NPTEL

NPTEL ONLINE CERTIFICATION COURSE

Discrete Mathematics
Graph Theory - 1

Trail

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Let me consider the same graph which I had used in the previous video,
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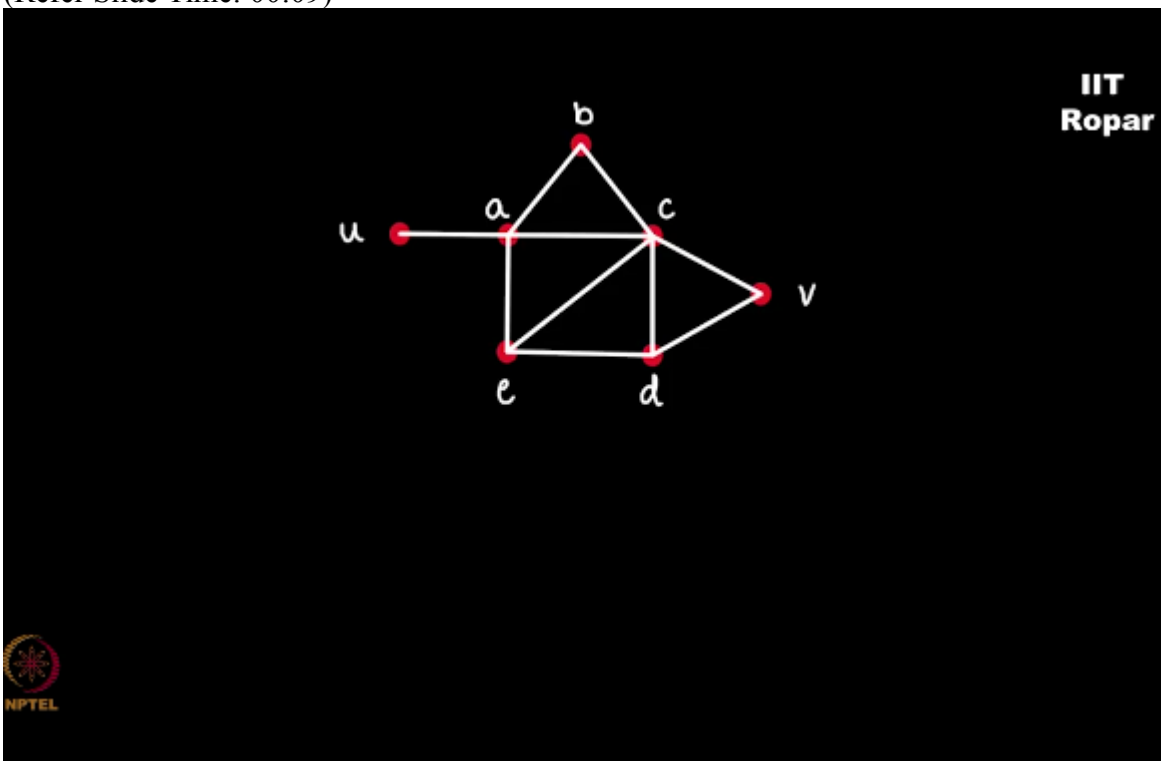

