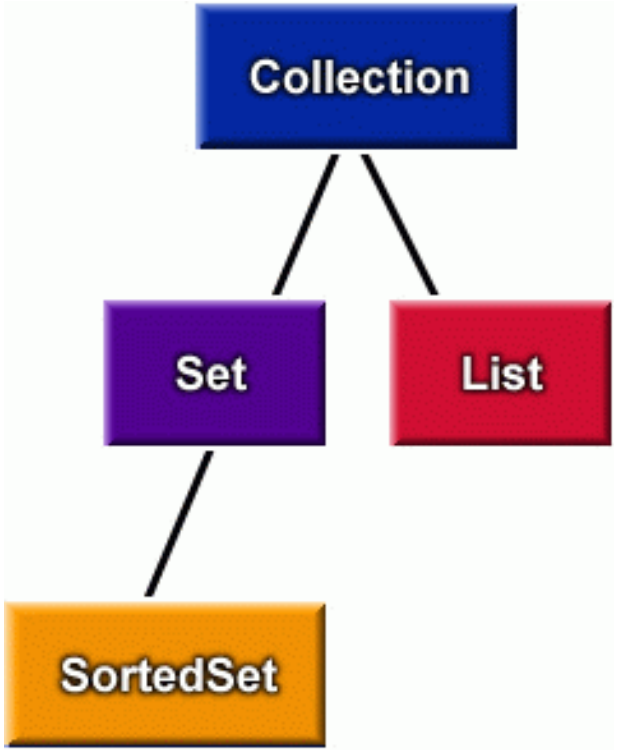
The Java Collection Framework

- A unified architecture for representing and manipulating collections
  - Interfaces
  - Implementations
  - Algorithms
- Advantages
  - It reduces programming effort
  - It increases program speed and quality
  - It allows interoperability among unrelated APIs
  - It fosters software reuse

Interfaces

- Collection
  - general interface
- Set
  - cannot contain duplicate elements
- List
  - ordered collection
- SortedSet
  - maintains its elements in ascending order



Object Ordering

- Implement Comparable interface
  - provides a *natural ordering*
  - allows objects of that class to be sorted automatically
- List
  - could be sorted in the *natural orderering* by method Collections.sort(List l)
- SortedSet
  - all objects sorted according to the *natural ordering*

Implementation

- SortedSet
  - TreeSet
- List
  - ArrayList
  - LinkedList
  - Vector
  - etc.

Comparable interface

- Source code

```
public interface Comparable {
    public int compareTo(Object ob);
}
```

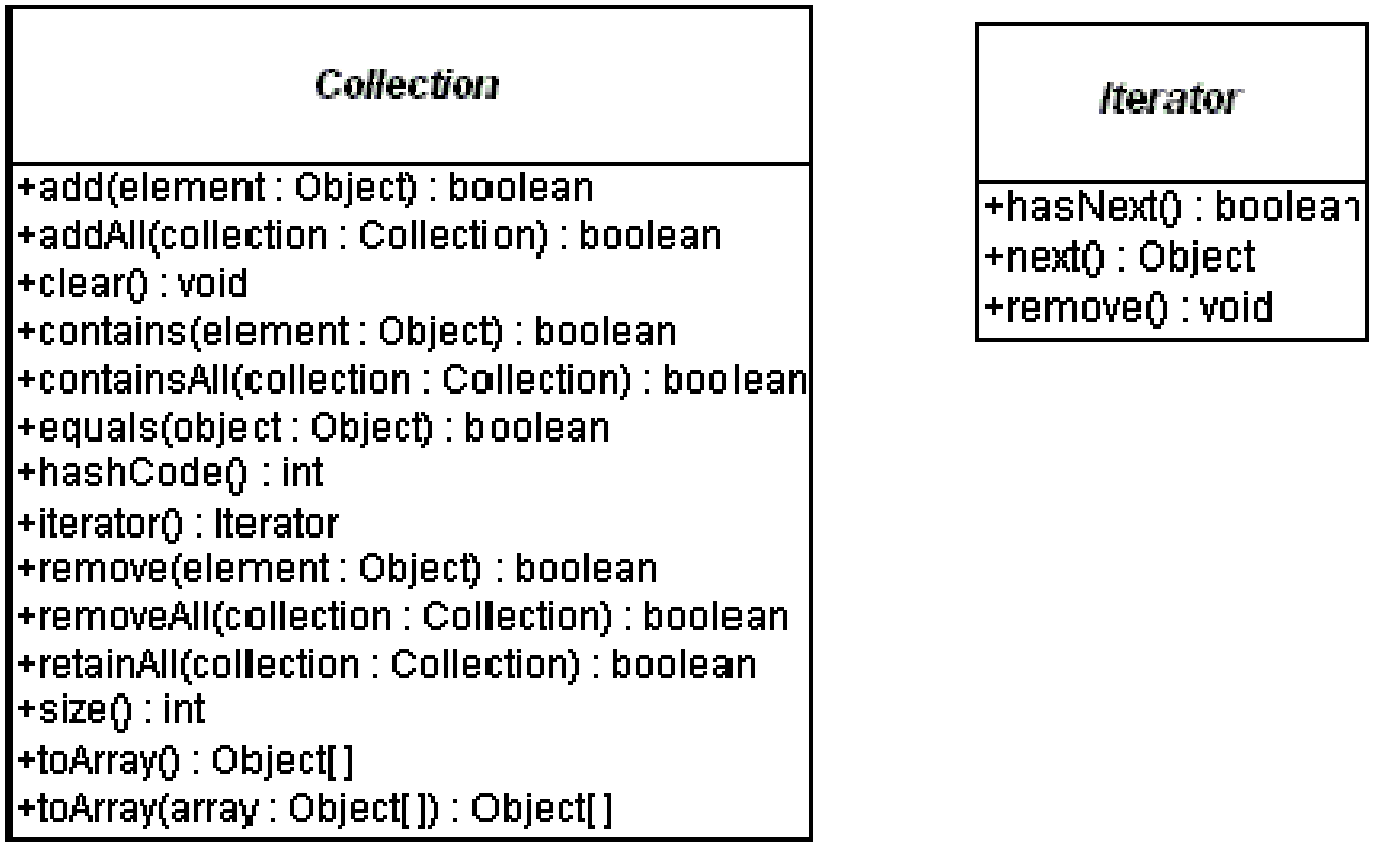
- Method compareTo returns

  negative – ob is less than this object

  zero – ob is equal to this object

  possitive – ob is greater than this object

Collection interface



For more information

- Documentation of the Collection Framework

  http://**java.sun.com**/j2se/1.4.2/docs/guide/collections/index.html

  - Tutorial
  - API Specification
- Introduction to the Collection Framework

  http://**java.sun.com**/developer/onlineTraining/collections/Collection.html