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[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/TransformedBag.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](http://docs.google.com/org/apache/commons/collections4/bag/SynchronizedSortedBag.html)
* [Next Class](http://docs.google.com/org/apache/commons/collections4/bag/TransformedSortedBag.html)
* [Frames](http://docs.google.com/index.html?org/apache/commons/collections4/bag/TransformedBag.html)
* [No Frames](http://docs.google.com/TransformedBag.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* Nested |
* [Field](#2et92p0) |
* [Constr](#tyjcwt) |
* [Method](#3dy6vkm)
* Detail:
* Field |
* [Constr](#lnxbz9) |
* [Method](#1ksv4uv)

org.apache.commons.collections4.bag

## Class TransformedBag<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.collection.TransformedCollection](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html)<E>
      * org.apache.commons.collections4.bag.TransformedBag<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> Direct Known Subclasses: [TransformedSortedBag](http://docs.google.com/org/apache/commons/collections4/bag/TransformedSortedBag.html)  
    
  public class TransformedBag<E>  
  extends [TransformedCollection](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html)<E>  
  implements [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<E>  
  Decorates another [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html) to transform objects that are added.  
  The add methods are affected by this class. Thus objects must be removed or searched for using their transformed form. For example, if the transformation converts Strings to Integers, you must use the Integer form to remove objects.  
  This class is Serializable from Commons Collections 3.1.Since: 3.0 See Also: [Serialized Form](http://docs.google.com/serialized-form.html#org.apache.commons.collections4.bag.TransformedBag)

### Field Summary

### Fields inherited from class org.apache.commons.collections4.collection.[**TransformedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html)[transformer](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html#transformer)

### Constructor SummaryConstructors

|  |  |
| --- | --- |
| * + Modifier | * + Constructor and Description |
| * + protected | * + [TransformedBag](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html#TransformedBag-org.apache.commons.collections4.Bag-org.apache.commons.collections4.Transformer-)([Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html)> bag, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super [E](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html),? extends [E](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html)> transformer) 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/TransformedBag.html#add-E-int-)([E](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html) object, int nCopies) Adds nCopies copies of the specified object to the Bag. |
| * + boolean | * + [equals](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html#equals-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) |
| * + protected [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html)> | * + [getBag](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html#getBag--)() Gets the decorated bag. |
| * + int | * + [getCount](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html#getCount-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) Returns the number of occurrences (cardinality) of the given object currently in the bag. |
| * + int | * + [hashCode](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html#hashCode--)() |
| * + boolean | * + [remove](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html#remove-java.lang.Object-int-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object, int nCopies) Removes nCopies copies of the specified object from the Bag. |
| * + static <E> [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<E> | * + [transformedBag](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html#transformedBag-org.apache.commons.collections4.Bag-org.apache.commons.collections4.Transformer-)([Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<E> bag, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super E,? extends E> transformer) Factory method to create a transforming bag that will transform existing contents of the specified bag. |
| * + static <E> [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<E> | * + [transformingBag](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html#transformingBag-org.apache.commons.collections4.Bag-org.apache.commons.collections4.Transformer-)([Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<E> bag, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super E,? extends E> transformer) Factory method to create a transforming bag. |
| * + [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html)> | * + [uniqueSet](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html#uniqueSet--)() Returns a [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true) of unique elements in the Bag. |

### Methods inherited from class org.apache.commons.collections4.collection.[**TransformedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html)[add](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html#add-E-), [addAll](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html#addAll-java.util.Collection-), [transform](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html#transform-java.util.Collection-), [transform](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html#transform-E-), [transformedCollection](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html#transformedCollection-java.util.Collection-org.apache.commons.collections4.Transformer-), [transformingCollection](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html#transformingCollection-java.util.Collection-org.apache.commons.collections4.Transformer-)

### 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-), [containsAll](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#containsAll-java.util.Collection-), [decorated](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#decorated--), [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--), [remove](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#remove-java.lang.Object-), [removeAll](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#removeAll-java.util.Collection-), [removeIf](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#removeIf-java.util.function.Predicate-), [retainAll](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#retainAll-java.util.Collection-), [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)[add](http://docs.google.com/org/apache/commons/collections4/Bag.html#add-E-), [containsAll](http://docs.google.com/org/apache/commons/collections4/Bag.html#containsAll-java.util.Collection-), [iterator](http://docs.google.com/org/apache/commons/collections4/Bag.html#iterator--), [remove](http://docs.google.com/org/apache/commons/collections4/Bag.html#remove-java.lang.Object-), [removeAll](http://docs.google.com/org/apache/commons/collections4/Bag.html#removeAll-java.util.Collection-), [retainAll](http://docs.google.com/org/apache/commons/collections4/Bag.html#retainAll-java.util.Collection-), [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)[addAll](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#addAll-java.util.Collection-), [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

