JavaScript is disabled on your browser.

[Skip navigation links](#1fob9te)

* [Overview](http://docs.google.com/overview-summary.html)
* [Package](http://docs.google.com/package-summary.html)
* Class
* [Use](http://docs.google.com/class-use/AbstractCollectionDecorator.html)
* [Tree](http://docs.google.com/package-tree.html)
* [Deprecated](http://docs.google.com/deprecated-list.html)
* [Index](http://docs.google.com/index-all.html)
* [Help](http://docs.google.com/help-doc.html)
* Prev Class
* [Next Class](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html)
* [Frames](http://docs.google.com/index.html?org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)
* [No Frames](http://docs.google.com/AbstractCollectionDecorator.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* Nested |
* Field |
* [Constr](#3znysh7) |
* [Method](#2et92p0)
* Detail:
* Field |
* [Constr](#4d34og8) |
* [Method](#3rdcrjn)

org.apache.commons.collections4.collection

## Class AbstractCollectionDecorator<E>

* [java.lang.Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)
  + org.apache.commons.collections4.collection.AbstractCollectionDecorator<E>
* Type Parameters: E - the type of the elements in the collection All Implemented Interfaces: [Serializable](https://docs.oracle.com/javase/7/docs/api/java/io/Serializable.html?is-external=true), [Iterable](https://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true)<E>, [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<E> Direct Known Subclasses: [AbstractBagDecorator](http://docs.google.com/org/apache/commons/collections4/bag/AbstractBagDecorator.html), [AbstractDualBidiMap.View](http://docs.google.com/org/apache/commons/collections4/bidimap/AbstractDualBidiMap.View.html), [AbstractListDecorator](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html), [AbstractMultiSetDecorator](http://docs.google.com/org/apache/commons/collections4/multiset/AbstractMultiSetDecorator.html), [AbstractQueueDecorator](http://docs.google.com/org/apache/commons/collections4/queue/AbstractQueueDecorator.html), [AbstractSetDecorator](http://docs.google.com/org/apache/commons/collections4/set/AbstractSetDecorator.html), [IndexedCollection](http://docs.google.com/org/apache/commons/collections4/collection/IndexedCollection.html), [PredicatedCollection](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.html), [TransformedCollection](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html), [UnmodifiableBoundedCollection](http://docs.google.com/org/apache/commons/collections4/collection/UnmodifiableBoundedCollection.html), [UnmodifiableCollection](http://docs.google.com/org/apache/commons/collections4/collection/UnmodifiableCollection.html)  
    
  public abstract class AbstractCollectionDecorator<E>  
  extends [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)  
  implements [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<E>, [Serializable](https://docs.oracle.com/javase/7/docs/api/java/io/Serializable.html?is-external=true)  
  Decorates another Collection to provide additional behaviour.  
  Each method call made on this Collection is forwarded to the decorated Collection. This class is used as a framework on which to build to extensions such as synchronized and unmodifiable behaviour. The main advantage of decoration is that one decorator can wrap any implementation of Collection, whereas sub-classing requires a new class to be written for each implementation.  
  This implementation does not perform any special processing with [iterator()](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#iterator--). Instead it simply returns the value from the wrapped collection. This may be undesirable, for example if you are trying to write an unmodifiable implementation it might provide a loophole.  
  This implementation does not forward the hashCode and equals methods through to the backing object, but relies on Object's implementation. This is necessary to preserve the symmetry of equals. Custom definitions of equality are usually based on an interface, such as Set or List, so that the implementation of equals can cast the object being tested for equality to the custom interface. AbstractCollectionDecorator does not implement such custom interfaces directly; they are implemented only in subclasses. Therefore, forwarding equals would break symmetry, as the forwarding object might consider itself equal to the object being tested, but the reverse could not be true. This behavior is consistent with the JDK's collection wrappers, such as [Collections.unmodifiableCollection(Collection)](https://docs.oracle.com/javase/7/docs/api/java/util/Collections.html?is-external=true#unmodifiableCollection-java.util.Collection-). Use an interface-specific subclass of AbstractCollectionDecorator, such as AbstractListDecorator, to preserve equality behavior, or override equals directly.Since: 3.0 See Also: [Serialized Form](http://docs.google.com/serialized-form.html#org.apache.commons.collections4.collection.AbstractCollectionDecorator)

### Constructor SummaryConstructors

|  |  |
| --- | --- |
| * + Modifier | * + Constructor and Description |
| * + protected | * + [AbstractCollectionDecorator](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#AbstractCollectionDecorator--)() Constructor only used in deserialization, do not use otherwise. |
| * + protected | * + [AbstractCollectionDecorator](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#AbstractCollectionDecorator-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)> coll) Constructor that wraps (not copies). |

