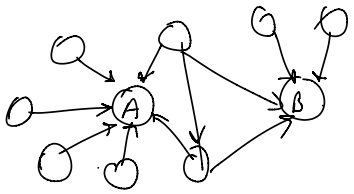
Common N/w terminologies

1) Node level properties :- Node level properities focus on one node & its position in the N/w. Some Important node properties include degree centrality, betweenness centrality, eigen vector centrality & structural holes.

1) Degree centrality :- Degree centrality of a node in a N/w measure the no. of links a node has to other node. In facebook N/w, for example it will equal to no of followers a user has. In a directed N/w, degree can be either In-degree or outdegree. In In-degree is the no of incoming links can ~~be~~ ei a node in N/w recives.

Ex- In Twitter N/w, the no. of person follow represent out degree of a node.

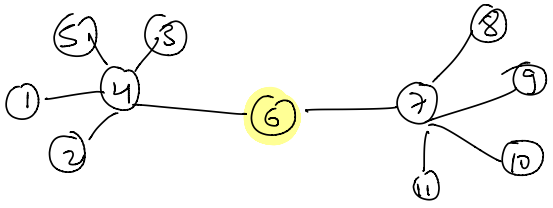
Max degree



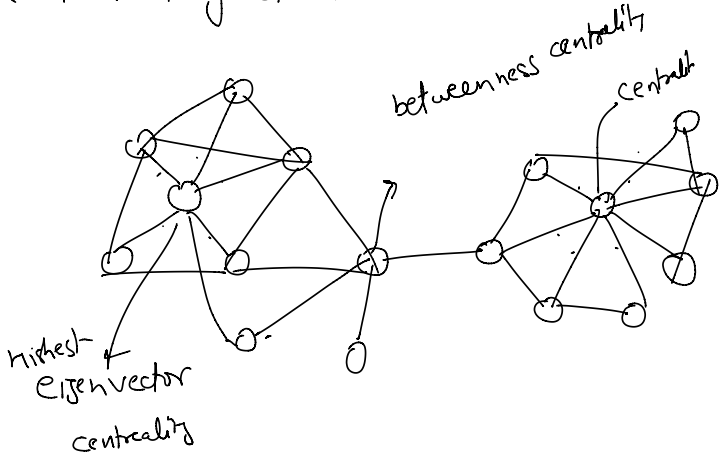
2) Betweeness Centrality

The node with high betweeness centrality have the ability to control or facilitate collaboration or flow of information due to their central position in the N/w

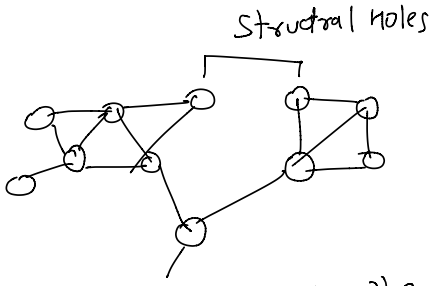
Ex- fb N/w, The user who occupy the central position are better positioned to control the flow of Social Media Content.



3) Eigenvector 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 N/working ability relative to that of others



4) Structural Holes



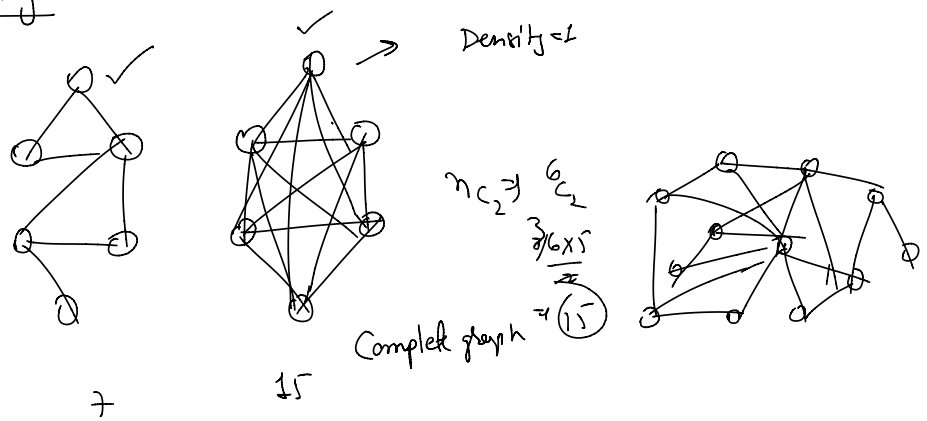
A node that is connected to users who are themselve not directly connected b has the opportunity to mediate betⁿ them & profit from their mediation.
- It is refer as empty space betⁿ contacts in a person N/w.
- It means that these contacts do not interact closely.

Network level properties: Network properties provide insight into the overall structure & Health of a N/w. Important net-level properies include clustering coefficient, density, diameter, Avg degree & Component

1) clustering coefficient :- The clustering co-efficient 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 link prediction technique

2) Density :- [0-1]



$\Rightarrow$ density $\Rightarrow \frac{\text{no of edges in N/w}}{\text{Total no of Possible edges in N/w}}$ $\Rightarrow \frac{7}{15} \Rightarrow 0.47$

The Density of the N/w deals with a no. of link in N/w. Density can be calculated as the no. of links present in a N/w divided by no of all possible links bet^n pair of Node in N/w.

$\Rightarrow$ To Calculate the no of all possible links in N/w $\Rightarrow n C_2 \Rightarrow \frac{n(n-1)}{2}$
Where n is no of node. in N/w.

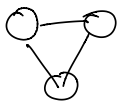
- A fully connected N/w. in which each node is connected to every other node will have a density of 1.

2) Components :- Component of a N/w are isolated sub N/w that connect within, but are disconnected bet^n veen, sub net.
In a Connected Component, all the node are connected & reachable, but ther is no path bet^n a node in the Component & any node not in the component

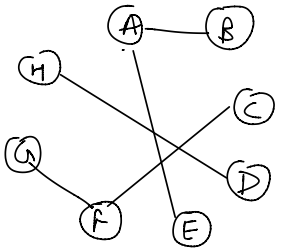
3) Diameter:- The diameter of a N/w is the largest of all the Calculated shortest path bet^n any pair of node in N/w. & it can provide an idea of How long it would take for Some information/ idea / MSG to pass through the N/w.

4) Average degree :- The average degree centrality measure the avg no of links among node in the N/w.

clique :- The numerator & denominator will be Same So the density will be 1. Therefore desity will be always 0 to 1.



Connectivity :- Connectivity is a count of Min no. of node that would have to be removed before the graph becomes disconnected. there is no longer path from each node to every other node



Ex- the connectivity is 1 bcz removing node B, C, or D would disconnect the graph, Since removing any one of those node disconnect the graph, the connectivity is 1

Trust N/w

Mutual Attribute Common, Common Interest