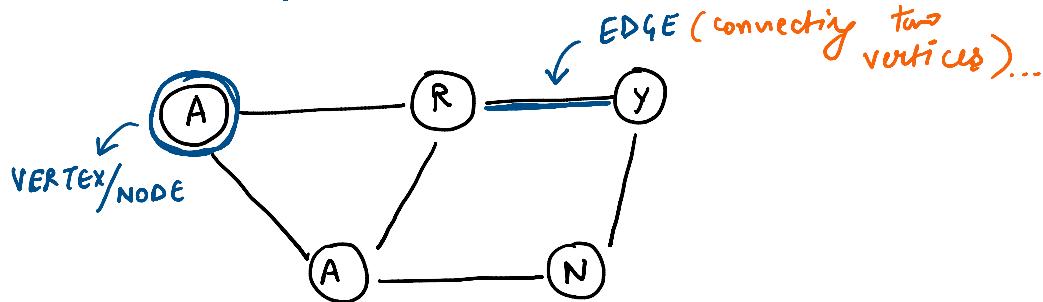


G-02 Different Conventions in Graph World

31 March 2023 09:31 PM

GRAPH: A graph can be defined as a group of vertices AND edges that are used to connect these vertices.

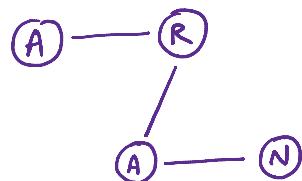
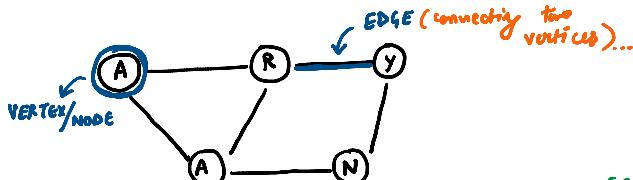


↓

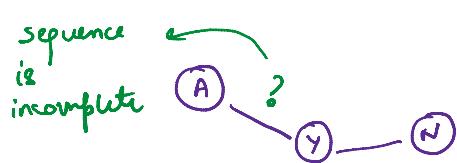
Graph (V, E) \rightarrow 5 vertices (A, R, Y, A, N)

6 edges (A, R) (N, Y)
 (R, Y) (A, N)
 (A, A) (A, R)

PATH: A path can be defined as the sequence of nodes that are followed in order to reach some terminal node V from initial node U.



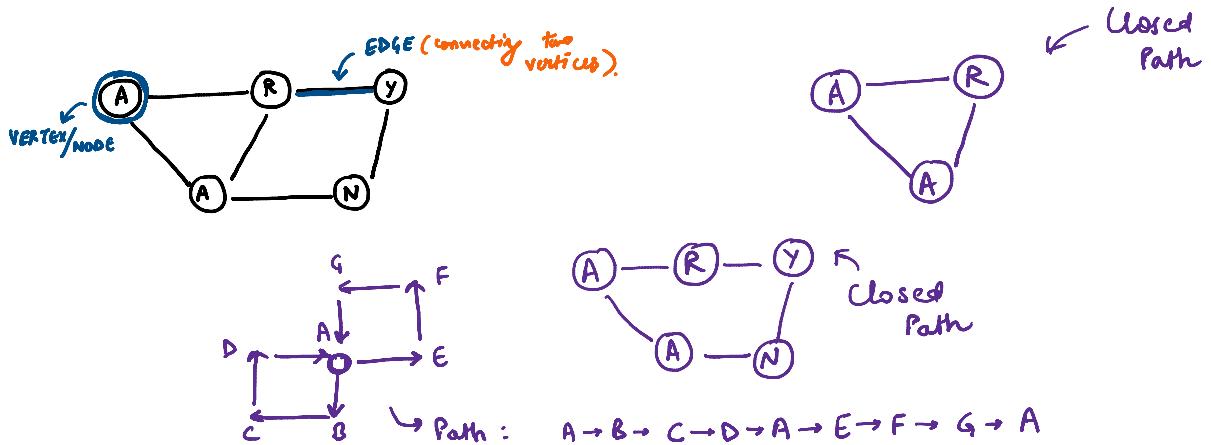
this is
a path.



