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org.apache.commons.collections4.collection

## Class CompositeCollection<E>

* [java.lang.Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)
  + org.apache.commons.collections4.collection.CompositeCollection<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>  
    
  public class CompositeCollection<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 a collection of other collections to provide a single unified view.  
  Changes made to this collection will actually be made on the decorated collection. Add and remove operations require the use of a pluggable strategy. If no strategy is provided then add and remove are unsupported.Since: 3.0 See Also: [Serialized Form](http://docs.google.com/serialized-form.html#org.apache.commons.collections4.collection.CompositeCollection)

### Nested Class SummaryNested Classes

|  |  |
| --- | --- |
| * + Modifier and Type | * + Class and Description |
| * + static interface | * + [CompositeCollection.CollectionMutator](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.CollectionMutator.html)<[E](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.CollectionMutator.html)> Pluggable strategy to handle changes to the composite. |

### Constructor SummaryConstructors

|  |
| --- |
| * + Constructor and Description |
| * + [CompositeCollection](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#CompositeCollection--)() Create an empty CompositeCollection. |
| * + [CompositeCollection](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#CompositeCollection-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/CompositeCollection.html)>... compositeCollections) Create a Composite Collection with an array of collections. |
| * + [CompositeCollection](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#CompositeCollection-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/CompositeCollection.html)> compositeCollection) Create a Composite Collection with one collection. |
| * + [CompositeCollection](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#CompositeCollection-java.util.Collection-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/CompositeCollection.html)> compositeCollection1, [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/CompositeCollection.html)> compositeCollection2) Create a Composite Collection with two collections. |

### Method SummaryAll Methods Instance Methods Concrete Methods

|  |  |
| --- | --- |
| * + Modifier and Type | * + Method and Description |
| * + boolean | * + [add](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#add-E-)([E](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html) obj) Adds an object to the collection, throwing UnsupportedOperationException unless a CollectionMutator strategy is specified. |
| * + boolean | * + [addAll](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.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/CompositeCollection.html)> coll) Adds a collection of elements to this collection, throwing UnsupportedOperationException unless a CollectionMutator strategy is specified. |
| * + void | * + [addComposited](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#addComposited-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/CompositeCollection.html)>... compositeCollections) Add these Collections to the list of collections in this composite |
| * + void | * + [addComposited](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#addComposited-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/CompositeCollection.html)> compositeCollection) Add these Collections to the list of collections in this composite |
| * + void | * + [addComposited](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#addComposited-java.util.Collection-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/CompositeCollection.html)> compositeCollection1, [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/CompositeCollection.html)> compositeCollection2) Add these Collections to the list of collections in this composite |
| * + void | * + [clear](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#clear--)() Removes all of the elements from this collection . |
| * + boolean | * + [contains](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#contains-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) obj) Checks whether this composite collection contains the object. |
| * + boolean | * + [containsAll](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#containsAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Checks whether this composite contains all the elements in the specified collection. |
| * + [List](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)<[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/CompositeCollection.html)>> | * + [getCollections](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#getCollections--)() Gets the collections being decorated. |
| * + protected [CompositeCollection.CollectionMutator](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.CollectionMutator.html)<[E](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html)> | * + [getMutator](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#getMutator--)() Get the collection mutator to be used for this CompositeCollection. |
| * + boolean | * + [isEmpty](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#isEmpty--)() Checks whether this composite collection is empty. |
| * + [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/CompositeCollection.html)> | * + [iterator](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#iterator--)() Gets an iterator over all the collections in this composite. |
| * + boolean | * + [remove](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#remove-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) obj) Removes an object from the collection, throwing UnsupportedOperationException unless a CollectionMutator strategy is specified. |
| * + boolean | * + [removeAll](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#removeAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Removes the elements in the specified collection from this composite collection. |
| * + void | * + [removeComposited](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#removeComposited-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/CompositeCollection.html)> coll) Removes a collection from the those being decorated in this composite. |
| * + boolean | * + [removeIf](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.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/CompositeCollection.html)> filter) Removes all of the elements of this collection that satisfy the given predicate from this composite collection. |
| * + boolean | * + [retainAll](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#retainAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Retains all the elements in the specified collection in this composite collection, removing all others. |
| * + void | * + [setMutator](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#setMutator-org.apache.commons.collections4.collection.CompositeCollection.CollectionMutator-)([CompositeCollection.CollectionMutator](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.CollectionMutator.html)<[E](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html)> mutator) Specify a CollectionMutator strategy instance to handle changes. |
| * + int | * + [size](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#size--)() Gets the size of this composite collection. |
| * + [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/CompositeCollection.html#toArray--)() Returns an array containing all of the elements in this composite. |
| * + <T> T[] | * + [toArray](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#toArray-T:A-)(T[] array) Returns an object array, populating the supplied array if possible. |
| * + [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/CompositeCollection.html)> | * + [toCollection](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html#toCollection--)() Returns a new collection containing all of the elements |

