

**NPTEL**

**NPTEL ONLINE CERTIFICATION COURSE**

**Discrete Mathematics  
Graph Theory - 1**

**Three Utilities Problem**

**By**

**Prof. S.R.S Iyengar**

**Department of Computer Science**

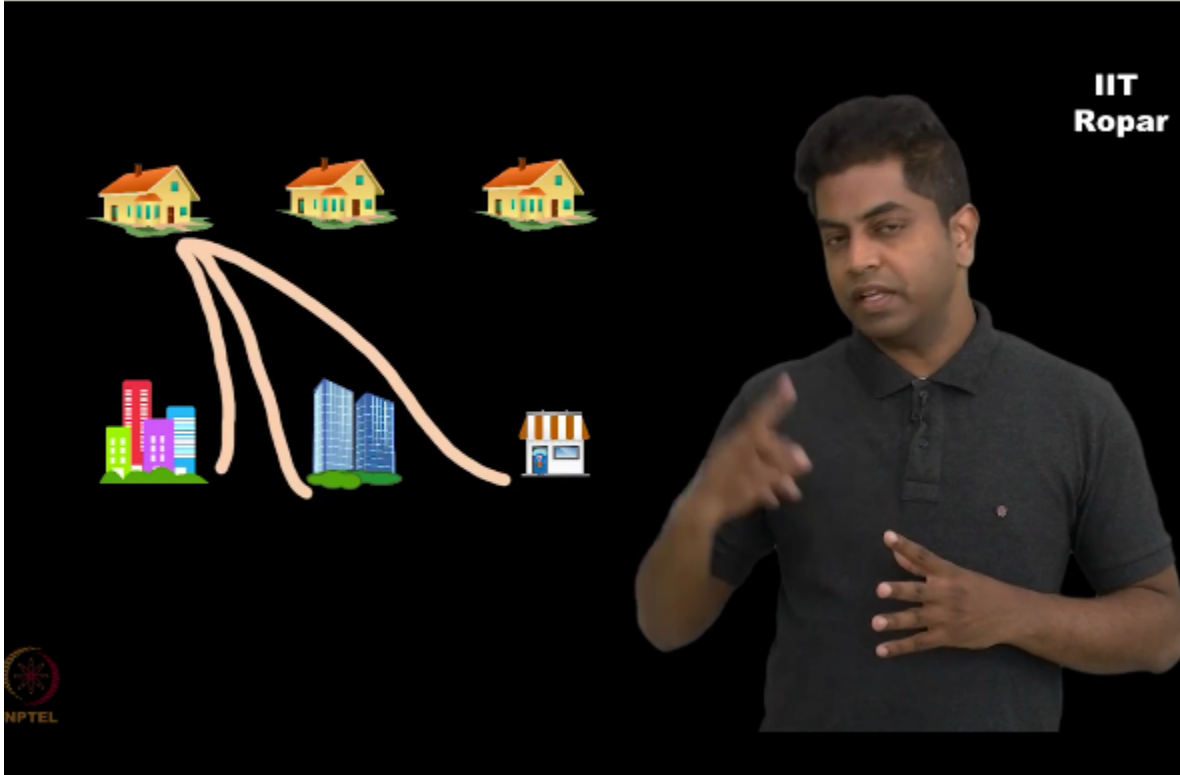
**IIT Ropar**

Look at these three houses and these three utilities,  
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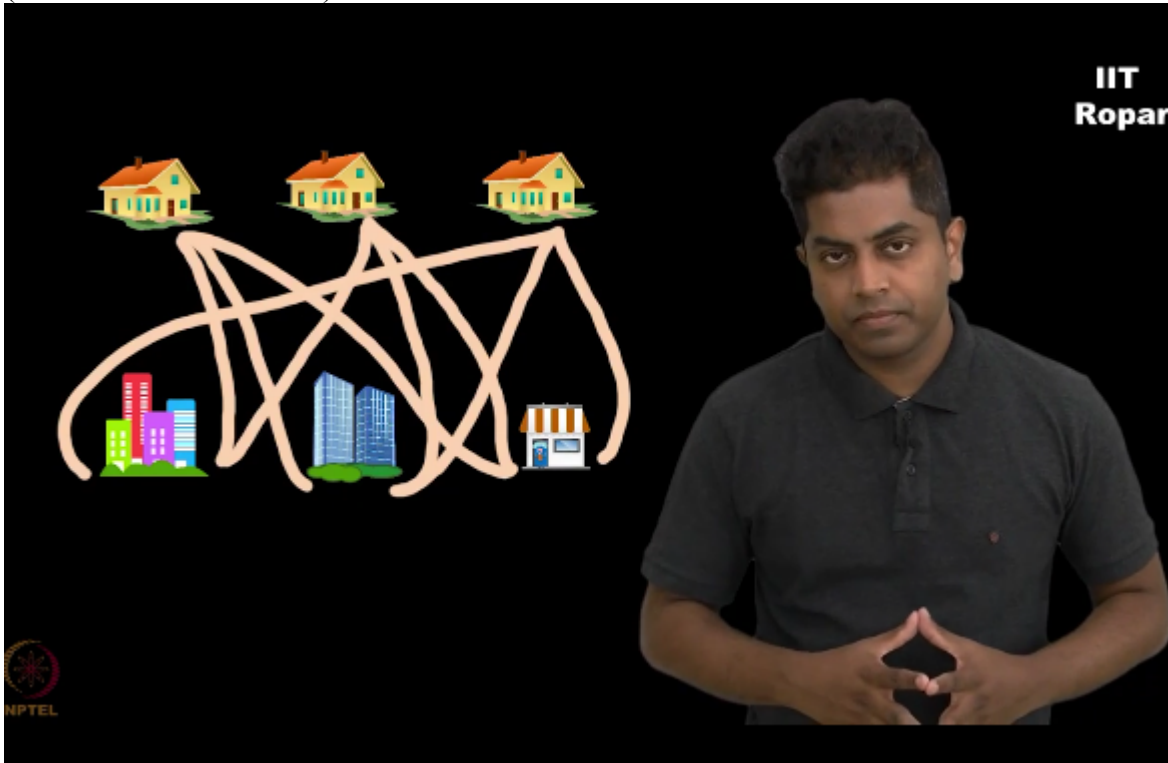


