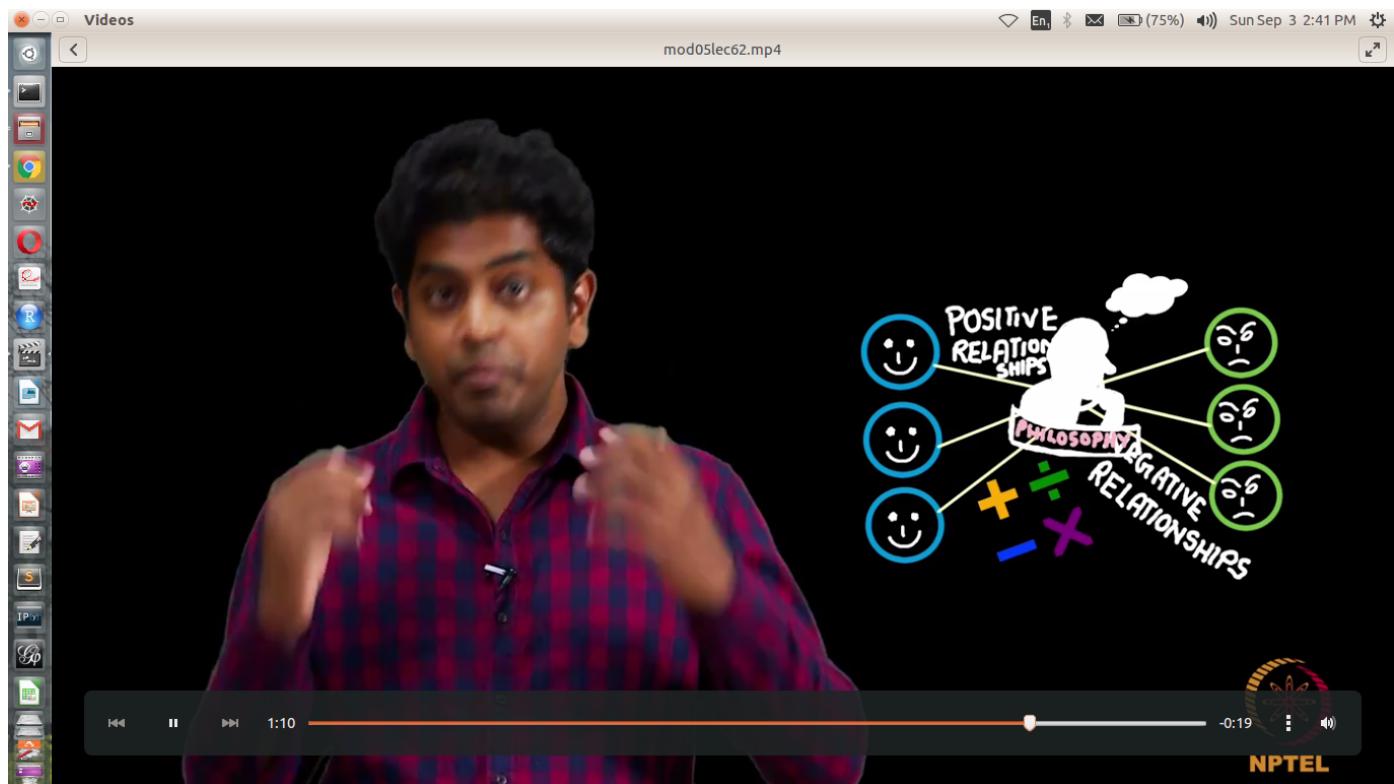
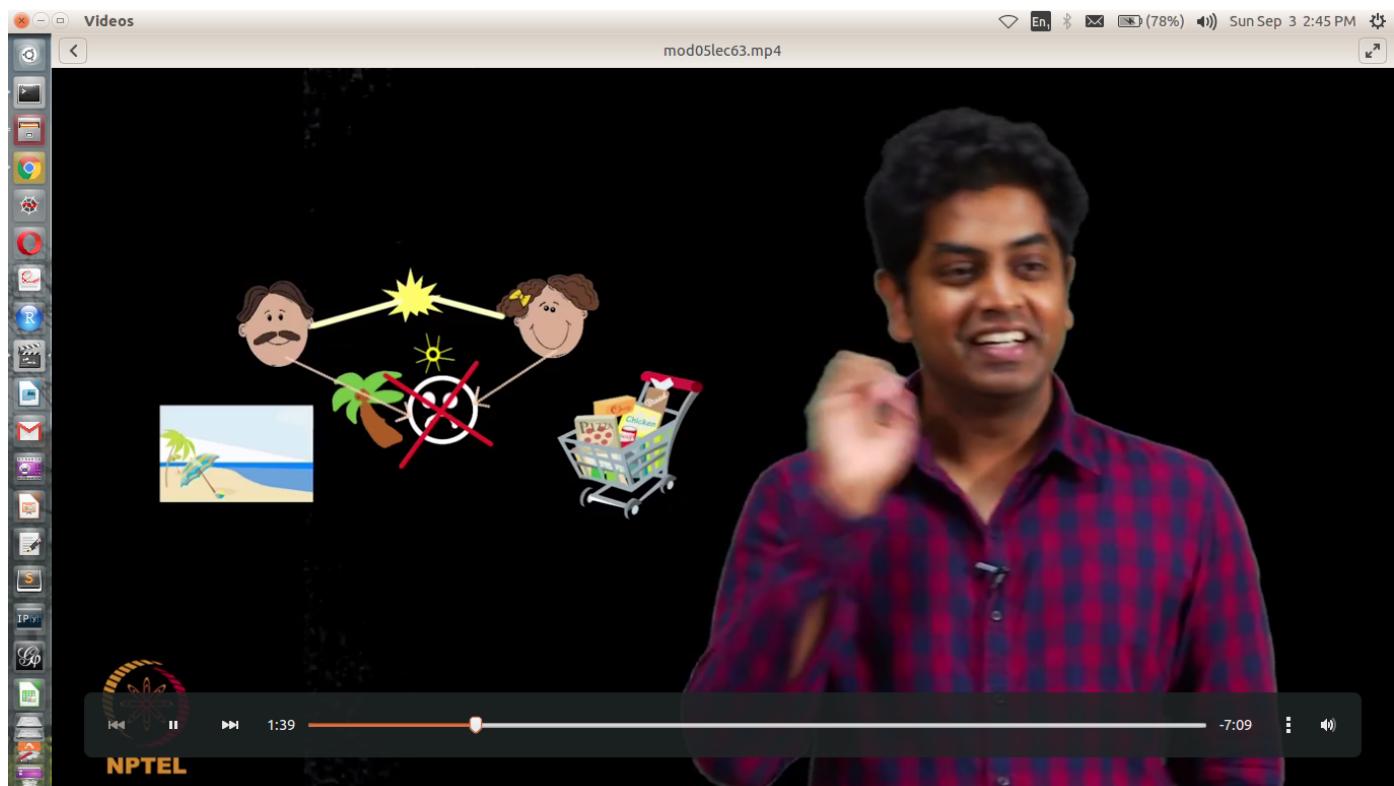
