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/GrowthList.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/list/FixedSizeList.html)
* [Next Class](http://docs.google.com/org/apache/commons/collections4/list/LazyList.html)
* [Frames](http://docs.google.com/index.html?org/apache/commons/collections4/list/GrowthList.html)
* [No Frames](http://docs.google.com/GrowthList.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* Nested |
* Field |
* [Constr](#3znysh7) |
* [Method](#2et92p0)
* Detail:
* Field |
* [Constr](#3rdcrjn) |
* [Method](#1ksv4uv)

org.apache.commons.collections4.list

## Class GrowthList<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.list.AbstractListDecorator](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html)<E>
      * [org.apache.commons.collections4.list.AbstractSerializableListDecorator](http://docs.google.com/org/apache/commons/collections4/list/AbstractSerializableListDecorator.html)<E>
        + org.apache.commons.collections4.list.GrowthList<E>
* 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>, [List](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)<E>  
    
  public class GrowthList<E>  
  extends [AbstractSerializableListDecorator](http://docs.google.com/org/apache/commons/collections4/list/AbstractSerializableListDecorator.html)<E>  
  Decorates another List to make it seamlessly grow when indices larger than the list size are used on add and set, avoiding most IndexOutOfBoundsExceptions.  
  This class avoids errors by growing when a set or add method would normally throw an IndexOutOfBoundsException. Note that IndexOutOfBoundsException IS returned for invalid negative indices.  
  Trying to set or add to an index larger than the size will cause the list to grow (using null elements). Clearly, care must be taken not to use excessively large indices, as the internal list will grow to match.  
  Trying to use any method other than add or set with an invalid index will call the underlying list and probably result in an IndexOutOfBoundsException.  
  Take care when using this list with null values, as null is the value added when growing the list.  
  All sub-lists will access the underlying list directly, and will throw IndexOutOfBoundsExceptions.  
  This class differs from [LazyList](http://docs.google.com/org/apache/commons/collections4/list/LazyList.html) because here growth occurs on set and add, where LazyList grows on get. However, they can be used together by decorating twice.Since: 3.2 See Also: [LazyList](http://docs.google.com/org/apache/commons/collections4/list/LazyList.html), [Serialized Form](http://docs.google.com/serialized-form.html#org.apache.commons.collections4.list.GrowthList)

### Constructor SummaryConstructors

|  |  |
| --- | --- |
| * + Modifier | * + Constructor and Description |
|  | * + [GrowthList](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html#GrowthList--)() Constructor that uses an ArrayList internally. |
|  | * + [GrowthList](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html#GrowthList-int-)(int initialSize) Constructor that uses an ArrayList internally. |
| * + protected | * + [GrowthList](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html#GrowthList-java.util.List-)([List](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html)> list) Constructor that wraps (not copies). |

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

|  |  |
| --- | --- |
| * + Modifier and Type | * + Method and Description |
| * + void | * + [add](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html#add-int-E-)(int index, [E](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html) element) Decorate the add method to perform the growth behaviour. |
| * + boolean | * + [addAll](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html#addAll-int-java.util.Collection-)(int index, [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<? extends [E](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html)> coll) Decorate the addAll method to perform the growth behaviour. |
| * + static <E> [GrowthList](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html)<E> | * + [growthList](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html#growthList-java.util.List-)([List](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)<E> list) Factory method to create a growth list. |
| * + [E](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html) | * + [set](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html#set-int-E-)(int index, [E](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html) element) Decorate the set method to perform the growth behaviour. |

### Methods inherited from class org.apache.commons.collections4.list.[**AbstractListDecorator**](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html)[decorated](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html#decorated--), [equals](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html#equals-java.lang.Object-), [get](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html#get-int-), [hashCode](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html#hashCode--), [indexOf](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html#indexOf-java.lang.Object-), [lastIndexOf](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html#lastIndexOf-java.lang.Object-), [listIterator](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html#listIterator--), [listIterator](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html#listIterator-int-), [remove](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html#remove-int-), [subList](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html#subList-int-int-)

### Methods inherited from class org.apache.commons.collections4.collection.[**AbstractCollectionDecorator**](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html)[add](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#add-E-), [addAll](http://docs.google.com/org/apache/commons/collections4/collection/AbstractCollectionDecorator.html#addAll-java.util.Collection-), [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.[**List**](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)[add](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true#add-E-), [addAll](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true#addAll-java.util.Collection-), [clear](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true#clear--), [contains](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true#contains-java.lang.Object-), [containsAll](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true#containsAll-java.util.Collection-), [isEmpty](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true#isEmpty--), [iterator](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true#iterator--), [remove](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true#remove-java.lang.Object-), [removeAll](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true#removeAll-java.util.Collection-), [replaceAll](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true#replaceAll-java.util.function.UnaryOperator-), [retainAll](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true#retainAll-java.util.Collection-), [size](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true#size--), [sort](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true#sort-java.util.Comparator-), [spliterator](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true#spliterator--), [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true#toArray--), [toArray](https://docs.oracle.com/javase/7/docs/api/java/util/List.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

