Lecture-01 and Lecture-02: Getting Started..

Week1 > Lecture 01 - Introduction (9 min) ---------- *on 31st July, 2021 ~ Saturday*[5]

Week1 > Lecture 02 - Answer to the puzzle (6 min) *on 1st August, 2021 ~ Sunday*[1]

Lecture_01

Started with 3 intuitive questions:

1. Is Obesity contagious?
2. How do you find your dream job?
3. Do you think a friend's friend has any influence on you?

and what does these questions has to do with *(Say) How Google works?*
Are there any commonalities in these..?? **YES**, that's what make this course "Social Networks".

Without further a do, lets start with a question..

> Sir shows a small video clip discussing about some gossip by two newly joined students of a college. (< week).
> At they end of the talk they reach to a conclusion that, one secret info known to one of the person out of two above yesterday, now he puzzles that when other friend tells about the thing, that only he and some close people only knows.
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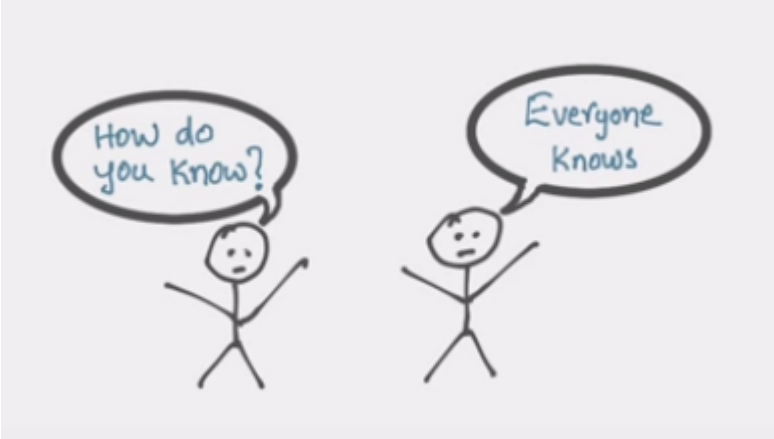
> 
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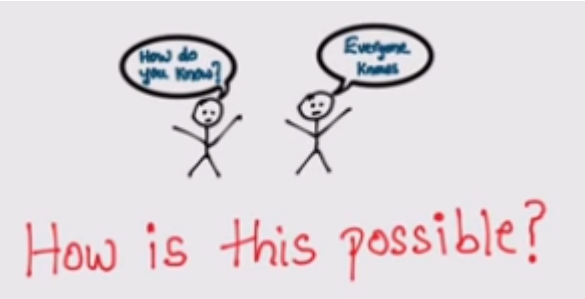
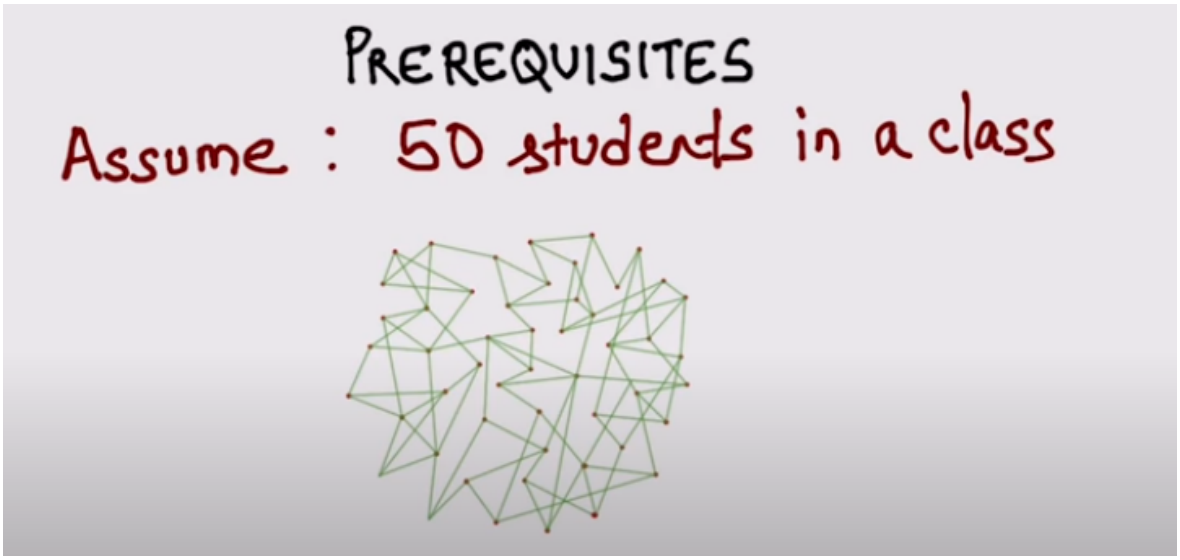
This dialog moves our further discussion in the course..as

