

The title "Data Structures" is rendered in a large, stylized, yellow-to-white gradient font with a blue outline. The background is a dark blue grid with various data structure diagrams. On the left, a tree structure has root 'A' with children 'C', 'D', and 'E'; 'D' has child 'B'. On the right, a tree structure has root '2' with children 'A' and 'C'; 'A' has children '2' and '5'; 'C' has children '3' and '4'. At the bottom, a tree structure has root 'A' with children 'C' and 'E'; 'C' has children '2' and '4'.

Data Structures

Introduction

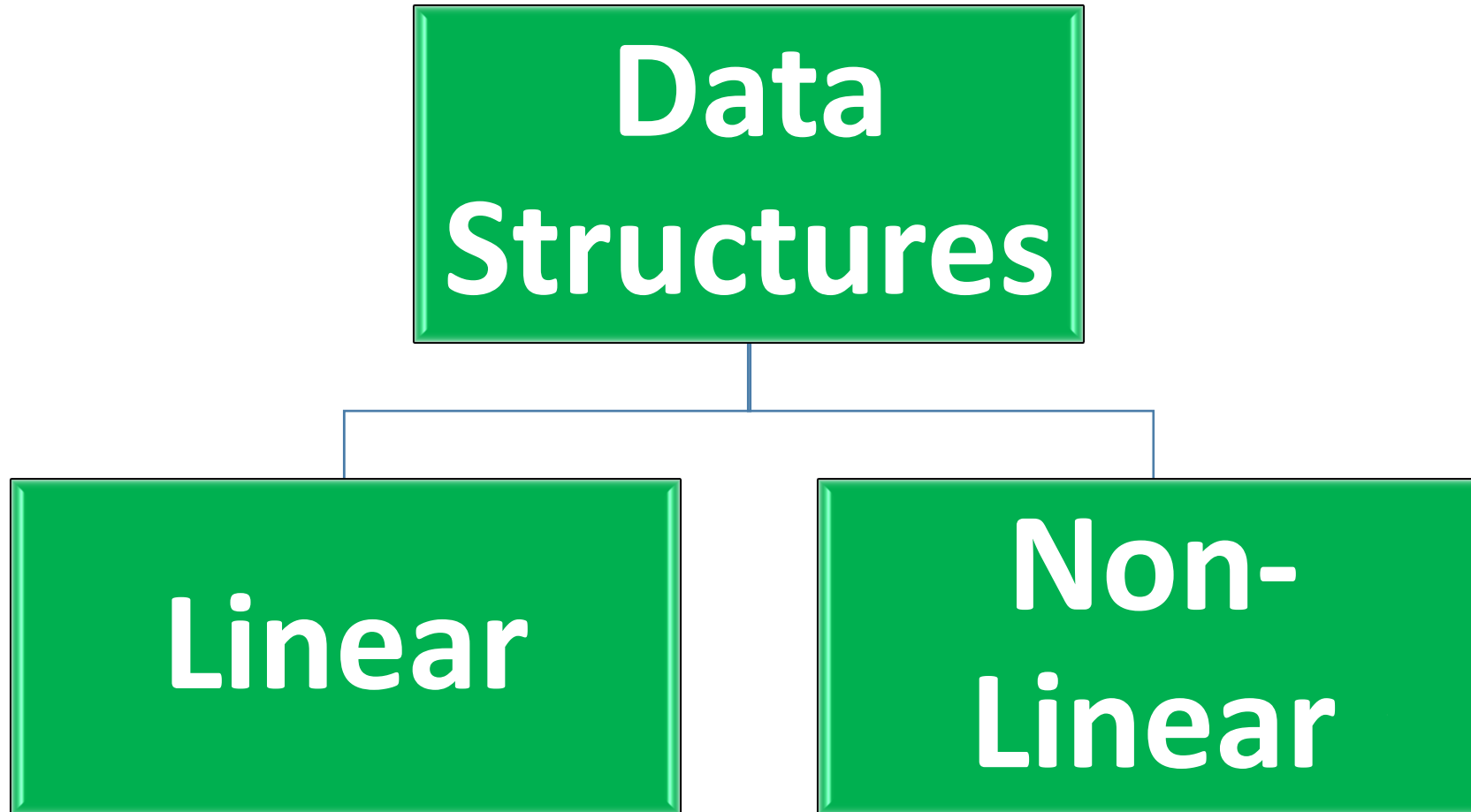
Content

- What is Data Structures?
- Types of Data Structures.
- Operations on data structures.

What is Data Structures?

- Data Structures: Organizing large amount of data with more efficiently.
- Storing the large amount of data in different structural format.
- If we want to work with a huge amount of data, then organizing that data is very important.
- If the data is not organized effectively, it is very difficult to perform any operation on that data.
- If it is organized effectively then any operation can be performed easily on that data.

Types of Data Structures



Linear Data Structures

- If a data structure organizes the data in sequential order, then that data structure is called a **Linear Data Structure**.
- **Example**
- Arrays
- Linked List
- Stack
- Queue

Non-Linear Data Structures

- If a data structure organizes the data in random order, then that data structure is called as **Non-Linear Data Structure**.
- **Example**
- Trees
- Graphs
- Dictionaries
- Heaps
- Tries

Operations on data structures

- Creation
- Insertion
- Deletion
- Search