

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.