now I bring in the constraint here, what if I see that you cannot go through a edge, you cannot go through an edge more than once,
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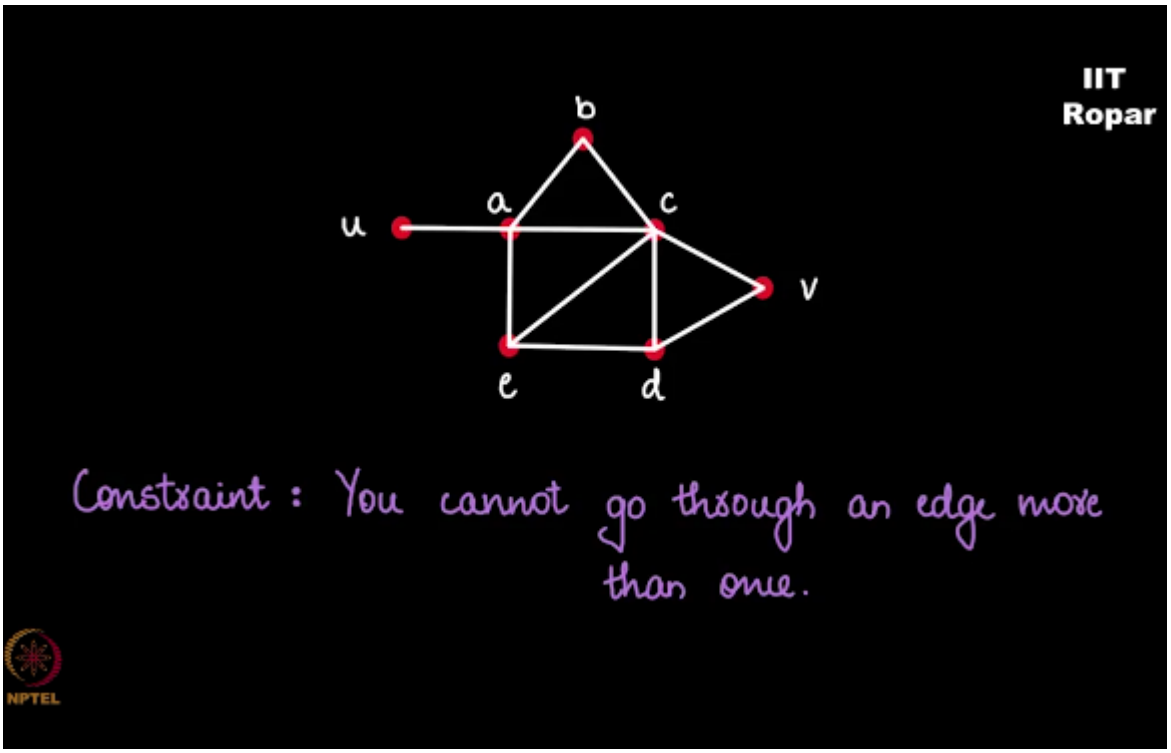

you cannot repeat an edge, but you can repeat vertices

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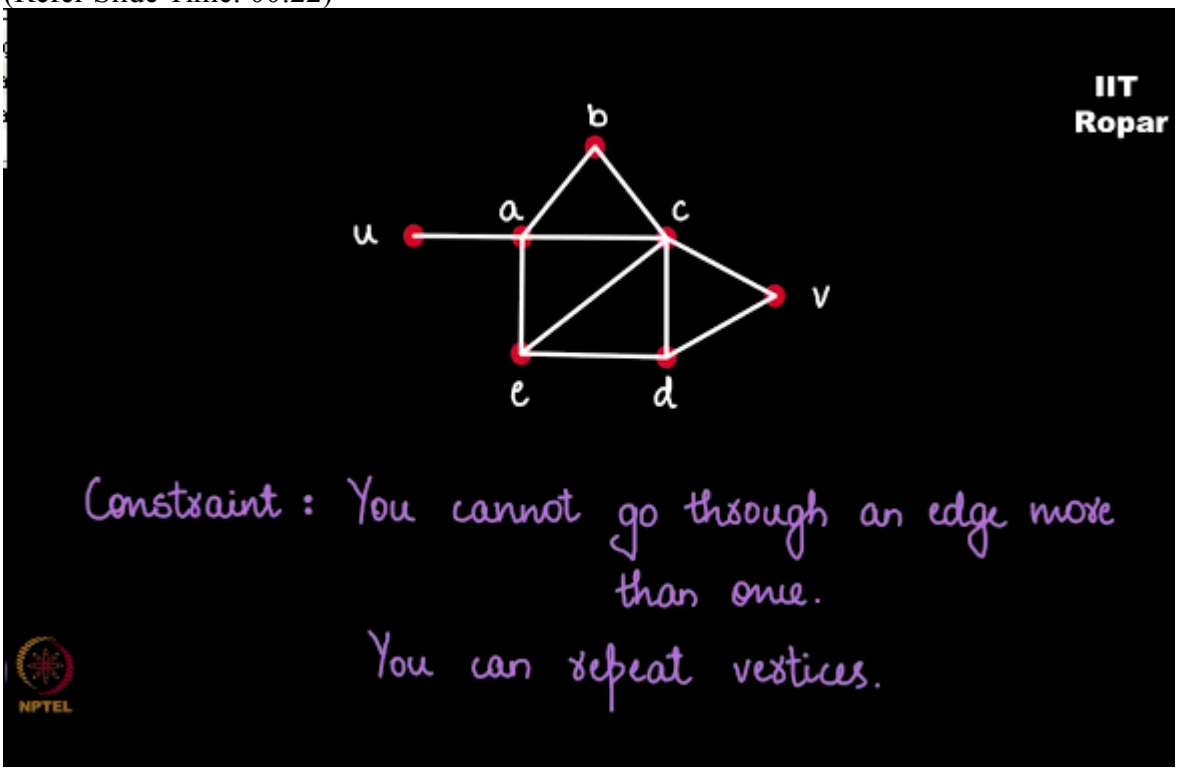

what if I rated this constraint, then will you walk in the same way, let us see.

