Data Structures

• the conceptual shape or arrangement of the data
• Arrays

• Lists
Abstract Data Types

- Stack: entries are only inserted and removed at the head
  - Last in, First out (LIFO)
  - Push: add to the top/front
  - Pop: remove from the top/front
  - Ideal for storing items that must be retrieved in the reverse order from which they are stored
  - Examples:
Abstract Data Type

• Queue: entries only removed at the front, entries only added to the back
  • FIFO
  • Push: add to the back
  • Pop: remove from the front
  • Examples
Trees

• A collection whose entries have a hierarchical organization
• Each position is called a node
• Node at the top is the root node
• Nodes at the end are called terminal nodes (leaves)
• Binary tree: a tree in which each parent has no more then two children
• Examples
How do we store a binary tree? What functions do we need to work with a tree?