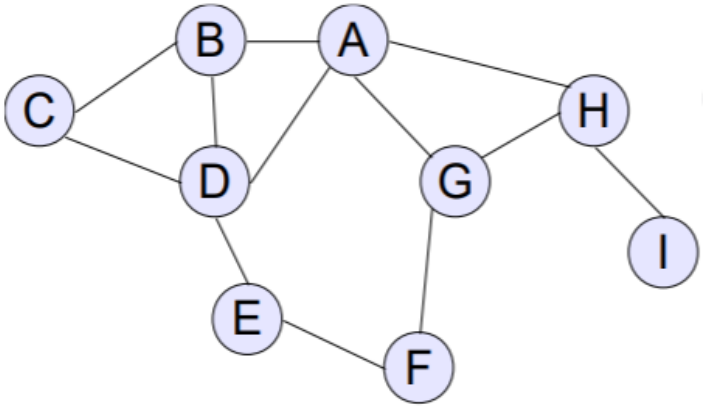
King Saud University
College of Computer and Information Sciences
Computer Science Department

CSC 212 **Second Semester 1439-1440**

Tutorial # 14

Problem 1:

a. Show the adjacency matrix for the following graph:



Solution:

	A	B	C	D	E	F	G	H	I
A	0	1	0	1	0	0	1	1	0
B	1	0	1	1	0	0	0	0	0
C	0	1	0	1	0	0	0	0	0
D	1	1	1	0	1	0	0	0	0
E	0	0	0	1	0	1	0	0	0
F	0	0	0	0	1	0	1	0	0
G	1	0	0	0	0	1	0	1	0
H	1	0	0	0	0	0	1	0	1
I	0	0	0	0	0	0	0	1	0

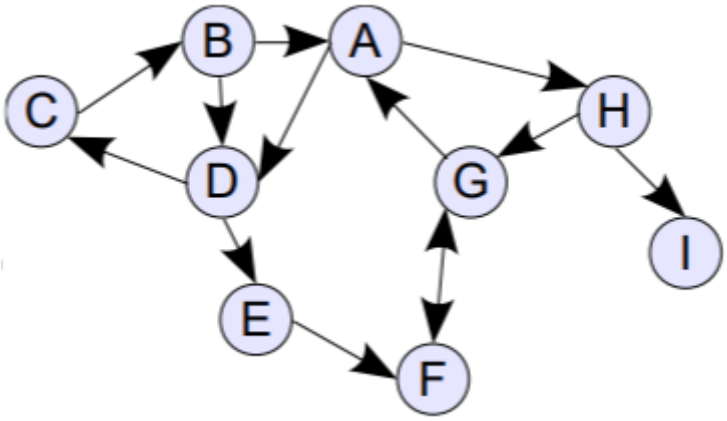
b. For the previous graph, give its BFS and DFS traversals starting at node B (order the children in alphabetical order).

Solution:

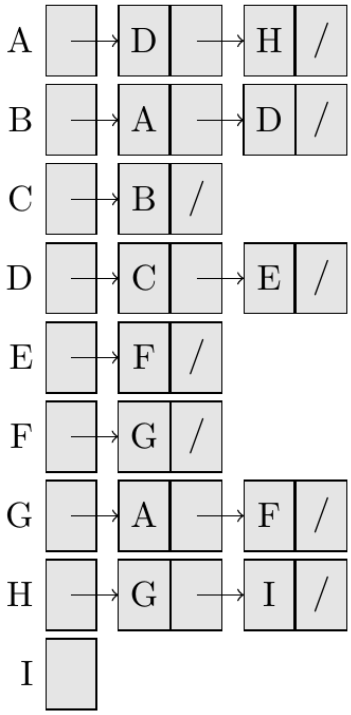
BFS: B, A, C, D, G, H, E, F, I

DFS: B, D, E, F, G, H, I, C, A

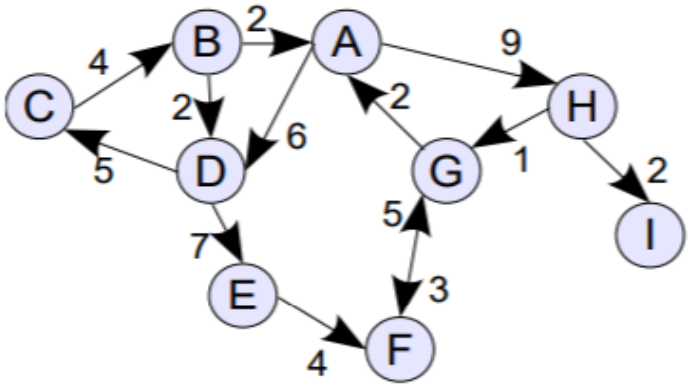
c. Show the adjacency list for the following graph:



Solution:

