Java Collections

- [http://java.sun.com/j2se/1.5.0/docs/api/java/util/package-summary.html](http://java.sun.com/j2se/1.5.0/docs/api/java/util/package-summary.html)
- **Exercise:** read the documentation for Collection, Iterator, List, Map, Queue, Set, SortedMap, and SortedSet

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List, Set, and Map

- **List**
  - Can be used as a dynamic array
  - When the elements need to be ordered
  - Allow duplicates
- **Set**
  - When the elements do not need to be ordered
  - Do not allow duplicates
- **Map**
  - Associative array
  - When the elements are <key,value> pairs

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List Classes

- **ArrayList**
- **LinkedList**

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Set Classes

- **HashSet**
- **LinkedHashSet**
- **TreeSet**
  - Also implements the SortedSet interface

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Map Classes

- **HashMap**
- **LinkedHashMap**
- **TreeMap**
Other Interfaces and Classes

- SortedSet and SortedMap
  - Guarantees that the iterator will traverse the elements in ascending order
- Queue, Stack, and PriorityQueue
- Vector
  - Use ArrayList instead
  - Synchronized by default

Collection and Collections

- Collection
  - The root interface for most of the collection interface/classes
- Collections
  - A class that contains a number of algorithms that can be applied to collections

Collections Algorithms

- Min, max
- Reverse, rotate, shuffle
- Binary search, sort

Examples

- Some examples