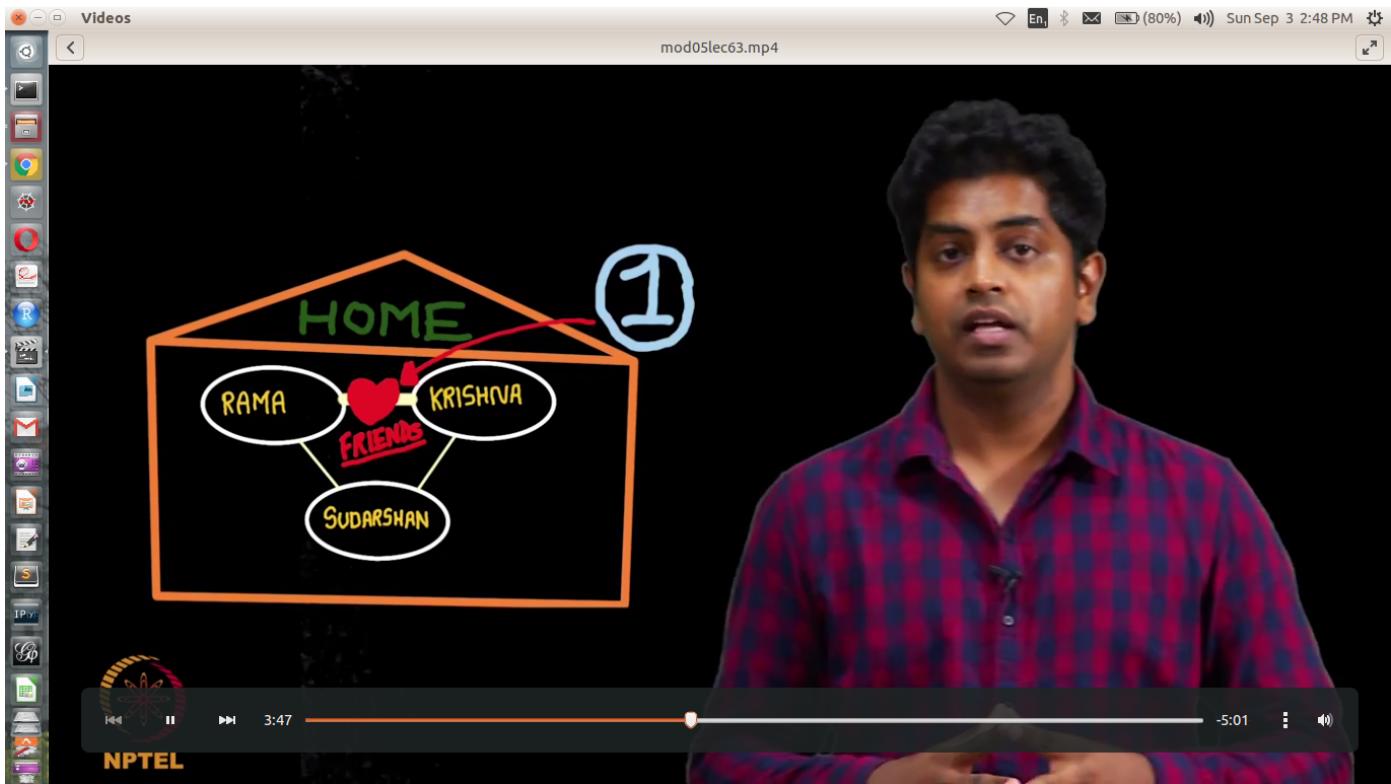


