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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/PredicatedMap.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/map/PassiveExpiringMap.ExpirationPolicy.html)
* [Next Class](http://docs.google.com/org/apache/commons/collections4/map/PredicatedSortedMap.html)
* [Frames](http://docs.google.com/index.html?org/apache/commons/collections4/map/PredicatedMap.html)
* [No Frames](http://docs.google.com/PredicatedMap.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* Nested |
* [Field](#tyjcwt) |
* [Constr](#3dy6vkm) |
* [Method](#1t3h5sf)
* Detail:
* [Field](#26in1rg) |
* [Constr](#1ksv4uv) |
* [Method](#2jxsxqh)

org.apache.commons.collections4.map

## Class PredicatedMap<K,V>

* [java.lang.Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)
  + [org.apache.commons.collections4.map.AbstractIterableMap](http://docs.google.com/org/apache/commons/collections4/map/AbstractIterableMap.html)<K,V>
    - [org.apache.commons.collections4.map.AbstractMapDecorator](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html)<K,V>
      * org.apache.commons.collections4.map.PredicatedMap<K,V>
* Type Parameters: K - the type of the keys in this map V - the type of the values in this map All Implemented Interfaces: [Serializable](https://docs.oracle.com/javase/7/docs/api/java/io/Serializable.html?is-external=true), [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<K,V>, [Get](http://docs.google.com/org/apache/commons/collections4/Get.html)<K,V>, [IterableGet](http://docs.google.com/org/apache/commons/collections4/IterableGet.html)<K,V>, [IterableMap](http://docs.google.com/org/apache/commons/collections4/IterableMap.html)<K,V>, [Put](http://docs.google.com/org/apache/commons/collections4/Put.html)<K,V> Direct Known Subclasses: [PredicatedSortedMap](http://docs.google.com/org/apache/commons/collections4/map/PredicatedSortedMap.html)  
    
  public class PredicatedMap<K,V>  
  extends [AbstractMapDecorator](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html)<K,V>  
  implements [Serializable](https://docs.oracle.com/javase/7/docs/api/java/io/Serializable.html?is-external=true)  
  Decorates another Map to validate that additions match a specified predicate.  
  This map exists to provide validation for the decorated map. It is normally created to decorate an empty map. If an object cannot be added to the map, an IllegalArgumentException is thrown.  
  One usage would be to ensure that no null keys are added to the map.  
  Map map = PredicatedSet.decorate(new HashMap(), NotNullPredicate.INSTANCE, null);  
  **Note that PredicatedMap is not synchronized and is not thread-safe.** If you wish to use this map from multiple threads concurrently, you must use appropriate synchronization. The simplest approach is to wrap this map using [Collections.synchronizedMap(Map)](https://docs.oracle.com/javase/7/docs/api/java/util/Collections.html?is-external=true#synchronizedMap-java.util.Map-). This class may throw exceptions when accessed by concurrent threads without synchronization.  
  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.map.PredicatedMap)

### Nested Class Summary

### Nested classes/interfaces inherited from interface java.util.[**Map**](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)[Map.Entry](https://docs.oracle.com/javase/7/docs/api/java/util/Map.Entry.html?is-external=true)<[K](https://docs.oracle.com/javase/7/docs/api/java/util/Map.Entry.html?is-external=true),[V](https://docs.oracle.com/javase/7/docs/api/java/util/Map.Entry.html?is-external=true)>

### Field SummaryFields

|  |  |
| --- | --- |
| * + Modifier and Type | * + Field and Description |
| * + protected [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<? super [K](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> | * + [keyPredicate](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html#keyPredicate) The key predicate to use |
| * + protected [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<? super [V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> | * + [valuePredicate](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html#valuePredicate) The value predicate to use |

### Constructor SummaryConstructors

|  |  |
| --- | --- |
| * + Modifier | * + Constructor and Description |
| * + protected | * + [PredicatedMap](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html#PredicatedMap-java.util.Map-org.apache.commons.collections4.Predicate-org.apache.commons.collections4.Predicate-)([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<[K](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> map, [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<? super [K](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> keyPredicate, [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<? super [V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> valuePredicate) Constructor that wraps (not copies). |

