

 University of Zurich <small>UZH</small>	Test Plan for Markup Generator	Author: E. Esati, G.R. Prinz, B. Solenthaler & S. Plüss Doc.No.: MARK-TEST-001 Date: 2017-12-04 Number of Pages: 10
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Revision History

Date	Version	Description	Author(s)
2017-11-21	0.1	Test cases and Test Suite description added	Elfat Esati
2017-11-30	0.2	Test cases, Public Classes and Routines Added	G. R. Prinz
2017-12-02	0.3	Introduction, Set Up, Tear Down added	Elfat Esati
2017-12-04	0.4	Test Data, Oracle, Set Up added	Severin Plüss

1 Introduction

This document describes the conditions of testing and evaluating the «Markup Generator» library. The requirements specified in the Mark-REQ-001 documents should agree with the outcome. Thus, it is showed below what should be tested and how it should be tested. The data and steps required to execute a single test case are also described.

2 Public API Overview

2.1 Public Classes

The following classes are part of the public API and should be tested by using automated test procedures:

Container Elements

- DOCUMENT
- LISTNODE
- TABLENODE
- TEBLEROWNODE

Leaf Elements

- CUSTOMELEMENT
- TEXTNODE
- DOCUMENTLINKNODE
- LISTITEMNODE
- TABLECELLNODE
- IMAGENODE
- HEADIGNODE
- EXTERNALLINKNODE

2.2 Public Routines

Routine	Class of the Routine	Expected Arguments
accept	DOCUMENT	Object belonging to a subclass of A_VISTOR
getname	DOCUMENT	None
addChild	DOCUMENT	Object belonging to a subclass of A_COMPOSITE
getChildren	DOCUMENT	None
accept	LISTNODE	Object belonging to a subclass of A_VISTOR
addChild	LISTNODE	Object of LISTITEMNODE
getChildren	LISTNODE	None
accept	TABLEROWNODE	Object belonging to a subclass of A_VISTOR
addChild	TABLEORWNODE	Object belonging to a subclass of A_COMPOSITE
getChildren	TABLEROWNODE	None
accept	TABLENODE	Object belonging to a subclass of A_VISTOR
addChild	TABLENODE	Object of TABLEROWNODE
getChildren	TABLENODE	None
accept	CUSTOMELEMENT	Object belonging to a subclass of A_VISTOR
addtext	CUSTOMELEMENT	String
getBody	CUSTOMELEMENT	None
accept	TEXTNODE	Object belonging to a subclass of A_VISTOR
getBody	TEXTNODE	None

accept	CUSTOMELEMENT	Object belonging to a subclass of A_VISTOR
getBody	CUSTOMELEMENT	None
getdocument	CUSTOMELEMENT	None
accept	LISTITEMNODE	Object belonging to a subclass of A_VISTOR
getBody	LISTITEMNODE	None
accept	TABLECELLNODE	Object belonging to a subclass of A_VISTOR
getBody	TABLECELLNODE	None
accept	IMAGENODE	Object belonging to a subclass of A_VISTOR
getSource	IMAGENODE	None
getAlt	IMAGENODE	None
getBody	IMAGENODE	None
accept	HEADINGNODE	Object belonging to a subclass of A_VISTOR
getLevel	HEADINGNODE	None
getBody	HEADINGNODE	None
accept	EXTRENALLINKNODE	Object belonging to a subclass of A_VISTOR
getLink	EXTRENALLINKNODE	None
getBody	EXTRENALLINKNODE	None

3 Test Suite Description

This test suite comprises the sets of test cases. Test cases help defining or listing cases or situations under which the system or library works well and complies to a high level of quality. When the test cases represent a scenario, the test suite may contain those test cases. Successful completion of one test case need to happen before testing the next case. When all test cases are identified it is required to validate them to ensure the system works correctly without having any failures and bugs.