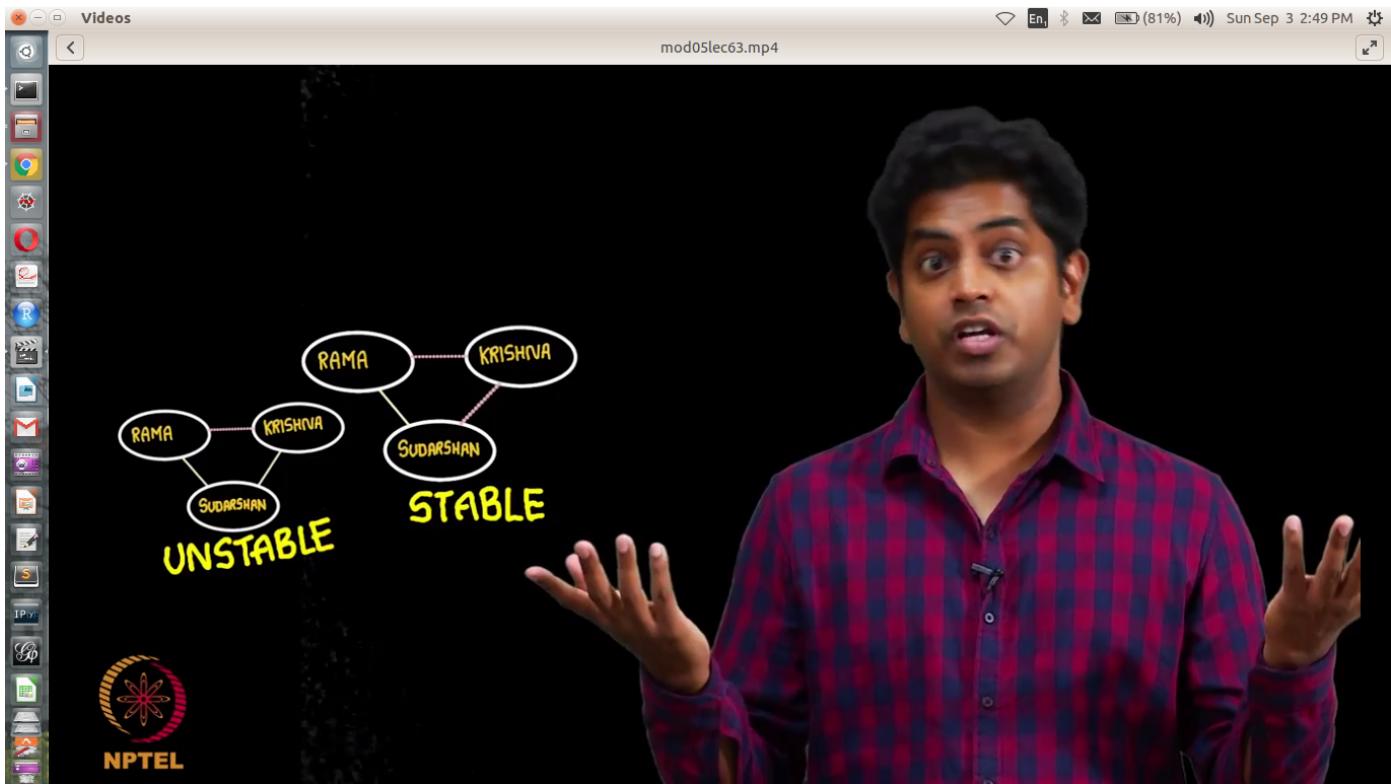
Lec62 +ve and -ve relationships : Introduction