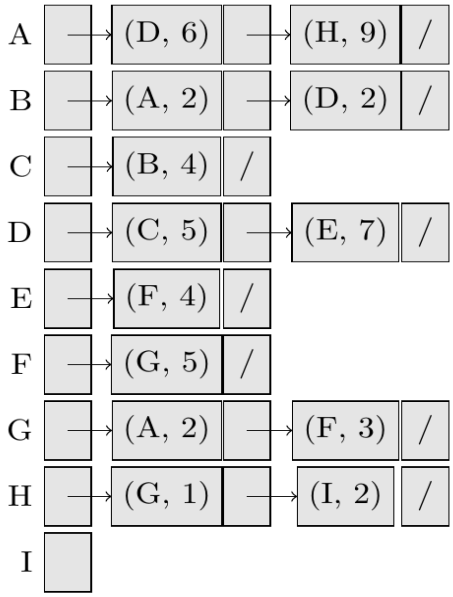


d. Show the adjacency matrix and the adjacency list for the following graph:



Solution:

	A	B	C	D	E	F	G	H	I
A	0	0	0	6	0	0	0	9	0
B	2	0	0	2	0	0	0	0	0
C	0	4	0	0	0	0	0	0	0
D	0	0	5	0	7	0	0	0	0
E	0	0	0	0	0	4	0	0	0
F	0	0	0	0	0	0	5	0	0
G	2	0	0	0	0	3	0	0	0
H	0	0	0	0	0	0	1	0	2
I	0	0	0	0	0	0	0	0	0

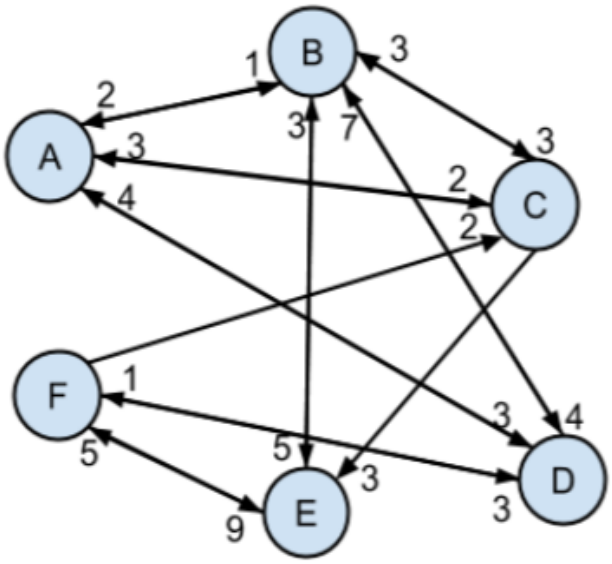


Problem 2:

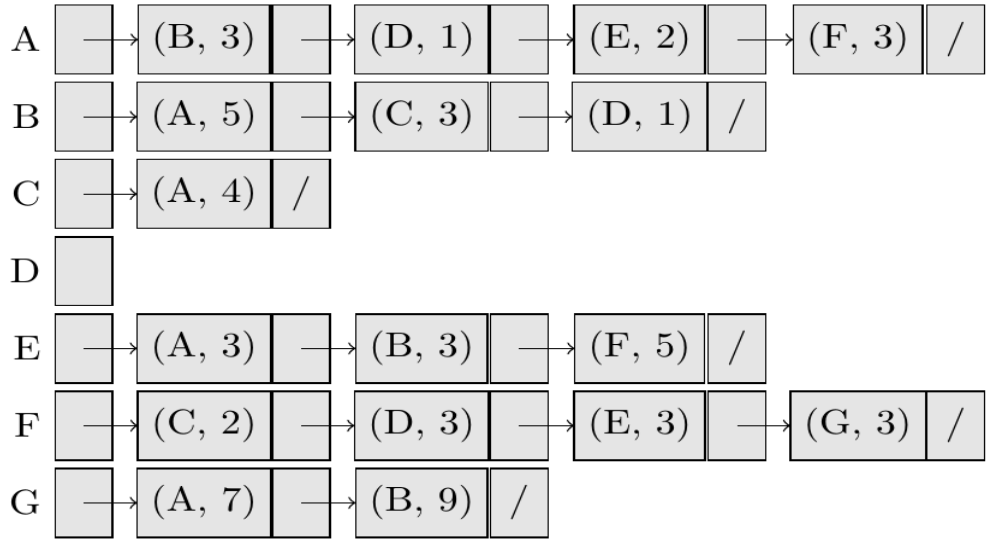
a. Draw the graph represented by the following adjacency matrix:

	A	B	C	D	E	F
A	0	1	2	3	0	0
B	2	0	3	4	5	0
C	3	3	0	0	3	0
D	4	7	0	0	0	1
E	0	3	0	0	0	5
F	0	0	2	3	9	0

Solution:



b. Draw the graph represented by the following adjacency list:



Solution: