Data Structure and Algorithm

Master the art of DSA along with C++

Bring on your coding attitude...

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Introduction

Intro about DSA

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Data Structure and Algorithm

Data Structure

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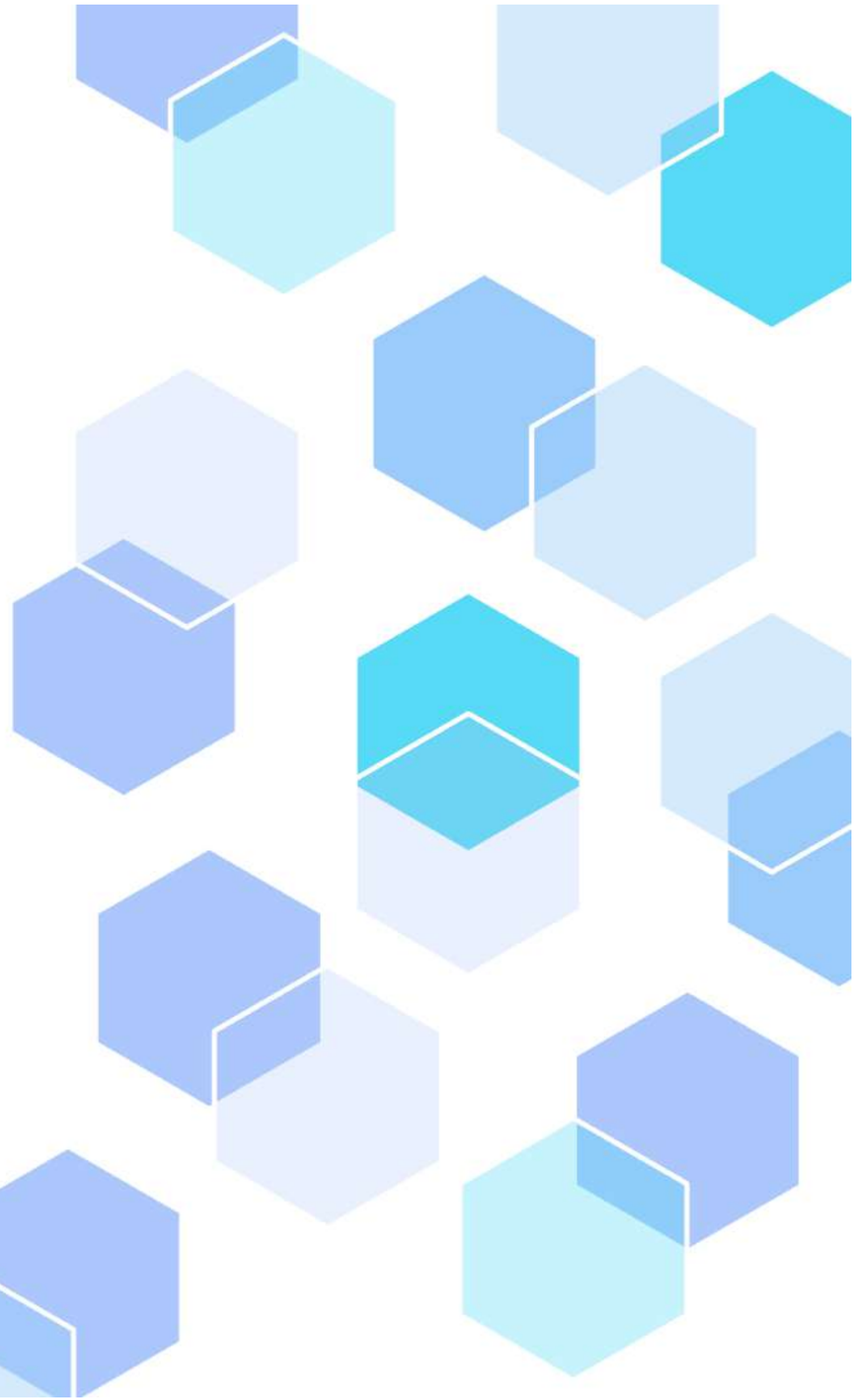
Algorithm

Data Structure

A data structure is a **way of organizing and storing data** in a computer so that it can be used efficiently.

It defines the relationships between data elements and the operations that can be performed on the data.

