NPTEL

NPTEL ONLINE CERTIFICATION COURSE

Discrete Mathematics
Recurrence Relation

Example- Number of ways of climbing steps

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Here is a very nice puzzle, a puzzle that anybody will understand, but I think only you should be able to see the chapters theme in this puzzle, imagine an 8-year-old kid climbing up those stairs, or let's say he's climbing up hill, and the hill has some 200 steps,
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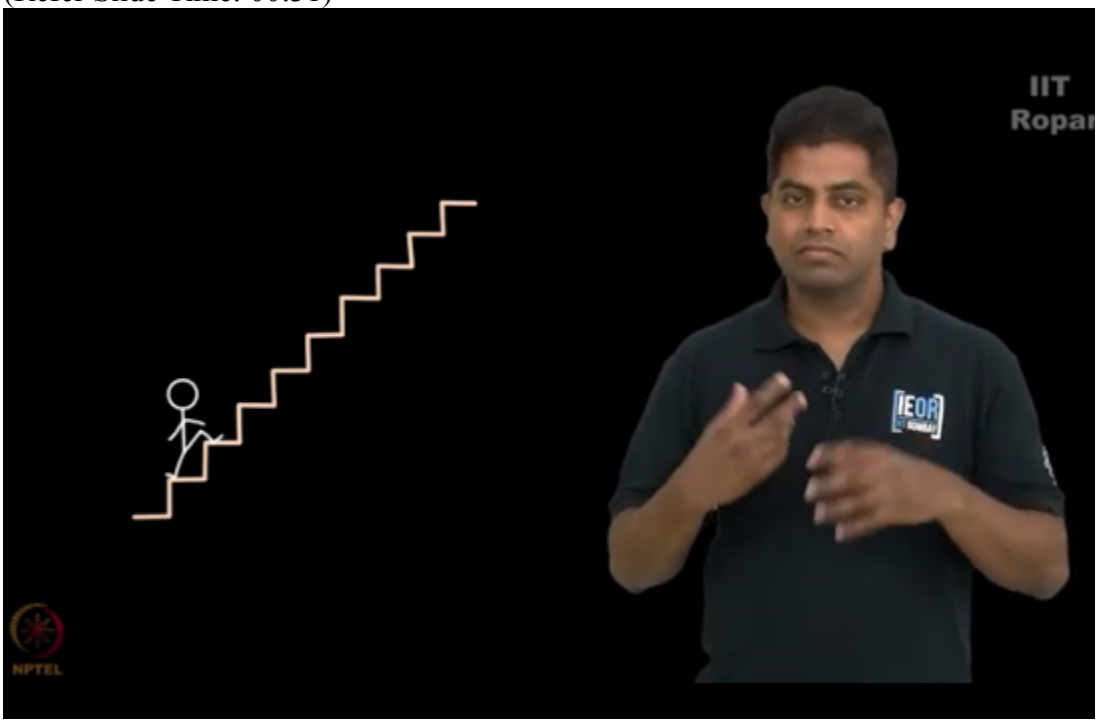

