**Lecture - 37**
**Analogy for the week 2**

This week we saw that network sends packets through layers, interacts with its peers using protocols and using IP addresses.

Now, the next interesting thing is that on the network how does the router actually manage to send the IP addresses from one IP address to the other, which is basically the source of the destination. So, that looks like a challenging thing to teach.

So, once again there are multiple ways in which we can teach this and let us try the same approach that we took last time of looking at an analogy. So, this time we will look at the Mumbai's dabbawala network as the analogy. First let us understand, how do they route these dabbas from one place to the other, so that people get their lunch on time and then we can go on to looking at how does it actually happen in the network.

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One famous network in Mumbai is the dabbawalas.

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In this video, we will try to understand the concept of routing by observing how the dabbawalas deliver tiffins over large distances.

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That too quite reliably. It starts in the kitchen.
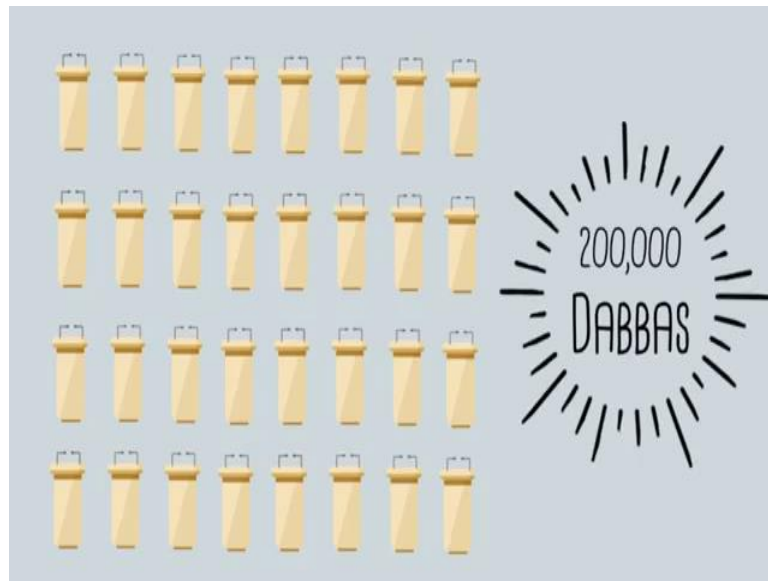
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Meet Anupam. Once the tiffin is ready, Anupam calls the dabbawala Mohan to pick up the dabba from his address.

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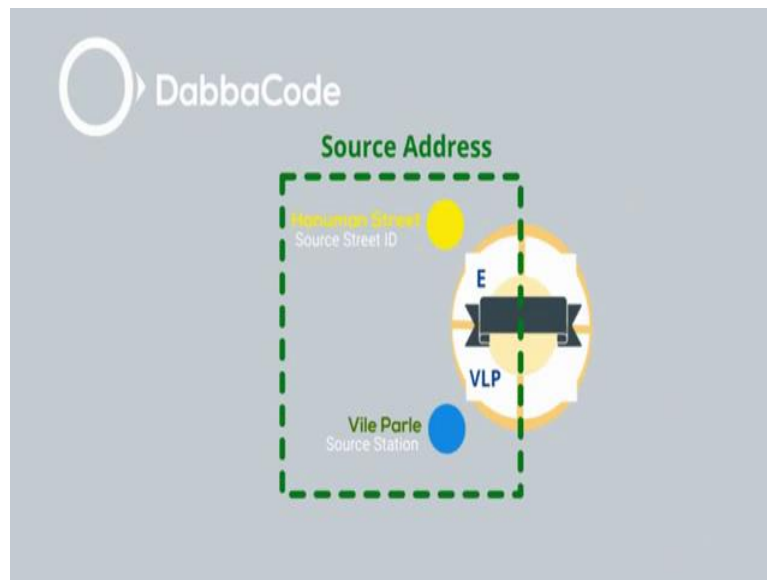The dabbawala takes the tiffin and leaves for picking dabbas from other nearby houses.

