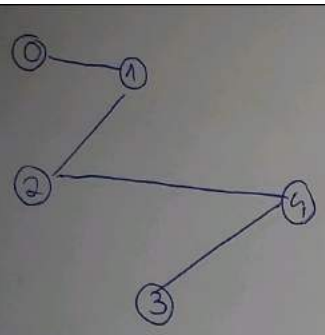
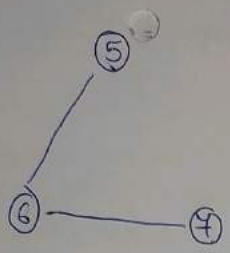




8

Practical work 2. Find the connected components of an undirected graph using DFS

visited = [False for i in range(0,9)]

components = [0 for i in range(0,9)]

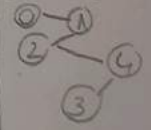
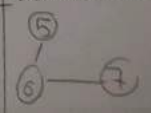
DOUT dictionary

Key		value
0	-	[1]
1	-	[0,2]
2	-	[1,4]
3	-	[4]
4	-	[2,3]
5	-	[6]
6	-	[5,7]
7	-	[6]
8	-	[ ]

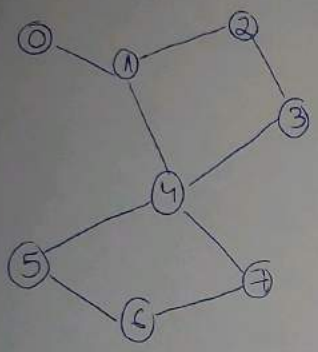
At the end

Components [1,1,1,1,1,2,2,2,3]

Connected (8)

	x	y	visited	components	count	
				[0,0,0,0,0,0,0,0,0]	0	
call DFS(Graph, 0, visited, comp, 1)	0 → 1 1 → 2 2 → 4 4 → 2 (F) 3 → 4 (F)	1 0 (F) 2 1 (F) 4 3	visited[0] = True visited[1] = True visited[2] = True visited[4] = True visited[3] = True			
				[1,1,1,1,1,0,0,0,0]	1	connected 
call DFS(Graph, 5, visited, comp, 2)	5 → 6 6 → 7 7 → 6 (F)	6 5 (F) 7 6 (F)	visited[5] = True visited[6] = True visited[7] = True			
				[1,1,1,1,1,2,2,2,0]	2	connected 
call DFS(Graph, 8, visited, comp, 3)	8		visited[8] = True			

Practical work 2



DOUT Dictionary

Key		Value
0	-	[1]
1	-	[0,2,4]
2	-	[1,3]
3	-	[2,4]
4	-	[1,3,7,5]
5	-	[4,6]
6	-	[5,7]
7	-	[4,6]

visited = [False for i in range [0,8]]
components = [0 for i in range [0,8)]

	x	y	visited	components	count
				[0,0,0,0,0,0,0,0]	0
call DFS(Graph, 0, visited, comp, 1) count=1	0 →	1	visited[0]= True		
	1 →	0 (F) 2	visited [1]= True		
	2 →	1 (F) 3	visited [2]= True		
	3 →	2 (F) 4	visited [3] = True		
	4 →	1 (F) 3 (F) 7	visited [4] = True		
	7 →	4 (F) 6	visited [7]= True		
	6 →	5	visited [6] = True		
	5	4 (F) 6 (F)	visited [5] = True		
				[1,1,1,1,1,1,1,1]	1

connected