

# Dynamic Data Structures

## What Are Dynamic Data Structures?

Dynamic data structures adjust their size during program execution, providing flexibility in managing data.

They are essential when the amount of information cannot be predetermined.

## Types of Dynamic Structures

Common dynamic data structures include linked lists, trees, graphs, and hash tables.

They allocate memory on demand, optimizing storage efficiency.

## Advantages and Considerations

Dynamic structures support efficient insertion and deletion but may have overhead due to pointer usage.

Choosing the right structure improves program performance and resource management.

## Applications

Used in databases, file systems, routing algorithms, and many advanced computing tasks.

Their flexibility makes them invaluable in complex systems.