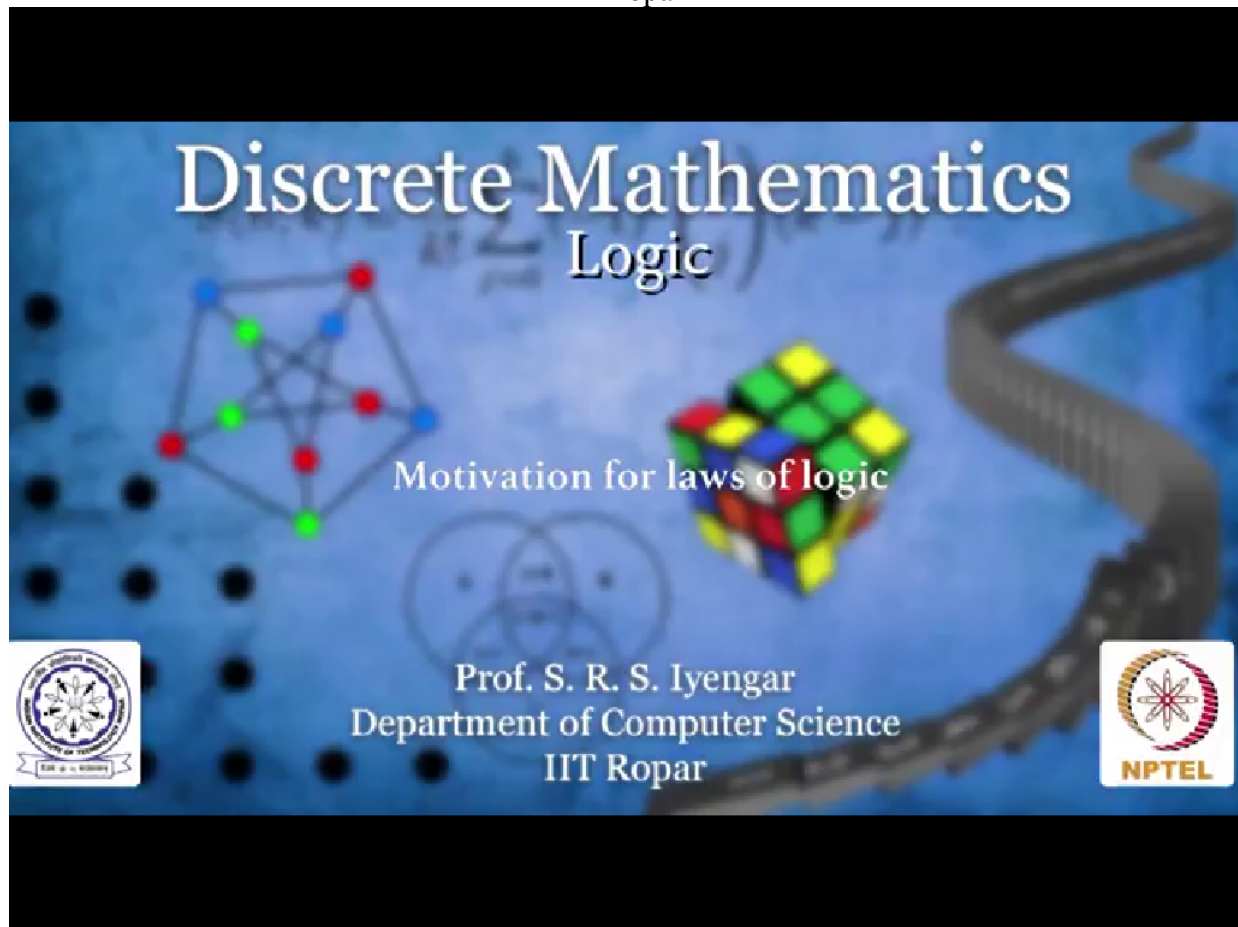
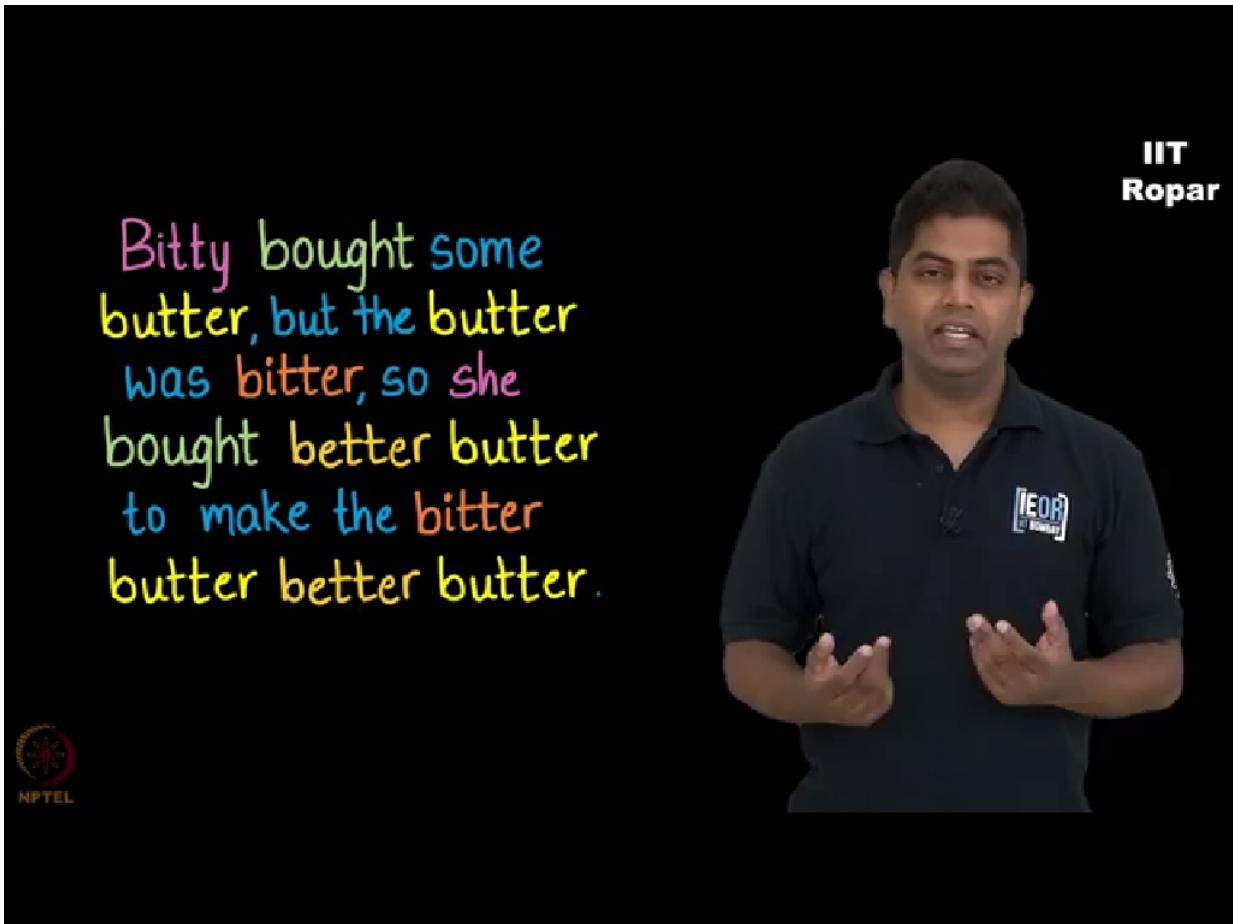


