Why can’t I find my stuff?

I don’t want to confuse matters too much here, but I actually think you don’t even need the room/gloves analogy. I would just start with the hotel analogy and dive right in. That’ll save you some space in the intro that you can then use to describe a little more depth about the algorithm or its time savings. Maybe even give some real numbers - Google stores 45 billion index pages, so how long would a non-algorithmic search take??? (Probably hundreds of years? And then contrast this with how long it actually takes Google to find stuff - less than a second.)

Narrator:

It’s winter time and I’m getting dressed to go outside. But every time I start putting on layers after layers of clothes, I always can’t seem to find my gloves. (location in the dorm; scene of me putting on layers of clothes and discovering in horror that I lost my gloves) Are they in the kitchen? On my bed? On the couch? Oh dear, I seem to have a problem. Why can’t I find my stuff? Is it because I have a lot of stuff that makes it so hard to remember?

Well, Google stores about 45 billion index pages of information. If each page of information was a sheet of paper (host holds up a piece of paper) and if we stacked them all together, we would create a tower of paper 610 times taller than Mount Everest! (camera men on the sides dump a mountain of papers on the host, causing him/her to comically fall over)

So how can a search engine like Google find your search results so quickly while I find it so difficult to find a pair of gloves? It’s like finding a needle in haystack; so how’s it done? (a camera closeup while the host hold up in his/her hand a needle and casually throws it in the stack of papers)

Well, it turns out that searching on the Internet is kinda like looking for a person in a hotel room. (\*change scene: a sonorous “ding!” sound of a hotel lift, a pan shot of the interior of Hyatt Regency Cambridge hotel)

Here’s James and he is going to hide in his hotel room. But we want to find where is James.

The simplest way would be to run through every room nearest to you and keep finding. But that would take a long time.

Is there a better way I can find James? Hmmm.. (rub chin and raise one eyebrow)

Well, it turns out that there’s a better way known as Binary Search.

(\*The keywords “Binary Search” flashes over the host’s hands)

Let’s say the people were arranged in alphabetical order in increasing numbers of the hotel rooms. We could run to the room in the middle and check if the name of the person in the room is James. And then if the person starts with a smaller alphabet than James, we head to the left. If not we head to the rooms to the right. We then head off to the middle room of the newly sectioned area. And we rinse and repeat. Eventually we will find James just like the first method. But we find James at a much much shorter time.

(The above scene would be done with simple animation drawing over my head with the host talking below on the camera)

How much shorter would that be? Well, that depends on number of people staying at the hotel. Let’s say it takes 10 seconds to knock on each hotel door and there’s 500 people, it would take about 80 minutes for the first method and 1.5 minutes for Binary Search. If there were a thousand people in the hotel, it would take 160 minutes for the first method and only 1.6 minutes for Binary Search. Now that’s a whole lot of difference.

(I suspect there might be a better way of illustrating this point that a slightly better algorithm make a huge difference when dealing with large problems)

Is finding James such a big deal? Well, yes! Finding James faster means getting your results on Google faster. Because finding James is like searching a keyword term on Google. And that means less waiting time for all of us.

So how does any of what we just learned help us to find things better at home? Noticed how the people in the hotel were arranged in rooms numbers based on alphabetical order? So the location of each person in a different hotel room depends on the alphabetical relationship of their names. So we don’t need to remember which person is in which room, we just need to remember the alphabetical relationship that all the people have with each other.

In the same way, simply by placing your home items in locations where they have a natural relationship to makes it easier for us to find them. The TV remote goes near the TV, the shoes go to the shoe rack, the coats go into the cupboard and the the winter gloves goes in the winter jacket.

 (location is back in the dorm \*Finds gloves in the jacket)

Aha! So that’s where my gloves are!

And that’s how we find stuff better. Not a just little bit better but a lot better!

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