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Package org.apache.commons.collections4.iterators

This package contains implementations of the [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true) interface.

See: [Description](#3znysh7)

* Class Summary

|  |  |
| --- | --- |
| * Class | * Description |
| * [AbstractEmptyMapIterator](http://docs.google.com/org/apache/commons/collections4/iterators/AbstractEmptyMapIterator.html)<K,V> | * Provides an implementation of an empty map iterator. |
| * [AbstractIteratorDecorator](http://docs.google.com/org/apache/commons/collections4/iterators/AbstractIteratorDecorator.html)<E> | * Provides basic behaviour for decorating an iterator with extra functionality. |
| * [AbstractListIteratorDecorator](http://docs.google.com/org/apache/commons/collections4/iterators/AbstractListIteratorDecorator.html)<E> | * Provides basic behaviour for decorating a list iterator with extra functionality. |
| * [AbstractMapIteratorDecorator](http://docs.google.com/org/apache/commons/collections4/iterators/AbstractMapIteratorDecorator.html)<K,V> | * Provides basic behaviour for decorating a map iterator with extra functionality. |
| * [AbstractOrderedMapIteratorDecorator](http://docs.google.com/org/apache/commons/collections4/iterators/AbstractOrderedMapIteratorDecorator.html)<K,V> | * Provides basic behaviour for decorating an ordered map iterator with extra functionality. |
| * [AbstractUntypedIteratorDecorator](http://docs.google.com/org/apache/commons/collections4/iterators/AbstractUntypedIteratorDecorator.html)<I,O> | * Provides basic behaviour for decorating an iterator with extra functionality without committing the generic type of the Iterator implementation. |
| * [ArrayIterator](http://docs.google.com/org/apache/commons/collections4/iterators/ArrayIterator.html)<E> | * Implements an [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true) over any array. |
| * [ArrayListIterator](http://docs.google.com/org/apache/commons/collections4/iterators/ArrayListIterator.html)<E> | * Implements a [ListIterator](https://docs.oracle.com/javase/7/docs/api/java/util/ListIterator.html?is-external=true) over an array. |
| * [BoundedIterator](http://docs.google.com/org/apache/commons/collections4/iterators/BoundedIterator.html)<E> | * Decorates another iterator to return elements in a specific range. |
| * [CollatingIterator](http://docs.google.com/org/apache/commons/collections4/iterators/CollatingIterator.html)<E> | * Provides an ordered iteration over the elements contained in a collection of ordered Iterators. |
| * [EmptyIterator](http://docs.google.com/org/apache/commons/collections4/iterators/EmptyIterator.html)<E> | * Provides an implementation of an empty iterator. |
| * [EmptyListIterator](http://docs.google.com/org/apache/commons/collections4/iterators/EmptyListIterator.html)<E> | * Provides an implementation of an empty list iterator. |
| * [EmptyMapIterator](http://docs.google.com/org/apache/commons/collections4/iterators/EmptyMapIterator.html)<K,V> | * Provides an implementation of an empty map iterator. |
| * [EmptyOrderedIterator](http://docs.google.com/org/apache/commons/collections4/iterators/EmptyOrderedIterator.html)<E> | * Provides an implementation of an empty ordered iterator. |
| * [EmptyOrderedMapIterator](http://docs.google.com/org/apache/commons/collections4/iterators/EmptyOrderedMapIterator.html)<K,V> | * Provides an implementation of an empty ordered map iterator. |
| * [EntrySetMapIterator](http://docs.google.com/org/apache/commons/collections4/iterators/EntrySetMapIterator.html)<K,V> | * Implements a MapIterator using a Map entrySet. |
| * [EnumerationIterator](http://docs.google.com/org/apache/commons/collections4/iterators/EnumerationIterator.html)<E> | * Adapter to make [Enumeration](https://docs.oracle.com/javase/7/docs/api/java/util/Enumeration.html?is-external=true) instances appear to be [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true) instances. |
| * [FilterIterator](http://docs.google.com/org/apache/commons/collections4/iterators/FilterIterator.html)<E> | * Decorates another [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true) using a predicate to filter elements. |
| * [FilterListIterator](http://docs.google.com/org/apache/commons/collections4/iterators/FilterListIterator.html)<E> | * Decorates another [ListIterator](https://docs.oracle.com/javase/7/docs/api/java/util/ListIterator.html?is-external=true) using a predicate to filter elements. |
| * [IteratorChain](http://docs.google.com/org/apache/commons/collections4/iterators/IteratorChain.html)<E> | * An IteratorChain is an Iterator that wraps a number of Iterators. |
| * [IteratorEnumeration](http://docs.google.com/org/apache/commons/collections4/iterators/IteratorEnumeration.html)<E> | * Adapter to make an [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true) instance appear to be an [Enumeration](https://docs.oracle.com/javase/7/docs/api/java/util/Enumeration.html?is-external=true) instance. |
| * [IteratorIterable](http://docs.google.com/org/apache/commons/collections4/iterators/IteratorIterable.html)<E> | * Adapter to make an [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true) instance appear to be an [Iterable](https://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true) instance. |
