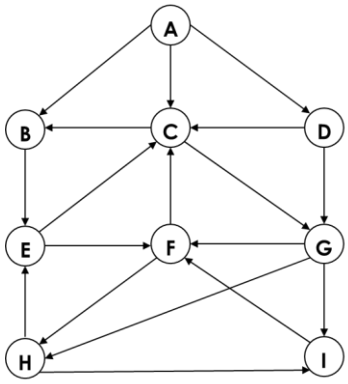
CS3353: Data Structures and Algorithm Analysis I
Spring 2024

Homework #6 – Reference #1

1. Print all the nodes that can be reached from the node H (including H itself). Use a **depth-first search** starting at node H using a **stack**. Show all your work.



Adjacency Lists			
A:	B	C	D
B:	E		
C:	B	G	
D:	C	G	
E:	C	F	
F:	C	H	
G:	F	H	I
H:	E	I	
I:	F		

- Push H onto the stack
  - Stack: H
- Pop and print the top element of the stack, that is H. Push all the neighbors of H onto the stack.
  - Stack: E, I
  - Print: H
- Pop and print the top element of the stack, that is I. Push all the neighbors of I onto the stack.
  - Stack: E, F
  - Print: I
- Pop and print the top element of the stack, that is F. Push all the neighbors of F onto the stack.
  - Stack: E, C
  - Print: F
- Pop and print the top element of the stack, that is C. Push all the neighbors of C onto the stack.
  - Stack: E, B, G
  - Print: C
- Pop and print the top element of the stack, that is G. Push all the neighbors of G onto the stack. No neighbor to push onto the stack.
  - Stack: E, B
  - Print: G
- Pop and print the top element of the stack, that is B. Push all the neighbors of B onto the stack. No neighbor to push onto the stack.
  - Stack: E
  - Print: B
- Pop and print the top element of the stack, that is E. Push all the neighbors of E onto the stack. No neighbor to push onto the stack. Now the stack is empty.
  - Stack:
  - Print: E
- H, I, F, C, G, B, E: These are the node which are reachable from the node H.