### 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-)

### 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

#### CompositeCollection public CompositeCollection() Create an empty CompositeCollection.

#### CompositeCollection public CompositeCollection([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/CompositeCollection.html)> compositeCollection) Create a Composite Collection with one collection.Parameters: compositeCollection - the Collection to be appended to the composite

#### CompositeCollection public CompositeCollection([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/CompositeCollection.html)> compositeCollection1, [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/CompositeCollection.html)> compositeCollection2) Create a Composite Collection with two collections.Parameters: compositeCollection1 - the Collection to be appended to the composite compositeCollection2 - the Collection to be appended to the composite

#### CompositeCollection public CompositeCollection([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/CompositeCollection.html)>... compositeCollections) Create a Composite Collection with an array of collections.Parameters: compositeCollections - the collections to composite

### Method Detail

#### size public int size() Gets the size of this composite collection. This implementation calls size() on each collection.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/CompositeCollection.html)> Returns: total number of elements in all contained containers

#### isEmpty public boolean isEmpty() Checks whether this composite collection is empty. This implementation calls isEmpty() on each collection.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/CompositeCollection.html)> Returns: true if all of the contained collections are empty

#### contains public boolean contains([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) obj) Checks whether this composite collection contains the object. This implementation calls contains() on each collection.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/CompositeCollection.html)> Parameters: obj - the object to search for Returns: true if obj is contained in any of the contained collections

#### 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/CompositeCollection.html)> iterator() Gets an iterator over all the collections in this composite. This implementation uses an IteratorChain.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/CompositeCollection.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/CompositeCollection.html)> Returns: an IteratorChain instance which supports remove(). Iteration occurs over contained collections in the order they were added, but this behavior should not be relied upon. See Also: [IteratorChain](http://docs.google.com/org/apache/commons/collections4/iterators/IteratorChain.html)

#### toArray public [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)[] toArray() Returns an array containing all of the elements in this composite.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/CompositeCollection.html)> Returns: an object array of all the elements in the collection

#### toArray public <T> T[] toArray(T[] array) Returns an object array, populating the supplied array if possible. See Collection interface for full details.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/CompositeCollection.html)> Type Parameters: T - the type of the elements in the collection Parameters: array - the array to use, populating if possible Returns: an array of all the elements in the collection

#### add public boolean add([E](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html) obj) Adds an object to the collection, throwing UnsupportedOperationException unless a CollectionMutator strategy is specified.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/CompositeCollection.html)> Parameters: obj - the object to add Returns: true if the collection was modified Throws: [UnsupportedOperationException](https://docs.oracle.com/javase/7/docs/api/java/lang/UnsupportedOperationException.html?is-external=true) - if CollectionMutator hasn't been set [UnsupportedOperationException](https://docs.oracle.com/javase/7/docs/api/java/lang/UnsupportedOperationException.html?is-external=true) - if add is unsupported [ClassCastException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassCastException.html?is-external=true) - if the object cannot be added due to its type [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if the object cannot be added because its null [IllegalArgumentException](https://docs.oracle.com/javase/7/docs/api/java/lang/IllegalArgumentException.html?is-external=true) - if the object cannot be added

#### remove public boolean remove([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) obj) Removes an object from the collection, throwing UnsupportedOperationException unless a CollectionMutator strategy is specified.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/CompositeCollection.html)> Parameters: obj - the object being removed Returns: true if the collection is changed Throws: [UnsupportedOperationException](https://docs.oracle.com/javase/7/docs/api/java/lang/UnsupportedOperationException.html?is-external=true) - if removed is unsupported [ClassCastException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassCastException.html?is-external=true) - if the object cannot be removed due to its type [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if the object cannot be removed because its null [IllegalArgumentException](https://docs.oracle.com/javase/7/docs/api/java/lang/IllegalArgumentException.html?is-external=true) - if the object cannot be removed

