Preface

Im just kinda taking notes and taking the slides from a yt vid so i can maybe remember stuff / copy stuff for later
also to partially increase my typing speed without looking at my keyboard and idk maybe get better at typing given i dont use the standerd asdf jkl; hand position
rather i do shift+awr jop' layout and use alot of range for my index fingers and spread them out its not optimal but this is realy all i need coz im a gamer lmfao

also [] is my ring finger and all numbers are my ring fingers wish i had an ergo keyboard lol

https://www.youtube.com/watch?v=RBSGKlAvoiM&ab_channel=freeCodeCamp.org

Example page, and literal first 6 minutes of the video

Why Data Structures?

- They are essential Ingredients in creeating fast and powerfull algorithms.
- they help to manage and organize data.
- they make code cleaner and easier to understand. (even if it lowers efficiency)

Abstract Data Types VS. Data Structures

Abstract data type

An abstract data type (ADT) is an abstraction of a data structure which provides only the interface to which a data structure must adhere to which a data structure must adhere to.

the interface does not give any specific details about how something should be implemented or in what programming language.

Examples

Abstraction (ADT)	Implementation (DS)
List	Dinamic Array Linked List

Queue	Linked List based Queue Array based Queue Stack based Queue
Map	Tree Map Hash Map / Hash Table
Vehicle	Golf Cart Bicycle Smart Car

Complexity Analysis

As programmers, we often find ourselves asking the same two questions over and over again:

1. How much time does this algorithm need to finish?
   1. if it takes the length of the universe to complete its useless
2. How much space does this algorithm need for its computation?
   1. likewise if it takes the entire bit size of internet its also useless

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