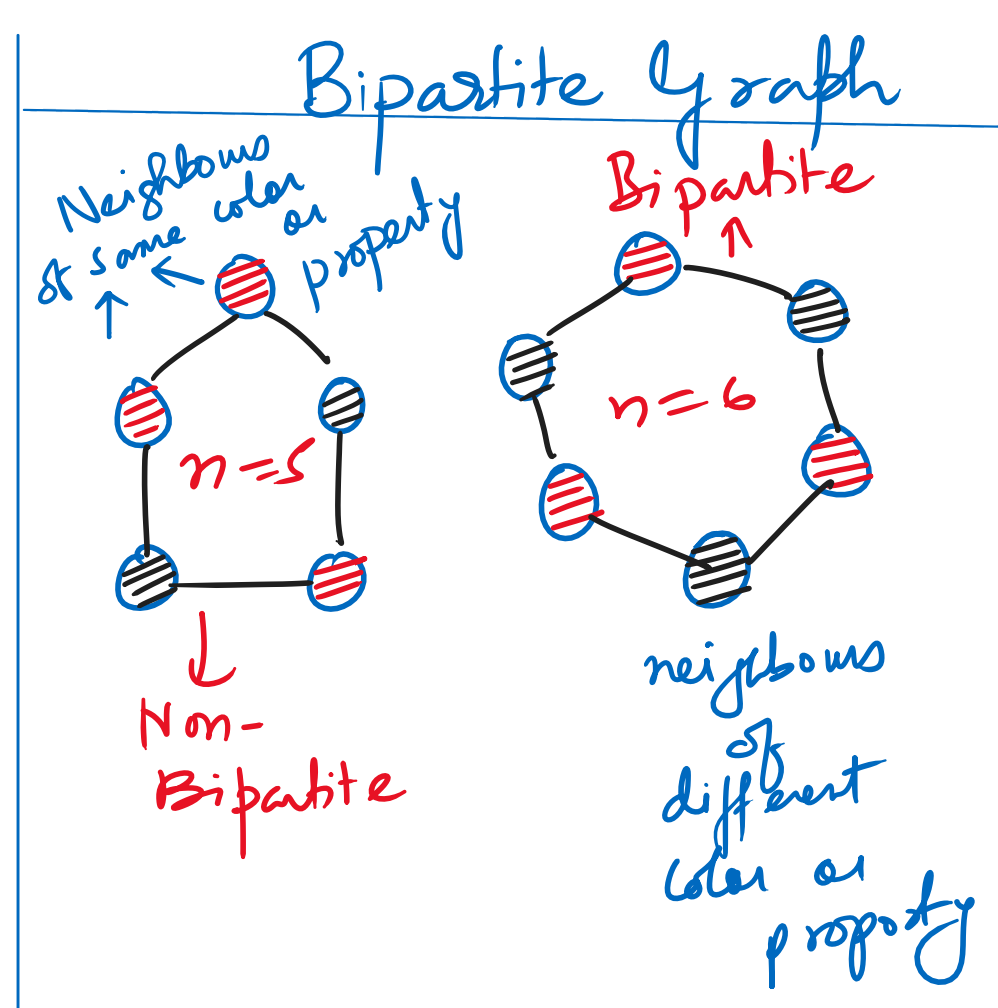
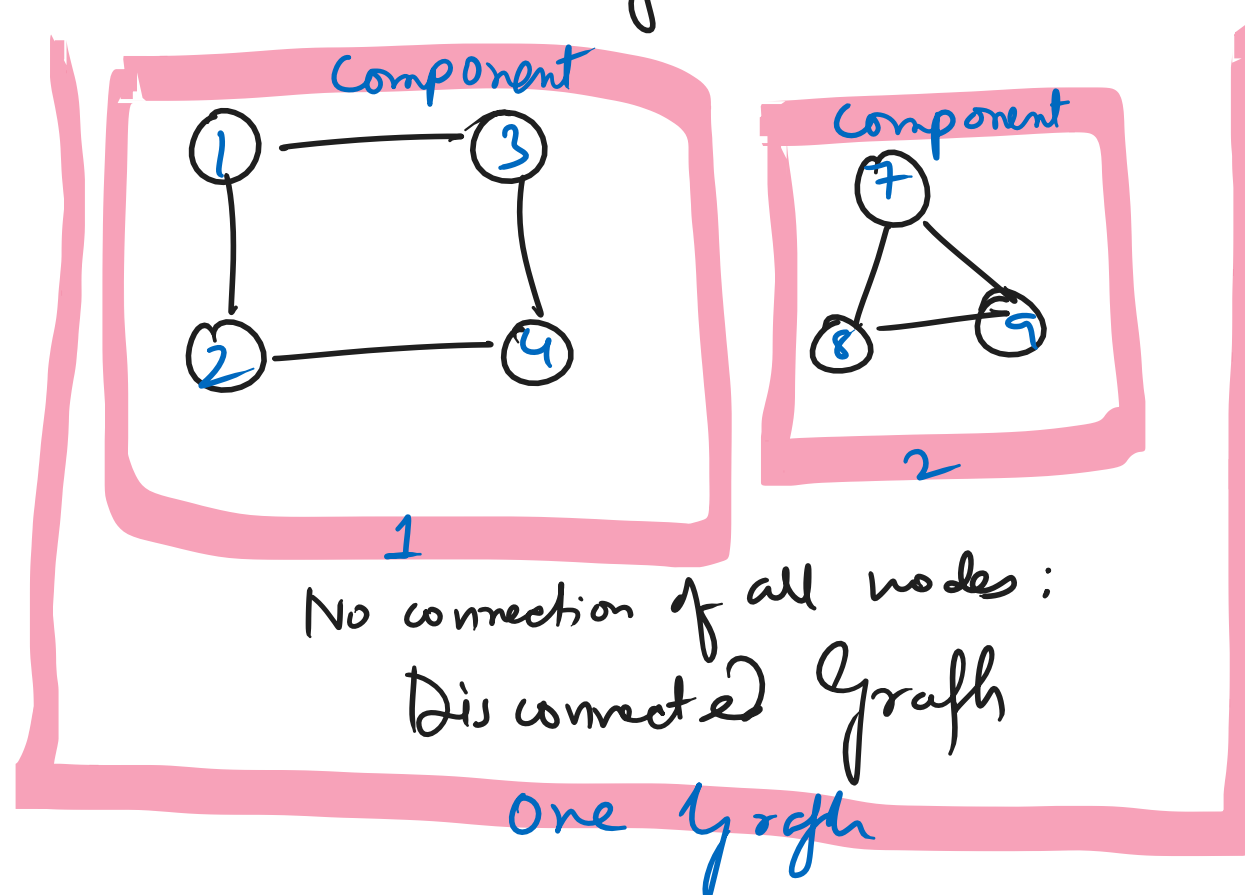
