

# DSA through C++

## Introduction to data structure



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## Agenda

- ① Why to learn DSA?
- ② What is the importance of structuring data?
- ③ What is a data structure?
- ④ Where are data structure resides?
- ⑤ Classification of data structure
- ⑥ Algorithms
- ⑦ Prerequisites

## Why to learn DSA?

1. Raise level of programming
2. Efficient Programming
3. Able to solve complex problems
4. Campus Placement
5. A-Grade company placements

What is the importance of structuring data?

## 1. Dictionary



What is the importance structuring data?

## 2. map

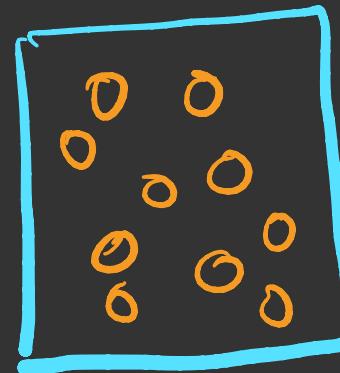


What is the importance structuring data?

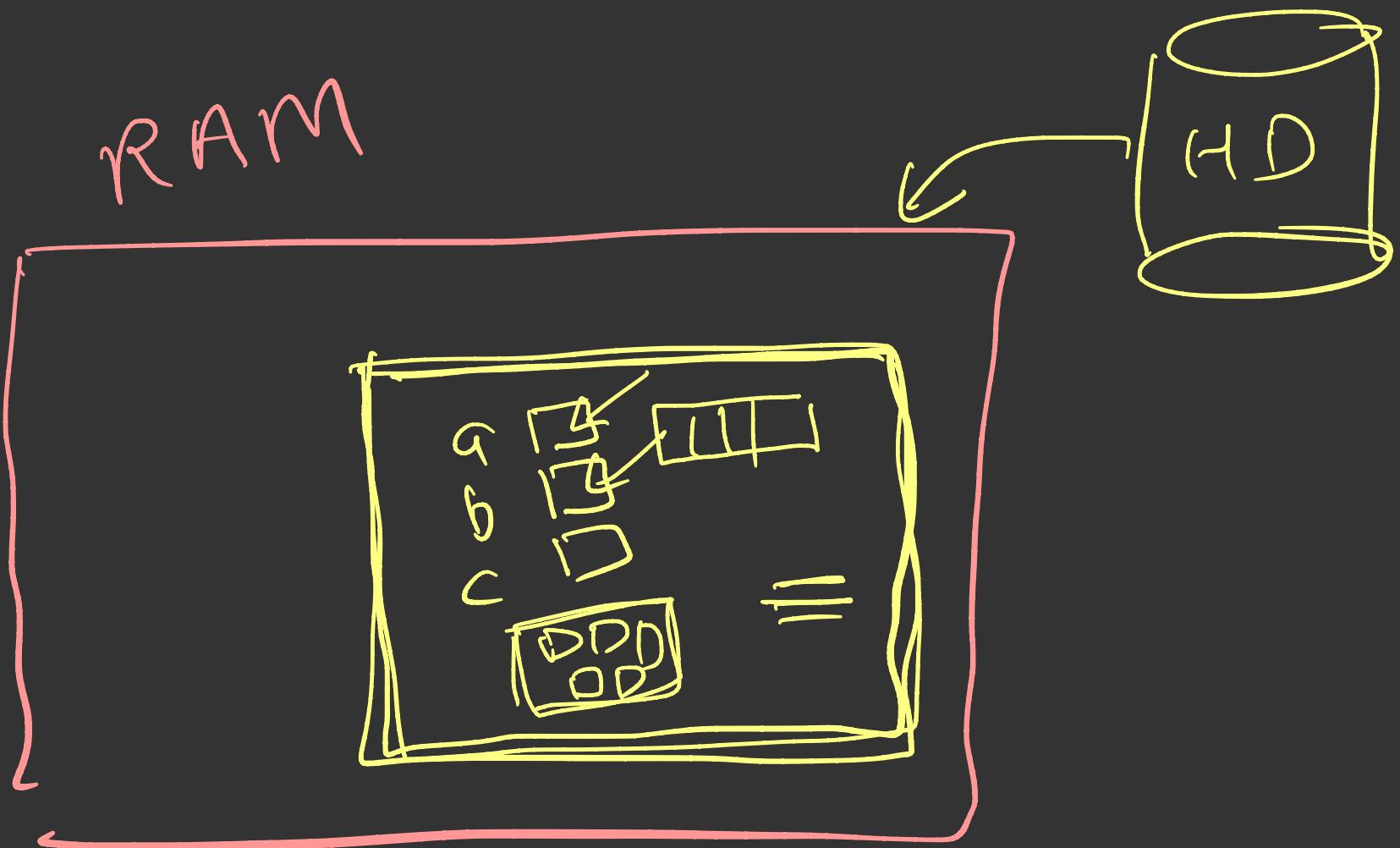
# 3. Ledger

## What is a data Structure?

Data Structure is a particular way of storing and organizing data in a computer so that it can be used efficiently.



Where are data structures resides?



# Classification of DS.

1. Linear data structures

Array, dynamic array, linked list, stack, queue, deque, etc.

2. Non-Linear data structures

BST, AVL, B-Tree, B+Tree, graph, etc

# Algorithm

An algorithm is the step by step, linguistic representation of logic to solve a given problem.

## Prerequisites

### C++

- classes and Objects
- constructor and destructor
- new and delete
- this pointer
- member access through pointer