Lec63 +ve and -ve relationships : Structural Balance





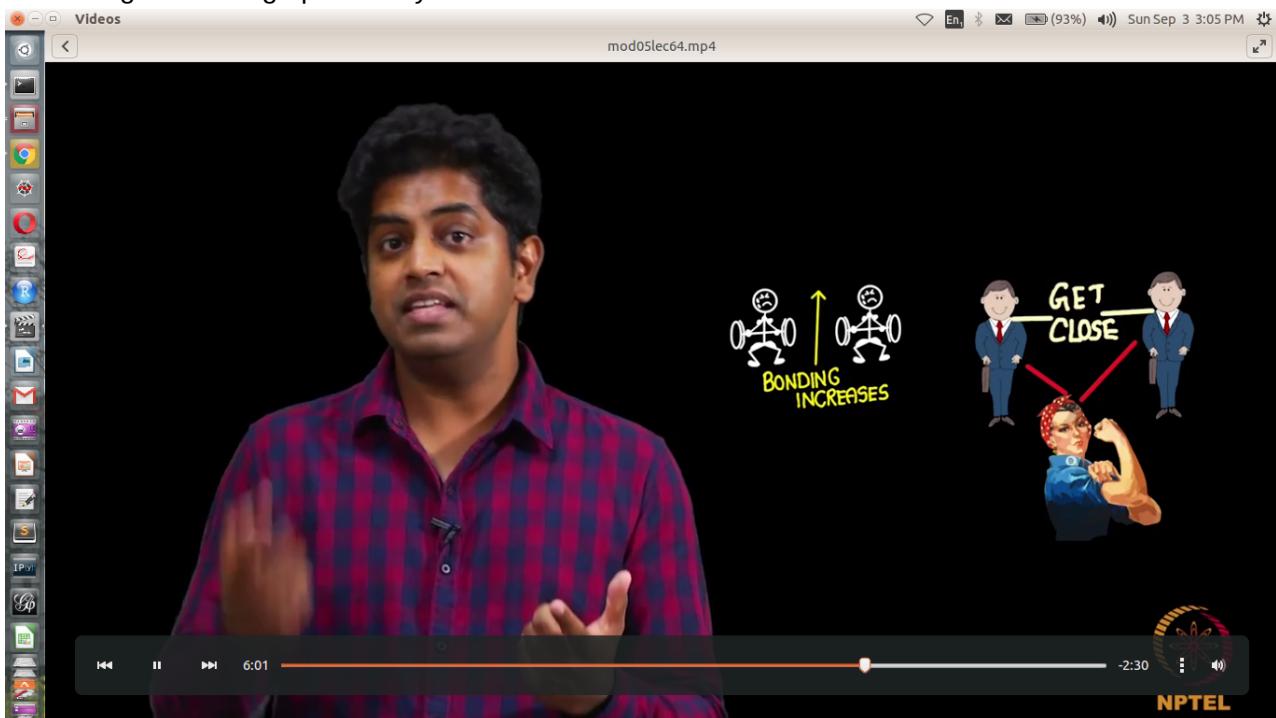


Consider 3 friends A, B, C

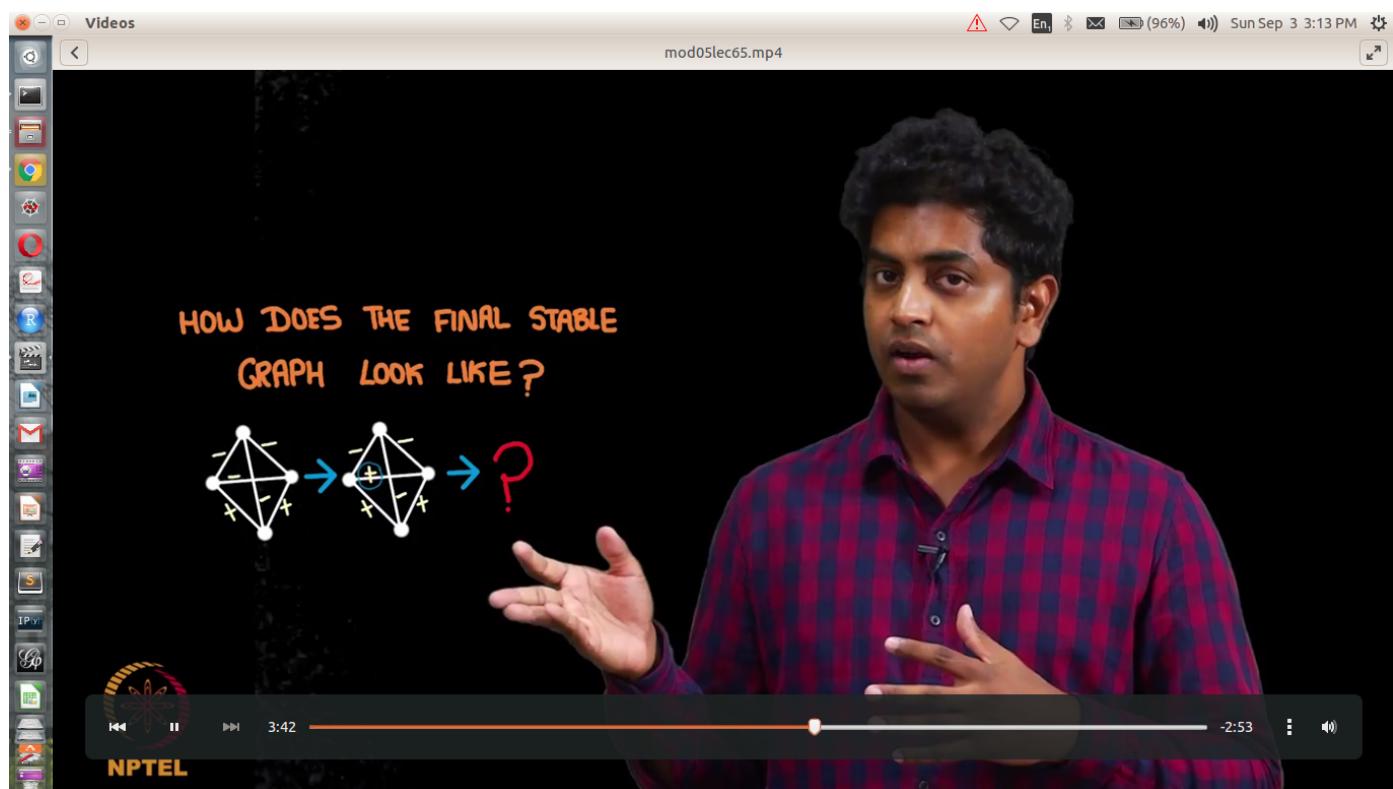
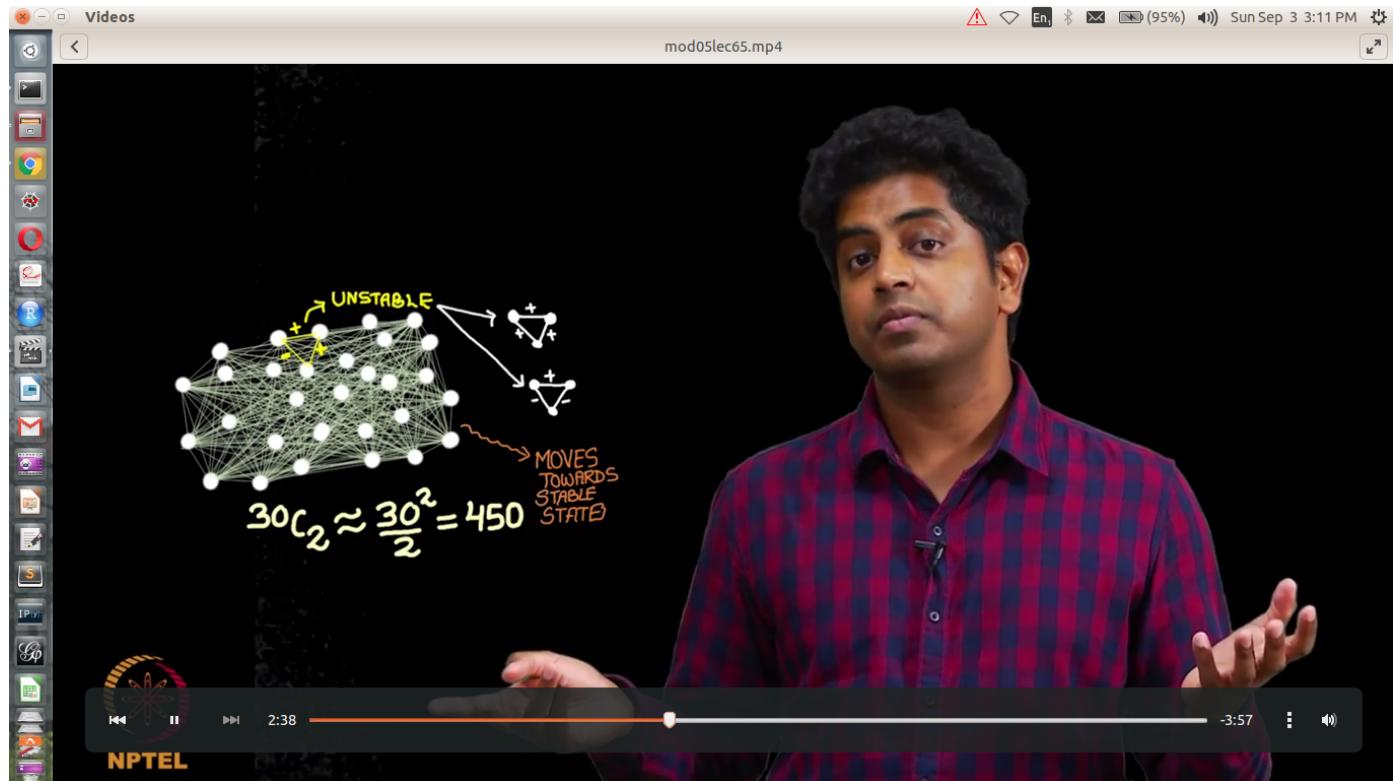
- case 1 : 3 friendships -> stable
- case 2 : 2 friendships and 1 hatred -> unstable (Results in atleast one friendship breakup or to case1)
- case 3 : 1 friendship and 2 hatreds -> stable (will continue like this..)
- case 4 : 3 hatreds -> unstable (Enemy's enemy is a friend)