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

|  |  |
| --- | --- |
| * + Modifier and Type | * + Method and Description |
| * + protected [V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html) | * + [checkSetValue](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html#checkSetValue-V-)([V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html) value) Override to validate an object set into the map via setValue. |
| * + [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[Map.Entry](https://docs.oracle.com/javase/7/docs/api/java/util/Map.Entry.html?is-external=true)<K,V>> | * + [entrySet](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html#entrySet--)() |
| * + protected boolean | * + [isSetValueChecking](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html#isSetValueChecking--)() Override to only return true when there is a value transformer. |
| * + static <K,V> [PredicatedMap](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)<K,V> | * + [predicatedMap](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html#predicatedMap-java.util.Map-org.apache.commons.collections4.Predicate-org.apache.commons.collections4.Predicate-)([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<K,V> map, [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<? super K> keyPredicate, [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<? super V> valuePredicate) Factory method to create a predicated (validating) map. |
| * + [V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html) | * + [put](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html#put-K-V-)([K](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html) key, [V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html) value) Note that the return type is Object, rather than V as in the Map interface. |
| * + void | * + [putAll](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html#putAll-java.util.Map-)([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<? extends [K](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html),? extends [V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> mapToCopy) |
| * + protected void | * + [validate](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html#validate-K-V-)([K](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html) key, [V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html) value) Validates a key value pair. |

### Methods inherited from class org.apache.commons.collections4.map.[**AbstractMapDecorator**](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html)[clear](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#clear--), [containsKey](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#containsKey-java.lang.Object-), [containsValue](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#containsValue-java.lang.Object-), [decorated](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#decorated--), [equals](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#equals-java.lang.Object-), [get](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#get-java.lang.Object-), [hashCode](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#hashCode--), [isEmpty](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#isEmpty--), [keySet](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#keySet--), [remove](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#remove-java.lang.Object-), [size](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#size--), [toString](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#toString--), [values](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#values--)

### Methods inherited from class org.apache.commons.collections4.map.[**AbstractIterableMap**](http://docs.google.com/org/apache/commons/collections4/map/AbstractIterableMap.html)[mapIterator](http://docs.google.com/org/apache/commons/collections4/map/AbstractIterableMap.html#mapIterator--)

### 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.[**Map**](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)[compute](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#compute-K-java.util.function.BiFunction-), [computeIfAbsent](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#computeIfAbsent-K-java.util.function.Function-), [computeIfPresent](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#computeIfPresent-K-java.util.function.BiFunction-), [forEach](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#forEach-java.util.function.BiConsumer-), [getOrDefault](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#getOrDefault-java.lang.Object-V-), [merge](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#merge-K-V-java.util.function.BiFunction-), [putIfAbsent](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#putIfAbsent-K-V-), [remove](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#remove-java.lang.Object-java.lang.Object-), [replace](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#replace-K-V-), [replace](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#replace-K-V-V-), [replaceAll](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#replaceAll-java.util.function.BiFunction-)

### Field Detail

#### keyPredicate protected final [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<? super [K](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> keyPredicate The key predicate to use

#### valuePredicate protected final [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<? super [V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> valuePredicate The value predicate to use

### Constructor Detail

#### PredicatedMap protected PredicatedMap([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<[K](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> map, [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<? super [K](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> keyPredicate, [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<? super [V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> valuePredicate) Constructor that wraps (not copies).Parameters: map - the map to decorate, must not be null keyPredicate - the predicate to validate the keys, null means no check valuePredicate - the predicate to validate to values, null means no check Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if the map is null

### Method Detail

#### predicatedMap public static <K,V> [PredicatedMap](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)<K,V> predicatedMap([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<K,V> map, [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<? super K> keyPredicate, [Predicate](http://docs.google.com/org/apache/commons/collections4/Predicate.html)<? super V> valuePredicate) Factory method to create a predicated (validating) map. If there are any elements already in the list being decorated, they are validated.Type Parameters: K - the key type V - the value type Parameters: map - the map to decorate, must not be null keyPredicate - the predicate to validate the keys, null means no check valuePredicate - the predicate to validate to values, null means no check Returns: a new predicated map Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if the map is null Since: 4.0

