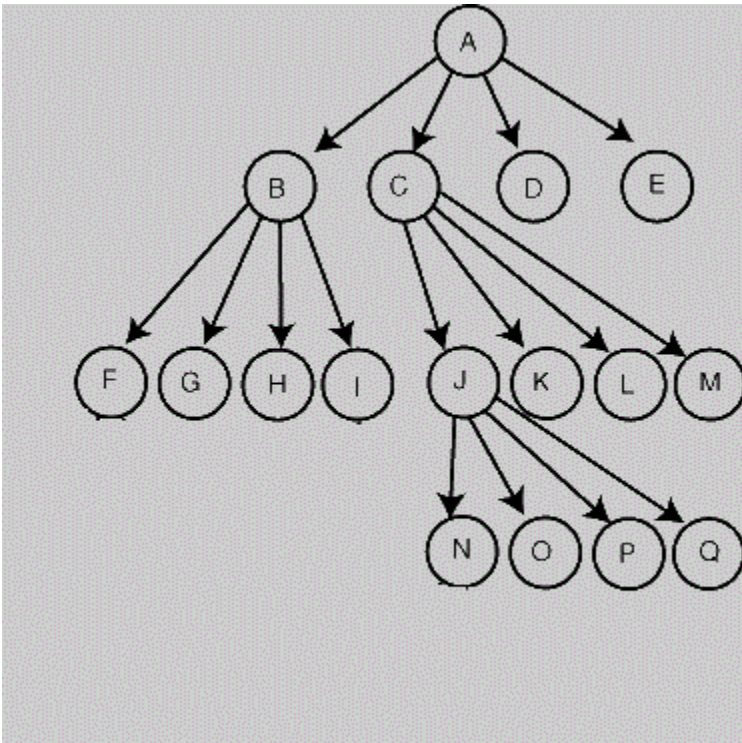


Search Space Practice Problems

Problem #1

Consider the following search tree



If we are searching for Node N, what order would the nodes be visited in a Breadth-First Search?

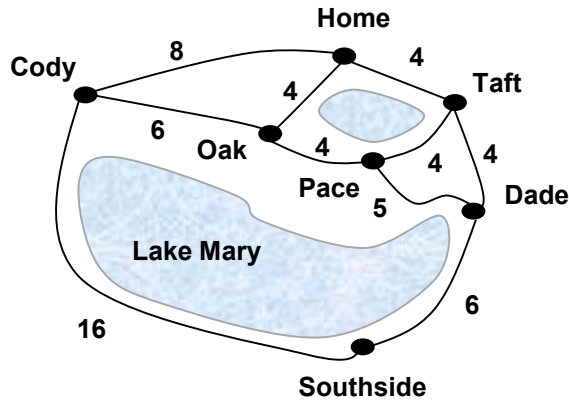
A, B, C, D, E, F, G, H, I, J, K, L, M, N

If we are searching for Node N, what order would the nodes be visited in a Depth-First Search?

A, B, F, G, H, I, C, J, N

Problem #2

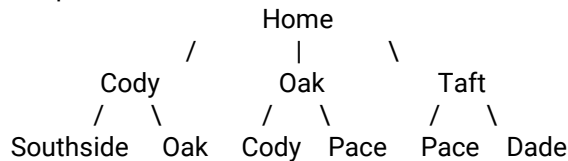
For the following map:



Straight line distance to Southside from:

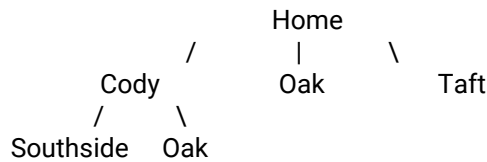
Cody	11
Dade	5
Home	9
Oak	7
Pace	6
Taft	8

- A. Draw the search tree generated by a breadth-first search in finding a path from Home to Southside. What is the found path?



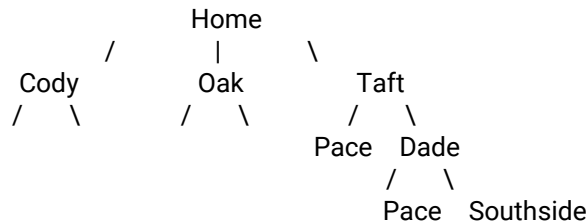
The found path is Home to Cody, and then to Southside

- B. Draw the search tree generated by a depth-first search in finding a path from Home to Southside. You may assume that the left (west) most child is expanded first. What is the found path?



The found path is Home to Cody, and then to Southside

- C. Draw the search tree generated by a depth-first search in finding a path from Home to Southside. You may assume that the right (east) most child is expanded first. What is the found path?



The found path is Home to Taft, to Dade, and then to Southside

Problem #2

Draw the search tree that would be generated by a breadth-first search when solving the eight-puzzle from the starting configuration below.

```
1 2 3
4 5 6
 7 8
```

ANSWER: (The order of the rows may vary.)