utilities could be some shopping complex or some facilities, some amenities or whatever, all that one is required to do is to build roads from each of this houses to all this three utilities, as you can see

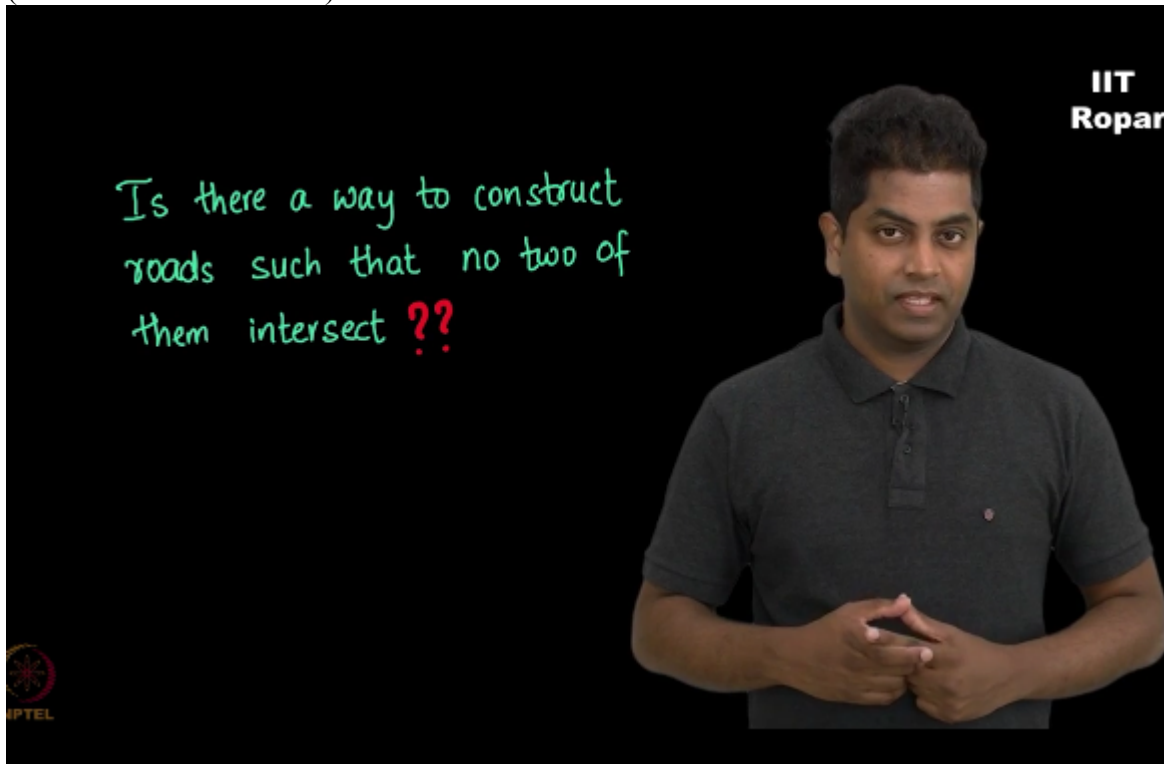
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from the first house there are 3 routes to this 3 utilities, and at the second there has to be 3, and from the third there has to be 3 and this is how it look like (Refer Slide Time: 00:36)



but you see the roads are intersected. The question is that can one come out with a way in which you construct these roads such that no two roads intersect each other  
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is this even possible.

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