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org.apache.commons.collections4

## Class ComparatorUtils

* [java.lang.Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)
  + org.apache.commons.collections4.ComparatorUtils
* public class ComparatorUtils  
  extends [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)  
  Provides convenient static utility methods for Comparator objects.  
  Most of the functionality in this class can also be found in the comparators package. This class merely provides a convenient central place if you have use for more than one class in the comparators subpackage.Since: 2.1

### Field SummaryFields

|  |  |
| --- | --- |
| * + Modifier and Type | * + Field and Description |
| * + static [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true) | * + [NATURAL\_COMPARATOR](http://docs.google.com/org/apache/commons/collections4/ComparatorUtils.html#NATURAL_COMPARATOR) Comparator for natural sort order. |

### Method SummaryAll Methods Static Methods Concrete Methods

|  |  |
| --- | --- |
| * + Modifier and Type | * + Method and Description |
| * + static [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<[Boolean](https://docs.oracle.com/javase/7/docs/api/java/lang/Boolean.html?is-external=true)> | * + [booleanComparator](http://docs.google.com/org/apache/commons/collections4/ComparatorUtils.html#booleanComparator-boolean-)(boolean trueFirst) Gets a Comparator that can sort Boolean objects. |
| * + static <E> [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> | * + [chainedComparator](http://docs.google.com/org/apache/commons/collections4/ComparatorUtils.html#chainedComparator-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E>> comparators) Gets a comparator that compares using a collection of [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)s, applied in (default iterator) sequence until one returns not equal or the collection is exhausted. |
| * + static <E> [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> | * + [chainedComparator](http://docs.google.com/org/apache/commons/collections4/ComparatorUtils.html#chainedComparator-java.util.Comparator...-)([Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E>... comparators) Gets a comparator that compares using an array of [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)s, applied in sequence until one returns not equal or the array is exhausted. |
| * + static <E> E | * + [max](http://docs.google.com/org/apache/commons/collections4/ComparatorUtils.html#max-E-E-java.util.Comparator-)(E o1, E o2, [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> comparator) Returns the larger of the given objects according to the given comparator, returning the second object if the comparator returns equal. |
| * + static <E> E | * + [min](http://docs.google.com/org/apache/commons/collections4/ComparatorUtils.html#min-E-E-java.util.Comparator-)(E o1, E o2, [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> comparator) Returns the smaller of the given objects according to the given comparator, returning the second object if the comparator returns equal. |
| * + static <E extends [Comparable](https://docs.oracle.com/javase/7/docs/api/java/lang/Comparable.html?is-external=true)<? super E>> [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> | * + [naturalComparator](http://docs.google.com/org/apache/commons/collections4/ComparatorUtils.html#naturalComparator--)() Gets a comparator that uses the natural order of the objects. |
| * + static <E> [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> | * + [nullHighComparator](http://docs.google.com/org/apache/commons/collections4/ComparatorUtils.html#nullHighComparator-java.util.Comparator-)([Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> comparator) Gets a Comparator that controls the comparison of null values. |
| * + static <E> [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> | * + [nullLowComparator](http://docs.google.com/org/apache/commons/collections4/ComparatorUtils.html#nullLowComparator-java.util.Comparator-)([Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> comparator) Gets a Comparator that controls the comparison of null values. |
| * + static <E> [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> | * + [reversedComparator](http://docs.google.com/org/apache/commons/collections4/ComparatorUtils.html#reversedComparator-java.util.Comparator-)([Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> comparator) Gets a comparator that reverses the order of the given comparator. |
| * + static <I,O> [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<I> | * + [transformedComparator](http://docs.google.com/org/apache/commons/collections4/ComparatorUtils.html#transformedComparator-java.util.Comparator-org.apache.commons.collections4.Transformer-)([Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<O> comparator, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super I,? extends O> transformer) Gets a Comparator that passes transformed objects to the given comparator. |

### Methods inherited from class java.lang.[**Object**](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)[clone](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#clone--), [equals](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#equals-java.lang.Object-), [finalize](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#finalize--), [getClass](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#getClass--), [hashCode](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#hashCode--), [notify](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#notify--), [notifyAll](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#notifyAll--), [toString](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#toString--), [wait](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#wait--), [wait](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#wait-long-), [wait](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#wait-long-int-)

### Field Detail

#### NATURAL\_COMPARATOR public static final [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true) NATURAL\_COMPARATOR Comparator for natural sort order.See Also: [ComparableComparator.comparableComparator()](http://docs.google.com/org/apache/commons/collections4/comparators/ComparableComparator.html#comparableComparator--)

### Method Detail

#### naturalComparator public static <E extends [Comparable](https://docs.oracle.com/javase/7/docs/api/java/lang/Comparable.html?is-external=true)<? super E>> [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> naturalComparator() Gets a comparator that uses the natural order of the objects.Type Parameters: E - the object type to compare Returns: a comparator which uses natural order

