

PROFESSOR: Hi. Do you know that Google stores 45 billion web pages on the internet? And if every single page was a sheet of paper and we stacked them up real high, that would be a tower 610 times taller than Mount Everest? Whoa. And if that's not mind blowing enough, Google is able to give you your search results in a split second.

So how can Google do that? I mean, that's like finding a needle in a haystack. And so what I was thinking of is showing the analogy of a search algorithm, like this, through a hotel. So imagine I have a friend, James, and I'm looking for James in the hotel and he's hiding in one of the doors of the hotel rooms. And assume that the hotel rooms are arranged in a numerical order and the people in the hotel are arranged in alphabetical order to the numbers behind them.

And so the easiest way, I guess, you could think of to find James is to just run through the doors, opening every single one, and say, is James here? Is James here? Is James here? And so on.

But the fastest way to do it is to run to the middle door and to open the door and say, is James here? And if James isn't there, you ask him, who are you? Well, this other person says, well, my name is Daniel. Then you would instantly know, oh, the people on the left of this door are people whose names start with A, B, and C. And the people on the right-hand of the door will be people from D onwards, D, E, F, H.

And then you realize, oh, so if I'm looking for James, James is on the right-hand side. And so you will run to the door right in the middle of the section you just cut on the right-hand side, and then you will ask again, is James here? If James isn't there, you would try to figure out, is f on the left-hand side of the grid or on the right-side of the grid, and so on. And that way you get to your results real fast instead of just trying it one at a time.

Now, I guess what I wanted to get out of this video to the people out there is to blow their minds on the simplicity of some of these algorithms and to say, whoa, if I can understand that - and to say that just knowing that something is a little bit better actually makes a humongous difference in the real world. And that's what I want to get out of the video.