Presentation CS Fundamentals

Good morning everyone I’m Radhey Khandelwal and today I’m giving a presentation on fundamental elements of Computer Science and more primarily on ArrayList vs Dictionaries.

Programming is the process of preparing an instructional program for a device.

It is a set of instruction we give to computer to perform a certain function.

Now onto the main topic of this presentation, ArrayList vs Dictionaries.

There are many data structures that can be used to store values eg arrays, linkedlist, stack, queues, trees, graphs, and many other, each having their own functionality,

ArrayList is the dynamic implementation of arrays, it helps to over the limitation of arrays which is fixed size, we need to define the size while define defining the array, but on the other hand arraylist are different, size of these can be dynamically changed,which means we can change its size according to our need, they are not linear in nature meaning that the address of these values are not storaged continuously and gets stored randomly, which in turn increases the time complexity of assessing the elements in arraylist, it takes linear time compared to array which takes constant time.

dictionaries have a different approach, they store key value pair, meaning that each value is asscosiated to a unique key, this makes it easier for the programmer to store huge chunks of data one of the way you can imagine it is in Netflix how data of different movie and it’s file get stores and assessing them becomes a ease, we just need the key for what we our looking for, accessing elements in dictionaries takes constant time which the most efficient.

The main reason why we use dictionaries over Arraylist is because of its key value pair property, key value pair can be of any data type which makes it more flexible to store the values.

Dictionaries and ArrayList both have different applications and can be used accordingly.