NPTEL

NPTEL ONLINE CERTIFICATION COURSE

Discrete Mathematics
Graph Theory – 2

Definition of Hamiltonian graphs

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A graph where one can go through all the vertices without repeating vertices or edges more than once is called a Hamiltonian graph.
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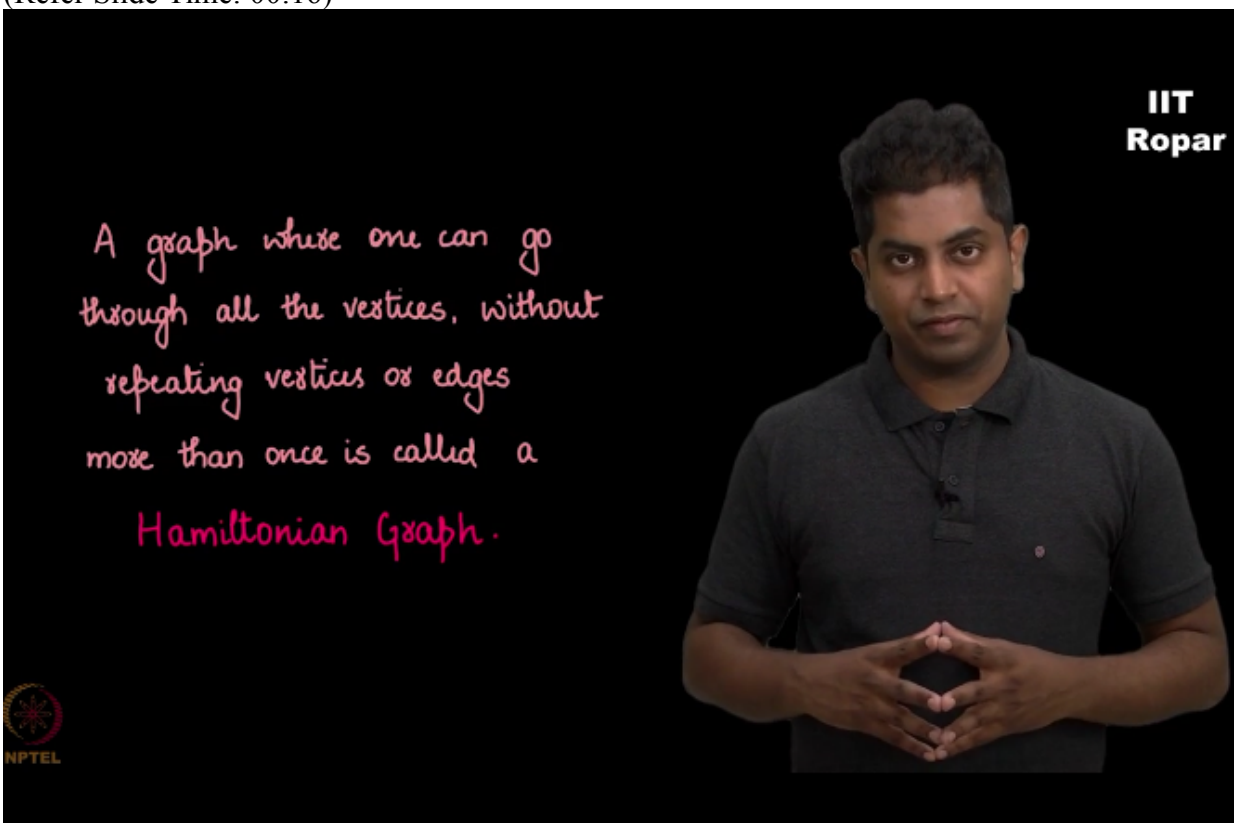