#### GrowthList public GrowthList() Constructor that uses an ArrayList internally.

#### GrowthList public GrowthList(int initialSize) Constructor that uses an ArrayList internally.Parameters: initialSize - the initial size of the ArrayList Throws: [IllegalArgumentException](https://docs.oracle.com/javase/7/docs/api/java/lang/IllegalArgumentException.html?is-external=true) - if initial size is invalid

#### GrowthList protected GrowthList([List](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html)> list) Constructor that wraps (not copies).Parameters: list - the list to decorate, must not be null Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if list is null

### Method Detail

#### growthList public static <E> [GrowthList](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html)<E> growthList([List](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)<E> list) Factory method to create a growth list.Type Parameters: E - the type of the elements in the list Parameters: list - the list to decorate, must not be null Returns: a new growth list Throws: [NullPointerException](https://docs.oracle.com/javase/7/docs/api/java/lang/NullPointerException.html?is-external=true) - if list is null Since: 4.0

#### add public void add(int index, [E](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html) element) Decorate the add method to perform the growth behaviour. If the requested index is greater than the current size, the list will grow to the new size. Indices between the old size and the requested size will be filled with null. If the index is less than the current size, the value will be added to the underlying list directly. If the index is less than zero, the underlying list is called, which will probably throw an IndexOutOfBoundsException.Specified by: [add](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true#add-int-E-) in interface [List](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html)> Overrides: [add](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html#add-int-E-) in class [AbstractListDecorator](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html)<[E](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html)> Parameters: index - the index to add at element - the object to add at the specified index Throws: [UnsupportedOperationException](https://docs.oracle.com/javase/7/docs/api/java/lang/UnsupportedOperationException.html?is-external=true) - if the underlying list doesn't implement set [ClassCastException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassCastException.html?is-external=true) - if the underlying list rejects the element [IllegalArgumentException](https://docs.oracle.com/javase/7/docs/api/java/lang/IllegalArgumentException.html?is-external=true) - if the underlying list rejects the element

#### addAll public boolean addAll(int index, [Collection](https://docs.oracle.com/javase/7/docs/api/java/util/Collection.html?is-external=true)<? extends [E](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html)> coll) Decorate the addAll method to perform the growth behaviour. If the requested index is greater than the current size, the list will grow to the new size. Indices between the old size and the requested size will be filled with null. If the index is less than the current size, the values will be added to the underlying list directly. If the index is less than zero, the underlying list is called, which will probably throw an IndexOutOfBoundsException.Specified by: [addAll](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true#addAll-int-java.util.Collection-) in interface [List](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html)> Overrides: [addAll](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html#addAll-int-java.util.Collection-) in class [AbstractListDecorator](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html)<[E](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html)> Parameters: index - the index to add at coll - the collection to add at the specified index Returns: true if the list changed Throws: [UnsupportedOperationException](https://docs.oracle.com/javase/7/docs/api/java/lang/UnsupportedOperationException.html?is-external=true) - if the underlying list doesn't implement set [ClassCastException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassCastException.html?is-external=true) - if the underlying list rejects the element [IllegalArgumentException](https://docs.oracle.com/javase/7/docs/api/java/lang/IllegalArgumentException.html?is-external=true) - if the underlying list rejects the element

#### set public [E](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html) set(int index, [E](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html) element) Decorate the set method to perform the growth behaviour. If the requested index is greater than the current size, the list will grow to the new size. Indices between the old size and the requested size will be filled with null. If the index is less than the current size, the value will be set onto the underlying list directly. If the index is less than zero, the underlying list is called, which will probably throw an IndexOutOfBoundsException.Specified by: [set](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true#set-int-E-) in interface [List](https://docs.oracle.com/javase/7/docs/api/java/util/List.html?is-external=true)<[E](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html)> Overrides: [set](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html#set-int-E-) in class [AbstractListDecorator](http://docs.google.com/org/apache/commons/collections4/list/AbstractListDecorator.html)<[E](http://docs.google.com/org/apache/commons/collections4/list/GrowthList.html)> Parameters: index - the index to set element - the object to set at the specified index Returns: the object previously at that index Throws: [UnsupportedOperationException](https://docs.oracle.com/javase/7/docs/api/java/lang/UnsupportedOperationException.html?is-external=true) - if the underlying list doesn't implement set [ClassCastException](https://docs.oracle.com/javase/7/docs/api/java/lang/ClassCastException.html?is-external=true) - if the underlying list rejects the element [IllegalArgumentException](https://docs.oracle.com/javase/7/docs/api/java/lang/IllegalArgumentException.html?is-external=true) - if the underlying list rejects the element

[Skip navigation links](#3whwml4)

* [Overview](http://docs.google.com/overview-summary.html)
* [Package](http://docs.google.com/package-summary.html)
* Class
* [Use](http://docs.google.com/class-use/GrowthList.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/list/FixedSizeList.html)
* [Next Class](http://docs.google.com/org/apache/commons/collections4/list/LazyList.html)
* [Frames](http://docs.google.com/index.html?org/apache/commons/collections4/list/GrowthList.html)
* [No Frames](http://docs.google.com/GrowthList.html)
* [All Classes](http://docs.google.com/allclasses-noframe.html)
* Summary:
* Nested |
* Field |
* [Constr](#3znysh7) |
* [Method](#2et92p0)
* Detail:
* Field |
* [Constr](#3rdcrjn) |
* [Method](#1ksv4uv)

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