#### containsAll public boolean containsAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Checks whether this composite contains all the elements in the specified collection. This implementation calls contains() for each element in the specified collection.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/CompositeCollection.html)> Parameters: coll - the collection to check for Returns: true if all elements contained

#### 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/CompositeCollection.html)> coll) Adds a collection of elements to this collection, throwing UnsupportedOperationException unless a CollectionMutator strategy is specified.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/CompositeCollection.html)> Parameters: coll - the collection to add Returns: true if the collection was modified Throws: [UnsupportedOperationException](https://docs.oracle.com/javase/7/docs/api/java/lang/UnsupportedOperationException.html?is-external=true) - if CollectionMutator hasn't been set [UnsupportedOperationException](https://docs.oracle.com/javase/7/docs/api/java/lang/UnsupportedOperationException.html?is-external=true) - if add is unsupported [ClassCastException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassCastException.html?is-external=true) - if the object cannot be added due to its type [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if the object cannot be added because its null [IllegalArgumentException](https://docs.oracle.com/javase/7/docs/api/java/lang/IllegalArgumentException.html?is-external=true) - if the object cannot be added

#### removeAll public boolean removeAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Removes the elements in the specified collection from this composite collection. This implementation calls removeAll on each collection.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/CompositeCollection.html)> Parameters: coll - the collection to remove Returns: true if the collection was modified Throws: [UnsupportedOperationException](https://docs.oracle.com/javase/7/docs/api/java/lang/UnsupportedOperationException.html?is-external=true) - if removeAll is unsupported

#### 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/CompositeCollection.html)> filter) Removes all of the elements of this collection that satisfy the given predicate from this composite collection. This implementation calls removeIf on each collection.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/CompositeCollection.html)> Parameters: filter - a predicate which returns true for elements to be removed Returns: true if the collection was modified Throws: [UnsupportedOperationException](https://docs.oracle.com/javase/7/docs/api/java/lang/UnsupportedOperationException.html?is-external=true) - if removeIf is unsupported Since: 4.4

#### retainAll public boolean retainAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) Retains all the elements in the specified collection in this composite collection, removing all others. This implementation calls retainAll() on each collection.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/CompositeCollection.html)> Parameters: coll - the collection to remove Returns: true if the collection was modified Throws: [UnsupportedOperationException](https://docs.oracle.com/javase/7/docs/api/java/lang/UnsupportedOperationException.html?is-external=true) - if retainAll is unsupported

#### clear public void clear() Removes all of the elements from this collection . This implementation calls clear() on each collection.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/CompositeCollection.html)> Throws: [UnsupportedOperationException](https://docs.oracle.com/javase/7/docs/api/java/lang/UnsupportedOperationException.html?is-external=true) - if clear is unsupported

#### setMutator public void setMutator([CompositeCollection.CollectionMutator](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.CollectionMutator.html)<[E](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html)> mutator) Specify a CollectionMutator strategy instance to handle changes.Parameters: mutator - the mutator to use

#### addComposited public void addComposited([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/CompositeCollection.html)> compositeCollection) Add these Collections to the list of collections in this compositeParameters: compositeCollection - the Collection to be appended to the composite

#### addComposited public void addComposited([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/CompositeCollection.html)> compositeCollection1, [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/CompositeCollection.html)> compositeCollection2) Add these Collections to the list of collections in this compositeParameters: compositeCollection1 - the Collection to be appended to the composite compositeCollection2 - the Collection to be appended to the composite

#### addComposited public void addComposited([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/CompositeCollection.html)>... compositeCollections) Add these Collections to the list of collections in this compositeParameters: compositeCollections - the Collections to be appended to the composite

#### removeComposited public void removeComposited([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/CompositeCollection.html)> coll) Removes a collection from the those being decorated in this composite.Parameters: coll - collection to be removed

#### toCollection public [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/CompositeCollection.html)> toCollection() Returns a new collection containing all of the elementsReturns: A new ArrayList containing all of the elements in this composite. The new collection is *not* backed by this composite.

#### getCollections public [List](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)<[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/CompositeCollection.html)>> getCollections() Gets the collections being decorated.Returns: Unmodifiable list of all collections in this composite.

#### getMutator protected [CompositeCollection.CollectionMutator](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.CollectionMutator.html)<[E](http://docs.google.com/org/apache/commons/collections4/collection/CompositeCollection.html)> getMutator() Get the collection mutator to be used for this CompositeCollection.Returns: CollectionMutator<E>

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