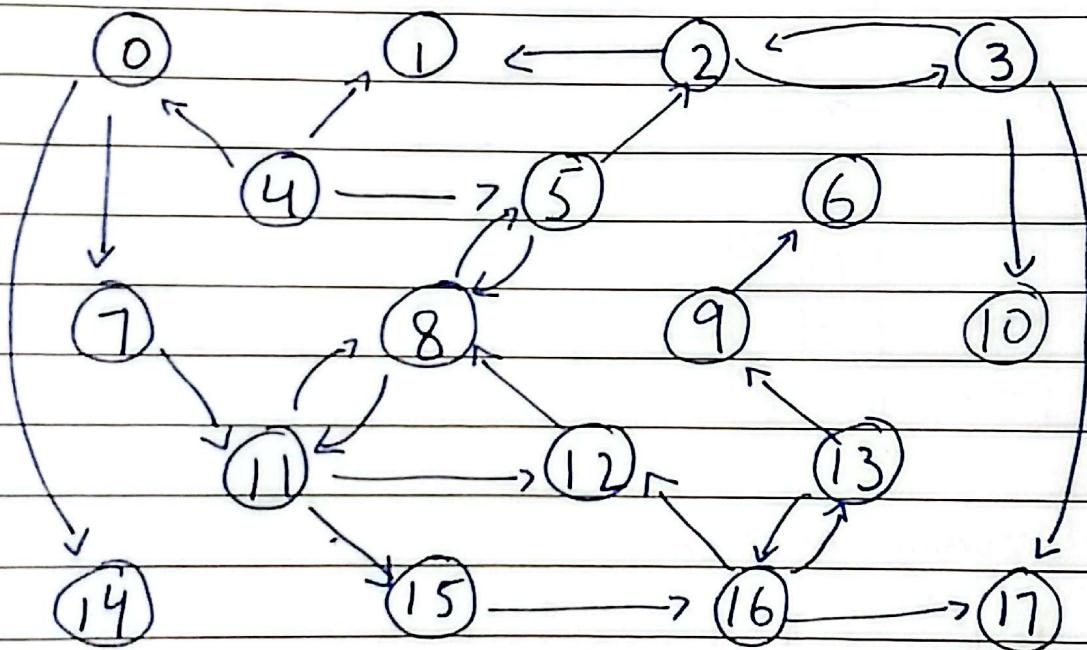


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D1

Given Graph:



Part 1:

→ Adjacency list:

0	[]	→	1	[]	→	14	[]
1	[]	→	[]	[]			
2	[]	→	1	[]	→	3	[]



3	→	2	→	11	/		
4	→	0	→	8	/		
5	→	2					
6	→	3					
7	→	4					
8	→	5					
9	→	6					
10	→		/				
11	→	8	→	12	→	15	/
12	→	8	→	13	→	15	/
13	→	9	→	12	→	16	/
14	→		/				
15	→	16	/				
16	→	12	→	13	→	17	/
17	→		/				

→ Adjacency Matrix:

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
7	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	
8	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	
9	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	
12	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	
13	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
16	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Part 2: DFS

→ Visited Array :

• Initial Array :

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

vertices

• Array after visiting.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	1	4	6	7	3	5	15	2	10	14	8	11	12	13	18	17	16	9

Order of visiting nodes

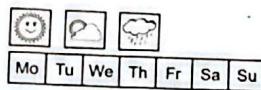
→ Stack Contents:

→ $\boxed{0 \ 7 \ 4 \ 1 \ 5 \ 2 \ 3 \ 10 \ 17 \ 18 \ 11 \ 12 \ 13 \ 9 \ 6 \ 16 \ 15 \ 14}$
 stack starting from here
 (Base of Stack) (Top of Stack)

→ Visited Array Explanation: $\boxed{0}$

$u \Rightarrow 0 \Rightarrow \{7, 14\}$	$\boxed{7 \ 14}$
$u \Rightarrow 7 \Rightarrow \{4, 11\}$	$\boxed{4 \ 11 \ 14}$
$u \Rightarrow 4 \Rightarrow \{0, 1, 5\}$	$\boxed{0 \ 5 \ 11 \ 14}$
$u \Rightarrow 1 \Rightarrow \{\}$	$\boxed{1 \ 11 \ 14}$
$u \Rightarrow 5 \Rightarrow \{2, 8\}$	$\boxed{2 \ 8 \ 11 \ 14}$
$u \Rightarrow 2 \Rightarrow \{1, 3\}$	$\boxed{1 \ 8 \ 11 \ 14}$
$u \Rightarrow 3 \Rightarrow \{2, 10, 17\}$	$\boxed{2 \ 10 \ 17 \ 8 \ 11 \ 14}$
$u \Rightarrow 10 \Rightarrow \{\}$	$\boxed{10 \ 17 \ 8 \ 11 \ 14}$
$u \Rightarrow 17 \Rightarrow \{\}$	$\boxed{17 \ 8 \ 11 \ 14}$

$u \Rightarrow 8 \Rightarrow \{5, 11\}$	$\boxed{5 \ 14}$
$u \Rightarrow 11 \Rightarrow \{8, 12, 15\}$	$\boxed{8 \ 15 \ 14}$
$u \Rightarrow 12 \Rightarrow \{8, 13, 15\}$	$\boxed{8 \ 15 \ 14}$
$u \Rightarrow 13 \Rightarrow \{9, 12, 16\}$	$\boxed{9 \ 16 \ 15 \ 14}$
$u \Rightarrow 9 \Rightarrow \{6, 8\}$	$\boxed{6 \ 16 \ 15 \ 14}$
$u \Rightarrow 6 \Rightarrow \{3\}$	$\boxed{16 \ 15 \ 14}$
$u \Rightarrow 16 \Rightarrow \{12, 13, 17\}$	$\boxed{12 \ 17 \ 14}$
$u \Rightarrow 15 \Rightarrow \{16\}$	$\boxed{16}$



Memo No. _____
Date / /

$$4 \Rightarrow 14 \Rightarrow \{ \}$$

→ Traversal order:

[0, 7, 4, 1, 5, 2, 3, 10, 17, 8, 11, 12, 13, 9, 6, 16, 15, 14]