How can it spread it so early, how is it possible? *-- To spread to all very soon, they all must be friends right..??, without being friends to each other, who will come and tell all about this In that less time, how it became possible?*



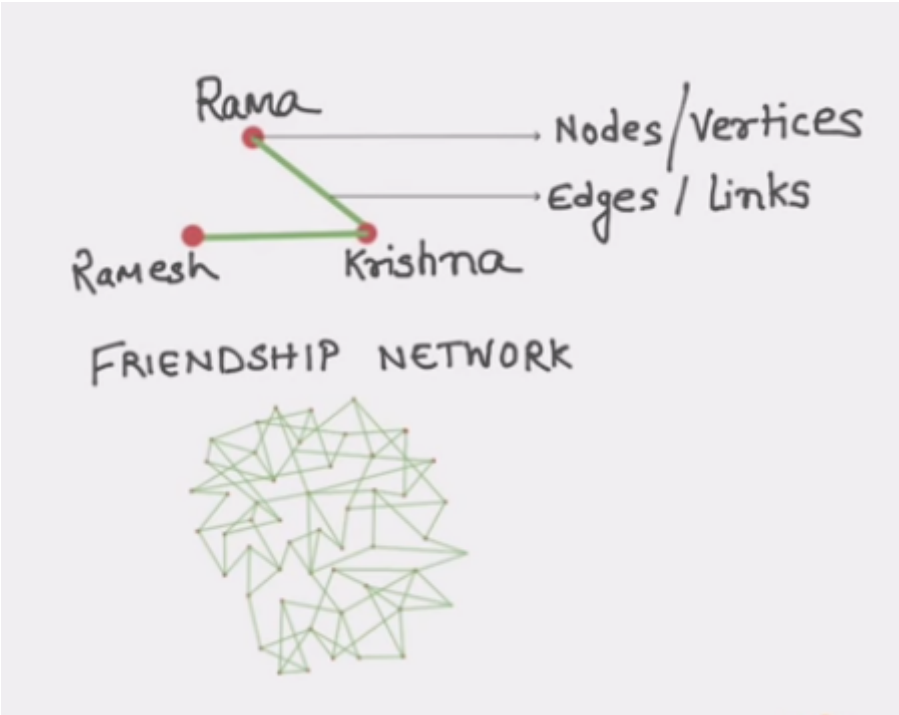
To analyse it, one need to develop some pre-requisites to answer the question.. come let's build it..

Let's assume 50 students were in the class..



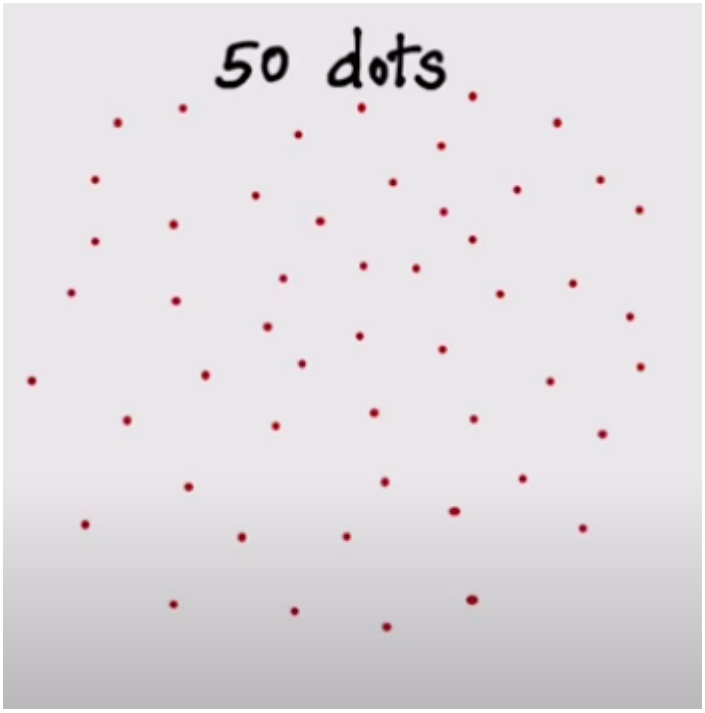
where each ***dot*** *represents a student, and a* ***connecting-line*** *denotes friend-ship between those.*

i.e., (say) three students Rama, Krishna and Ramesh. *Rama* and *Krishna* are friends, so there's a link, *Rama* and *Ramesh* aren't, so no line between those.