#### validate protected void validate([K](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html) key, [V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html) value) Validates a key value pair.Parameters: key - the key to validate value - the value to validate Throws: [IllegalArgumentException](https://docs.oracle.com/javase/7/docs/api/java/lang/IllegalArgumentException.html?is-external=true) - if invalid

#### checkSetValue protected [V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html) checkSetValue([V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html) value) Override to validate an object set into the map via setValue.Parameters: value - the value to validate Returns: the value itself Throws: [IllegalArgumentException](https://docs.oracle.com/javase/7/docs/api/java/lang/IllegalArgumentException.html?is-external=true) - if invalid Since: 3.1

#### isSetValueChecking protected boolean isSetValueChecking() Override to only return true when there is a value transformer.Returns: true if a value predicate is in use Since: 3.1

#### put public [V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html) put([K](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html) key, [V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html) value) Description copied from interface: [Put](http://docs.google.com/org/apache/commons/collections4/Put.html#put-K-V-) Note that the return type is Object, rather than V as in the Map interface. See the class Javadoc for further info.Specified by: [put](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#put-K-V-) in interface [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<[K](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> Specified by: [put](http://docs.google.com/org/apache/commons/collections4/Put.html#put-K-V-) in interface [Put](http://docs.google.com/org/apache/commons/collections4/Put.html)<[K](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> Overrides: [put](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#put-K-V-) in class [AbstractMapDecorator](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html)<[K](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> Parameters: key - key with which the specified value is to be associated value - value to be associated with the specified key Returns: the previous value associated with key, or null if there was no mapping for key. (A null return can also indicate that the map previously associated null with key, if the implementation supports null values.) See Also: [Map.put(Object, Object)](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#put-K-V-)

#### putAll public void putAll([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<? extends [K](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html),? extends [V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> mapToCopy)Specified by: [putAll](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#putAll-java.util.Map-) in interface [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<[K](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> Specified by: [putAll](http://docs.google.com/org/apache/commons/collections4/Put.html#putAll-java.util.Map-) in interface [Put](http://docs.google.com/org/apache/commons/collections4/Put.html)<[K](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> Overrides: [putAll](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#putAll-java.util.Map-) in class [AbstractMapDecorator](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html)<[K](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html),[V](http://docs.google.com/org/apache/commons/collections4/map/PredicatedMap.html)> Parameters: mapToCopy - mappings to be stored in this map See Also: [Map.putAll(Map)](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#putAll-java.util.Map-)

#### entrySet public [Set](https://docs.oracle.com/javase/7/docs/api/java/util/Set.html?is-external=true)<[Map.Entry](https://docs.oracle.com/javase/7/docs/api/java/util/Map.Entry.html?is-external=true)<K,V>> entrySet()Specified by: [entrySet](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#entrySet--) in interface [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<K,V> Specified by: [entrySet](http://docs.google.com/org/apache/commons/collections4/Get.html#entrySet--) in interface [Get](http://docs.google.com/org/apache/commons/collections4/Get.html)<K,V> Overrides: [entrySet](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#entrySet--) in class [AbstractMapDecorator](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html)<K,V> Returns: a set view of the mappings contained in this map See Also: [Map.entrySet()](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#entrySet--)

[Skip navigation links](#2p2csry)

* [Overview](http://docs.google.com/overview-summary.html)
* [Package](http://docs.google.com/package-summary.html)
* Class
* [Use](http://docs.google.com/class-use/PredicatedMap.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/map/PassiveExpiringMap.ExpirationPolicy.html)
* [Next Class](http://docs.google.com/org/apache/commons/collections4/map/PredicatedSortedMap.html)
* [Frames](http://docs.google.com/index.html?org/apache/commons/collections4/map/PredicatedMap.html)
* [No Frames](http://docs.google.com/PredicatedMap.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* Nested |
* [Field](#tyjcwt) |
* [Constr](#3dy6vkm) |
* [Method](#1t3h5sf)
* Detail:
* [Field](#26in1rg) |
* [Constr](#1ksv4uv) |
* [Method](#2jxsxqh)

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