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org.apache.commons.collections4.splitmap

## Class TransformedSplitMap<J,K,U,V>

* [java.lang.Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true)
  + [org.apache.commons.collections4.splitmap.AbstractIterableGetMapDecorator](http://docs.google.com/org/apache/commons/collections4/splitmap/AbstractIterableGetMapDecorator.html)<K,V>
    - org.apache.commons.collections4.splitmap.TransformedSplitMap<J,K,U,V>
* Type Parameters: J - the type of the keys to put in this map K - the type of the keys to get in this map U - the type of the values to put in this map V - the type of the values to get in this map All Implemented Interfaces: [Serializable](https://docs.oracle.com/javase/7/docs/api/java/io/Serializable.html?is-external=true), [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>, [Put](http://docs.google.com/org/apache/commons/collections4/Put.html)<J,U>  
    
  public class TransformedSplitMap<J,K,U,V>  
  extends [AbstractIterableGetMapDecorator](http://docs.google.com/org/apache/commons/collections4/splitmap/AbstractIterableGetMapDecorator.html)<K,V>  
  implements [Put](http://docs.google.com/org/apache/commons/collections4/Put.html)<J,U>, [Serializable](https://docs.oracle.com/javase/7/docs/api/java/io/Serializable.html?is-external=true)  
  Decorates another [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true) to transform objects that are added.  
  The Map put methods and Map.Entry setValue method 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.  
  **Note that TransformedMap 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.  
  The "put" and "get" type constraints of this class are mutually independent; contrast with [TransformedMap](http://docs.google.com/org/apache/commons/collections4/map/TransformedMap.html) which, by virtue of its implementing [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<K, V>, must be constructed in such a way that its read and write parameters are generalized to a common (super-)type. In practice this would often mean >Object, Object>, defeating much of the usefulness of having parameterized types.  
  On the downside, this class is not drop-in compatible with [Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true) but is intended to be worked with either directly or by [Put](http://docs.google.com/org/apache/commons/collections4/Put.html) and [Get](http://docs.google.com/org/apache/commons/collections4/Get.html) generalizations.Since: 4.0 See Also: [SplitMapUtils.readableMap(org.apache.commons.collections4.Get)](http://docs.google.com/org/apache/commons/collections4/SplitMapUtils.html#readableMap-org.apache.commons.collections4.Get-), [SplitMapUtils.writableMap(Put)](http://docs.google.com/org/apache/commons/collections4/SplitMapUtils.html#writableMap-org.apache.commons.collections4.Put-), [Serialized Form](http://docs.google.com/serialized-form.html#org.apache.commons.collections4.splitmap.TransformedSplitMap)

### Constructor SummaryConstructors

|  |  |
| --- | --- |
| * + Modifier | * + Constructor and Description |
| * + protected | * + [TransformedSplitMap](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html#TransformedSplitMap-java.util.Map-org.apache.commons.collections4.Transformer-org.apache.commons.collections4.Transformer-)([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/splitmap/TransformedSplitMap.html),[V](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html)> map, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super [J](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html),? extends [K](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html)> keyTransformer, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super [U](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html),? extends [V](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html)> valueTransformer) 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/splitmap/TransformedSplitMap.html) | * + [checkSetValue](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html#checkSetValue-U-)([U](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html) value) Override to transform the value when using setValue. |
| * + void | * + [clear](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html#clear--)() |
| * + [V](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html) | * + [put](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html#put-J-U-)([J](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html) key, [U](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.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/splitmap/TransformedSplitMap.html#putAll-java.util.Map-)([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<? extends [J](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html),? extends [U](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html)> mapToCopy) |
| * + static <J,K,U,V> [TransformedSplitMap](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html)<J,K,U,V> | * + [transformingMap](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html#transformingMap-java.util.Map-org.apache.commons.collections4.Transformer-org.apache.commons.collections4.Transformer-)([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<K,V> map, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super J,? extends K> keyTransformer, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super U,? extends V> valueTransformer) Factory method to create a transforming map. |
| * + protected [K](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html) | * + [transformKey](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html#transformKey-J-)([J](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html) object) Transforms a key. |
| * + protected [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/splitmap/TransformedSplitMap.html),[V](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html)> | * + [transformMap](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html#transformMap-java.util.Map-)([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<? extends [J](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html),? extends [U](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html)> map) Transforms a map. |
| * + protected [V](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html) | * + [transformValue](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html#transformValue-U-)([U](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html) object) Transforms a value. |

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

### 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-)

### Constructor Detail

#### TransformedSplitMap protected TransformedSplitMap([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/splitmap/TransformedSplitMap.html),[V](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html)> map, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super [J](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html),? extends [K](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html)> keyTransformer, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super [U](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html),? extends [V](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html)> valueTransformer) Constructor that wraps (not copies). If there are any elements already in the collection being decorated, they are NOT transformed.Parameters: map - the map to decorate, must not be null keyTransformer - the transformer to use for key conversion, must not be null valueTransformer - the transformer to use for value conversion, must not be null Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if map or either of the transformers is null

### Method Detail

#### transformingMap public static <J,K,U,V> [TransformedSplitMap](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html)<J,K,U,V> transformingMap([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<K,V> map, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super J,? extends K> keyTransformer, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super U,? extends V> valueTransformer) Factory method to create a transforming map. If there are any elements already in the map being decorated, they are NOT transformed.Type Parameters: J - the input key type K - the output key type U - the input value type V - the output value type Parameters: map - the map to decorate, must not be null keyTransformer - the transformer to use for key conversion, must not be null valueTransformer - the transformer to use for value conversion, must not be null Returns: a new transformed map Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if map or either of the transformers is null

#### transformKey protected [K](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html) transformKey([J](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html) object) Transforms a key. The transformer itself may throw an exception if necessary.Parameters: object - the object to transform Returns: the transformed object

#### transformValue protected [V](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html) transformValue([U](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html) object) Transforms a value. The transformer itself may throw an exception if necessary.Parameters: object - the object to transform Returns: the transformed object

#### transformMap protected [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/splitmap/TransformedSplitMap.html),[V](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html)> transformMap([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<? extends [J](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html),? extends [U](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html)> map) Transforms a map. The transformer itself may throw an exception if necessary.Parameters: map - the map to transform Returns: the transformed object

#### checkSetValue protected [V](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html) checkSetValue([U](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html) value) Override to transform the value when using setValue.Parameters: value - the value to transform Returns: the transformed value

#### put public [V](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html) put([J](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html) key, [U](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.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](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)<[J](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html),[U](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.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 [J](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html),? extends [U](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html)> mapToCopy)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)<[J](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html),[U](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.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-)

#### clear public void clear()Specified by: [clear](http://docs.google.com/org/apache/commons/collections4/Put.html#clear--) in interface [Put](http://docs.google.com/org/apache/commons/collections4/Put.html)<[J](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html),[U](http://docs.google.com/org/apache/commons/collections4/splitmap/TransformedSplitMap.html)> See Also: [Map.clear()](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#clear--)

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