We saw for Eulerian graph there was a Litmus test, we could say whether a graph is Eulerian or not, just by looking at the degree of individual vertices, if they were all even we would say the graph is Eulerian,
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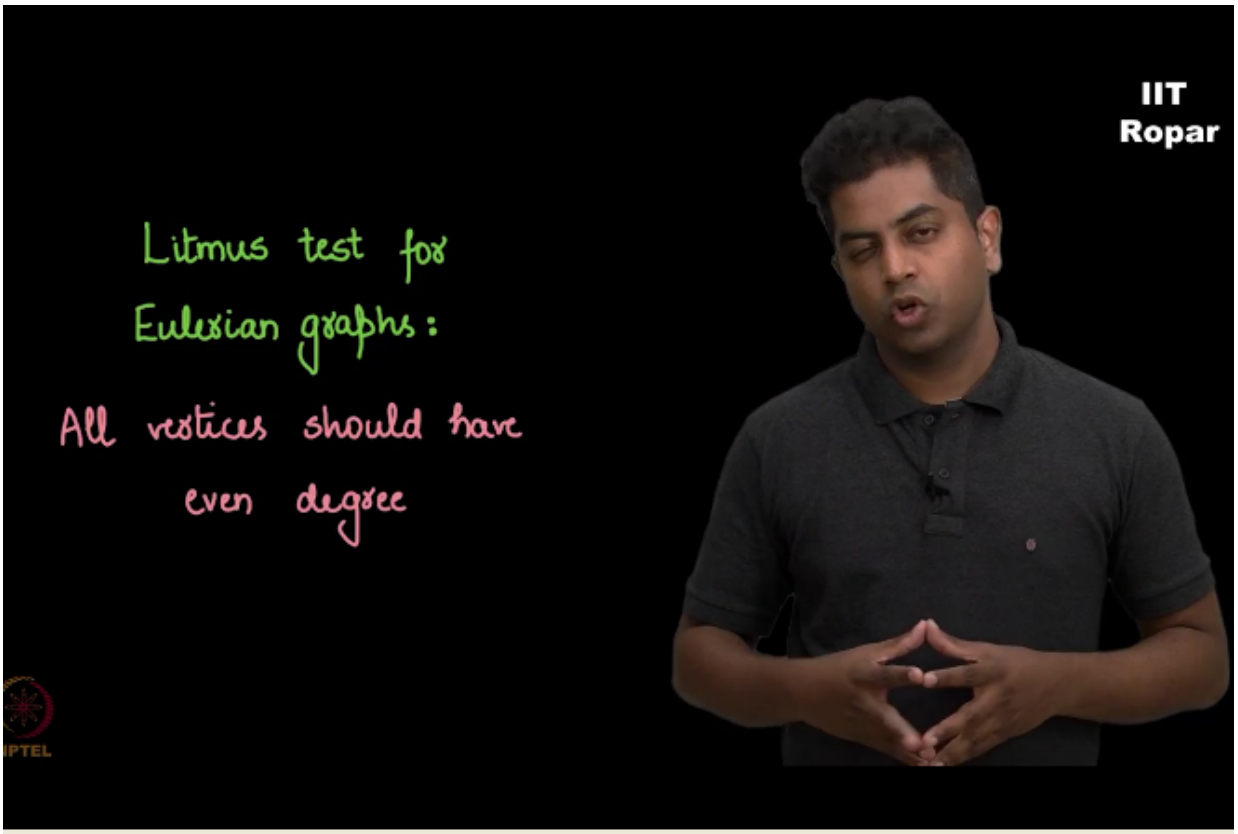

converse was also true.

Now can we think of some such thing for a Hamiltonian graph? Given a graph G when can we say that its Hamiltonian is there a Litmus test?
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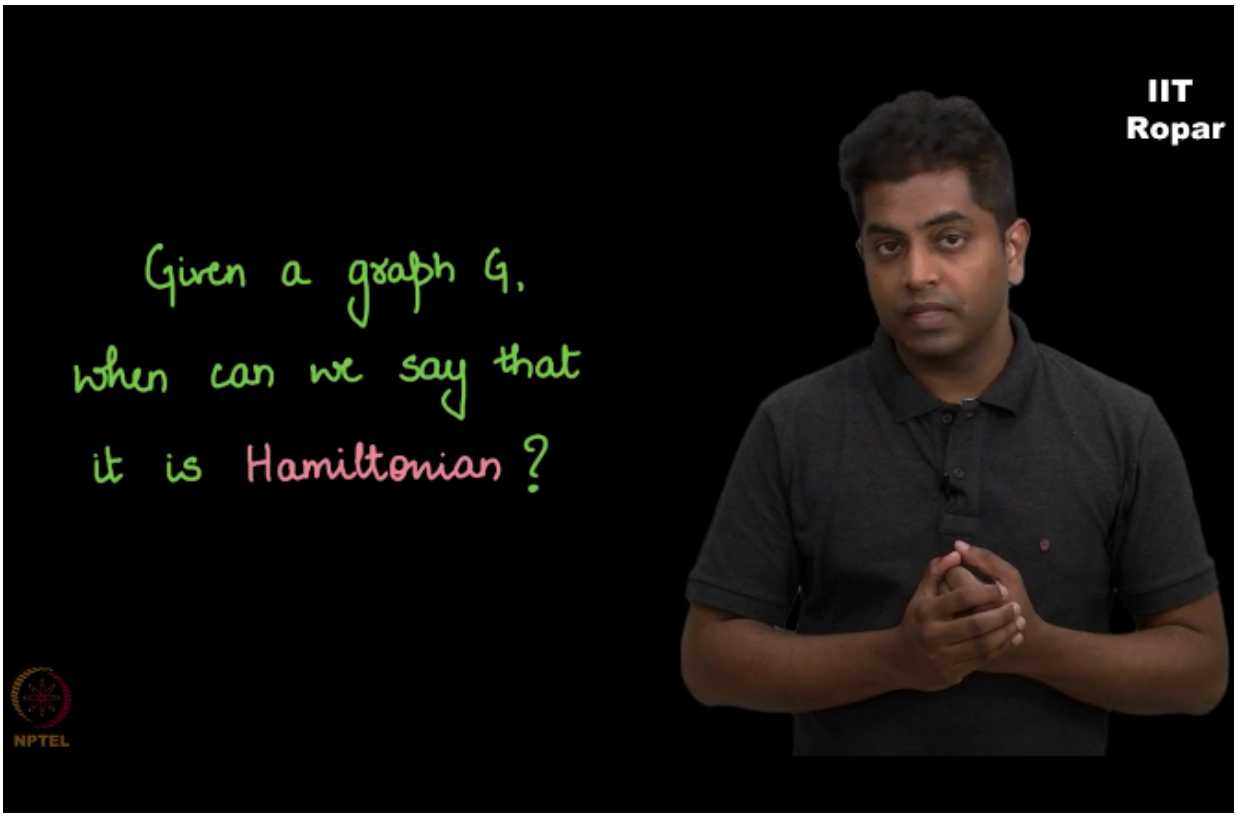