In Mumbai 200,000s of dabbas are delivered within 3 hours. Can you think of a way this could be done? Turns out, there is one and that is what we will see now. Anupam's tiffin and all other tiffins have a special code on the top.

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Let us call this dabbacode. Anupam lives on Hanuman Street in Vile Parle. The code for this location is E VLP. This tells the dabbawalas the source address of the dabba. Our dabbawala, Mohan takes this dabba to Vile Parle station along with the others he collected.
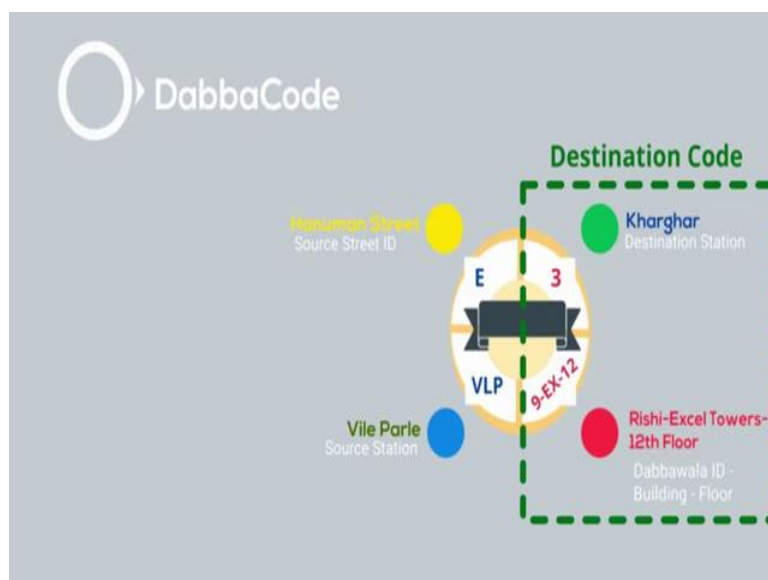
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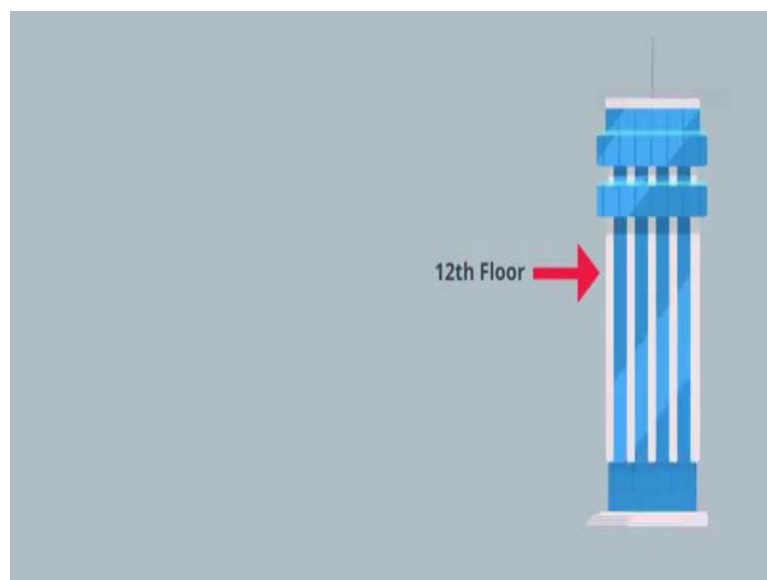


