Jerry Olds
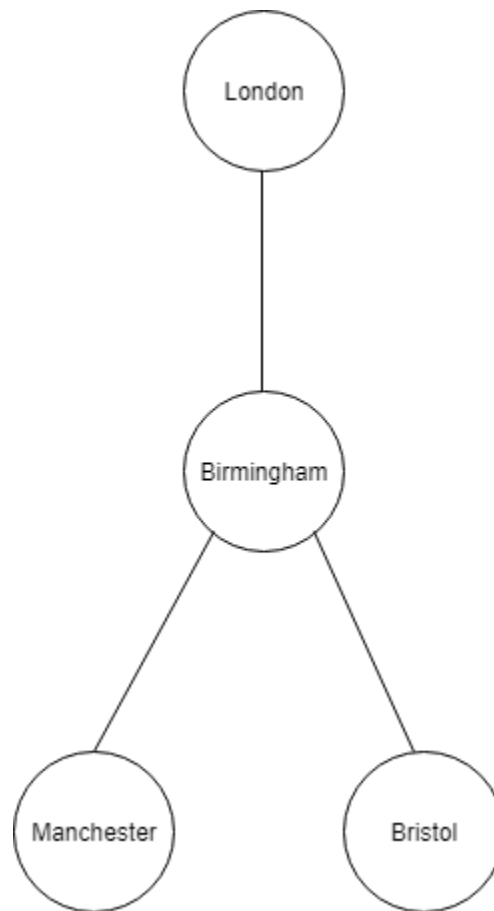
1001533643

CSE-4308-002

7/17/2019

<center>Assignment1</center>

TASK 2

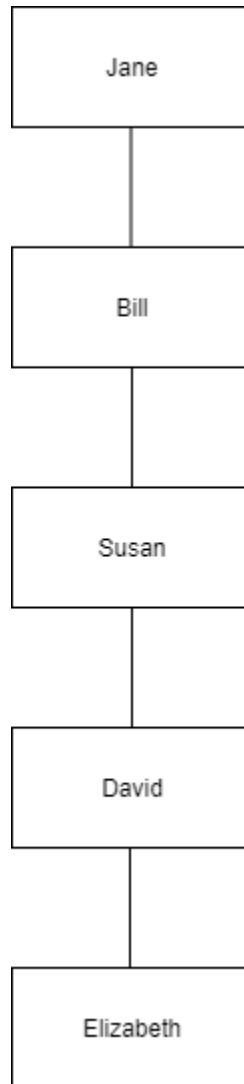Breadth-first search: Bremen, Hamburg, Hannover, Dortmund, Luebeck
Depth-first search: Bremen, Hamburg, Luebeck, Hannover, Magdeburg
Iterative deepening search: Bremen, Hamburg, Luebeck, Hannover, Magdeburg
Uniform cost search: Bremen, Hamburg, Luebeck, Hannover, Magdeburg

TASK 3

    i)   Breadth-first search, uniform cost search, and iterative deepening search

    ii)   No it is not a one-to-one correspondence because a node in the search tree can correspond to two different vertices in the SNG

    iii)

```
┌─────────────────┐
│      Jane       │
└─────────────────┘
        │
┌─────────────────┐
│      Bill       │
└─────────────────┘
        │
┌─────────────────┐
│     Susan       │
└─────────────────┘
        │
┌─────────────────┐
│     David       │
└─────────────────┘
        │
┌─────────────────┐
│    Elizabeth    │
└─────────────────┘
```

    iv)   Form the search in such a way that the tree will be linear with no branching.

TASK 4

<u>Heuristic 1</u>: Non-admissible

h(A) = 25

h(B) = 35

h(E) = 20

<u>Heuristic 2:</u> Non-admissible

h(A) = 25

h(B) = 35

h(C) = 5

h(D) = 0

h(E) = 20

h(F) = 60

<u>Heuristic 3:</u> Non-admissible

h(A) = 25

<u>Heuristic 4:</u> Non-admissible

h(A) = 25

h(B) = 35

h(C) = 5

h(D) = 0

h(E) = 20

<u>Heuristic 5:</u> Admissible

TASK 5

City -> Suburb -> City and farm -> farm and mountain

1   2   3   4   5   6

H = 6