If I have to reach V from U maybe I would probably consider taking U, A, C, I cannot go back to A again, did you get it, why? Because if I go from here to here

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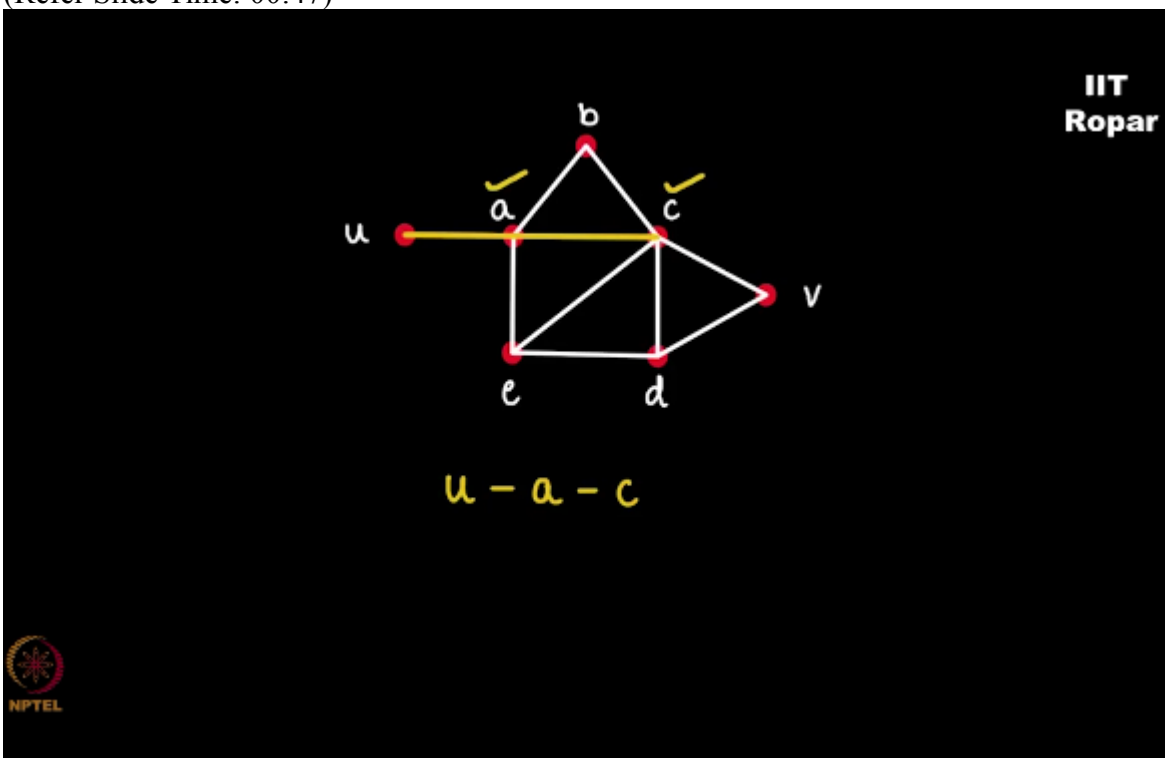

I cannot come back here to here, I'm repeating this edge there which is not allowed, hence I have to unforced to go to either D or B or V, if I go to D then I have to take, okay, let me write it separately, so if I go from U, A, C, V,

