

Time Complexity and Big O Notation (notes) CodeWithKAZAMA

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So the input size didn't increase and the runtime of the algorithms didn't increase either. No, it doesn't depend on the size of the input. When we ask questions like as the input will increase, Then the runtime will change as per what? And after that Now you will go to aunty's house You will be treated. Consider there are different routes to come and go.

I want to tell you guys one story. It happened like this, I was bored in my house. I was so bored that I needed some entertainment. This guy has amazing games like Pubg and GTA5. So he has a collection of games. He likes playing games a lot. And you can get every type of game from him. But there is one problem, I also use jio. He also uses jio and we get just 1 Gb for one day. And with more internet, we can't sell files and all. So for me, what is the fastest way to take the game from this friend. So what will I do? I will take my bike As the size of this input will get increased, the runtime of the algorithms will increase. This means that as the input size is increasing like that The time required to send the file, That is also increasing. There is a hard disk then there is your motorcycle. You will go on that bike. And you will take it and in hard disk whether you bring 250kb or Tb. As the input size of algo2 increased like that what happened? For that, there was no change in the runtime. Runtime remained the same. So we say as the size of the input keeps on increasing, Similarly, what is the effect of the algorithm on runtime. We are trying to remove the time complexity of n .

is the algorithm that runs in constant time. $K1n$ to the power 0 $k2+k3+k4$ This time is required in algo 2. The sentence is: Run time of it, there are some things that we will recite. Because we won't constantly use our brains again and again, as we see Big O of 1 it is constant. Now, come here and listen to another story. If we do an analysis of the first algorithm, If I do T algo1 Then what will happen here? And along with consider that game is of L3 kb. If the game is of N kb then how much time will you need? The sentence is: Run time of it, there are some things that we will recite. There are polynomial algorithms and there are exponential algorithms and there are logarithmic algorithms and there are exponential functions and there are logarithmic functions. There are also algorithms that are not linear in time.

We are not studying algorithms, we are listening to a story. We are doing a real-world analysis of things. Big O is called a constant runtime algorithm. Because it was constant we remove n to power 0 and make it 1. So this is Big O of n to the power 0. If I do T algo1 then what will happen here? What do I have to do? When I am sending data then I must upload and send. My main time is required in that ok. Now, considering I turn on my computer In that, I will need time L1 After that what happened? Consider all preparation I required L1 which will be a constant 5 secs, 2 secs, 10 secs. If there is an SSD in your computer then it will open in 4 secs If you are using a supercomputer then it can even open in 1 sec. L1+ consider your speed is L2. Ok, so it takes a constant speed of your This is not equal to. Writing equal to is wrong here. So here I will say that The most difference that will be visible It will be because of this term. Because n to power 1, if I increase input and make it 10 lakh. So this was of 2 lines but this will become 10 lakhs. So the higher degree term in the polynomial In any equation The most impactful term It is taken ok. So I picked this because in comparison with n to the power 0 it is big. And I want to see things in a simple way.