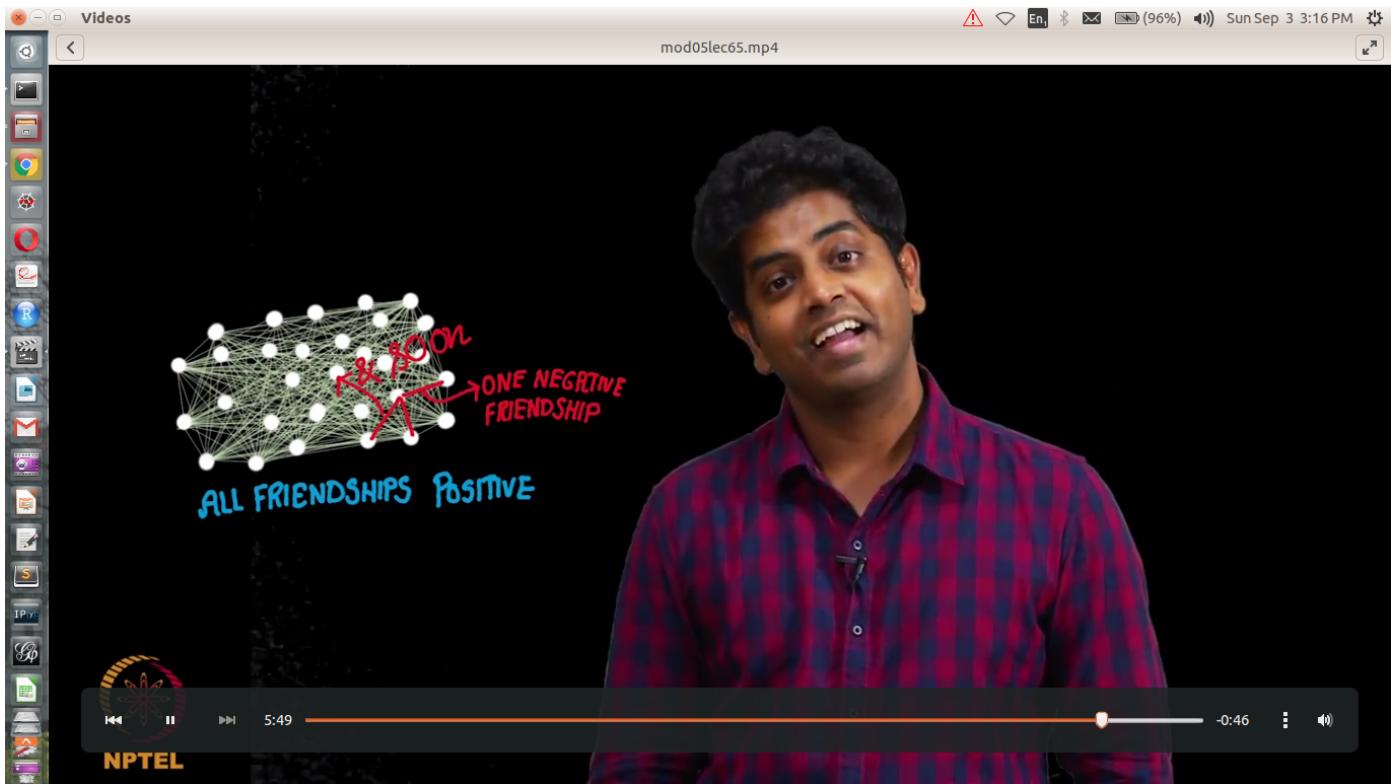
Lec64 +ve and -ve relationships : Enemy's enemy is a friend

- Struggling together increases the friendship bond
- Sweat Together -> high probability of LOVE :P