3.1 Individual Tests

3.1.1 General

Test Case ID	T.3.1.1.001
SRS ID of Functionality	R3.2.1.001
Name of Functionality	Inexplicit Usage of Functions
Classes and Routines	Public Routines
Set Up	Necessary arguments to be passed to functions if needed.
Tear Down	None
Test Data	None
Oracle	The functions should have been implemented and as a result they must return what is expected from it.

Test Case ID	T.3.1.1.002
SRS ID of Functionality	R3.2.1.002
Name of Functionality	System
Classes and Routines	None
Set Up	None
Tear Down	None
Test Data	None
Oracle	If tested in different Eiffel IDE there is no guarantee to function properly.

Test Case ID	T.3.1.1.003
SRS ID of Functionality	R3.2.1.003
Name of Functionality	Creating Documents
Classes and Routines	Class: Document, routine: make
Set Up	An instance of Document class should be declared.
Tear Down	None
Test Data	Internal name
Oracle	A document object should be created. It should have an internal name that was determined within the creation procedure. No messages should be displayed. Furthermore, no errors should be raised. There is no item or value returned.

3.1.2 Presentation Semantics

Test Case ID	T.3.1.2.001
SRS ID of Functionality	R3.2.2.001
Name of Functionality	Internal Links
Classes Routines	Class: DOKUMENTLINKNODE
Set Up	An instance of Document class should be declared.
Tear Down	None
Test Data	Link Text
Oracle	A link should be placed in the document. It should reference to other parts of the same document. No message should be displayed. Furthermore, no errors should be raised. There is no item or value returned.

Test Case ID	T.3.1.2.002
SRS ID of Functionality	R3.2.2.002
Name of Functionality	Linking Multiple Reports
Classes and Routines	Class: DOCUMENTLINKNODE, routine: make; Class: DOCUMENT, routine: addChild

Set Up	Two arguments to be passed to creation procedure of the class DOCUMENTLINKNODE.
Tear Down	None
Test Data	Document Link
Oracle	An object characterized by a link text and a DOCUMENT object, on which the object references, should be created and assigned to an object of type DOCUMENT. No messages should be displayed. Furthermore, no errors should be raised. There is no item or value returned.

Test Case ID	T.3.1.2.003
SRS ID of Functionality	R3.2.2.003
Name of Functionality	Linking Documents / Web Pages Accessible through the Web
Classes and Routines	Class: EXTERNALLINKNODE, routine: make; Class: DOCUMENT, routine: addChild
Set Up	The link (url address) to be provided
Tear Down	None
Test Data	Html link with it's content.
Oracle	An object characterized by a link text and a string representing an URL, on which the object references, should be created and assigned to an object of type DOCUMENT. No messages should be displayed. Furthermore, no errors should be raised. There is no item or value returned.

Test Case ID	T.3.1.2.004
SRS ID of Functionality	R3.2.2.004
Name of Functionality	Referencing Images by URL
Classes and Routines	Class: IMAGENODE and HTMLVISITOR, routines: make and makeAlt
Set Up	Image file with url link pointing to it.
Tear Down	None
Test Data	Image file
Oracle	An object characterized by an alternative text and a string representing an URL, which leads to the extrenal image, should be created and assigned to an object of type DOCUMENT. No messages should be displayed. Furthermore, no errors should be raised. There is no item or value returned.

Test Case ID	T.3.1.2.005
SRS ID of Functionality	R3.2.2.005
Name of Functionality	Generating Images from Local Files
Classes and Routines	Class: IMAGENODE and HTMLVISITOR, routines: make and makeAlt
Set Up	Image file address (with location where the image is).
Tear Down	None
Test Data	Image file