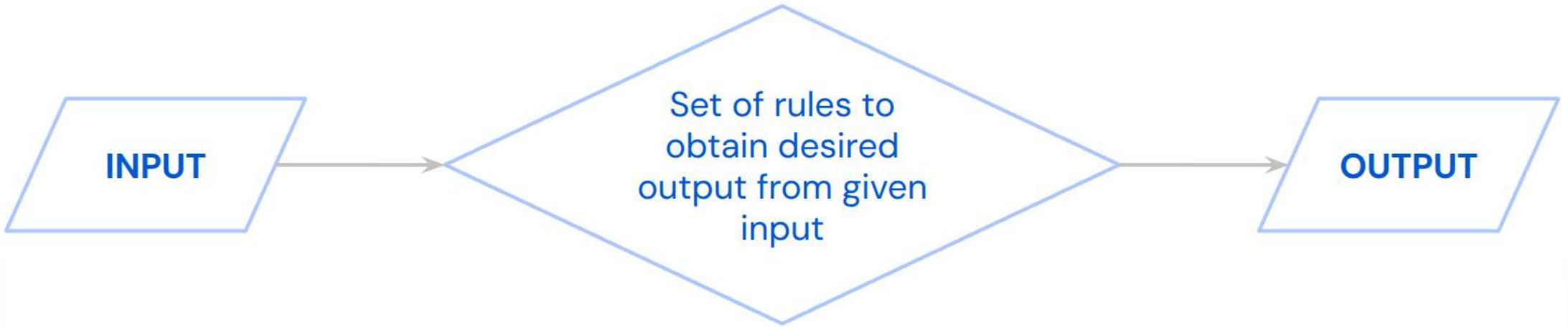


Algorithm

An algorithm is a **step-by-step procedure** or formula for **solving a problem**.

It is a finite set of instructions that, when followed, accomplishes a particular task.

Algorithm



02

Importance

Use case scenario

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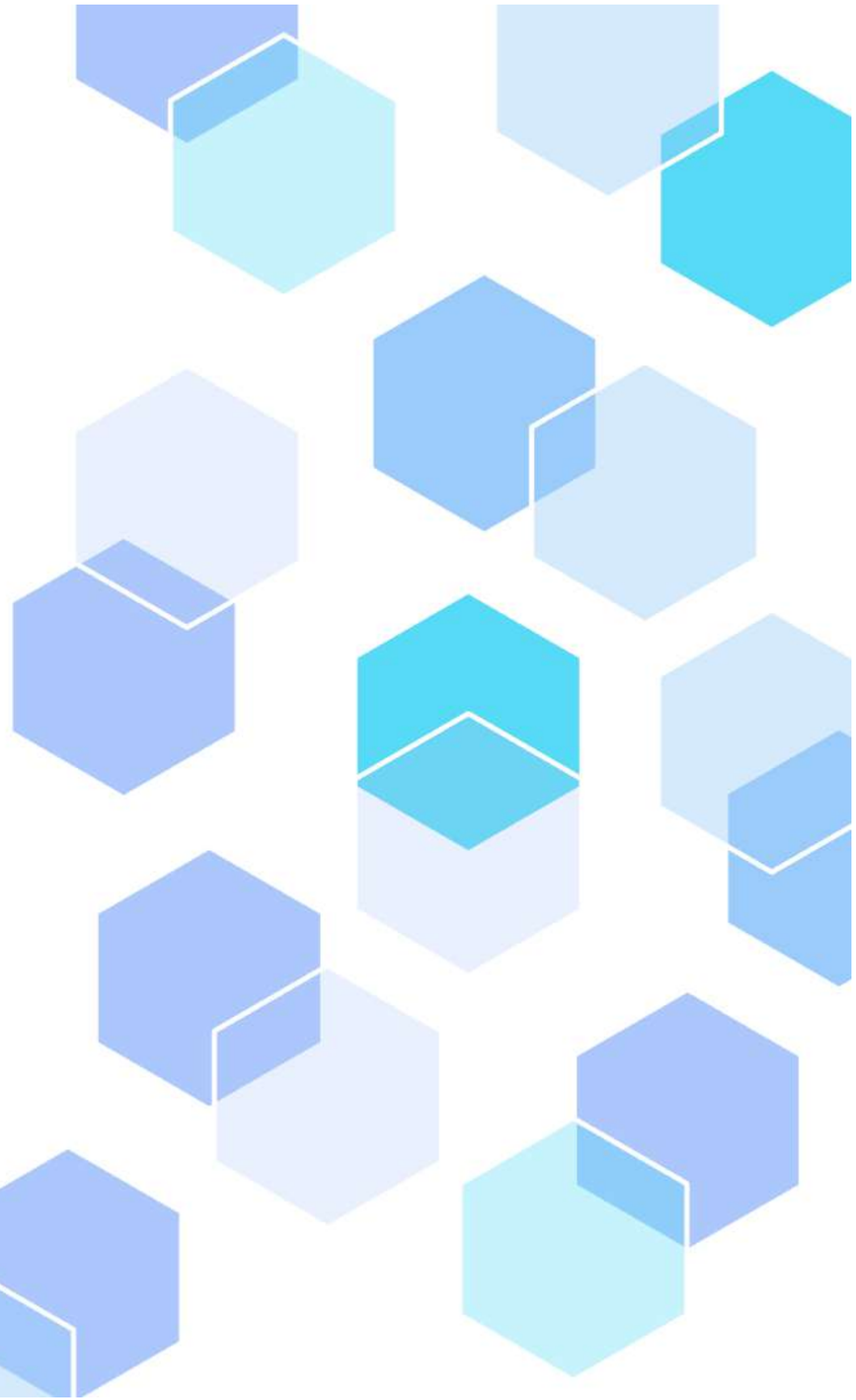
Importance of DSA

It is a **field of study in computer science** that **deals with** the **design**, **analysis**, and **implementation** of efficient **algorithms** and **data structures** to **solve complex computational problems**.