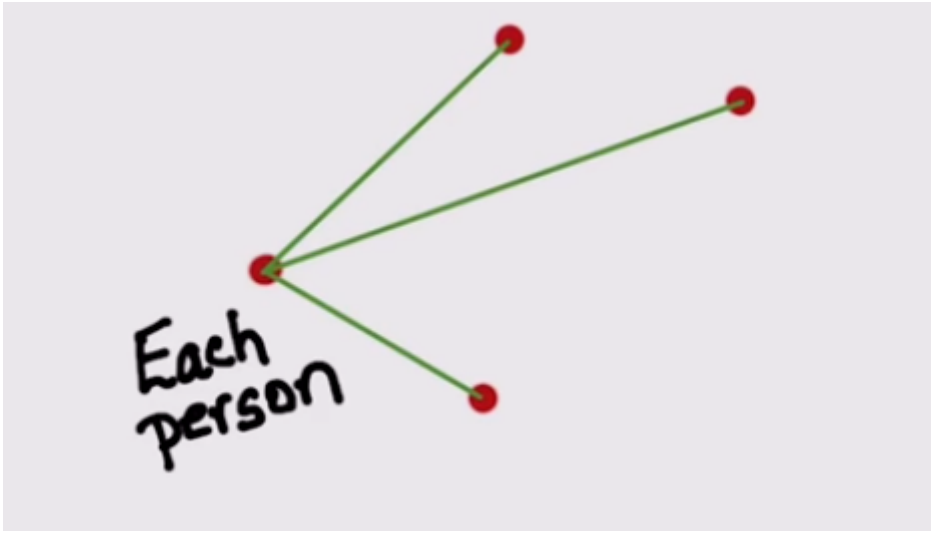


Also note the technical jargon/nomenclature)... from this

Let's do a small experiment and come back..
Say there are 50 students in the class, all are of newly joined ones.



Let's take a small guess, each one would have managed to have 3 friends (on average).
So pick a friend, and connect to 3 random dots.. *(Why 3?, as its beginning of college)*



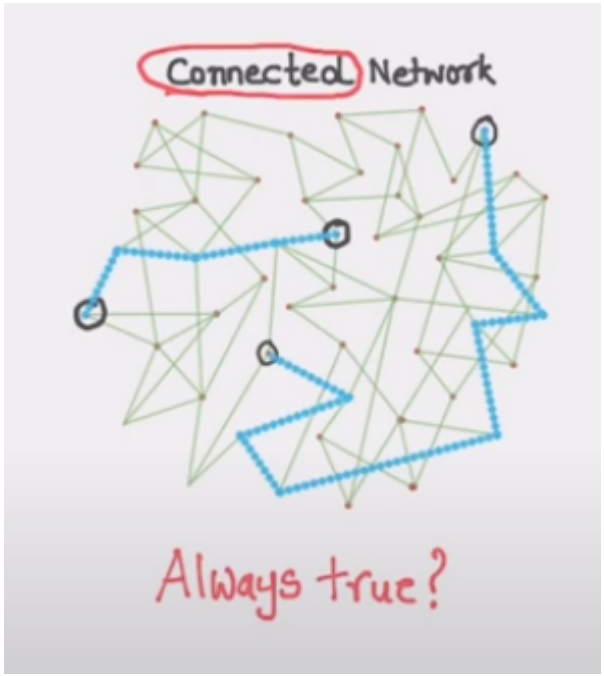
like

Repeating for all the dots, looks like:

Now, what do you observe here?

> All are connected

What do you mean by *Connected*?



> See, you take any two dots in the network, you can find some path between those. -- that's meant by connected.

But is this true always?

