



## Element Collections Examples

The CODESYS package “Element Collections Examples” contains sample projects for using the library “Element Collections” library.

### Product description

The CODESYS library “Element Collections” contains function blocks for lists, queues, stacks, and hash tables. The elements of collections are instances of function blocks of type `IElement`. The sample project “Element Collections Examples” demonstrates how to use individual components.

### More information

The sample project includes the following applications:

#### ElementExample

Example of creating instances of type `IElement`. `IElement` is the basic interface of all elements of a collection.

#### OnlineChangeSafeLinkedListExample

Example of linked lists that are safe from an online change.

#### SimpleHashTableExample

Example of how to use the `HashTable` function block.

#### SimpleLinkedListExample

Example of how to use the `LinkedList` function block. The `LinkedList` function block does not have index access and it can be extended dynamically.

#### SimpleListExample

Example of how to use the `List` function block. The `List` function block has methods with index access to the following elements: `GetElementAt`, `InsertElementAt`, `RemoveElementAt`, and `SetElementAt`.

#### SimpleQueueExample

Example of how to use the `Queue` function block. The `Queue` function block works according to the FIFO principle (first in, first out).

#### SimpleSortedListExample

Example of how to use the `SortedList` function block. The elements of a `SortedList` are sorted by the `ElementCompareTo` method of `IElement`.

#### SimpleStackExample

Example of how to use the `Stack` function block. The `Stack` function block works according to the LIFO principle (last in, first out).

#### SimpleTreeNodeExample

Example of how to use the `TreeNode` function block. With the `TreeNode` function block, tree structures can be built

#### DynamicListExample

Example for using the function module `ListFactory`. You can use the function module `ListFactory` to create lists at runtime. These lists can be parameterized with a fixed size and also with an initial size with growth factor. The example demonstrates the general handling of a collection factory. The `QueueFactory`, `SortedListFactory`, `StackFactory` and `TreeNodeFactory` work according to the same pattern.

## General information

### Manufacturer:

3S-Smart Software Solutions GmbH  
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### Support:

<https://support.codesys.com>

### Item:

Element Collections Examples

### Item number:

000095

### Sales:

CODESYS Store

<https://store.codesys.com>

### Included in delivery:

CODESYS Package

## System requirements and restrictions

<b>Programming system</b>	CODESYS Development System V3.5.14.0
<b>Runtime system</b>	CODESYS Control V3.5.14.0
<b>Supported platforms and devices</b>	Note: Use the "Device Reader" product for locating the functions (licenses) supported by the PLC. The product is available in the CODESYS Store free of charge.
<b>Additional requirements</b>	•
<b>Restrictions</b>	
<b>Licensing</b>	•
<b>Required accessories</b>	•

*Note: Not all CODESYS features are available in all territories. For more information on geographic restrictions, please contact [sales@codesys.com](mailto:sales@codesys.com).*

*Note: Technical specifications are subject to change. Errors and omissions excepted. The content of the current online version of this document applies.*