Importance

1. **Problem Solving**
2. **Algorithm Design**
3. **Code Optimization**
4. **Resource Management**
5. **Programming Interviews**
6. **Efficient Programming**
7. **Critical Thinking**
8. **Career Advancement**

03

Types of DS

Categorization of DS

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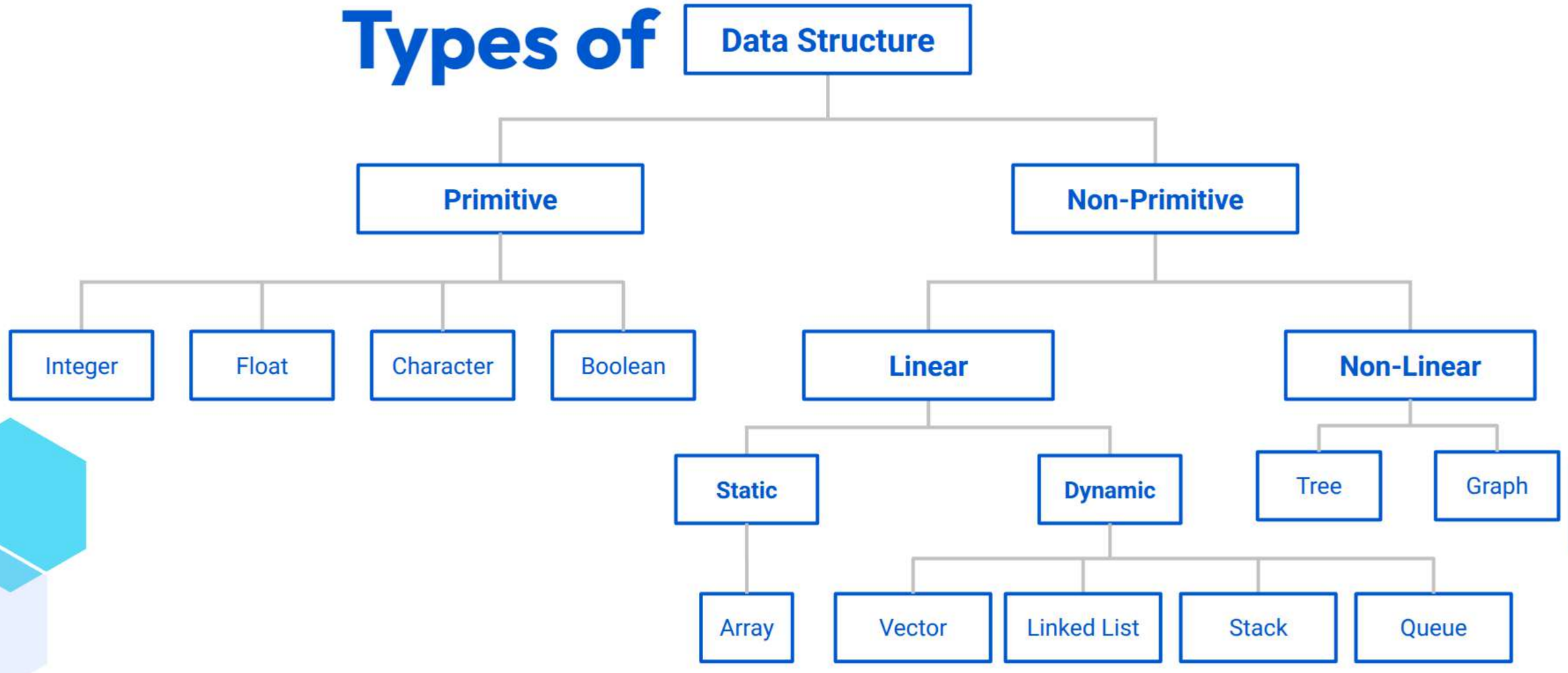
Types of Data Structure



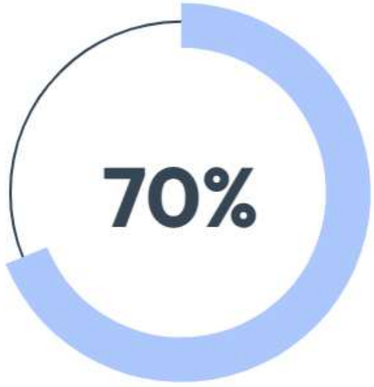
10-20-70 Rule for master DSA

Watching

Watching at least one lecture daily

Reading

Read 2 hours daily



Practicing

Keep practice 4 hours daily

TL;DR

Data Structure

- Way of organizing data for efficient access and manipulation.
- It defines the relationship between the data and the operations that can be performed on the data.
- I.e., Array, Vector, Linked List, Stack, Queue, etc.

Algorithm

- A step-by-step procedure for solving a problem or accomplishing a task.
- Algorithms are designed to solve specific problems or achieve particular goals.
- I.e., Searching, Sorting, Mathematical, Encryption, etc.

Thank you...

Bring on your coding attitude...