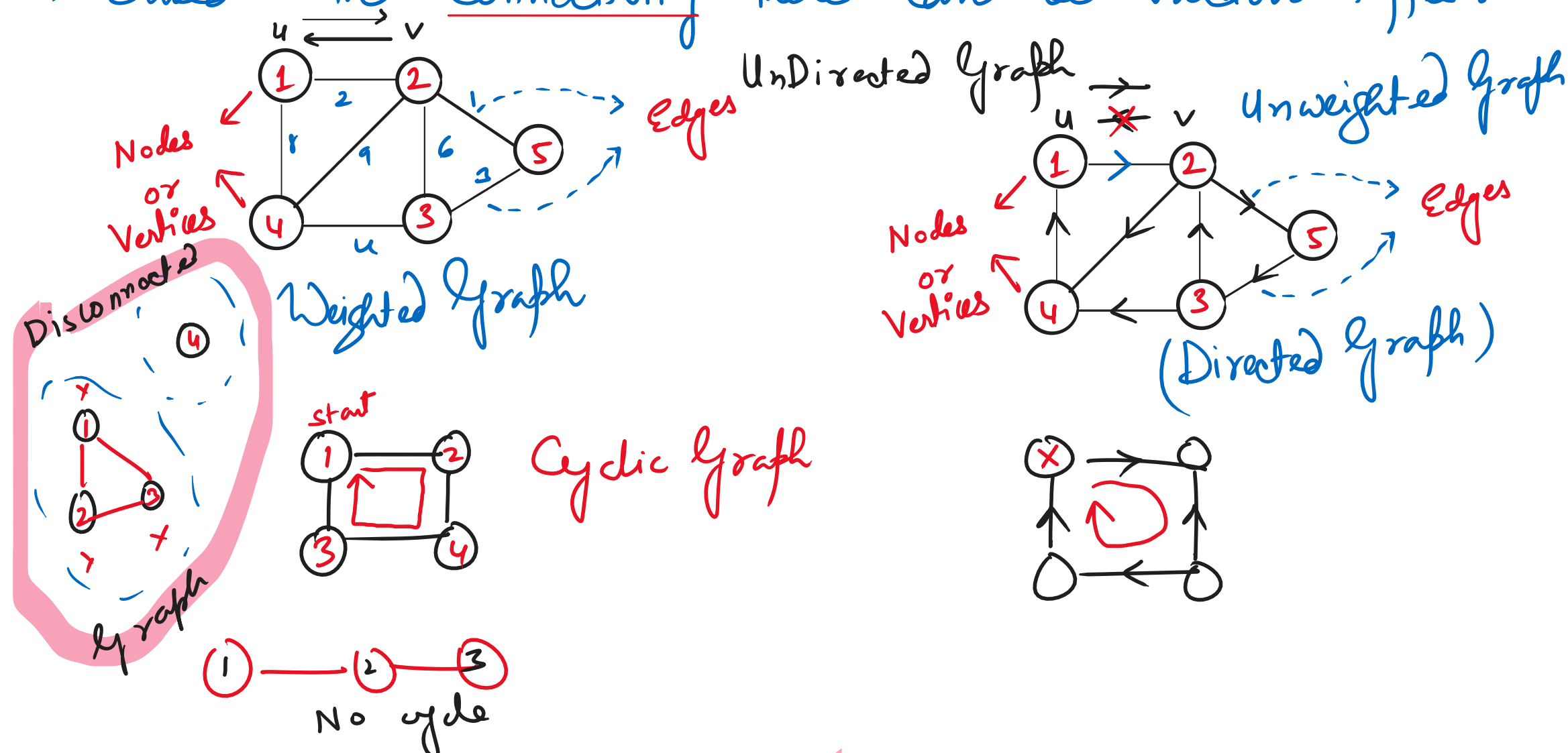