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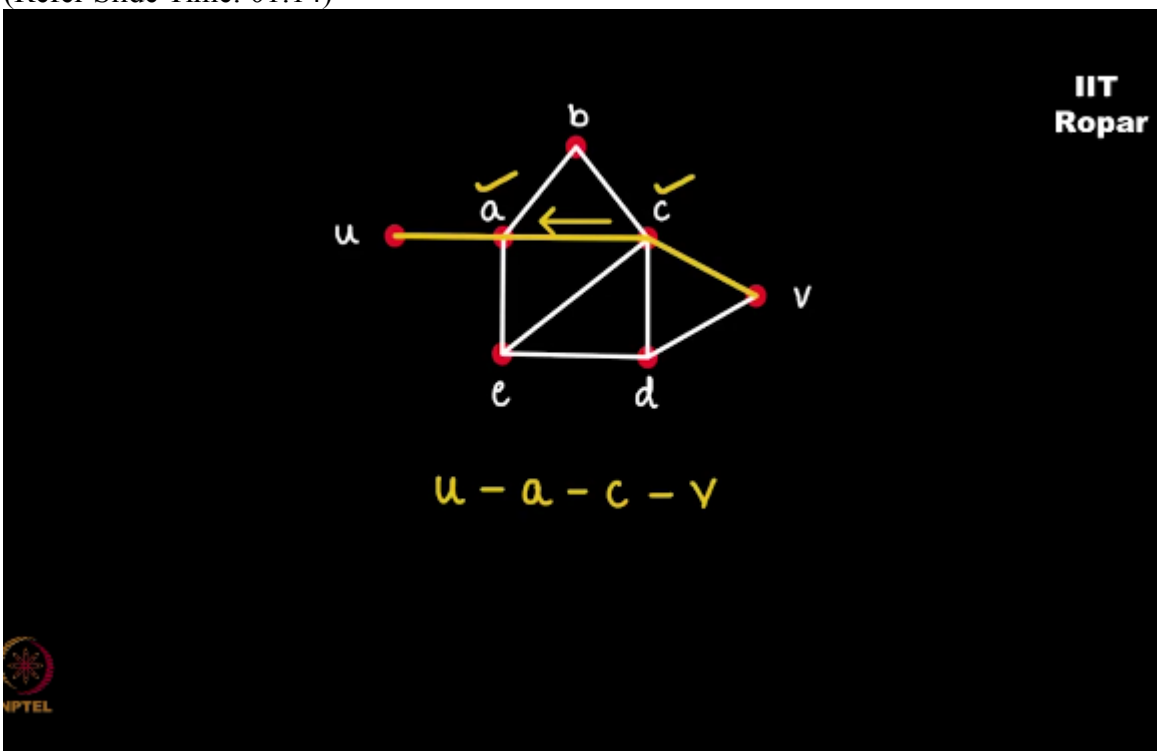

this is one such V where I'm not repeating the edges, this is called a trail.

A walk is a trail if the edges are all distinct, but vertices need not be the distinct,
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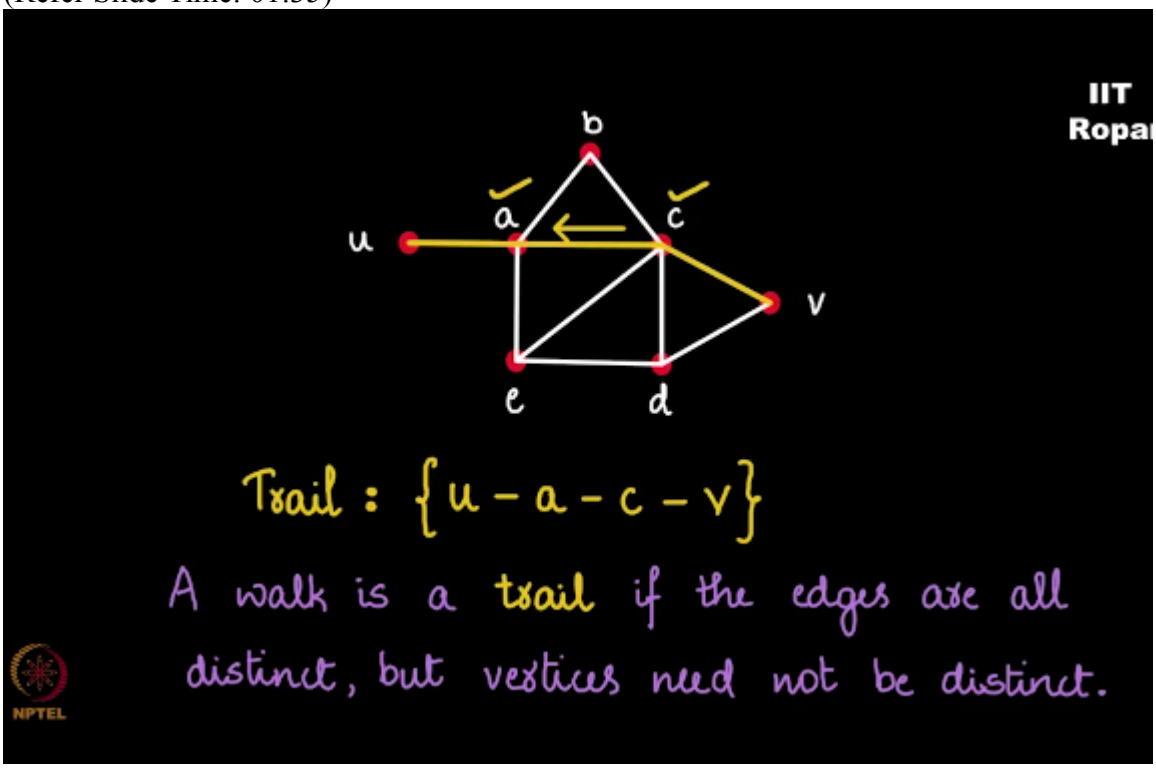

