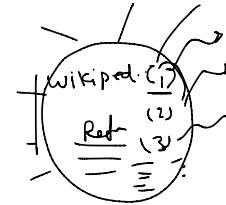
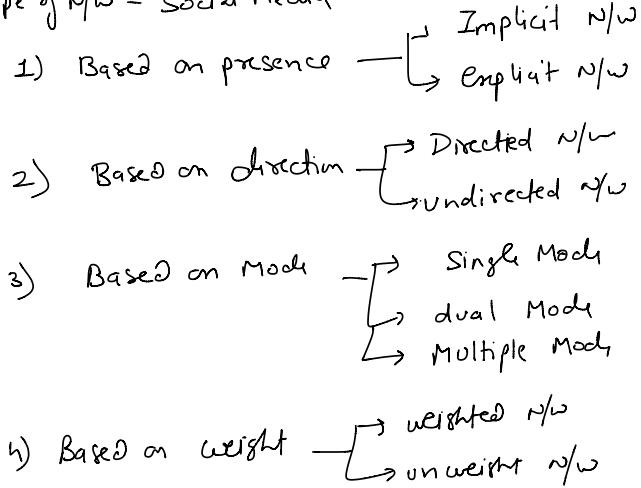


Type of N/w - Social Media



1) Based on presence :-

1) Implicit : - They are not terminated or hidden by default & must be intentionally constructed using special tool or technique.
ex - citation N/w, Hyperlink N/w etc.

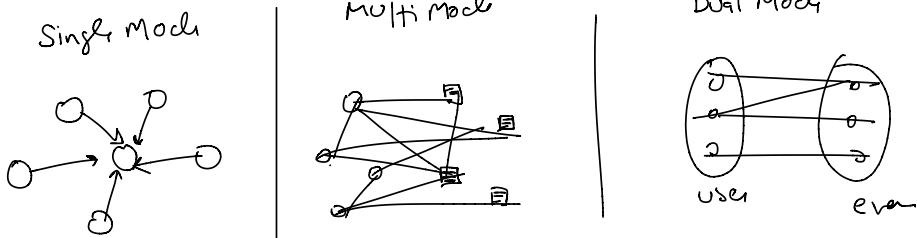
2) Explicit - Explicit Social N/w are present by default. In other words it is clearly designed for Social Media users to participate.
ex - fb N/w, twitter follow-follow N/w.
- yt subscriber N/w -

2) Based on Direction :

1) Directed N/w - A N/w with directed links between nodes is called directed N/w.
links are usually drawn with arrow to indicate the direction of relationship b/w nodes. ex - twitter, Insta.

2) Undirected N/w - In the undirected N/w the connection b/w nodes have no direction. The fb friends N/w is the example.

3) Based on Mode



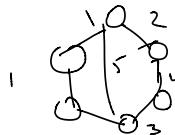
1) Single Mode :- A Single Mode N/w is formed b/w single set of peer nodes. The fb friends N/w is an example of one Mode

n/w when node from n/w connection

- 2) Dual Mod: A bimodal n/w is also called as bipartite n/w. It is n/w with 2 sets of different ~~etc~~ classes. In this n/w, network connectivity exist only betⁿ nodes belonging to different group.
- 3) Multimode \Rightarrow It is a heterogeneous n/w are interconnected. It can be viewed as a mix of 1-Mod & 2-Mod n/w

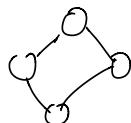
Based on weight:-

- 1) weighted n/w - The links betⁿ nodes are given a certain weight to indicate the strength of links betⁿ nodes.



Ex The relationship (connection)² betⁿ 2 friends (node) on fb. become stronger when more they communicate.

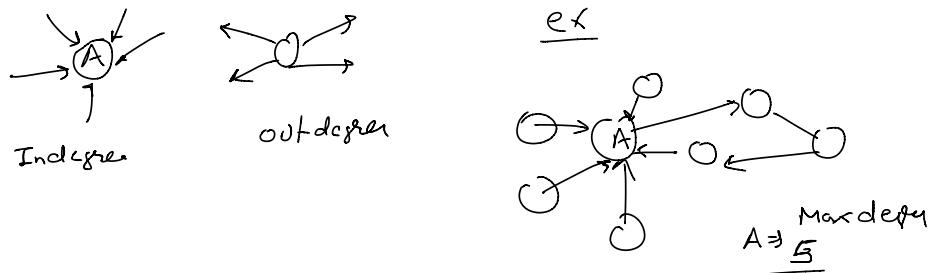
- 2) unweighted n/w - In this n/w links betⁿ nodes have no weight. links only indicate the existence of relationship, not its strength. It is easy to construct but may hide useful information



common n/w terminologies

- 1) Node level properties \rightarrow It is focus on node & its position in the n/w. Some important properties are degree centrality, betweenness centrality, eigen vector, & structural holes.