## Non-linear data Structures contd....

### Introduction to Graph data structure:→

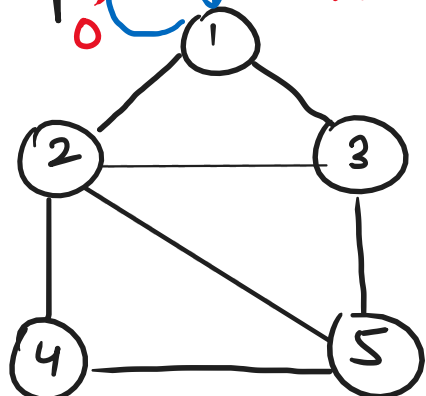
- \* It is a non-linear data structure, where we have entities called "nodes".
- \* Each "node" is connected to the other via "edges".
- \* Based on the connectivity there can be various types:



### \* Representation of a Graph:→ edges = 7, n = 5

#### Adjacency Matrix (n x n)

	1	2	3	4	5
1	0	1	1	0	0
2	1	0	1	1	1
3	1	1	0	0	1
4	0	1	0	0	1
5	0	1	1	1	0



#### Adjacency List

Node : List of Neighbours

```

1 : 2, 3
2 : 1, 3, 4, 5
3 : 1, 2, 5
4 : 2, 5
5 : 2, 3, 4
    
```

### \* Write the code for displaying the adj

Adjacency List

Node	Neighbours
1	2, 3
2	1, 3, 4, 5
3	1, 2, 5
4	2, 5
5	2, 3, 4

```

List<List<Integer>> adjlist =
    new ArrayList<>();
    // outside
    {
        // inside
        { 1 : 2, 3 }, new ArrayList<>();
        { 2 : 1, 3, 4, 5 },
        { 3 : 1, 2, 5 },
        { 4 : 2, 5 },
        { 5 : 2, 3, 4 },
    }
    
```