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org.apache.commons.collections4.set

## Class TransformedSet<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.set.TransformedSet<E>
* Type Parameters: E - the type of the elements in this set 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>, [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<E> Direct Known Subclasses: [TransformedSortedSet](http://docs.google.com/org/apache/commons/collections4/set/TransformedSortedSet.html)  
    
  public class TransformedSet<E>  
  extends [TransformedCollection](http://docs.google.com/org/apache/commons/collections4/collection/TransformedCollection.html)<E>  
  implements [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<E>  
  Decorates another Set 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.set.TransformedSet)

### 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 | * + [TransformedSet](http://docs.google.com/org/apache/commons/collections4/set/TransformedSet.html#TransformedSet-java.util.Set-org.apache.commons.collections4.Transformer-)([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/set/TransformedSet.html)> set, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super [E](http://docs.google.com/org/apache/commons/collections4/set/TransformedSet.html),? extends [E](http://docs.google.com/org/apache/commons/collections4/set/TransformedSet.html)> transformer) Constructor that wraps (not copies). |

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

|  |  |
| --- | --- |
| * + Modifier and Type | * + Method and Description |
| * + boolean | * + [equals](http://docs.google.com/org/apache/commons/collections4/set/TransformedSet.html#equals-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) object) |
| * + int | * + [hashCode](http://docs.google.com/org/apache/commons/collections4/set/TransformedSet.html#hashCode--)() |
| * + static <E> [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<E> | * + [transformedSet](http://docs.google.com/org/apache/commons/collections4/set/TransformedSet.html#transformedSet-java.util.Set-org.apache.commons.collections4.Transformer-)([Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<E> set, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super E,? extends E> transformer) Factory method to create a transforming set that will transform existing contents of the specified set. |
| * + static <E> [TransformedSet](http://docs.google.com/org/apache/commons/collections4/set/TransformedSet.html)<E> | * + [transformingSet](http://docs.google.com/org/apache/commons/collections4/set/TransformedSet.html#transformingSet-java.util.Set-org.apache.commons.collections4.Transformer-)([Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<E> set, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super E,? extends E> transformer) Factory method to create a transforming set. |

### 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 java.util.[**Set**](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)[add](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#add-E-), [addAll](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#addAll-java.util.Collection-), [clear](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#clear--), [contains](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#contains-java.lang.Object-), [containsAll](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#containsAll-java.util.Collection-), [isEmpty](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#isEmpty--), [iterator](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#iterator--), [remove](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#remove-java.lang.Object-), [removeAll](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#removeAll-java.util.Collection-), [retainAll](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#retainAll-java.util.Collection-), [size](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#size--), [spliterator](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#spliterator--), [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#toArray--), [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#toArray-T:A-)

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

#### TransformedSet protected TransformedSet([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/set/TransformedSet.html)> set, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super [E](http://docs.google.com/org/apache/commons/collections4/set/TransformedSet.html),? extends [E](http://docs.google.com/org/apache/commons/collections4/set/TransformedSet.html)> transformer) Constructor that wraps (not copies). If there are any elements already in the set being decorated, they are NOT transformed.Parameters: set - the set 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 set or transformer is null

### Method Detail

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

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

#### 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/set/TransformedSet.html)> Specified by: [equals](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#equals-java.lang.Object-) in interface [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/set/TransformedSet.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/set/TransformedSet.html)> Specified by: [hashCode](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true#hashCode--) in interface [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/set/TransformedSet.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)

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