Anupam's tiffin has to reach the 12th floor on excel towers in Kharghar. On Vile Parle station Anupam's tiffin is loaded along with the others on to the local train.
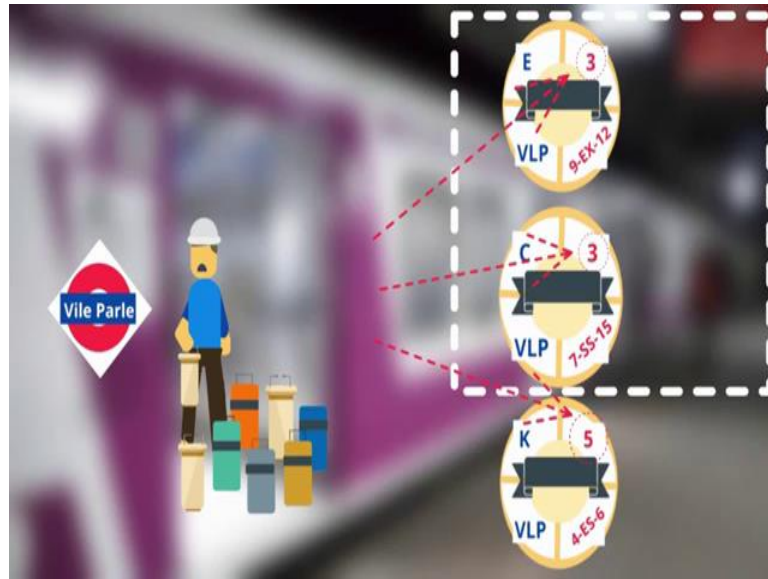
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Mumbai local stops for only 14 seconds on a station so, that is pretty much what you can do in the short time.

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There is a part of the code on the Anupam's tiffin, we still have not talked about, the destination code. The destination code on Anupam's tiffin is 3 9-EX-12.

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The dabbawalas in the train look at the first number which is 3 in this case and place Anupam's tiffin with others to be delivered in Kharghar.

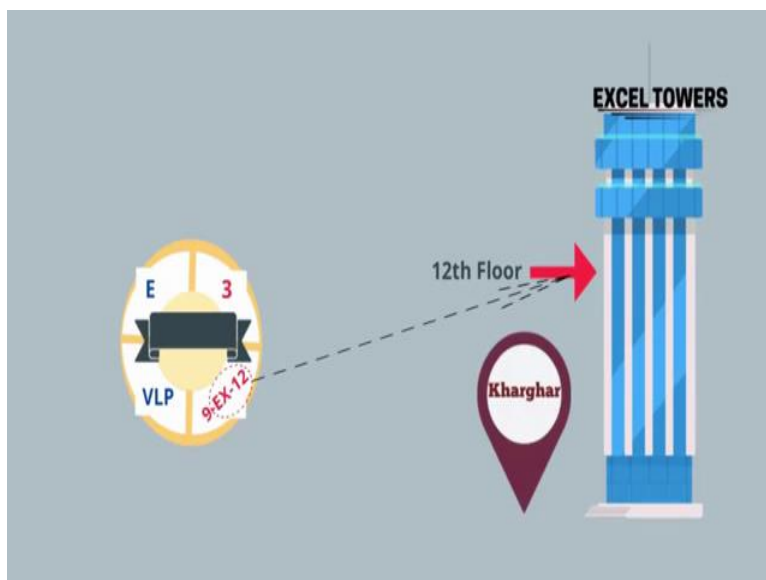(Refer Slide Time: 03:04)



On reaching Kharghar, all these dabbas are off loaded and collected by the next set of dabbawalas.

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Here, the dabbawala number 9, Rishi looks at the second number of the destination code and takes all dabbas that have the label 9. So, Anupam's tiffin is now with Rishi.

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Will now delivered to its destination based on the final part EX-12, which refers to the 12th floor on Excel towers in Kharghar. And here we are, the dabba has reached to Seema on time. It still 15 minutes to lunch time. So, that is how the dabbawala network works. Now, its time for some questions.

Now, that you have seen the animation of the dabbawala network, here is a fun thing to do. Imagine that you are a dabba and try to keep track of what all information is stuck on you when you are routed through the network. Imagine that you are going from the home to the office and vice versa. And, how are you routed through the network? Also try to identify what is the key piece of information that each dabbawala has to keep track of in order to route you through the network?

Once you have done that, then we will come back to see how does this routing happen in a network. Once you have done that post your answers in the discussion forum and in the next week we will come back and see how does this idea, that you have learned through the analogy, actually manifests itself in a network.

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