H G

Fringe initially: [(A,0)]

Fringe after expanding node A: [(A-B,1),(A-C,6)]

Fringe after expanding node B: [(A-B-D,2),(A-B-C,5), (A-C,6)]

Fringe after expanding node D: [(A-B-C,5),(A-C,6),(A-B-D-E,7),(A-B-D-H,9)]

Fringe after expanding node C: [(A-B-C-F,6),(A-B-D-E,7),(A-B-D-H,9)]

Fringe after expanding node F: [(A-B-D-E,7),(A-B-C-F-E,8),(A-B-D-H,9),(A-B-C-F-G,12)]

Fringe after expanding node E: [(A-B-D-E-H,9),(A-B-D-H,9),(A-B-D-E-G,11),(A-B-C-F-G,12)]

Fringe after expanding node H: [(A-B-D-E-G,11),(A-B-C-F-G,12),(A-B-D-E-H-G,15),(A-B-D-H-G,15)]

Fringe after reaching the goal node: []