and the kid is energetic at times and not so energetic at times, when he is low on energy he takes only one step, when he is full of energy he takes a huge hop, he jumps 2 steps, meaning in one step he covers two steps as you can see in the figure.
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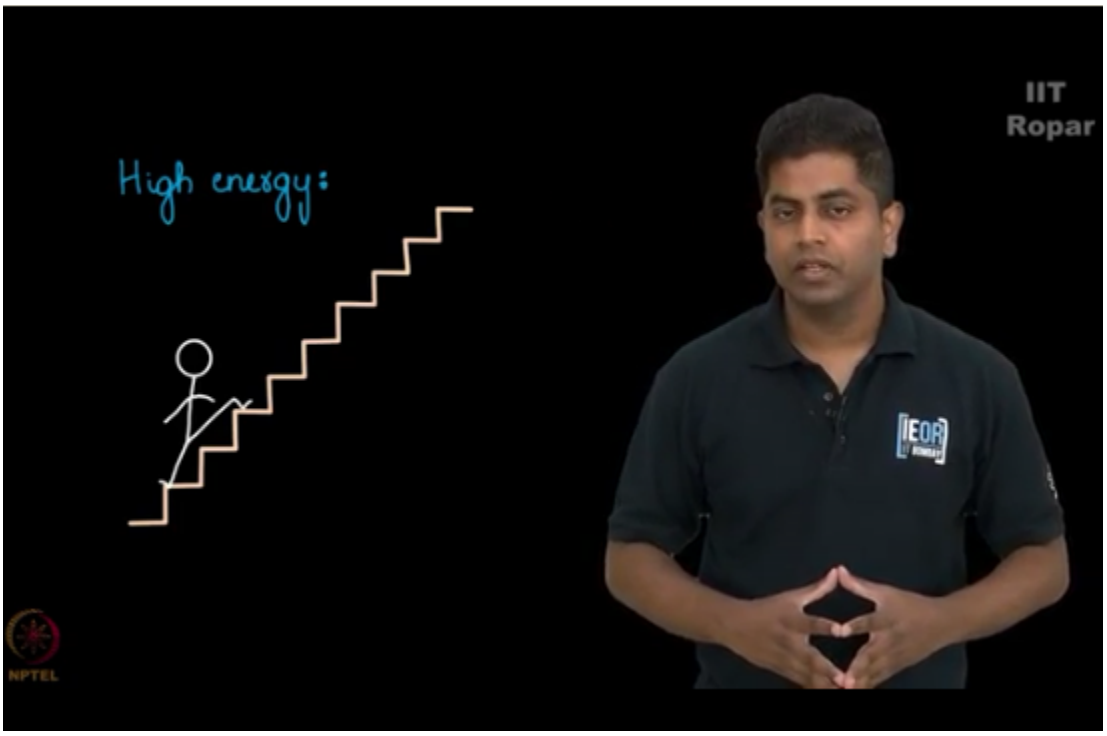

Now the question for you all is if there were n number of steps, in how many ways can this kid cover these n steps?

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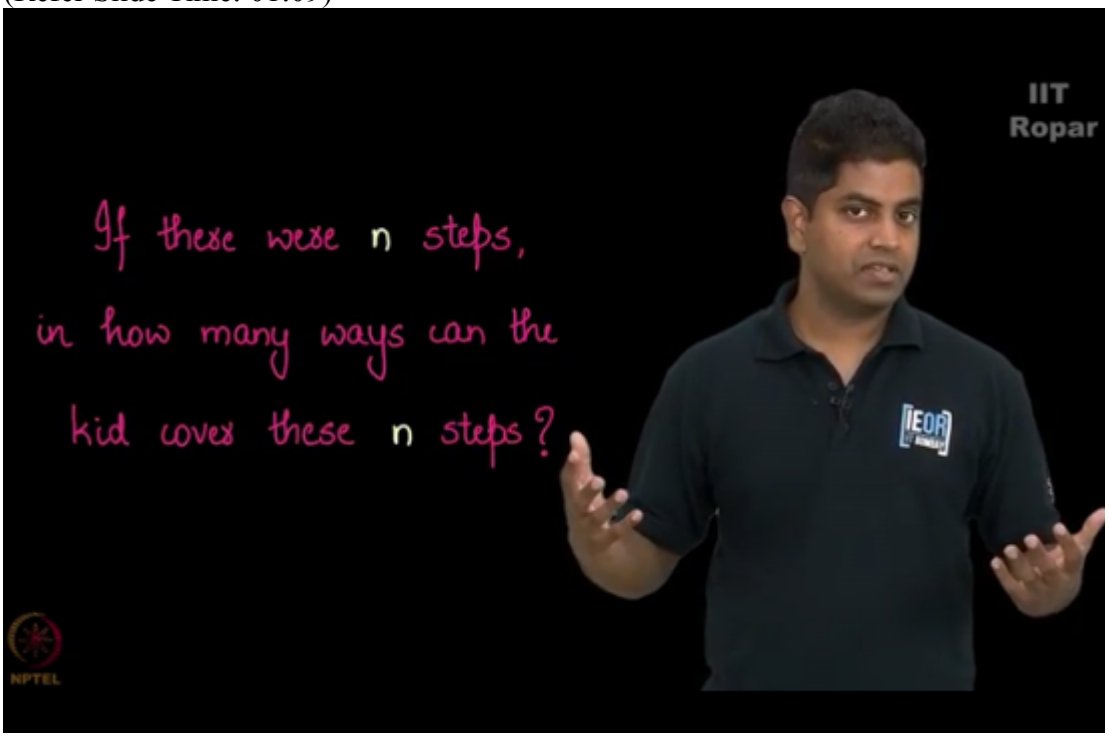

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