

Data Structures & Algorithms #1 - What Are Data Structures?

CS Dojo

YK was formerly a software developer at Google and now he works on this YouTube channel full time. There are basically different ways of storing data on your computer. YK says there are a few different options for this one of those options will be to store all possible paths in a list like format. Data structures are basically two different ways of storing exactly the same set of data and as you can see they have sort of different structures and so these are simplified examples of what data structures look like now if you're already familiar with data structures you might notice that the first method corresponds to the array or a list data structure. The second method is the hash table or hash map data structure so what are algorithms one way to define what they are would be that there are the operations we can perform on different data structures. An algorithm is basically you have a problem you're going to solve in this case finding the shortest path from home to school and then you have systematic instructions for solving that problem. Depending on what data structure you're using to store the data that you're performing the algorithm on your algorithm might look slightly differently you might even have in some cases completely different algorithms for solving the same problem.

Each person come to the party will bring sort of like a small ball with them like a ball that can fit in their hand and this ball will have their name written on it. David will have a ball with David written on the ball and Kevin will have another ball with Kevin written on them. This is actually a data structure that's realized in real life and this actually corresponds to the data structure called array in computer science. To find in 98th person or finding the 98th box here would be much harder than the linked list data structure. Each box can be in any location relative to the previous box so this first box might be in the living room. Each partition is ten centimeters wide so you just need to find ten centimeters times ninety seven times nine hundred seventy centimeters. YK from CS dojo explains what data structures are like on a computer using concepts like classes