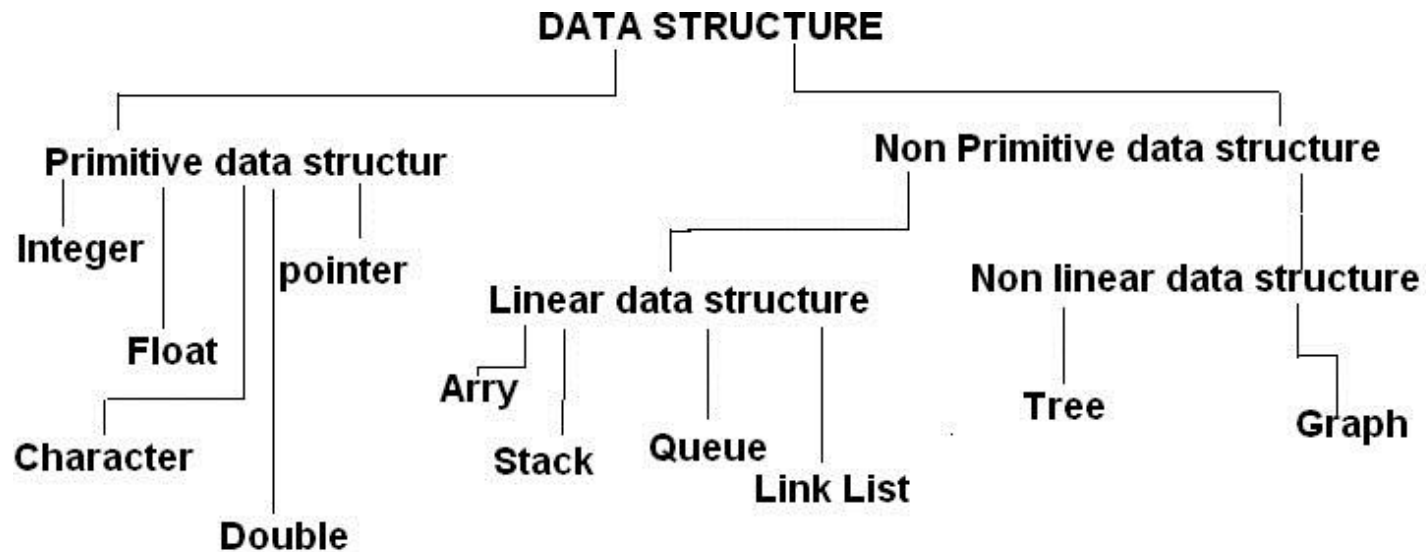


CCK2AAB4 STRUKTUR DATA



Introduction to Data Structure

Understanding Data Structure and Algorithm



Classification of data structure



Organizing Data

- ▶ data structure is meant to be
 - **an organization for a collection of data items.**
 - **a way of organizing input data and operations which can be performed on this data**
- ▶ Organized data must be able to be **searched**, **processed** in any order, or **modified**
- ▶ The choice of data structure and algorithm can make the difference between a program running in a few seconds or many days.

Why Data Structure?

- ▶ In computer science, often the question is not how to solve a problem, but how to solve a problem **well**
- ▶ In this case, it means **Efficiency**
- ▶ Data structure is one of fundamental items to develop a good computer systems
 - You'll learn Computer efficiency more deeply at other subject
(Design and Analysis of Algorithms)

Space-Time Tradeoffs and Efficiency

- ▶ trade-off between **speed** and **memory**
- ▶ To make a more powerful computers → more complex applications.
- ▶ More complex applications demand more calculations

Selecting a Data Structure

- Analyze the problem to determine the resource constraints a solution must meet.
- Determine the basic operations that must be supported. Quantify the resource constraints for each operation.
- Select the data structure that best meets these requirements

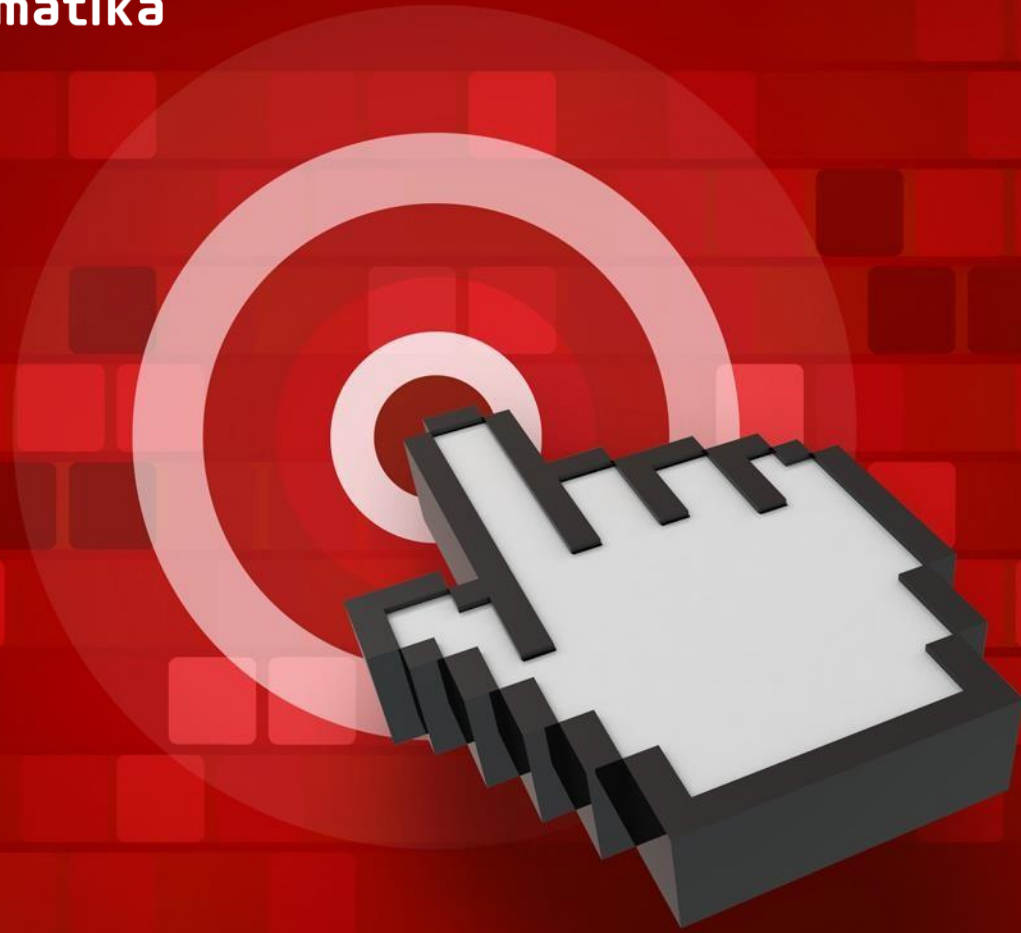
Data structure classification

- ▶ Linear data structure
 - Stack
 - Queue
- ▶ Non-linear data structure
 - Tree
 - Graph

Question?



Fakultas Informatika
School of Computing
Telkom University



THANK YOU