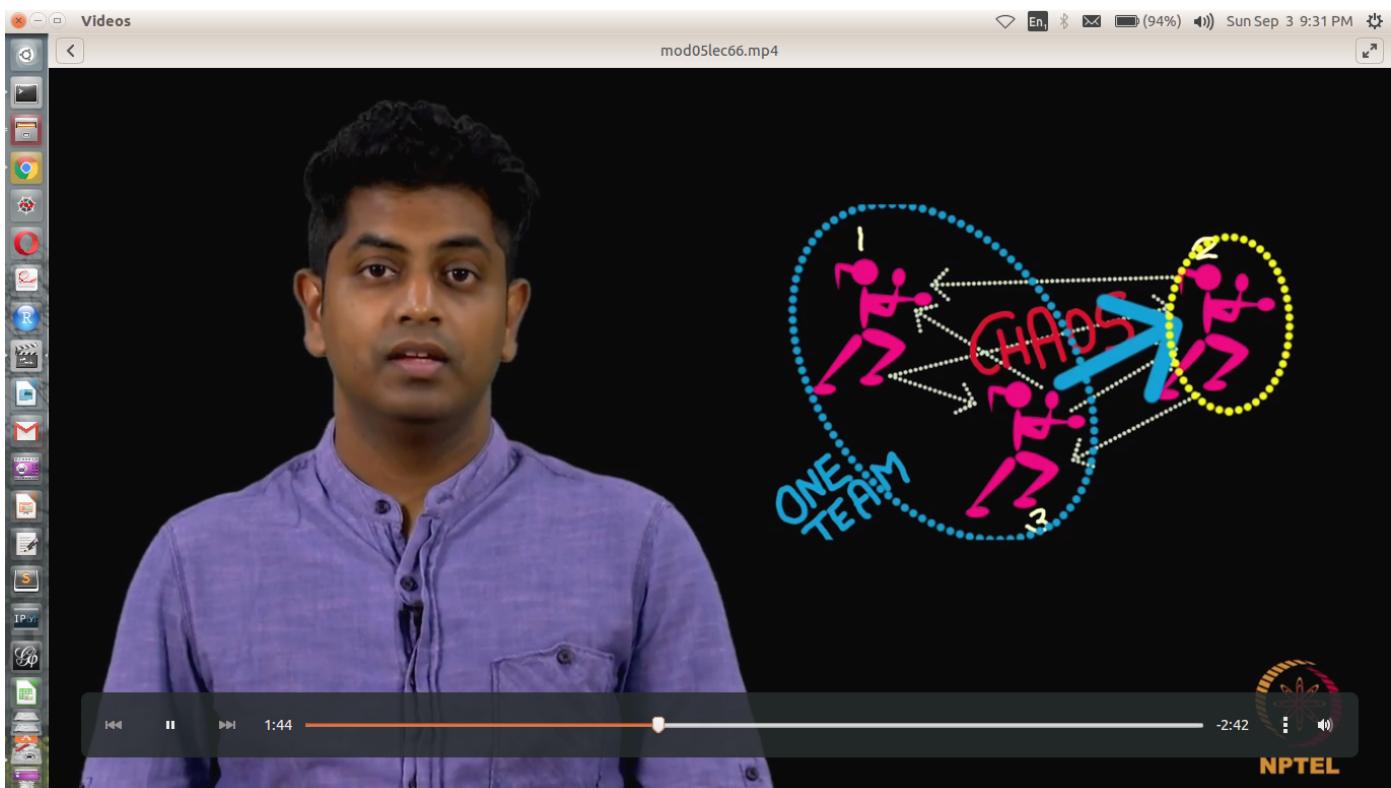


Lec65 +ve and -ve relationships : Characterizing the structure of balanced networks





