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org.apache.commons.collections4.set

## Class PredicatedSet<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.PredicatedCollection](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.html)<E>
      * org.apache.commons.collections4.set.PredicatedSet<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: [PredicatedSortedSet](http://docs.google.com/org/apache/commons/collections4/set/PredicatedSortedSet.html)  
    
  public class PredicatedSet<E>  
  extends [PredicatedCollection](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.html)<E>  
  implements [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<E>  
  Decorates another Set to validate that all additions match a specified predicate.  
  This set exists to provide validation for the decorated set. It is normally created to decorate an empty set. If an object cannot be added to the set, an IllegalArgumentException is thrown.  
  One usage would be to ensure that no null entries are added to the set.  
  Set set = PredicatedSet.decorate(new HashSet(), NotNullPredicate.INSTANCE);  
  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.PredicatedSet)

### Nested Class Summary

### Nested classes/interfaces inherited from class org.apache.commons.collections4.collection.[**PredicatedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.html)[PredicatedCollection.Builder](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.Builder.html)<[E](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.Builder.html)>

### Field Summary

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

### Constructor SummaryConstructors

|  |  |
| --- | --- |
| * + Modifier | * + Constructor and Description |
| * + protected | * + [PredicatedSet](http://docs.google.com/org/apache/commons/collections4/set/PredicatedSet.html#PredicatedSet-java.util.Set-org.apache.commons.collections4.Predicate-)([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/PredicatedSet.html)> set, [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<? super [E](http://docs.google.com/org/apache/commons/collections4/set/PredicatedSet.html)> predicate) Constructor that wraps (not copies). |

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

|  |  |
| --- | --- |
| * + Modifier and Type | * + Method and Description |
| * + protected [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/PredicatedSet.html)> | * + [decorated](http://docs.google.com/org/apache/commons/collections4/set/PredicatedSet.html#decorated--)() Gets the set being decorated. |
| * + boolean | * + [equals](http://docs.google.com/org/apache/commons/collections4/set/PredicatedSet.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/PredicatedSet.html#hashCode--)() |
| * + static <E> [PredicatedSet](http://docs.google.com/org/apache/commons/collections4/set/PredicatedSet.html)<E> | * + [predicatedSet](http://docs.google.com/org/apache/commons/collections4/set/PredicatedSet.html#predicatedSet-java.util.Set-org.apache.commons.collections4.Predicate-)([Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<E> set, [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<? super E> predicate) Factory method to create a predicated (validating) set. |

### Methods inherited from class org.apache.commons.collections4.collection.[**PredicatedCollection**](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.html)[add](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.html#add-E-), [addAll](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.html#addAll-java.util.Collection-), [builder](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.html#builder-org.apache.commons.collections4.Predicate-), [notNullBuilder](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.html#notNullBuilder--), [predicatedCollection](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.html#predicatedCollection-java.util.Collection-org.apache.commons.collections4.Predicate-), [validate](http://docs.google.com/org/apache/commons/collections4/collection/PredicatedCollection.html#validate-E-)

### 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-), [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

#### PredicatedSet protected PredicatedSet([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/PredicatedSet.html)> set, [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<? super [E](http://docs.google.com/org/apache/commons/collections4/set/PredicatedSet.html)> predicate) Constructor that wraps (not copies). If there are any elements already in the set being decorated, they are validated.Parameters: set - the set to decorate, must not be null predicate - the predicate to use for validation, must not be null Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if set or predicate is null [IllegalArgumentException](https://docs.oracle.com/javase/7/docs/api/java/lang/IllegalArgumentException.html?is-external=true) - if the set contains invalid elements

### Method Detail

#### predicatedSet public static <E> [PredicatedSet](http://docs.google.com/org/apache/commons/collections4/set/PredicatedSet.html)<E> predicatedSet([Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<E> set, [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<? super E> predicate) Factory method to create a predicated (validating) set. If there are any elements already in the set being decorated, they are validated.Type Parameters: E - the element type Parameters: set - the set to decorate, must not be null predicate - the predicate to use for validation, must not be null Returns: a decorated set Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if set or predicate is null [IllegalArgumentException](https://docs.oracle.com/javase/7/docs/api/java/lang/IllegalArgumentException.html?is-external=true) - if the set contains invalid elements Since: 4.0

#### decorated protected [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/PredicatedSet.html)> decorated() Gets the set being decorated.Overrides: [decorated](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#decorated--) in class [AbstractCollectionDecorator](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)<[E](http://docs.google.com/org/apache/commons/collections4/set/PredicatedSet.html)> Returns: the decorated set

#### 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/PredicatedSet.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/PredicatedSet.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/PredicatedSet.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/PredicatedSet.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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