Data Structures and Algorithms
Lecture 14

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Agenda

Data Structures

Searching

Searching

Given a set S of n elements, we want to search whether $x \in S$.

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▶ Time Complexity?

Searching

Given a set S of ordered n elements (e.g., numbers), we want to search whether $x \in S$.

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Searching

Given a set S of ordered n elements (e.g., numbers), we want to search whether $x \in S$.

▶ Time Complexity?

▶ What data structure should be used? Arrays? Linked Lists?

Searching

Given a dynamic set S of ordered elements (e.g., numbers),
we want to search whether $x \in S$.

- ▶ What data structure should be used?

Data Structure

- Insert(x)
- Delete(x)
- Find(x)
- ListAllElements()

Data Structure

- Insert(x)
- Delete(x)
- Find(x)
- ListAllElements()

Binary Search Trees

Binary Search Trees

List all elements / Traversals

► Preorder
► Inorder
► Postorder