

Lec22 Datasets: Analysing using gephi

- Gephi is written in Java

Overview Tab

- we can manually change the position of nodes
- Noverlap layout is used to avoid overlapping of nodes
- Ranking of nodes can be done based on the degrees and differentiated either by color or size
- **Statistics tab** : average degree, average weighted degree, density, diameter, modularity, page rank, connected component, clustering coefficient,.....

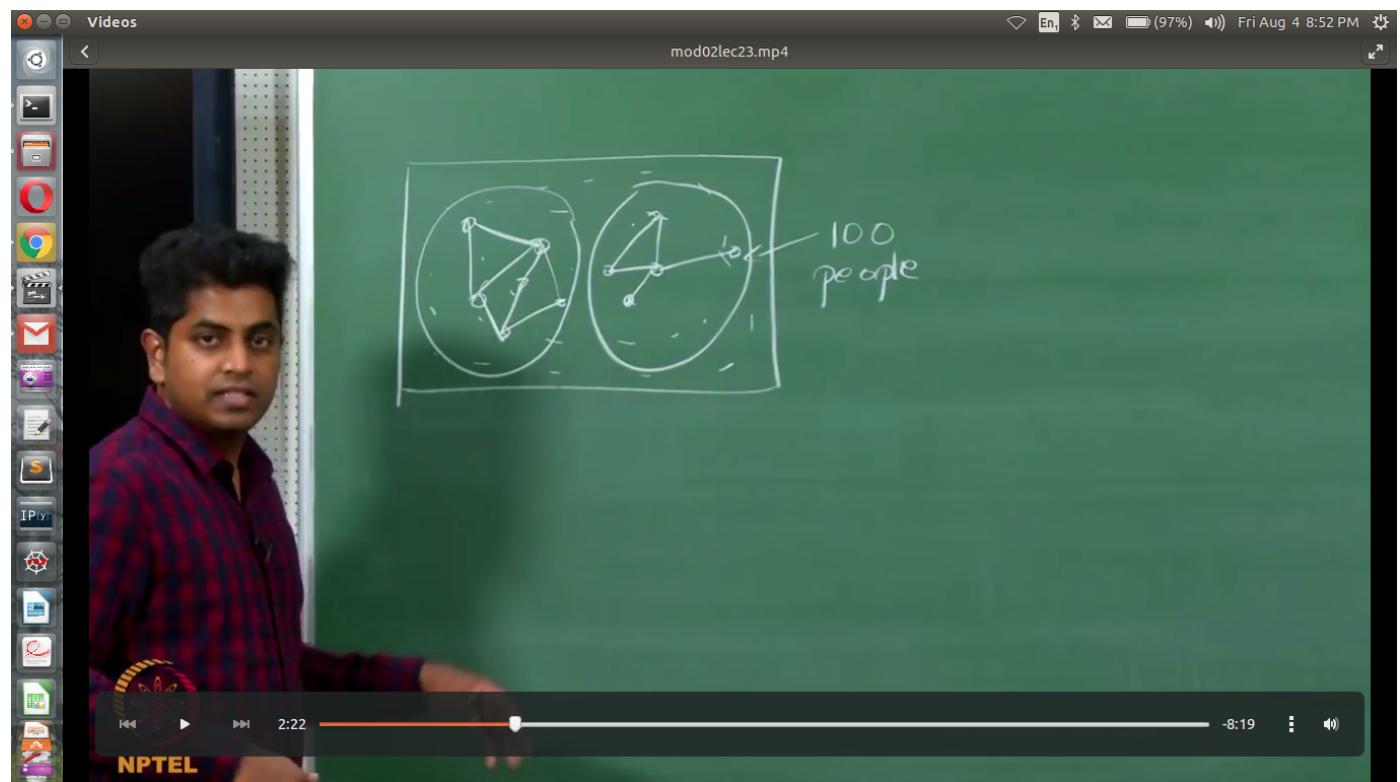
Data Laboratory Tab

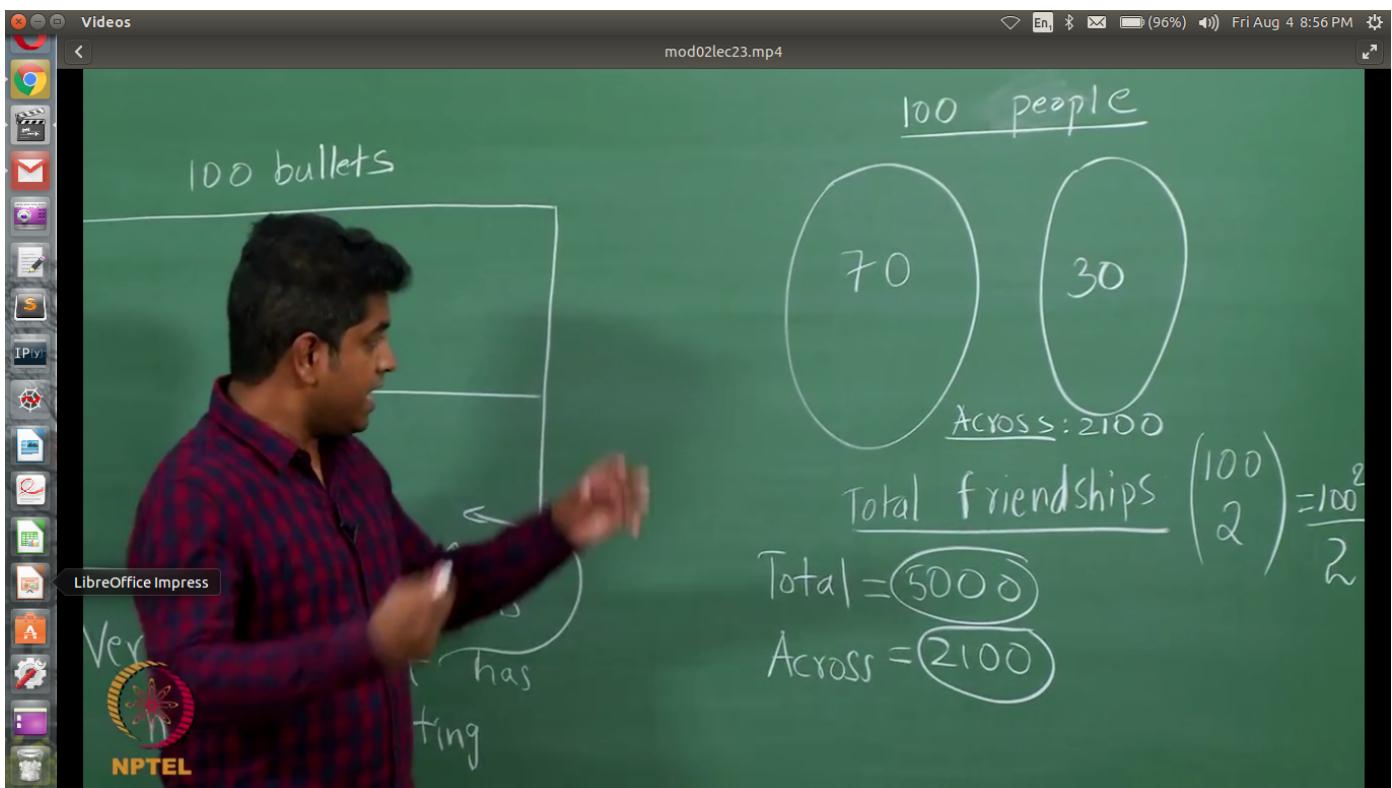
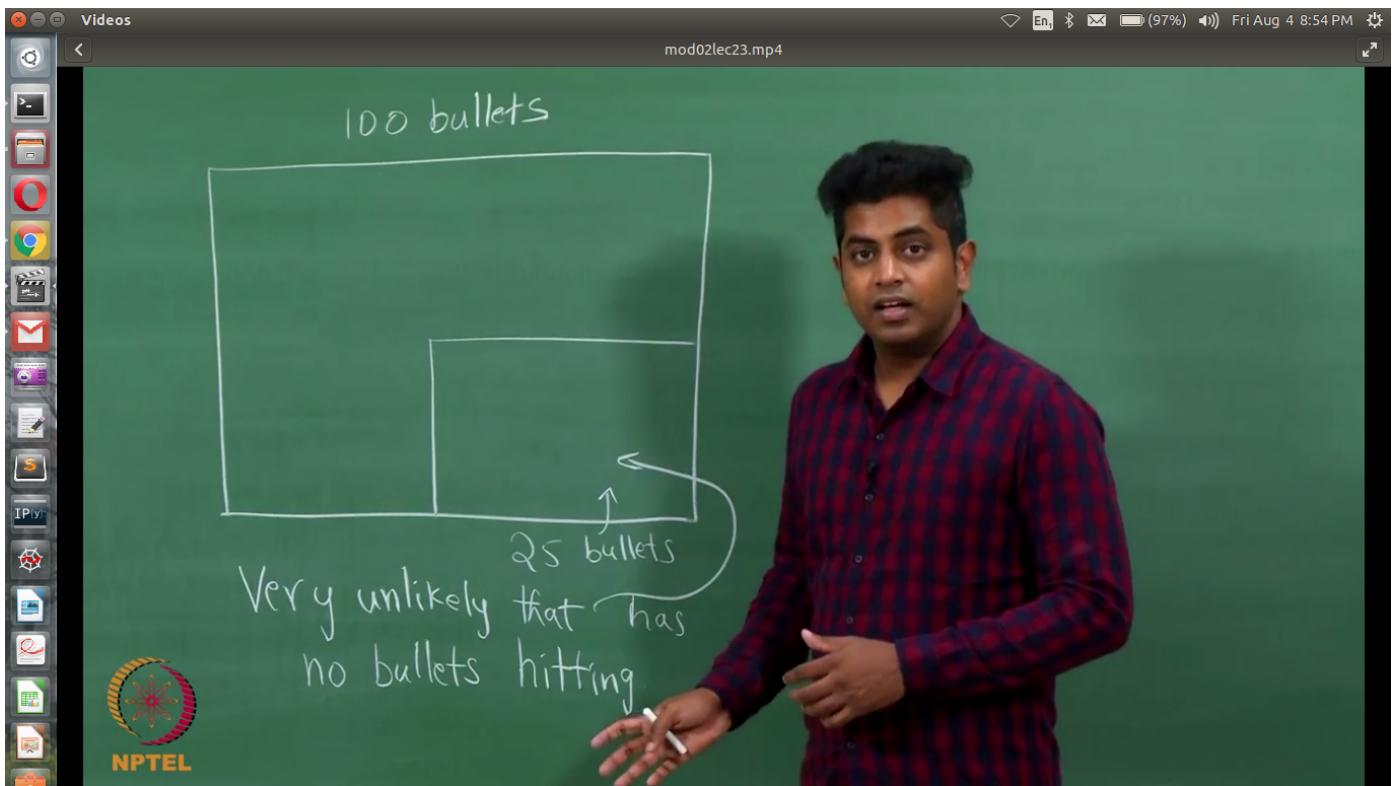
- Shows data in the tabular format

