***Sorted Set (Interface)***

* *The elements are ordered using their*[*natural ordering*](https://docs.oracle.com/javase/8/docs/api/java/lang/Comparable.html)*, or by a*[*Comparator*](https://docs.oracle.com/javase/8/docs/api/java/util/Comparator.html)*typically provided at sorted set creation time. The set's iterator will traverse the set in ascending element order.*
* *All elements inserted into a sorted set must implement the Comparable interface (or be accepted by the specified comparator). Furthermore, all such elements must be mutually comparable: e1.compareTo(e2) (or comparator.compare(e1, e2)) must not throw a ClassCastException for any elements e1 and e2 in the sorted set.*

***Important Functions/Operations of Sorted interface***

|  |  |
| --- | --- |
| ***Return Type*** | ***Methods*** |
| [Comparator](https://docs.oracle.com/javase/8/docs/api/java/util/Comparator.html)<? super [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html)> | [comparator](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#comparator--)() |
| default [Spliterator](https://docs.oracle.com/javase/8/docs/api/java/util/Spliterator.html" \o "interface in java.util)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html)> | [spliterator](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#spliterator--)() |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) | [first](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#first--)() |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) | [last](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#last--)() |
| [SortedSet](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html)> | [headSet](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#headSet-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) toElement) |
| [SortedSet](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html)> | [subSet](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#subSet-E-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) fromElement, [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) toElement) |
| [SortedSet](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html)> | [tailSet](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#tailSet-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) fromElement) |

*Refer:* [*https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html*](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html)

***Navigable Set (Interface)***

***Important Functions/Operations of Navigable interface***

|  |  |
| --- | --- |
| ***Return Type*** | ***Methods*** |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) | [ceiling](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html#ceiling-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html) e) |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) | [floor](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html#floor-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html) e) |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) | [higher](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html#higher-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html) e) |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) | [lower](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html#lower-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html) e) |
| [NavigableSet](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)> | [headSet](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#headSet-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html) fromElement, boolean inclusive) |
| [NavigableSet](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)> | [subSet](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#subSet-E-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html) fromElement, boolean fromInclusive, [E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html) toElement, boolean toInclusive)) |
| [NavigableSet](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)> | [tailSet](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#tailSet-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html) fromElement, boolean inclusive) |
| [Iterator](https://docs.oracle.com/javase/8/docs/api/java/util/Iterator.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)> | [iterator](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html#iterator--)() |
| [Iterator](https://docs.oracle.com/javase/8/docs/api/java/util/Iterator.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)> | [descendingIterator](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html#descendingIterator--)() |
| [NavigableSet](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)> | [descendingSet](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html#descendingSet--)() |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) | [pollFirst](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html#pollFirst--)() |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) | [pollLast](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html#pollLast--)() |

*Refer:* [*https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html*](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html)

***Tree Set***

***Important Functions/Operations of Navigable interface***

|  |  |
| --- | --- |
| ***Return Type*** | ***Methods*** |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) | [ceiling](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html#ceiling-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html) e) |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) | [floor](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html#floor-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html) e) |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) | [higher](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html#higher-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html) e) |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) | [lower](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html#lower-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html) e) |
| [NavigableSet](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)> | [headSet](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#headSet-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html) fromElement, boolean inclusive) |
| [NavigableSet](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)> | [subSet](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#subSet-E-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html) fromElement, boolean fromInclusive, [E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html) toElement, boolean toInclusive)) |
| [NavigableSet](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)> | [tailSet](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#tailSet-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html) fromElement, boolean inclusive) |
| [Iterator](https://docs.oracle.com/javase/8/docs/api/java/util/Iterator.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)> | [iterator](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html#iterator--)() |
| [Iterator](https://docs.oracle.com/javase/8/docs/api/java/util/Iterator.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)> | [descendingIterator](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html#descendingIterator--)() |
| [NavigableSet](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html)> | [descendingSet](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html#descendingSet--)() |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) | [pollFirst](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html#pollFirst--)() |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) | [pollLast](https://docs.oracle.com/javase/8/docs/api/java/util/NavigableSet.html#pollLast--)() |

***Important Functions/Operations of Sorted interface***

|  |  |
| --- | --- |
| ***Return Type*** | ***Methods*** |
| [Comparator](https://docs.oracle.com/javase/8/docs/api/java/util/Comparator.html)<? super [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html)> | [comparator](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#comparator--)() |
| default [Spliterator](https://docs.oracle.com/javase/8/docs/api/java/util/Spliterator.html" \o "interface in java.util)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html)> | [spliterator](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#spliterator--)() |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) | [first](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#first--)() |
| [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) | [last](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#last--)() |
| [SortedSet](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html)> | [headSet](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#headSet-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) toElement) |
| [SortedSet](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html)> | [subSet](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#subSet-E-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) fromElement, [E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) toElement) |
| [SortedSet](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html)<[E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html)> | [tailSet](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html#tailSet-E-)([E](https://docs.oracle.com/javase/8/docs/api/java/util/SortedSet.html) fromElement) |

***Important Functions/Operations of Collection class***

|  |  |
| --- | --- |
| ***Return Type*** | ***Methods*** |
| boolean | [add](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html#add(E))([E](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html) e) |
| boolean | [addAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html#addAll(java.util.Collection))([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html)<? extends [E](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html)> c) |
| void | [clear](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html#clear())() |
| boolean | [contains](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html#contains(java.lang.Object))([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html) o) |
| boolean | [containsAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html#containsAll(java.util.Collection))([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html)<?> c) |
| boolean | [equals](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html#equals(java.lang.Object))([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html) o) |
| int | [isEmpty](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html#isEmpty())() |
| [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html)<[E](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html)> | [iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html#iterator())() |
| boolean | [remove](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html#remove(java.lang.Object))([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html) o) |
| boolean | [removeAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html#removeAll(java.util.Collection))([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html)<?> c) |
| boolean | [retainAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html#retainAll(java.util.Collection))([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html)<?> c) |
| int | [size](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html#size())() |
| [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html)[] | [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html#toArray())() |
| <T> T[] | [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html#toArray(T[]))(T[] a) |

Refer: <https://docs.oracle.com/javase/8/docs/api/java/util/TreeSet.html>