### Method SummaryAll Methods Instance Methods Concrete Methods

|  |  |
| --- | --- |
| * + Modifier and Type | * + Method and Description |
| * + boolean | * + [add](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#add-E-)([E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html) object) |
| * + boolean | * + [addAll](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#addAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<? extends [E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)> coll) |
| * + void | * + [clear](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#clear--)() |
| * + boolean | * + [contains](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#contains-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) |
| * + boolean | * + [containsAll](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#containsAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) |
| * + protected [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)> | * + [decorated](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#decorated--)() Gets the collection being decorated. |
| * + boolean | * + [isEmpty](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#isEmpty--)() |
| * + [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)> | * + [iterator](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#iterator--)() |
| * + boolean | * + [remove](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#remove-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) |
| * + boolean | * + [removeAll](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#removeAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) |
| * + boolean | * + [removeIf](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#removeIf-java.util.function.Predicate-)([Predicate](https://docs.oracle.com/javase/8/docs/api/java/util/function/Predicate.html?is-external=true)<? super [E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)> filter) |
| * + boolean | * + [retainAll](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#retainAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) |
| * + protected void | * + [setCollection](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#setCollection-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)> coll) Sets the collection being decorated. |
| * + int | * + [size](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#size--)() |
| * + [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)[] | * + [toArray](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#toArray--)() |
| * + <T> T[] | * + [toArray](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#toArray-T:A-)(T[] object) |
| * + [String](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html?is-external=true) | * + [toString](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#toString--)() |

### 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--), [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-)

### Methods inherited from interface java.util.[**Collection**](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)[equals](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#equals-java.lang.Object-), [hashCode](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#hashCode--), [parallelStream](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#parallelStream--), [spliterator](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#spliterator--), [stream](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#stream--)

### Methods inherited from interface java.lang.[**Iterable**](https://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true)[forEach](https://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true#forEach-java.util.function.Consumer-)

### Constructor Detail

#### AbstractCollectionDecorator protected AbstractCollectionDecorator() Constructor only used in deserialization, do not use otherwise.Since: 3.1

#### AbstractCollectionDecorator protected AbstractCollectionDecorator([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)> coll) Constructor that wraps (not copies).Parameters: coll - the collection to decorate, must not be null Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if the collection is null

### Method Detail

#### decorated protected [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)> decorated() Gets the collection being decorated. All access to the decorated collection goes via this method.Returns: the decorated collection

#### setCollection protected void setCollection([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)> coll) Sets the collection being decorated. **NOTE:** this method should only be used during deserializationParameters: coll - the decorated collection

#### add public boolean add([E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html) object)Specified by: [add](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#add-E-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)>

#### addAll public boolean addAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<? extends [E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)> coll)Specified by: [addAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#addAll-java.util.Collection-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)>

#### clear public void clear()Specified by: [clear](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#clear--) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)>

#### contains public boolean contains([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object)Specified by: [contains](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#contains-java.lang.Object-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)>

#### isEmpty public boolean isEmpty()Specified by: [isEmpty](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#isEmpty--) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)>

#### iterator public [Iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Iterator.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)> iterator()Specified by: [iterator](https://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true#iterator--) in interface [Iterable](https://docs.oracle.com/javase/7/docs/api/java/lang/Iterable.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)> Specified by: [iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#iterator--) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)>

#### remove public boolean remove([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object)Specified by: [remove](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#remove-java.lang.Object-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)>

#### size public int size()Specified by: [size](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#size--) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)>

#### toArray public [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)[] toArray()Specified by: [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#toArray--) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)>

#### toArray public <T> T[] toArray(T[] object)Specified by: [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#toArray-T:A-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)>

#### containsAll public boolean containsAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll)Specified by: [containsAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#containsAll-java.util.Collection-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)>

#### removeIf public boolean removeIf([Predicate](https://docs.oracle.com/javase/8/docs/api/java/util/function/Predicate.html?is-external=true)<? super [E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)> filter)Specified by: [removeIf](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#removeIf-java.util.function.Predicate-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)> Since: 4.4

#### removeAll public boolean removeAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll)Specified by: [removeAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#removeAll-java.util.Collection-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)>

#### retainAll public boolean retainAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll)Specified by: [retainAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#retainAll-java.util.Collection-) in interface [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)>

#### toString public [String](https://docs.oracle.com/javase/7/docs/api/java/lang/String.html?is-external=true) toString()Overrides: [toString](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#toString--) in class [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)

[Skip navigation links](#23ckvvd)

* [Overview](http://docs.google.com/overview-summary.html)
* [Package](http://docs.google.com/package-summary.html)
* Class
* [Use](http://docs.google.com/class-use/AbstractCollectionDecorator.html)
* [Tree](http://docs.google.com/package-tree.html)
* [Deprecated](http://docs.google.com/deprecated-list.html)
* [Index](http://docs.google.com/index-all.html)
* [Help](http://docs.google.com/help-doc.html)
* Prev Class
* [Next Class](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html)
* [Frames](http://docs.google.com/index.html?org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)
* [No Frames](http://docs.google.com/AbstractCollectionDecorator.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* Nested |
* Field |
* [Constr](#3znysh7) |
* [Method](#2et92p0)
* Detail:
* Field |
* [Constr](#4d34og8) |
* [Method](#3rdcrjn)

Copyright © 2001–2019 [The Apache Software Foundation](https://www.apache.org/). All rights reserved.