let me give you an example here, U, A, C, E, D, C, V this as an example of a trail
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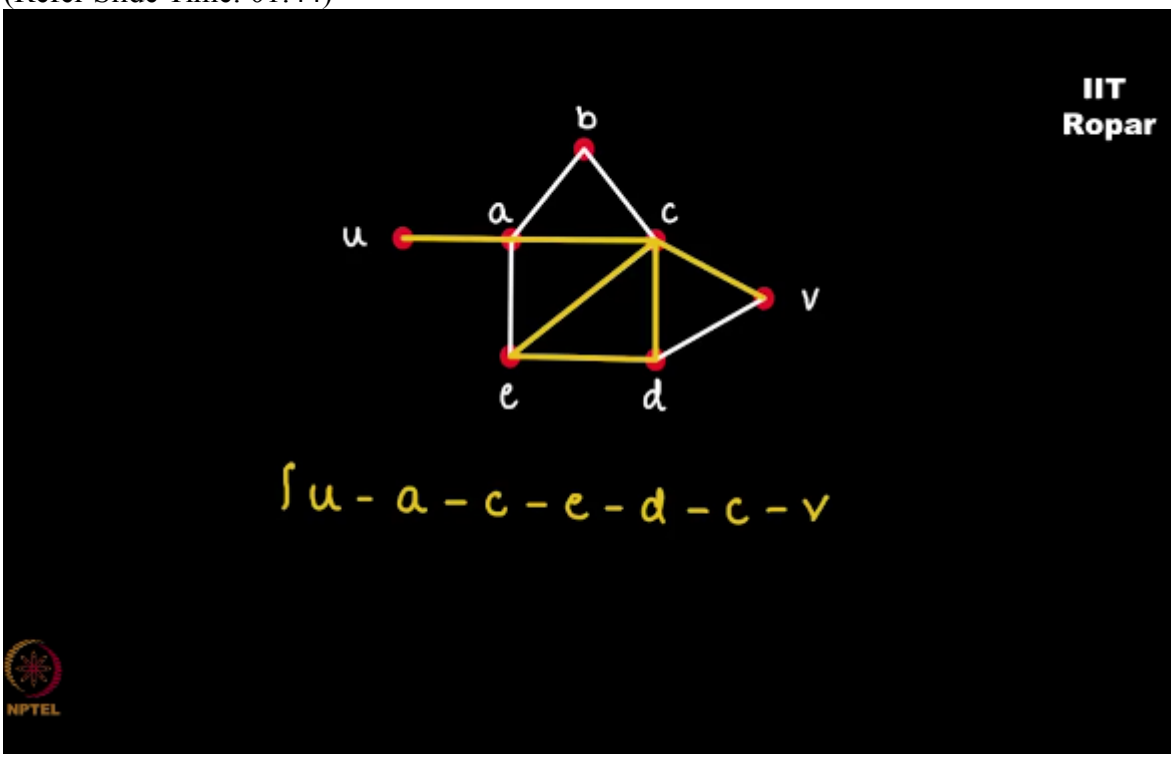

you see that I've just repeated the vertex C, but none of the edges are repeated if you check it, so this is a trail.

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