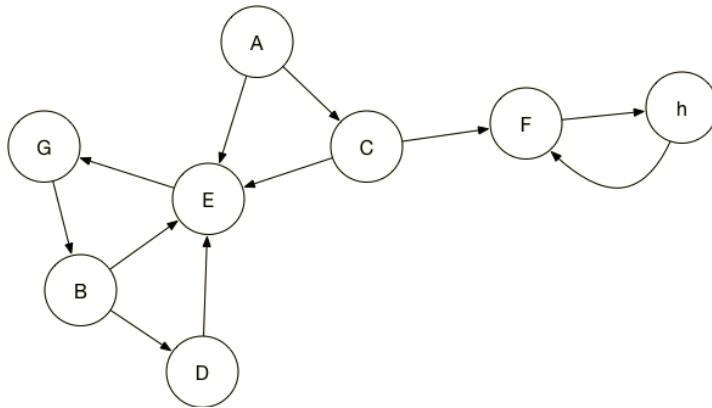


# Programming & Data Structures

## Week 10 Assignment

### Question 2)

Use the graph below to answer the following questions:

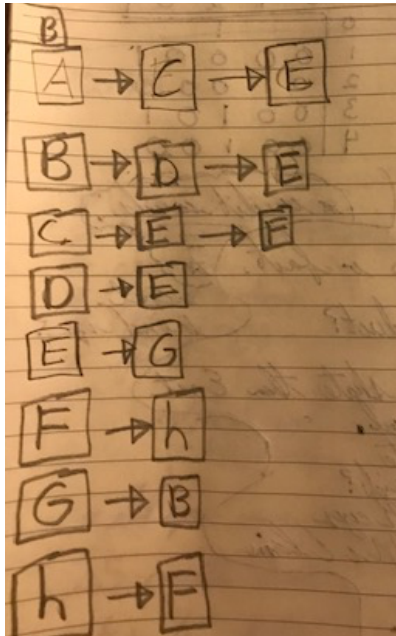


- a) Depict the adjacency matrix for the graph above.

A)

	A	B	C	D	E	F	G	h
A	0	0	1	0	1	0	0	0
B	0	0	0	1	1	0	0	0
C	0	0	0	0	1	1	0	0
D	0	0	0	0	1	0	0	0
E	0	0	0	0	0	0	1	0
F	0	0	0	0	0	0	0	1
G	0	1	0	0	0	0	0	0
h	0	0	0	0	0	1	0	0

Depict the adjacency list for the graph above.



c) How many connected components are there in the graph?

**1**

d) Run a DFS from B and state the sequence of nodes.

**B, E, G, D**

B  
D, E  
D, G,

e) Run a BFS from E and state the sequence of nodes.

**EGBD**

f) Are there cycles in the above graph? Identify all that you can find.

Assuming cycles are three or more.

**EGBE, EGBDE**