Lec66 +ve and -ve relationships : Balance Theorem

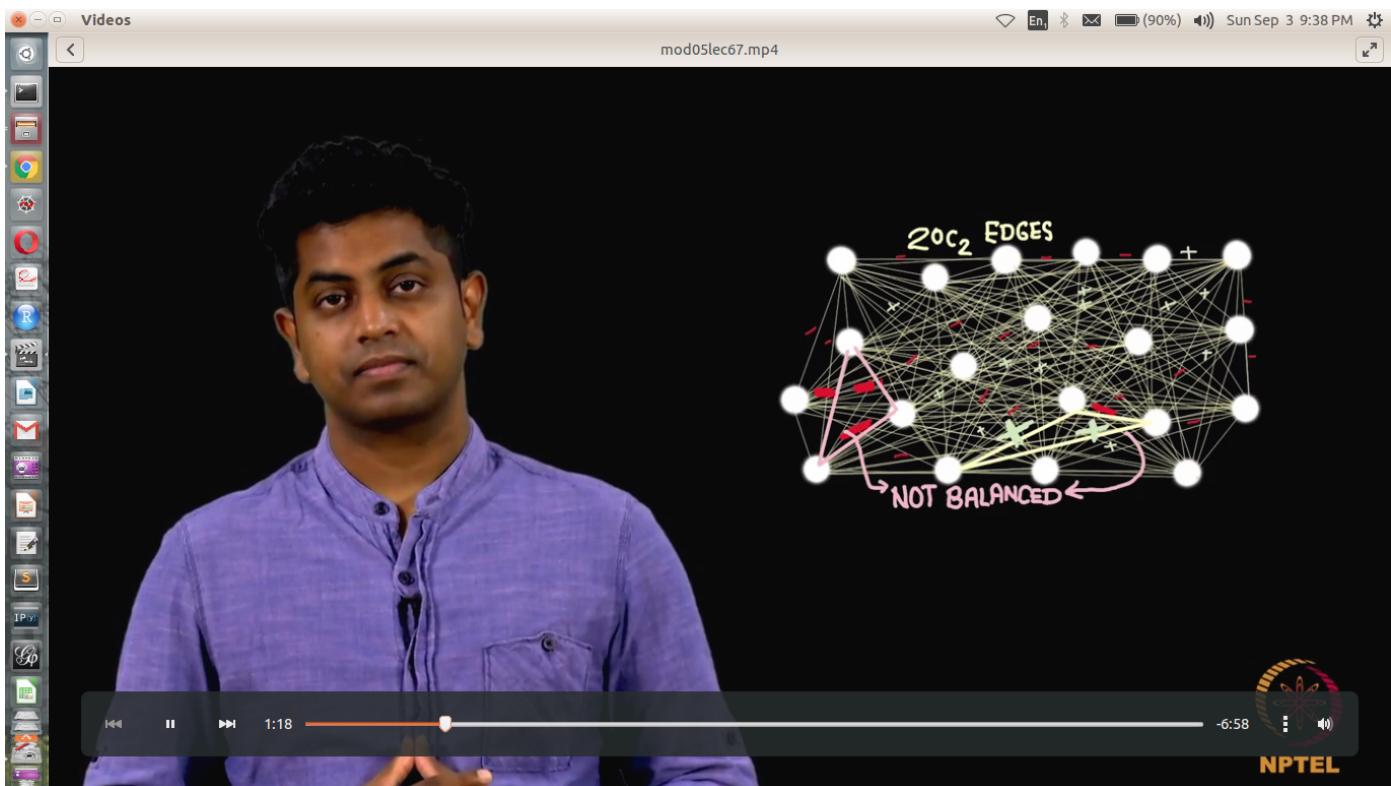




- In a boxing ring of 4 players in which each has to fight with all others, there will be the evolution of 2 teams due to chaos(4 -> 3 teams -> 2 teams) [E->E is a friend]

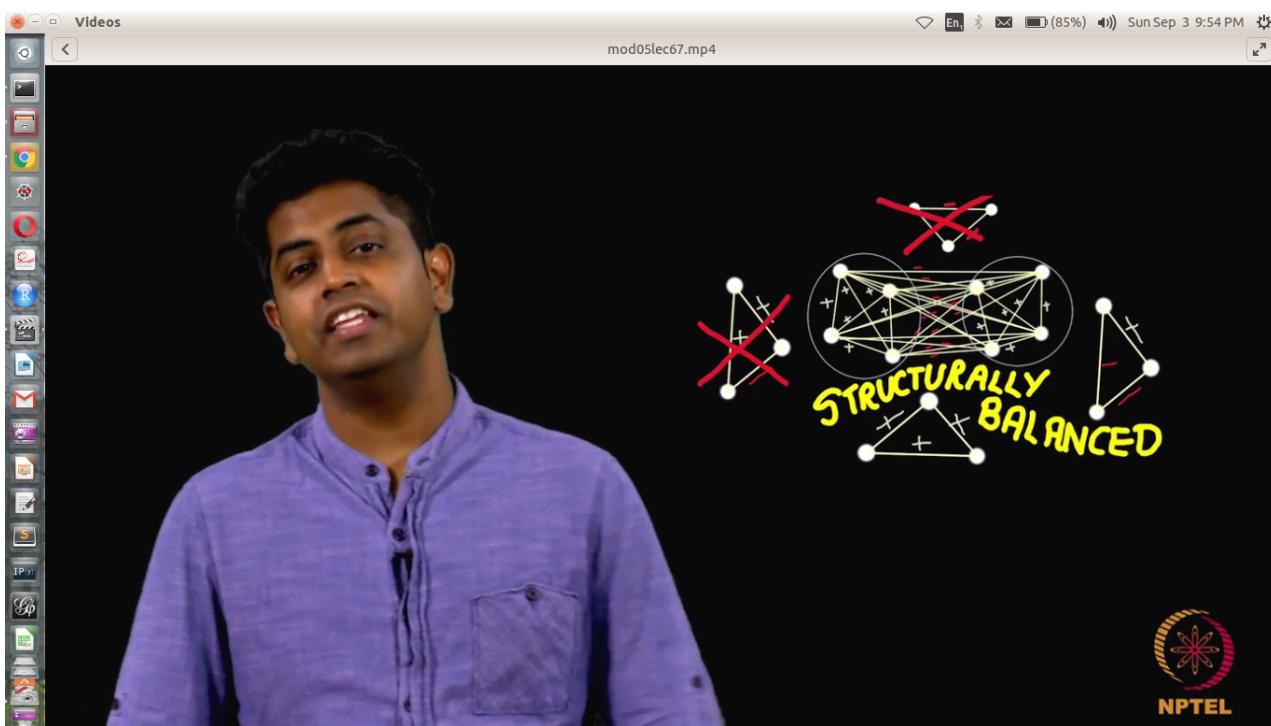
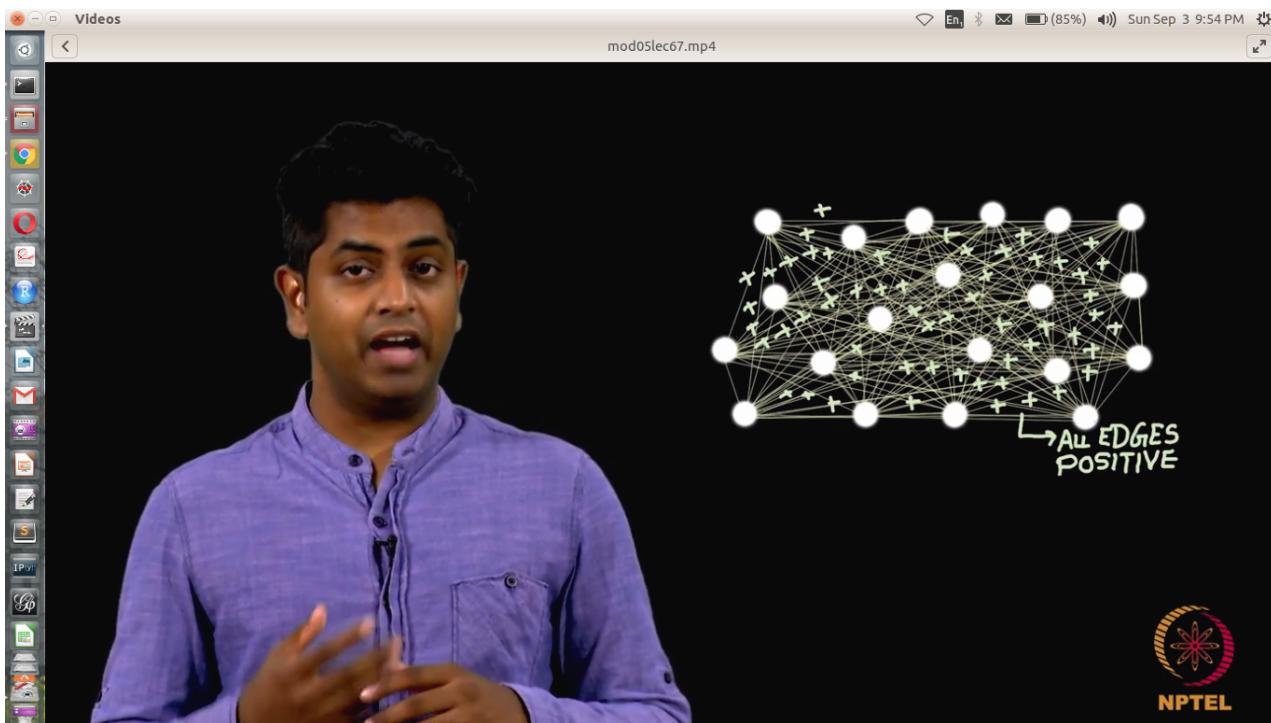
Lec67 +ve and -ve relationships : Proof of Balance Theorem

