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org.apache.commons.collections4.bag

## Class CollectionBag<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](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<E>
    - [org.apache.commons.collections4.bag.AbstractBagDecorator](http://docs.google.com/org/apache/commons/collections4/bag/AbstractBagDecorator.html)<E>
      * org.apache.commons.collections4.bag.CollectionBag<E>
* Type Parameters: E - the type of elements in this bag 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>, [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<E>  
    
  public final class CollectionBag<E>  
  extends [AbstractBagDecorator](http://docs.google.com/org/apache/commons/collections4/bag/AbstractBagDecorator.html)<E>  
  Decorates another [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html) to comply with the Collection contract.  
  By decorating an existing [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html) instance with a [CollectionBag](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html), it can be safely passed on to methods that require Collection types that are fully compliant with the Collection contract.  
  The method javadoc highlights the differences compared to the original Bag interface.Since: 4.0 See Also: [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html), [Serialized Form](http://docs.google.com/serialized-form.html#org.apache.commons.collections4.bag.CollectionBag)

### Constructor SummaryConstructors

|  |
| --- |
| * + Constructor and Description |
| * + [CollectionBag](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html#CollectionBag-org.apache.commons.collections4.Bag-)([Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html)> bag) Constructor that wraps (not copies). |

### Method SummaryAll Methods Static Methods Instance Methods Concrete Methods

|  |  |
| --- | --- |
| * + Modifier and Type | * + Method and Description |
| * + boolean | * + [add](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html#add-E-)([E](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html) object) *(Change)* Adds one copy of the specified object to the Bag. |
| * + boolean | * + [add](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html#add-E-int-)([E](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html) object, int count) *(Change)* Adds count copies of the specified object to the Bag. |
| * + boolean | * + [addAll](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.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/bag/CollectionBag.html)> coll) |
| * + static <E> [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<E> | * + [collectionBag](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html#collectionBag-org.apache.commons.collections4.Bag-)([Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<E> bag) Factory method to create a bag that complies to the Collection contract. |
| * + boolean | * + [containsAll](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html#containsAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) *(Change)* Returns true if the bag contains all elements in the given collection, **not** respecting cardinality. |
| * + boolean | * + [remove](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html#remove-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) *(Change)* Removes the first occurrence of the given object from the bag. |
| * + boolean | * + [removeAll](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html#removeAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) *(Change)* Remove all elements represented in the given collection, **not** respecting cardinality. |
| * + boolean | * + [retainAll](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html#retainAll-java.util.Collection-)([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) *(Change)* Remove any members of the bag that are not in the given collection, *not* respecting cardinality. |

### Methods inherited from class org.apache.commons.collections4.bag.[**AbstractBagDecorator**](http://docs.google.com/org/apache/commons/collections4/bag/AbstractBagDecorator.html)[decorated](http://docs.google.com/org/apache/commons/collections4/bag/AbstractBagDecorator.html#decorated--), [equals](http://docs.google.com/org/apache/commons/collections4/bag/AbstractBagDecorator.html#equals-java.lang.Object-), [getCount](http://docs.google.com/org/apache/commons/collections4/bag/AbstractBagDecorator.html#getCount-java.lang.Object-), [hashCode](http://docs.google.com/org/apache/commons/collections4/bag/AbstractBagDecorator.html#hashCode--), [remove](http://docs.google.com/org/apache/commons/collections4/bag/AbstractBagDecorator.html#remove-java.lang.Object-int-), [uniqueSet](http://docs.google.com/org/apache/commons/collections4/bag/AbstractBagDecorator.html#uniqueSet--)

### Methods inherited from class org.apache.commons.collections4.collection.[**AbstractCollectionDecorator**](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)[clear](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#clear--), [contains](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#contains-java.lang.Object-), [isEmpty](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#isEmpty--), [iterator](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#iterator--), [removeIf](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#removeIf-java.util.function.Predicate-), [setCollection](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#setCollection-java.util.Collection-), [size](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#size--), [toArray](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#toArray--), [toArray](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#toArray-T:A-), [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--), [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--), [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 org.apache.commons.collections4.[**Bag**](http://docs.google.com/org/apache/commons/collections4/Bag.html)[iterator](http://docs.google.com/org/apache/commons/collections4/Bag.html#iterator--), [size](http://docs.google.com/org/apache/commons/collections4/Bag.html#size--)