this is
not a
path

1. re... p.u. A Path will be called as Closed Path if the initial

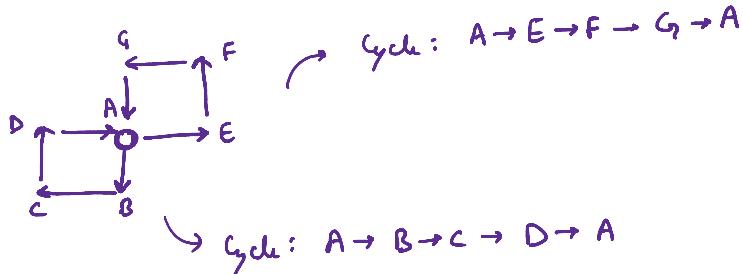
↳ Closed Path: A Path will be called as Closed path if the initial node is same as terminal node.
i.e. $u = v$



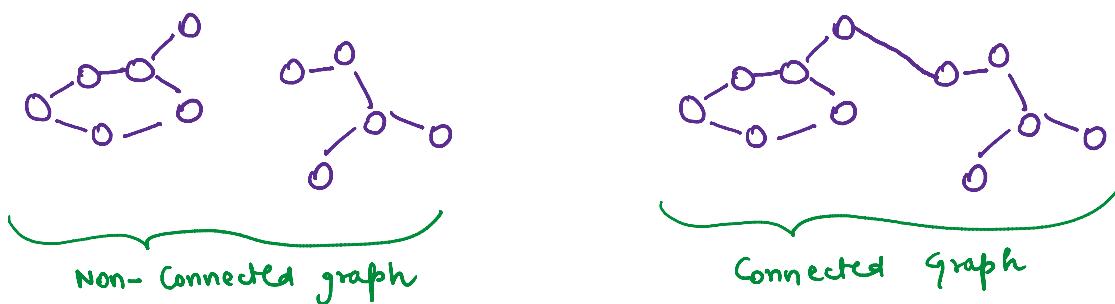
cycle: A cycle is defined as the path which has no repeating edges or vertices except the first & last vertices.

→ directed graph.

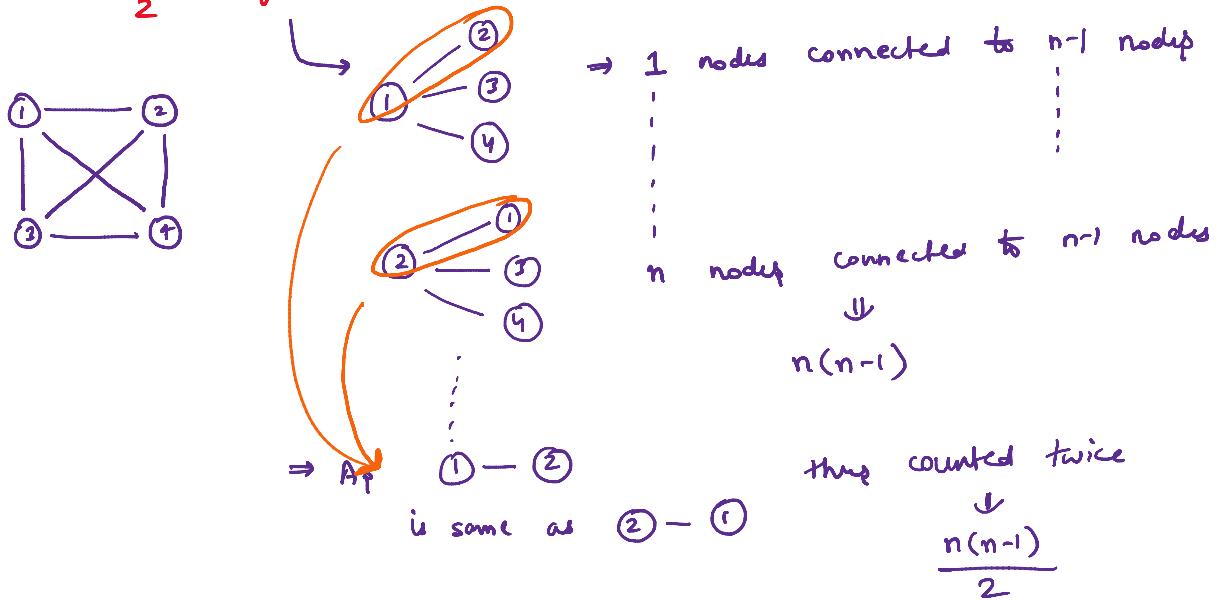
→ undirected graph.