Structurally Unbalanced Graphs



Structurally Balanced Graphs

- Either All +ve or two clusters(2-ve and 1+ve)



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THEOREM

ONLY 2 POSSIBLE STRUCTURALLY EQUIVALENT CONFIGURATIONS:

ALL PLUS

INTRA GROUP PLUS & INTER GROUP MINUS

NPTEL

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UNSTABLE

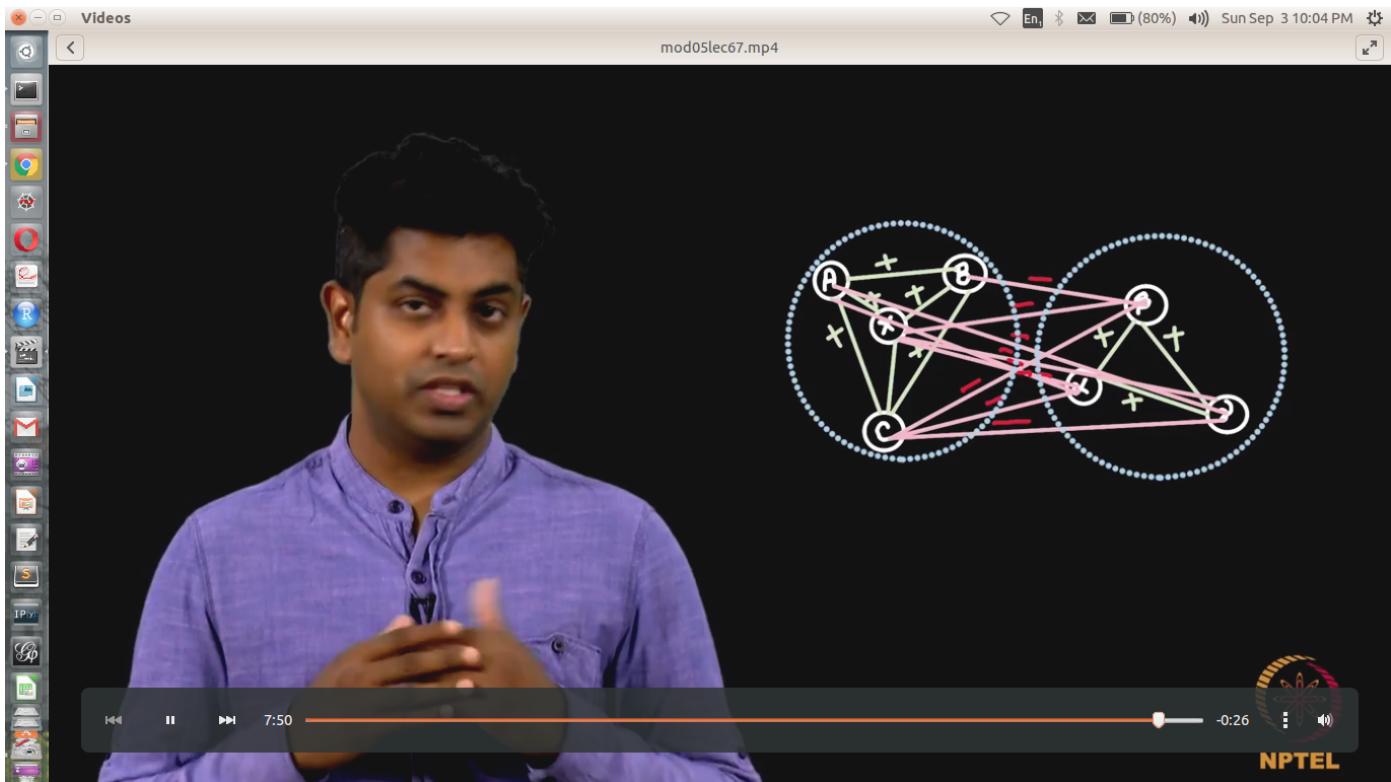
UNSTABLE

(-)

29

70

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Lec68 +ve and -ve relationships : Signed Networks

Stable Triangles

Three Mutual Friends (3 +ve's)

(1)

Two friends with a common enemy (1 +ve)

(2)

'The friend of my friend is my friend'

"The enemy of my enemy is my friend" (A for B)
 "The enemy of my friend is my enemy" (B for C)
 "The friend of my enemy is my enemy" (C for A)

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