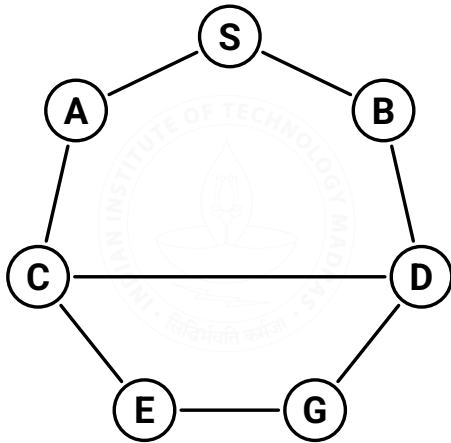


# Lecture Example 3

## Depth-Bound Depth First Search (DBDFS)

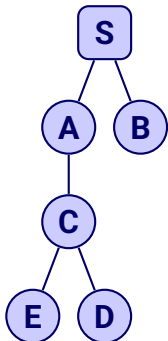
Prepared by S. Baskaran

### State Space



X	MoveGen(X)
S	[A, B]
A	[S, C]
B	[S, D]
C	[E, D, A]
D	[B, C, G]
E	[C, G]
G	[D, E]

### DBDFS (d=3) Search Tree



# DBDFS (d=3) Solution

OPEN and CLOSED carry pairs: (NODE,PARENT)

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

1.  
NODE S  
close (S,null)  
moveGen A:B:[]  
newNodes A:B:[]  
newPairs (A,S):(B,S):[]

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

2.  
NODE A  
close (A,S)  
moveGen S:C:[]  
newNodes C:[]  
newPairs (C,A):[]

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

3.  
NODE C  
close (C,A)  
moveGen E:D:A:[]  
newNodes E:D:[]  
newPairs (E,C):(D,C):[]

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

4.  
NODE E  
close (E,C)

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

5.  
NODE D  
close (D,C)  
  
OPEN (B,S):[]  
CLOSED (D,C):(E,C):(C,A):(A,S):(S,null):[]

6.  
NODE B  
close (B,S)  
moveGen S:D:[]  
newNodes []  
newPairs []  
  
OPEN []  
CLOSED (B,S):(D,C):(E,C):(C,A):(A,S):(S,null):[]  
  
PATH []