| * [LazyIteratorChain](http://docs.google.com/org/apache/commons/collections4/iterators/LazyIteratorChain.html)<E> | * An LazyIteratorChain is an Iterator that wraps a number of Iterators in a lazy manner. |
| * [ListIteratorWrapper](http://docs.google.com/org/apache/commons/collections4/iterators/ListIteratorWrapper.html)<E> | * Converts an [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true) into a [ResettableListIterator](http://docs.google.com/org/apache/commons/collections4/ResettableListIterator.html). |
| * [LoopingIterator](http://docs.google.com/org/apache/commons/collections4/iterators/LoopingIterator.html)<E> | * An Iterator that restarts when it reaches the end. |
| * [LoopingListIterator](http://docs.google.com/org/apache/commons/collections4/iterators/LoopingListIterator.html)<E> | * A ListIterator that restarts when it reaches the end or when it reaches the beginning. |
| * [NodeListIterator](http://docs.google.com/org/apache/commons/collections4/iterators/NodeListIterator.html) | * An [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true) over a [NodeList](https://docs.oracle.com/javase/7/docs/api/org/w3c/dom/NodeList.html?is-external=true). |
| * [ObjectArrayIterator](http://docs.google.com/org/apache/commons/collections4/iterators/ObjectArrayIterator.html)<E> | * An [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true) over an array of objects. |
| * [ObjectArrayListIterator](http://docs.google.com/org/apache/commons/collections4/iterators/ObjectArrayListIterator.html)<E> | * Implements a [ListIterator](https://docs.oracle.com/javase/7/docs/api/java/util/ListIterator.html?is-external=true) over an array of objects. |
| * [ObjectGraphIterator](http://docs.google.com/org/apache/commons/collections4/iterators/ObjectGraphIterator.html)<E> | * An Iterator that can traverse multiple iterators down an object graph. |
| * [PeekingIterator](http://docs.google.com/org/apache/commons/collections4/iterators/PeekingIterator.html)<E> | * Decorates an iterator to support one-element lookahead while iterating. |
| * [PermutationIterator](http://docs.google.com/org/apache/commons/collections4/iterators/PermutationIterator.html)<E> | * This iterator creates permutations of an input collection, using the Steinhaus-Johnson-Trotter algorithm (also called plain changes). |
| * [PushbackIterator](http://docs.google.com/org/apache/commons/collections4/iterators/PushbackIterator.html)<E> | * Decorates an iterator to support pushback of elements. |
| * [ReverseListIterator](http://docs.google.com/org/apache/commons/collections4/iterators/ReverseListIterator.html)<E> | * Iterates backwards through a List, starting with the last element and continuing to the first. |
| * [SingletonIterator](http://docs.google.com/org/apache/commons/collections4/iterators/SingletonIterator.html)<E> | * SingletonIterator is an [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true) over a single object instance. |
| * [SingletonListIterator](http://docs.google.com/org/apache/commons/collections4/iterators/SingletonListIterator.html)<E> | * SingletonIterator is an [ListIterator](https://docs.oracle.com/javase/7/docs/api/java/util/ListIterator.html?is-external=true) over a single object instance. |
| * [SkippingIterator](http://docs.google.com/org/apache/commons/collections4/iterators/SkippingIterator.html)<E> | * Decorates another iterator to skip the first N elements. |
| * [TransformIterator](http://docs.google.com/org/apache/commons/collections4/iterators/TransformIterator.html)<I,O> | * Decorates an iterator such that each element returned is transformed. |
| * [UniqueFilterIterator](http://docs.google.com/org/apache/commons/collections4/iterators/UniqueFilterIterator.html)<E> | * A FilterIterator which only returns "unique" Objects. |
| * [UnmodifiableIterator](http://docs.google.com/org/apache/commons/collections4/iterators/UnmodifiableIterator.html)<E> | * Decorates an iterator such that it cannot be modified. |
| * [UnmodifiableListIterator](http://docs.google.com/org/apache/commons/collections4/iterators/UnmodifiableListIterator.html)<E> | * Decorates a list iterator such that it cannot be modified. |
| * [UnmodifiableMapIterator](http://docs.google.com/org/apache/commons/collections4/iterators/UnmodifiableMapIterator.html)<K,V> | * Decorates a map iterator such that it cannot be modified. |
| * [UnmodifiableOrderedMapIterator](http://docs.google.com/org/apache/commons/collections4/iterators/UnmodifiableOrderedMapIterator.html)<K,V> | * Decorates an ordered map iterator such that it cannot be modified. |
| * [ZippingIterator](http://docs.google.com/org/apache/commons/collections4/iterators/ZippingIterator.html)<E> | * Provides an interleaved iteration over the elements contained in a collection of Iterators. |

## Package org.apache.commons.collections4.iterators Description

This package contains implementations of the [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true) interface.

You may also consider using [IteratorUtils](http://docs.google.com/org/apache/commons/collections4/IteratorUtils.html), which is a single class that uses static methods to construct instances of the classes in this package.

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