#### chainedComparator public static <E> [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> chainedComparator([Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E>... comparators) Gets a comparator that compares using an array of [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)s, applied in sequence until one returns not equal or the array is exhausted.Type Parameters: E - the object type to compare Parameters: comparators - the comparators to use, not null or empty or containing nulls Returns: a [ComparatorChain](http://docs.google.com/org/apache/commons/collections4/comparators/ComparatorChain.html) formed from the input comparators Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if comparators array is null or contains a null See Also: [ComparatorChain](http://docs.google.com/org/apache/commons/collections4/comparators/ComparatorChain.html)

#### chainedComparator public static <E> [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> chainedComparator([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E>> comparators) Gets a comparator that compares using a collection of [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)s, applied in (default iterator) sequence until one returns not equal or the collection is exhausted.Type Parameters: E - the object type to compare Parameters: comparators - the comparators to use, not null or empty or containing nulls Returns: a [ComparatorChain](http://docs.google.com/org/apache/commons/collections4/comparators/ComparatorChain.html) formed from the input comparators Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if comparators collection is null or contains a null [ClassCastException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassCastException.html?is-external=true) - if the comparators collection contains the wrong object type See Also: [ComparatorChain](http://docs.google.com/org/apache/commons/collections4/comparators/ComparatorChain.html)

#### reversedComparator public static <E> [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> reversedComparator([Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> comparator) Gets a comparator that reverses the order of the given comparator.Type Parameters: E - the object type to compare Parameters: comparator - the comparator to reverse Returns: a comparator that reverses the order of the input comparator See Also: [ReverseComparator](http://docs.google.com/org/apache/commons/collections4/comparators/ReverseComparator.html)

#### booleanComparator public static [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<[Boolean](https://docs.oracle.com/javase/7/docs/api/java/lang/Boolean.html?is-external=true)> booleanComparator(boolean trueFirst) Gets a Comparator that can sort Boolean objects. The parameter specifies whether true or false is sorted first. The comparator throws NullPointerException if a null value is compared.Parameters: trueFirst - when true, sort true [Boolean](https://docs.oracle.com/javase/7/docs/api/java/lang/Boolean.html?is-external=true)s before false [Boolean](https://docs.oracle.com/javase/7/docs/api/java/lang/Boolean.html?is-external=true)s. Returns: a comparator that sorts booleans

#### nullLowComparator public static <E> [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> nullLowComparator([Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> comparator) Gets a Comparator that controls the comparison of null values. The returned comparator will consider a null value to be less than any nonnull value, and equal to any other null value. Two nonnull values will be evaluated with the given comparator.Type Parameters: E - the object type to compare Parameters: comparator - the comparator that wants to allow nulls Returns: a version of that comparator that allows nulls See Also: [NullComparator](http://docs.google.com/org/apache/commons/collections4/comparators/NullComparator.html)

#### nullHighComparator public static <E> [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> nullHighComparator([Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> comparator) Gets a Comparator that controls the comparison of null values. The returned comparator will consider a null value to be greater than any nonnull value, and equal to any other null value. Two nonnull values will be evaluated with the given comparator.Type Parameters: E - the object type to compare Parameters: comparator - the comparator that wants to allow nulls Returns: a version of that comparator that allows nulls See Also: [NullComparator](http://docs.google.com/org/apache/commons/collections4/comparators/NullComparator.html)

#### transformedComparator public static <I,O> [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<I> transformedComparator([Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<O> comparator, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super I,? extends O> transformer) Gets a Comparator that passes transformed objects to the given comparator. Objects passed to the returned comparator will first be transformed by the given transformer before they are compared by the given comparator.Type Parameters: I - the input object type of the transformed comparator O - the object type of the decorated comparator Parameters: comparator - the sort order to use transformer - the transformer to use Returns: a comparator that transforms its input objects before comparing them See Also: [TransformingComparator](http://docs.google.com/org/apache/commons/collections4/comparators/TransformingComparator.html)

#### min public static <E> E min(E o1, E o2, [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> comparator) Returns the smaller of the given objects according to the given comparator, returning the second object if the comparator returns equal.Type Parameters: E - the object type to compare Parameters: o1 - the first object to compare o2 - the second object to compare comparator - the sort order to use Returns: the smaller of the two objects

#### max public static <E> E max(E o1, E o2, [Comparator](https://docs.oracle.com/javase/7/docs/api/java/util/Comparator.html?is-external=true)<E> comparator) Returns the larger of the given objects according to the given comparator, returning the second object if the comparator returns equal.Type Parameters: E - the object type to compare Parameters: o1 - the first object to compare o2 - the second object to compare comparator - the sort order to use Returns: the larger of the two objects

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