The answer is, I shouldn't be saying no, because we don't know is the answer,

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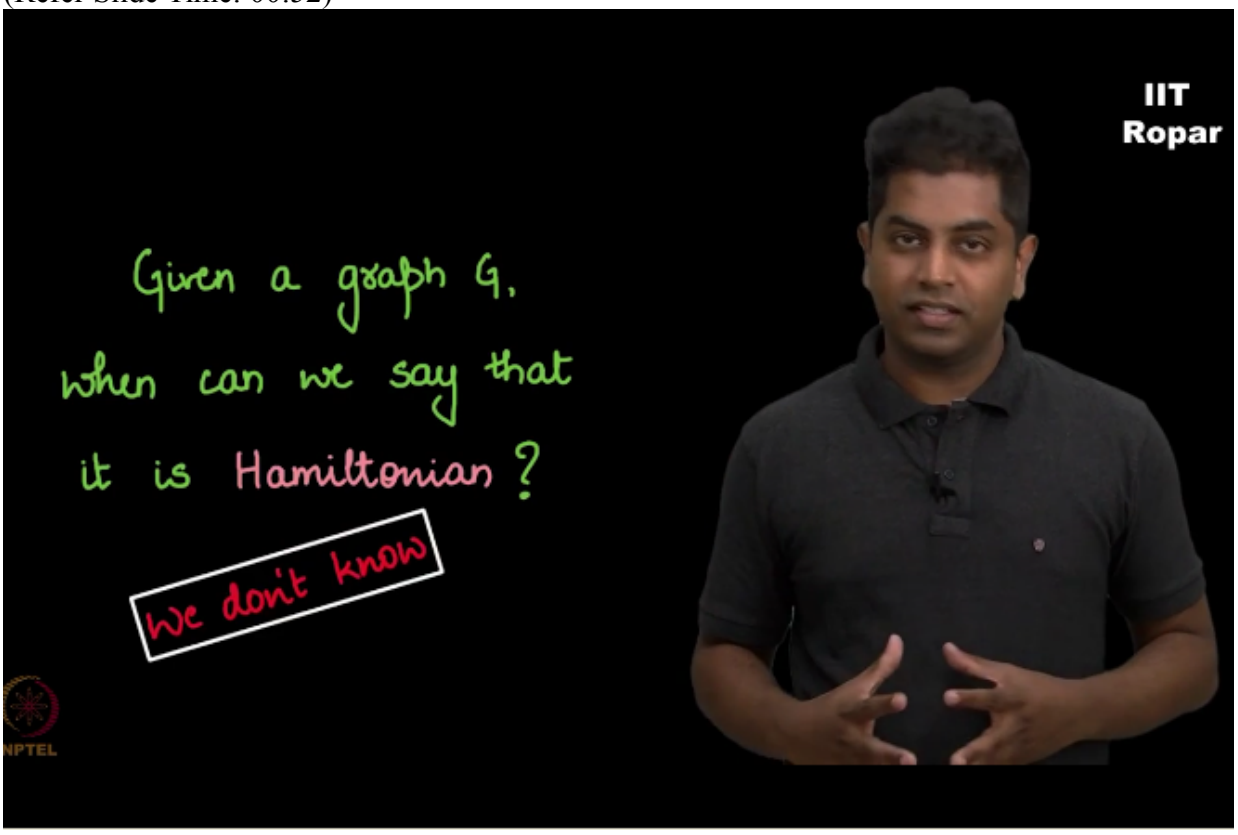

this is one of the toughest problems in mathematics and computer science wherein we have not figured out if there is a easy way in which we can say whether a graph has a Hamilton sub path or not.

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