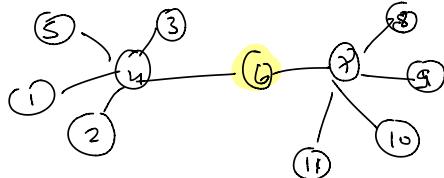
- (1) Degree Centrality - Degree centrality of node in a n/w measure the no. of links a node has to other nodes. In fb n/w, it will equate to no. of followers a user has. In the directed n/w, degree can be either In-degree or Out-degree. In-degree is the no. of incoming links can a node in n/w receives.



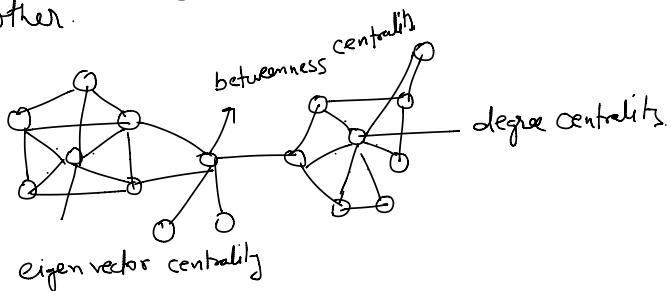
2) Betweenness centrality

The Nodes with High betweenness centrality have the ability to control or facilitate collaboration or flow of information due to their central position in the N/w.

ex - fb N/w, The user who occupy the central position are better positioned to control the flow of Social Media Content



3) Eigen vector centrality:- It measure the important of a Node based on its connection with other important Node in the N/w. It can provide an understanding of node's networking ability relative to that of other.

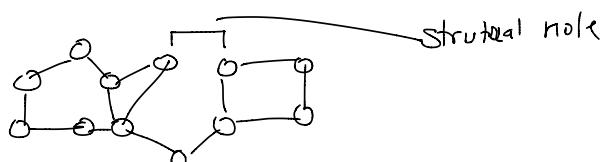


4) Structural hole :-

A Node that is connected to user who are themselves not directly connected has the opportunity to Mediate betⁿ them & profit from the mediation

- It is refer as empty space betⁿ contacts in a person N/w

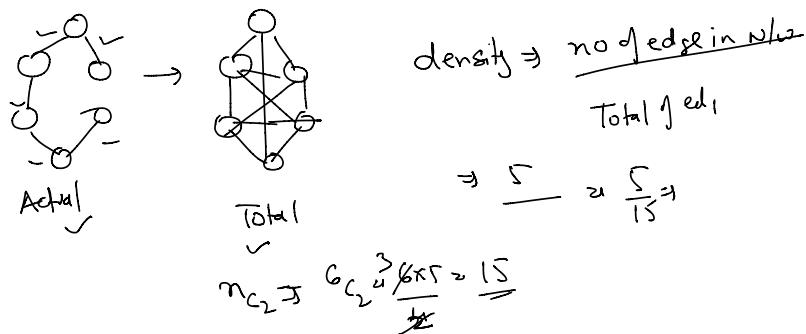
- It means that their contact do not interact closely



II N/W Level Properties → N/W properties provide insight into overall structure & health of a N/W. Important network properties are

1) clustering coefficient - The clustering coefficient of a N/W is the degree to which node in a N/W tends to cluster or group together. Clustering coefficient of N/W plays vital role to influence the behaviour of links prediction technique.

2) Density → (0-1)



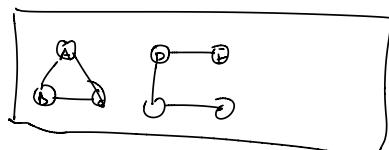
→ The Density of the N/W deals with a no. of link in N/W.

Density can be calculated as no of links present in a N/W.

N/W divided by no of all possible link bet' pair of Node in N/W.

→ A fully connected N/W in which each Node is connected to every other Node will have a density of 1.

2) Component → Component of a N/W are isolated sub N/W that connect within but are disconnect between. Subnetwork

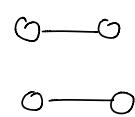
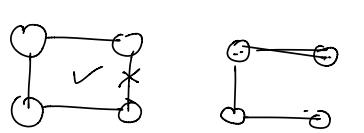


If it is connected component all the nodes are connected & ~~are~~ reachable but there is no path bet' a node in a component of other component

3) Diameter - The diameter of a N/W is the largest of all the calculated shortest path betw any pair of nodes in the N/W.

& it can be provide an idea of how long it would take for some information/idea/msg to pass through the N/W.

cliques Density of clique in 1. every node is connected to other nodes



Connected graph

Disconnected graph