Preview Tab

- Large graph with the beautiful layout
- click Refresh to get the new rendered graph

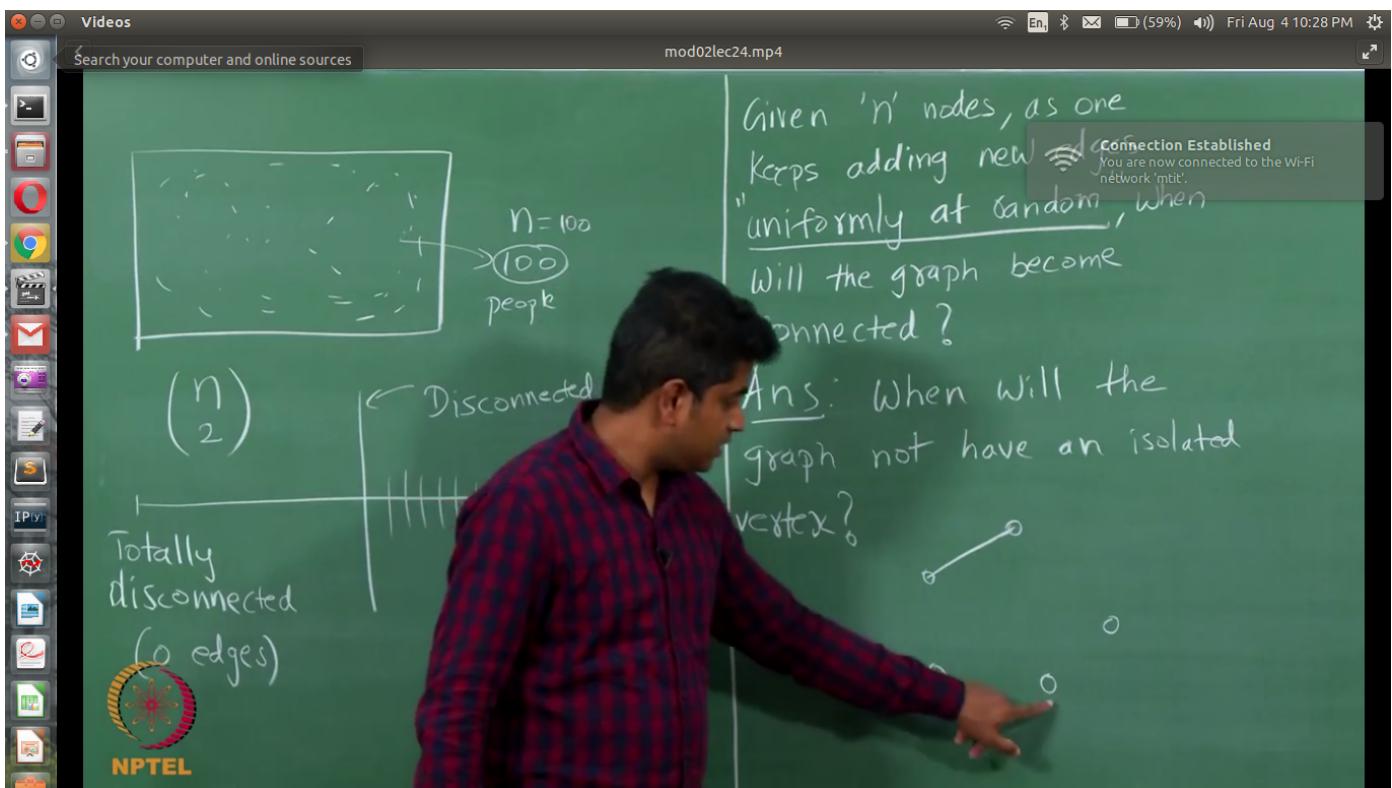
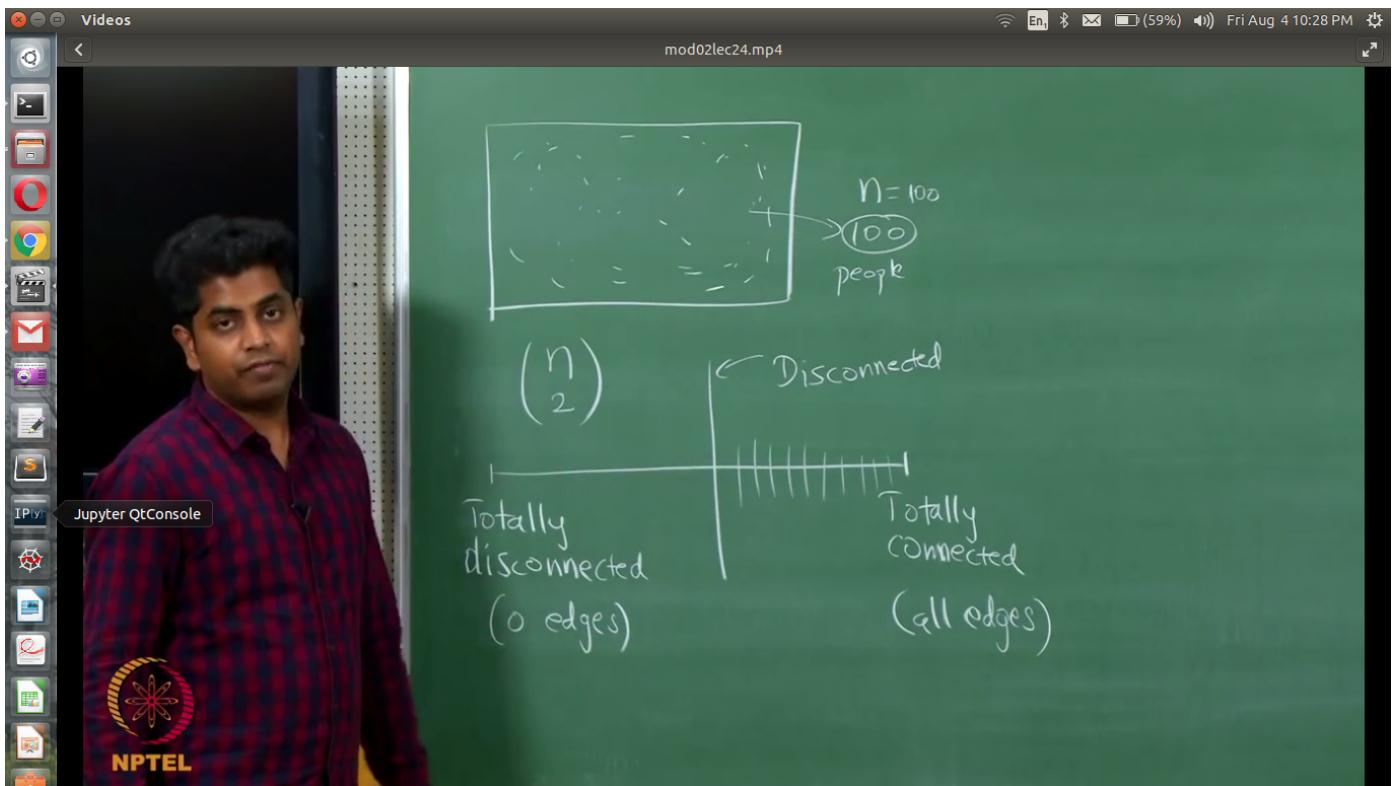
Lec23 Introduction : Emergence of connectedness