#### TransformedBag protected TransformedBag([Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html)> bag, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super [E](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html),? extends [E](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html)> transformer) Constructor that wraps (not copies). If there are any elements already in the bag being decorated, they are NOT transformed.Parameters: bag - the bag to decorate, must not be null transformer - the transformer to use for conversion, must not be null Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if bag or transformer is null

### Method Detail

#### transformingBag public static <E> [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<E> transformingBag([Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<E> bag, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super E,? extends E> transformer) Factory method to create a transforming bag. If there are any elements already in the bag being decorated, they are NOT transformed. Contrast this with [transformedBag(Bag, Transformer)](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html#transformedBag-org.apache.commons.collections4.Bag-org.apache.commons.collections4.Transformer-).Type Parameters: E - the type of the elements in the bag Parameters: bag - the bag to decorate, must not be null transformer - the transformer to use for conversion, must not be null Returns: a new transformed Bag Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if bag or transformer is null Since: 4.0

#### transformedBag public static <E> [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<E> transformedBag([Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<E> bag, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super E,? extends E> transformer) Factory method to create a transforming bag that will transform existing contents of the specified bag. If there are any elements already in the bag being decorated, they will be transformed by this method. Contrast this with [transformingBag(Bag, Transformer)](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html#transformingBag-org.apache.commons.collections4.Bag-org.apache.commons.collections4.Transformer-).Type Parameters: E - the type of the elements in the bag Parameters: bag - the bag to decorate, must not be null transformer - the transformer to use for conversion, must not be null Returns: a new transformed Bag Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if bag or transformer is null Since: 4.0

#### getBag protected [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html)> getBag() Gets the decorated bag.Returns: the decorated bag

#### equals public boolean equals([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object)Specified by: [equals](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#equals-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/TransformedBag.html)> Overrides: [equals](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#equals-java.lang.Object-) in class [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)

#### hashCode public int hashCode()Specified by: [hashCode](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true#hashCode--) 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/TransformedBag.html)> Overrides: [hashCode](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true#hashCode--) in class [Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)

#### getCount public int getCount([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) Description copied from interface: [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html#getCount-java.lang.Object-) Returns the number of occurrences (cardinality) of the given object currently in the bag. If the object does not exist in the bag, return 0.Specified by: [getCount](http://docs.google.com/org/apache/commons/collections4/Bag.html#getCount-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/TransformedBag.html)> Parameters: object - the object to search for Returns: the number of occurrences of the object, zero if not found

#### remove public boolean remove([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object, int nCopies) Description copied from interface: [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html#remove-java.lang.Object-int-) Removes nCopies copies of the specified object from the Bag. If the number of copies to remove is greater than the actual number of copies in the Bag, no error is thrown.Specified by: [remove](http://docs.google.com/org/apache/commons/collections4/Bag.html#remove-java.lang.Object-int-) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html)> Parameters: object - the object to remove nCopies - the number of copies to remove Returns: true if this call changed the collection

#### add public boolean add([E](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html) object, int nCopies) Description copied from interface: [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html#add-E-int-) Adds nCopies copies of the specified object to the Bag. If the object is already in the [Bag.uniqueSet()](http://docs.google.com/org/apache/commons/collections4/Bag.html#uniqueSet--) then increment its count as reported by [Bag.getCount(Object)](http://docs.google.com/org/apache/commons/collections4/Bag.html#getCount-java.lang.Object-). Otherwise add it to the [Bag.uniqueSet()](http://docs.google.com/org/apache/commons/collections4/Bag.html#uniqueSet--) and report its count as nCopies.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/TransformedBag.html)> Parameters: object - the object to add nCopies - the number of copies to add Returns: true if the object was not already in the uniqueSet

#### uniqueSet public [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html)> uniqueSet() Description copied from interface: [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html#uniqueSet--) Returns a [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true) of unique elements in the Bag. Uniqueness constraints are the same as those in [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true).Specified by: [uniqueSet](http://docs.google.com/org/apache/commons/collections4/Bag.html#uniqueSet--) in interface [Bag](http://docs.google.com/org/apache/commons/collections4/Bag.html)<[E](http://docs.google.com/org/apache/commons/collections4/bag/TransformedBag.html)> Returns: the Set of unique Bag elements

[Skip navigation links](#1pxezwc)

* [Overview](http://docs.google.com/overview-summary.html)
* [Package](http://docs.google.com/package-summary.html)
* Class
* [Use](http://docs.google.com/class-use/TransformedBag.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](http://docs.google.com/org/apache/commons/collections4/bag/SynchronizedSortedBag.html)
* [Next Class](http://docs.google.com/org/apache/commons/collections4/bag/TransformedSortedBag.html)
* [Frames](http://docs.google.com/index.html?org/apache/commons/collections4/bag/TransformedBag.html)
* [No Frames](http://docs.google.com/TransformedBag.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* Nested |
* [Field](#2et92p0) |
* [Constr](#tyjcwt) |
* [Method](#3dy6vkm)
* Detail:
* Field |
* [Constr](#lnxbz9) |
* [Method](#1ksv4uv)

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