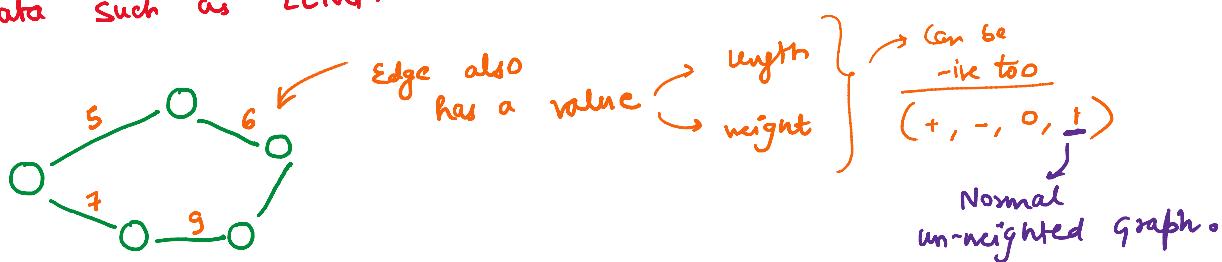
Connected Graph: A connected graph is the one in which some path exists between every two vertices (u, v).
There are no isolated nodes in connected Graph.



Complete Graph: A complete graph is one in which every node is connected with all other nodes. A complete graph contains $\frac{n(n-1)}{2}$ edges. [n: No. of nodes in the graph]

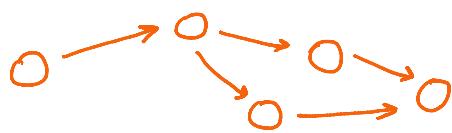
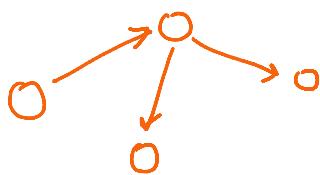


Weighted Graph: In a weighted graph, each edge is assigned some data such as LENGTH or WEIGHT.



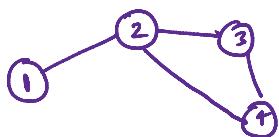
Directed Graph (Digraph): A digraph is a directed graph in which edge of the graph is associated with some direction & traversing can be done in the specified direction.

some curvature
in the specified direction.



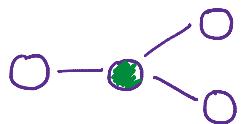
- Followers/ Following
- social Networking
- Dependency Resolution.

Adjacent Nodes: if two nodes $u \neq v$ are connected via an edge e , then nodes $u \neq v$ are called as Neighbours or Adjacent Nodes.

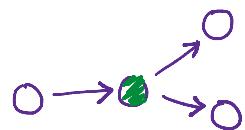


- 1 - 2 are adjacent
- 2 - 4 are adjacent
- 1 - 3 is not adjacent

Degree of a node: A degree of a node is the number of edges that are connected with that node.
→ A node with degree 0 is called Isolated node.



$$\text{Degree} = 3$$



$$\begin{aligned} \text{In-degree} &= 1 \\ \text{out-degree} &= 2 \end{aligned}$$