NPTEL
NPTEL ONLINE COURSE
Discrete Mathematics
Logic
Motivation for laws of logic
With
Prof. S. R. S. Iyengar
Department of Computer Science
IIT Ropar



Betty bought some butter, but the butter was bitter, so she bought better butter to make the bitter butter better butter. Why did I say all this? Just for fun.




Now what just happened, our friend initially said a very complicated tongue twister, but ideally speaking that just meant a small one liner. Bitty had bad butter. She replaced that by good butter. But look at the tongue twister. It looks very complicated.





Now here is a lesson for us to buy. There are things that are more complicated than what it actually is and we may want to simplify it. Don't you think we encounter this problem in a real life too? I at least do as a professor. I read a text book or a piece of a research article and I see it is more complicated than what it was supposed to be, right? That's because we seldom spend time on simplifying things.

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Ropar

“
I write long letters
because I lack time
to make it short.
”



Blaise Pascal



I'm reminded of a very beautiful quote by Blaise Pascal which goes like this. "I write long letters because I lack time to make it short." What does it mean? It means making it short requires a lot of time. Short is not less time. Short making a something very long short is quite a exercise.



So let us take this as a model and try to apply this in simplifying Boolean expressions. Sometimes your Boolean expressions, they appear very complicated and big, but in reality, they may not be as complicated as they appear. There are, in fact, very nice ways in which you can simplify a Boolean expression. Let's see how that can be done.

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