

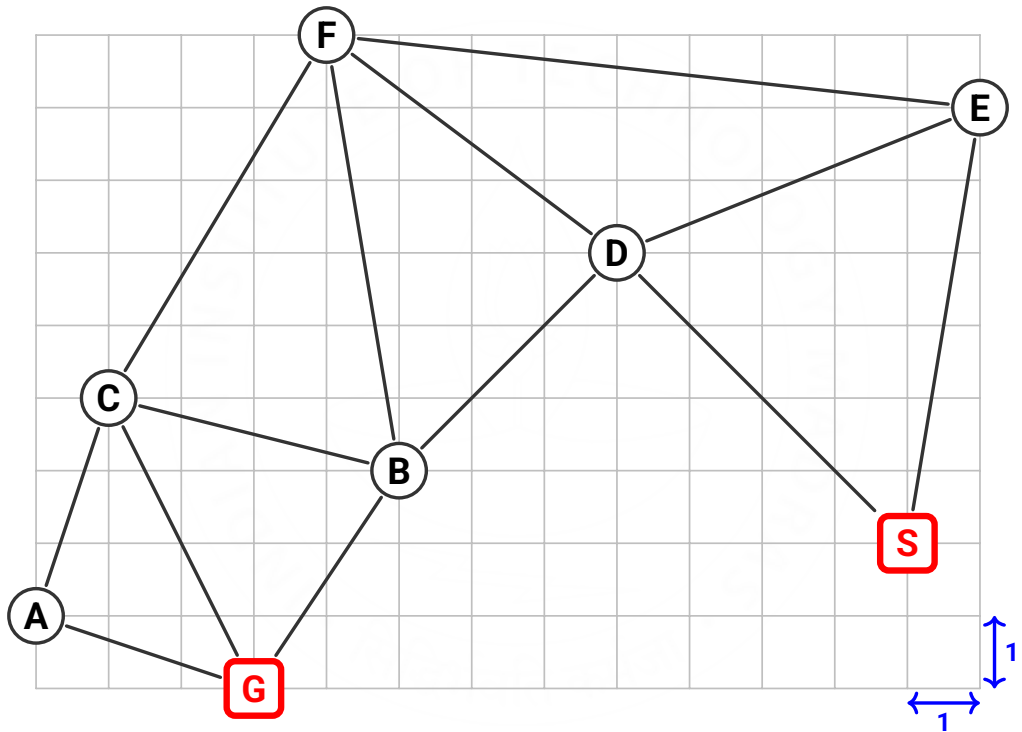
# Practice Assignment: City Map Example 2

## Depth First Search

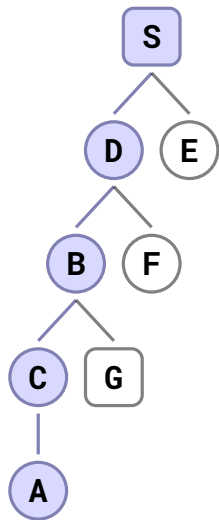
Prepared by S. Baskaran

### State Space

MoveGen returns nodes in ALPHABETICAL ORDER.



# Search Tree



# Solution

OPEN and CLOSED carry pairs: (NODE,PARENT)

OPEN (S,null):[]  
CLOSED []

1.  
NODE S  
close (S,null)  
moveGen D:E:[]  
newNodes D:E:[]  
newPairs (D,S):(E,S):[]

OPEN (D,S):(E,S):[]

CLOSED (S,null):[]

2.  
NODE D  
close (D,S)  
moveGen B:E:F:S:[]  
newNodes B:F:[]  
newPairs (B,D):(F,D):[]

OPEN (B,D):(F,D):(E,S):[]

CLOSED (D,S):(S,null):[]

3.  
NODE B  
close (B,D)  
moveGen C:D:F:G:[]  
newNodes C:G:[]  
newPairs (C,B):(G,B):[]

OPEN (C,B):(G,B):(F,D):(E,S):[]

CLOSED (B,D):(D,S):(S,null):[]

4.  
NODE C  
close (C,B)  
moveGen A:B:F:G:[]  
newNodes A:[]  
newPairs (A,C):[]

OPEN (A,C):(G,B):(F,D):(E,S):[]

CLOSED (C,B):(B,D):(D,S):(S,null):[]

5.  
NODE A  
close (A,C)  
moveGen C:G:[]  
newNodes []  
newPairs []

OPEN (G,B):(F,D):(E,S):[]

CLOSED (A,C):(C,B):(B,D):(D,S):(S,null):[]

6.  
NODE G  
GOAL G

OPEN (G,B):(F,D):(E,S):[]

CLOSED (A,C):(C,B):(B,D):(D,S):(S,null):[]

PATH S:D:B:G:[]