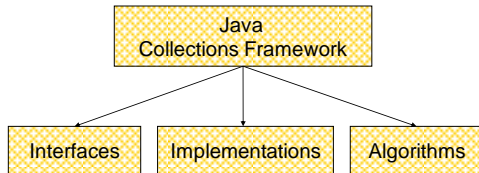


Java Collections Framework

- **Collection:** a group of elements
- Interface Based Design:

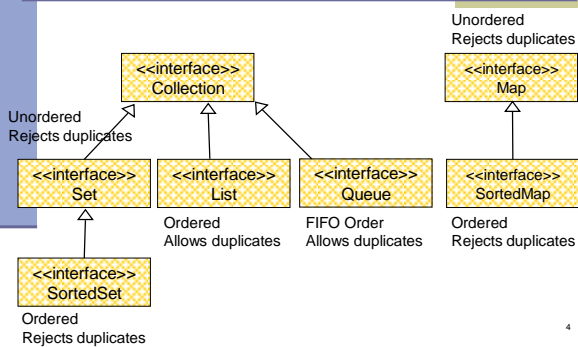


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Software 1 with Java

Recitation No. 11
Lior Shapira and Oranit Dror

Collection Interfaces



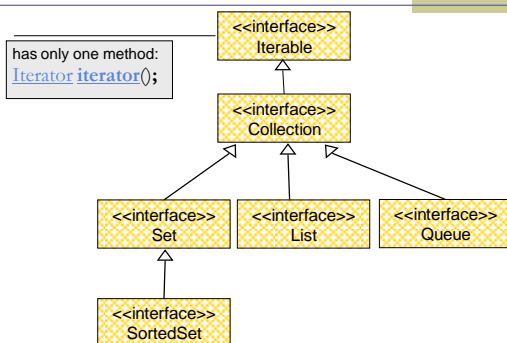
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Online Resources

- Java 5 API Specification:
<http://java.sun.com/j2se/1.5.0/docs/api/index.html>
- Sun Tutorial:
<http://java.sun.com/docs/books/tutorial/collections/>

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Collection extends Iterable



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The Collection Interface

- Holds any Object references
 - Not type safe
 - Use casting
- Doesn't hold primitives
 - Use wrapper classes
- Since Java5 collections are type-safe
 - Will be discussed later in the course

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Iterating over a Collection

```
for (Iterator iter = collection.iterator() ;
     iter.hasNext();) {
    System.out.println(iter.next());
}
```

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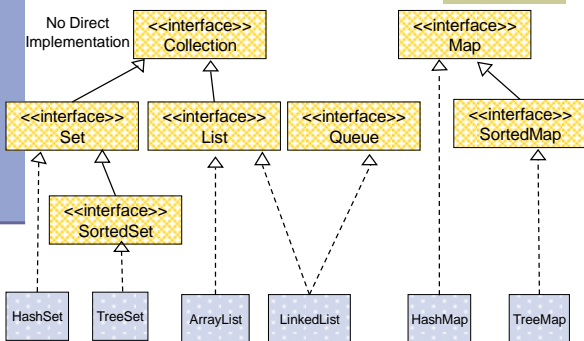
The Iterator Interface

- Provide a way to access the elements of a collection sequentially **without exposing its underlying representation**
- Methods:
 - hasNext() - Returns true if there are more elements
 - next() - Returns the next element
 - remove() - Removes the last element returned by the iterator (optional operation)

Command and Query

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General Purpose Implementations



Collection Implementations

- Class Name Convention: <Data structure> <Interface>

General Purpose Implementations	Data Structures			
	Hash Table	Resizable Array	Balanced Tree	Linked List
Interfaces	Set	HashSet	TreeSet (SortedSet)	
	Queue			LinkedList
	List	ArrayList		LinkedList
	Map	HashMap	TreeMap (SortedMap)	

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