JavaScript is disabled on your browser.

[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/LazyMap.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/HashedMap.html)
* [Next Class](http://docs.google.com/org/apache/commons/collections4/map/LazySortedMap.html)
* [Frames](http://docs.google.com/index.html?org/apache/commons/collections4/map/LazyMap.html)
* [No Frames](http://docs.google.com/LazyMap.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* Nested |
* [Field](#tyjcwt) |
* [Constr](#3dy6vkm) |
* [Method](#1t3h5sf)
* Detail:
* [Field](#26in1rg) |
* [Constr](#35nkun2) |
* [Method](#2jxsxqh)

org.apache.commons.collections4.map

## Class LazyMap<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.LazyMap<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: [LazySortedMap](http://docs.google.com/org/apache/commons/collections4/map/LazySortedMap.html)  
    
  public class LazyMap<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 create objects in the map on demand.  
  When the [get(Object)](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html#get-java.lang.Object-) method is called with a key that does not exist in the map, the factory is used to create the object. The created object will be added to the map using the requested key.  
  For instance:  
   Factory<Date> factory = new Factory<Date>() {  
   public Date create() {  
   return new Date();  
   }  
   }  
   Map<String, Date> lazy = LazyMap.lazyMap(new HashMap<String, Date>(), factory);  
   Date date = lazy.get("NOW");  
     
  After the above code is executed, date will refer to a new Date instance. Furthermore, that Date instance is mapped to the "NOW" key in the map.  
  **Note that LazyMap 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.LazyMap)

### 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 [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super [K](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html),? extends [V](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)> | * + [factory](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html#factory) The factory to use to construct elements |

### Constructor SummaryConstructors

|  |  |
| --- | --- |
| * + Modifier | * + Constructor and Description |
| * + protected | * + [LazyMap](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html#LazyMap-java.util.Map-org.apache.commons.collections4.Factory-)([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/LazyMap.html),[V](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)> map, [Factory](http://docs.google.com/org/apache/commons/collections4/Factory.html)<? extends [V](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)> factory) Constructor that wraps (not copies). |
| * + protected | * + [LazyMap](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html#LazyMap-java.util.Map-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/map/LazyMap.html),[V](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)> map, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super [K](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html),? extends [V](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)> factory) Constructor that wraps (not copies). |

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

|  |  |
| --- | --- |
| * + Modifier and Type | * + Method and Description |
| * + [V](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html) | * + [get](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html#get-java.lang.Object-)([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) key) |
| * + static <K,V> [LazyMap](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)<K,V> | * + [lazyMap](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html#lazyMap-java.util.Map-org.apache.commons.collections4.Factory-)([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<K,V> map, [Factory](http://docs.google.com/org/apache/commons/collections4/Factory.html)<? extends V> factory) Factory method to create a lazily instantiated map. |
| * + static <V,K> [LazyMap](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)<K,V> | * + [lazyMap](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html#lazyMap-java.util.Map-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 K,? extends V> factory) Factory method to create a lazily instantiated map. |

### 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--), [entrySet](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#entrySet--), [equals](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#equals-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--), [put](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#put-K-V-), [putAll](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#putAll-java.util.Map-), [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

#### factory protected final [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super [K](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html),? extends [V](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)> factory The factory to use to construct elements

### Constructor Detail

#### LazyMap protected LazyMap([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/LazyMap.html),[V](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)> map, [Factory](http://docs.google.com/org/apache/commons/collections4/Factory.html)<? extends [V](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)> factory) Constructor that wraps (not copies).Parameters: map - the map to decorate, must not be null factory - the factory to use, must not be null Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if map or factory is null

#### LazyMap protected LazyMap([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/LazyMap.html),[V](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)> map, [Transformer](http://docs.google.com/org/apache/commons/collections4/Transformer.html)<? super [K](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html),? extends [V](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)> factory) Constructor that wraps (not copies).Parameters: map - the map to decorate, must not be null factory - the factory to use, must not be null Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if map or factory is null

### Method Detail

#### lazyMap public static <K,V> [LazyMap](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)<K,V> lazyMap([Map](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true)<K,V> map, [Factory](http://docs.google.com/org/apache/commons/collections4/Factory.html)<? extends V> factory) Factory method to create a lazily instantiated map.Type Parameters: K - the key type V - the value type Parameters: map - the map to decorate, must not be null factory - the factory to use, must not be null Returns: a new lazy map Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if map or factory is null Since: 4.0

#### lazyMap public static <V,K> [LazyMap](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)<K,V> lazyMap([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 K,? extends V> factory) Factory method to create a lazily instantiated map.Type Parameters: K - the key type V - the value type Parameters: map - the map to decorate, must not be null factory - the factory to use, must not be null Returns: a new lazy map Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if map or factory is null Since: 4.0

#### get public [V](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html) get([Object](https://docs.oracle.com/javase/7/docs/api/java/lang/Object.html?is-external=true) key)Specified by: [get](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#get-java.lang.Object-) 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/LazyMap.html),[V](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)> Specified by: [get](http://docs.google.com/org/apache/commons/collections4/Get.html#get-java.lang.Object-) in interface [Get](http://docs.google.com/org/apache/commons/collections4/Get.html)<[K](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html),[V](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)> Overrides: [get](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html#get-java.lang.Object-) in class [AbstractMapDecorator](http://docs.google.com/org/apache/commons/collections4/map/AbstractMapDecorator.html)<[K](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html),[V](http://docs.google.com/org/apache/commons/collections4/map/LazyMap.html)> Parameters: key - the key whose associated value is to be returned Returns: the value to which the specified key is mapped, or null if this map contains no mapping for the key See Also: [Map.get(Object)](https://docs.oracle.com/javase/7/docs/api/java/util/Map.html?is-external=true#get-java.lang.Object-)

[Skip navigation links](#1ci93xb)

* [Overview](http://docs.google.com/overview-summary.html)
* [Package](http://docs.google.com/package-summary.html)
* Class
* [Use](http://docs.google.com/class-use/LazyMap.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/HashedMap.html)
* [Next Class](http://docs.google.com/org/apache/commons/collections4/map/LazySortedMap.html)
* [Frames](http://docs.google.com/index.html?org/apache/commons/collections4/map/LazyMap.html)
* [No Frames](http://docs.google.com/LazyMap.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* Nested |
* [Field](#tyjcwt) |
* [Constr](#3dy6vkm) |
* [Method](#1t3h5sf)
* Detail:
* [Field](#26in1rg) |
* [Constr](#35nkun2) |
* [Method](#2jxsxqh)

Copyright © 2001–2019 [The Apache Software Foundation](https://www.apache.org/). All rights reserved.