> Not always..
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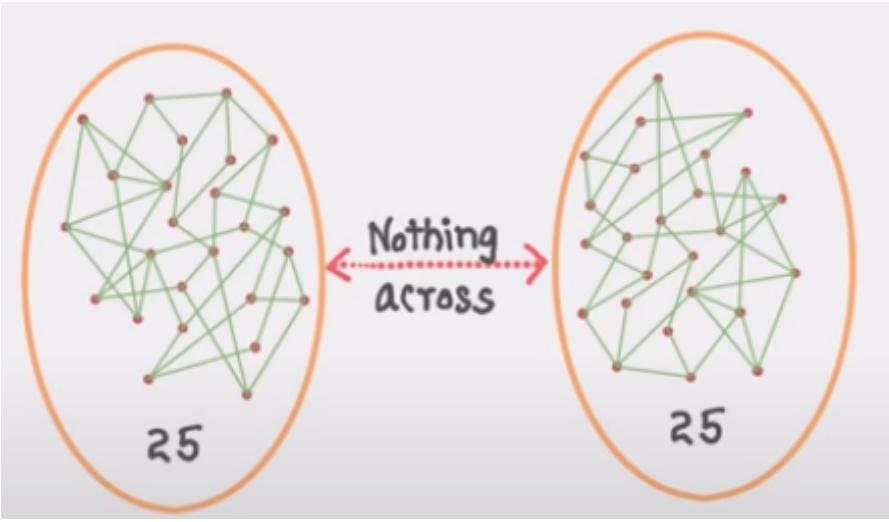
> 
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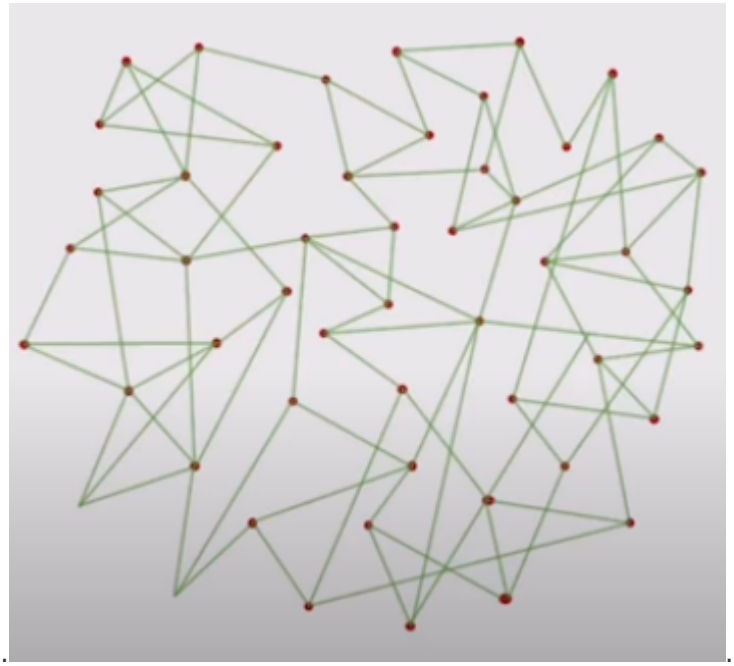
>
> It can happen like this, (say) a bifurcation can happen as 25 and 25 in 50.
> NOTE that, they are friends within that cluster and ***no friendship across.***

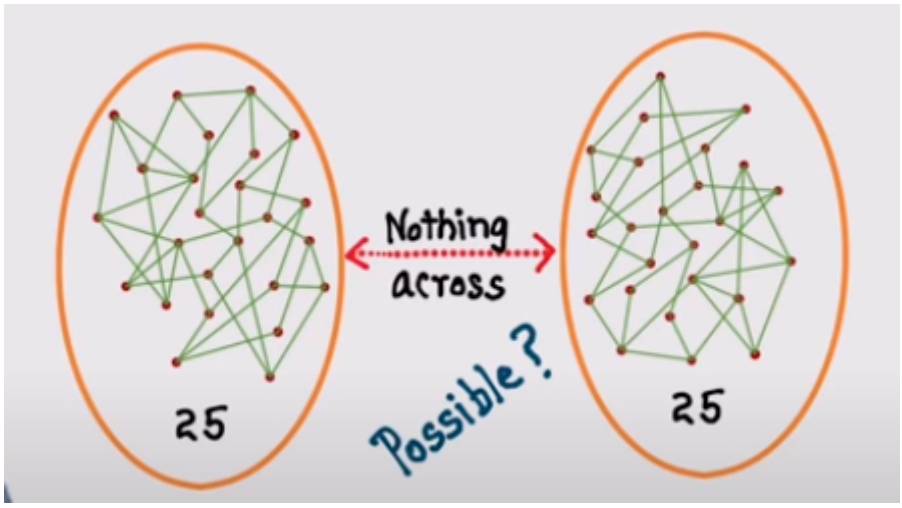
In this case, its called as **DisConnected** *Why?, as for some pair of dots from either of the clusters, no path*.

Summing up..

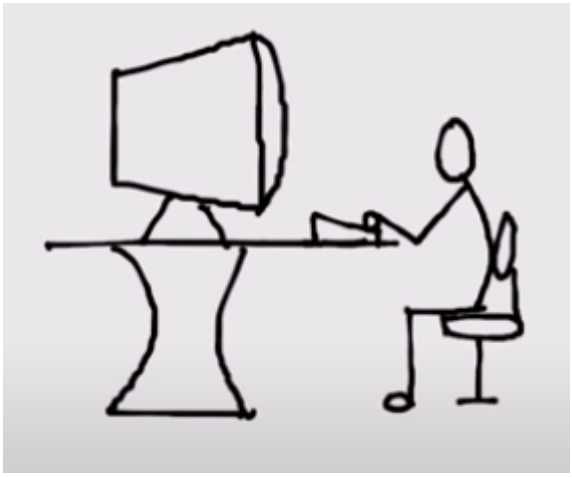
- On an average if made 3 connections for person, by picking the three people uniformly at random, the graph gets connected *(as in the below figure)*.



- Now the question arises.. **Is this possible always..?**



Now sir, goes to write the program and make an obsevation from it..

 and share the results with us.

Lecture_02