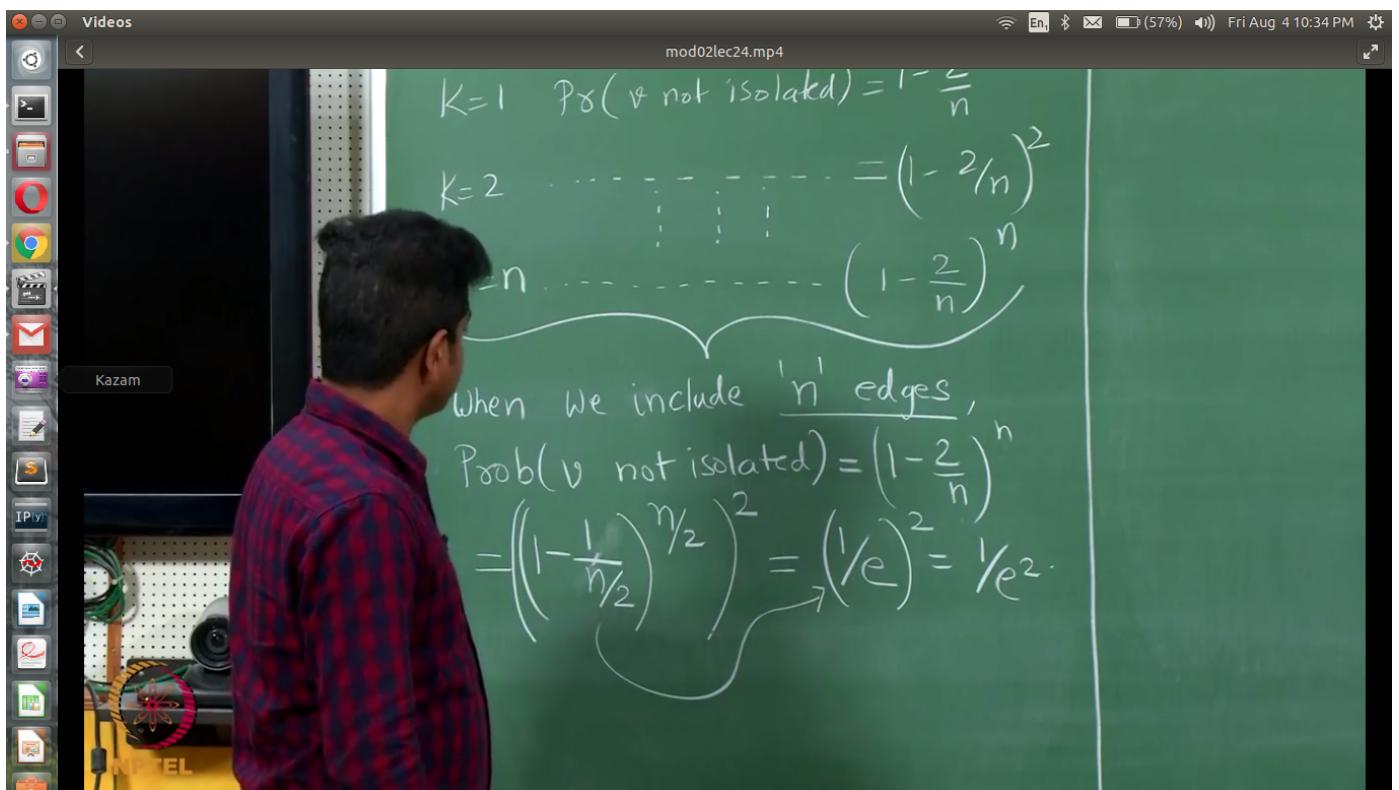
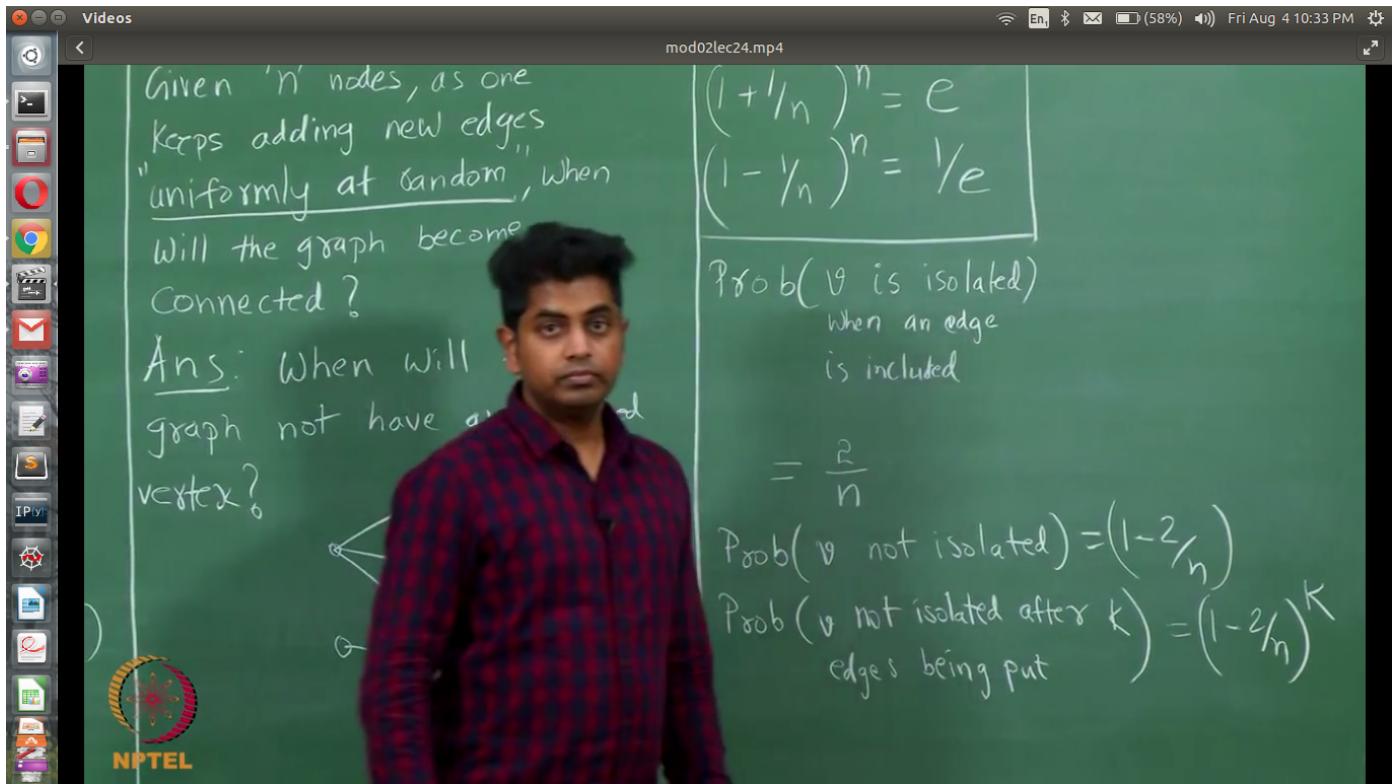




Lec24 Advanced : Emergence of connectedness

Refer notes in MOOC diary





Videos mod02lec24.mp4 Fri Aug 4 10:34 PM

$K=1 \quad \text{Prob}(\text{v not isolated}) = 1 - \frac{2}{n}$

$K=2 \quad \dots \quad = (1 - \frac{2}{n})^2$

$K=n \quad \dots \quad = (1 - \frac{2}{n})^n$

When we include n edges, $\text{Prob}(\text{v not isolated}) = \left(1 - \frac{1}{n/2}\right)^{n/2}$

$K=n \log n$

$\text{Prob}(\text{v not isolated}) = \left(1 - \frac{1}{n/2}\right)^{n/2} \approx \log n$

$= \left(\frac{1}{e^2}\right)^{\log n} = \left(\frac{1}{e^{\log n}}\right)^2$

$= \left(\frac{1}{n}\right)^2$

Prob of v becoming isolated after including $n \log n$ edges is

100 nodes & is isolated after 100 \log_{10} edges

$\frac{(1 + 1/n)}{(1 - 1/n)}$

$\text{Prob}(\text{v is isolated}) = \frac{1}{10,000}$

$\text{Prob}(\text{v is isolated}) = \frac{1}{10,000}$