### Methods inherited from interface java.util.[**Collection**](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)[clear](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#clear--), [contains](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#contains-java.lang.Object-), [isEmpty](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#isEmpty--), [parallelStream](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#parallelStream--), [removeIf](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#removeIf-java.util.function.Predicate-), [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--), [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#toArray--), [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#toArray-T:A-)

### 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

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

### Method Detail

#### collectionBag public static <E> [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<E> collectionBag([Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<E> bag) Factory method to create a bag that complies to the Collection contract.Type Parameters: E - the type of the elements in the bag Parameters: bag - the bag to decorate, must not be null Returns: a Bag that complies to the Collection contract Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if bag is null

#### containsAll public boolean containsAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) *(Change)* Returns true if the bag contains all elements in the given collection, **not** respecting cardinality. That is, if the given collection coll contains at least one of every object contained in this object.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/bag/CollectionBag.html)> Specified by: [containsAll](http://docs.google.com/org/apache/commons/collections4/Bag.html#containsAll-java.util.Collection-) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html)> Overrides: [containsAll](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#containsAll-java.util.Collection-) in class [AbstractCollectionDecorator](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html)> Parameters: coll - the collection to check against Returns: true if the Bag contains at least one of every object in the collection

#### add public boolean add([E](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html) object) *(Change)* Adds one copy of the specified object to the Bag. Since this method always increases the size of the bag, it will always return true.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/bag/CollectionBag.html)> Specified by: [add](http://docs.google.com/org/apache/commons/collections4/Bag.html#add-E-) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html)> Overrides: [add](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#add-E-) in class [AbstractCollectionDecorator](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html)> Parameters: object - the object to add Returns: true, always

#### 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/bag/CollectionBag.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/bag/CollectionBag.html)> Overrides: [addAll](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#addAll-java.util.Collection-) in class [AbstractCollectionDecorator](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html)>

#### remove public boolean remove([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) *(Change)* Removes the first occurrence of the given object from the bag. This will also remove the object from the [AbstractBagDecorator.uniqueSet()](http://docs.google.com/org/apache/commons/collections4/bag/AbstractBagDecorator.html#uniqueSet--) if the bag contains no occurrence anymore of the object after this operation.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/bag/CollectionBag.html)> Specified by: [remove](http://docs.google.com/org/apache/commons/collections4/Bag.html#remove-java.lang.Object-) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html)> Overrides: [remove](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#remove-java.lang.Object-) in class [AbstractCollectionDecorator](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html)> Parameters: object - the object to remove Returns: true if this call changed the collection

#### removeAll public boolean removeAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) *(Change)* Remove all elements represented in the given collection, **not** respecting cardinality. That is, remove *all* occurrences of every object contained in the given 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/bag/CollectionBag.html)> Specified by: [removeAll](http://docs.google.com/org/apache/commons/collections4/Bag.html#removeAll-java.util.Collection-) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html)> Overrides: [removeAll](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#removeAll-java.util.Collection-) in class [AbstractCollectionDecorator](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html)> Parameters: coll - the collection to remove Returns: true if this call changed the collection

#### retainAll public boolean retainAll([Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<?> coll) *(Change)* Remove any members of the bag that are not in the given collection, *not* respecting cardinality. That is, any object in the given collection coll will be retained in the bag with the same number of copies prior to this operation. All other objects will be completely removed from this bag. This implementation iterates over the elements of this bag, checking each element in turn to see if it's contained in coll. If it's not contained, it's removed from this bag. As a consequence, it is advised to use a collection type for coll that provides a fast (e.g. O(1)) implementation of [Collection.contains(Object)](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#contains-java.lang.Object-).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/bag/CollectionBag.html)> Specified by: [retainAll](http://docs.google.com/org/apache/commons/collections4/Bag.html#retainAll-java.util.Collection-) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html)> Overrides: [retainAll](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#retainAll-java.util.Collection-) in class [AbstractCollectionDecorator](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html)> Parameters: coll - the collection to retain Returns: true if this call changed the collection

#### add public boolean add([E](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html) object, int count) *(Change)* Adds count copies of the specified object to the Bag. Since this method always increases the size of the bag, it will always return true.Specified by: [add](http://docs.google.com/org/apache/commons/collections4/Bag.html#add-E-int-) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html)> Overrides: [add](http://docs.google.com/org/apache/commons/collections4/bag/AbstractBagDecorator.html#add-E-int-) in class [AbstractBagDecorator](http://docs.google.com/org/apache/commons/collections4/bag/AbstractBagDecorator.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/CollectionBag.html)> Parameters: object - the object to add count - the number of copies to add Returns: true, always

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