Oracle	An object characterized by an alternative text and a string representing a local file path, which leads to the local image, should be created and assigned to an object of type DOCUMENT. No messages should be displayed. Furthermore, no errors should be raised. There is no item or value returned.
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Test Case ID	T.3.1.2.006
SRS ID of Functionality	R3.2.2.006
Name of Functionality	Creating Bullet Lists
Classes and Routines	Class: LISTITEMNODE, routine: make; Class: LISTNODE, procedure: make, addChild; Class: DOCUMENT, procedure: addChild
Set Up	Text as argument for the class LISTITEMNODE.
Tear Down	None
Test Data	Text
Oracle	One or multiple objects of type LISTITEMNODE containing simple text should be created and added to an object of type LISTNODE. The latter is assigned to an object of type DOCUMENT. The text contained in the objects of LISTITEMNODE are given by user input. No messages should be displayed. Furthermore, no errors should be raised. There is no item or value returned.

Test Case ID	T.3.1.2.007
SRS ID of Functionality	R3.2.2.007
Name of Functionality	Creating Tables
Classes and Routines	Class: TABLENODE; TABLEROWNODE, TABLECELLNODE, Routines: addChild, make.
Set Up	body as argument for creation procedure for class TABLECELLNODE.
Tear Down	None
Test Data	Text passed as argument.
Oracle	Table with columns and rows, filled by calling elements of the list in the TABLENODE.

Test Case ID	T.3.1.2.008
SRS ID of Functionality	R3.2.2.008
Name of Functionality	Text
Classes and Routines	Class: TEXTNODE, routine: make; Class: DOCUMENT, routine: addChild
Set Up	Text as argument for make of the class TEXTNODE.
Tear Down	None
Test Data	Text
Oracle	An object specified by a string entered by the user should be contained in an object of type DOCUMENT. No messages should be displayed. Furthermore, no errors should be raised. There is no item or value returned.

Test Case ID	T.3.1.2.009
SRS ID of Functionality	R3.2.2.009
Name of Functionality	Headers
Classes and Routines	Class: HEADINGNODE, routine: make; Class DOCUMENT, routine: addChild
Set Up	Text and Level argument for make of HEADINGNODE.
Tear Down	None
Test Data	Text provided
Oracle	An object of type HEADINGNODE which is characterized by two features representing the heading text and hierarchy level should be contained in an object of type DOCUMENT. No messages should be displayed. Furthermore, no errors should be raised. There is no item or value returned.

Test Case ID	T.3.1.2.010
SRS ID of Functionality	R3.2.2.010
Name of Functionality	Including Existing Code
Classes and Routines	Class: CUSTOMELEMENT, routines: make, addText
Set Up	Text as argument for make of the affected class.
Tear Down	None
Test Data	Given Text
Oracle	An object of type CUSTOMELEMENT containing an user-specified string representing markup code should be assigned to an object of type DOCUMENT. No messages should be displayed. Furthermore, no errors should be raised. There is no item or value returned.

Test Case ID	T.3.1.2.011
SRS ID of Functionality	R3.2.2.011
Name of Functionality	Reading from File
Classes and Routines	Class: FILEWRITER
Set Up	Path to the file.
Tear Down	Delete File
Test Data	File read
Oracle	A path to a text file should be given to the function, so that the content of the file is read and returned. An error should be raised if the file can not be read. The content of the file is returned.

3.1.3 Document Structure

Test Case ID	T.3.1.3.001
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SRS ID of Functionality	R3.2.3.001
Name of Functionality	Document Name
Classes and Routines	Class: DOCUMENT, routines: make, getName
Set Up	Document Name provided by user
Tear Down	None
Test Data	Document File
Oracle	Each object of type DOCUMENT should be characterized by a user-specific string representing the document's name. No messages should be displayed. Furthermore, no errors should be raised. There is no item or value returned.

Test Case ID	T.3.1.3.002
SRS ID of Functionality	R3.2.3.002
Name of Functionality	Correctly Indented Output
Classes and Routines	Class: HTML_VISITOR, routine: getIndent, indent
Set Up	Class Instance of HTML_VISITOR
Tear Down	None
Test Data	Document file
Oracle	The markup output should be well-structured by using indentation. Each child element should be intended in relation to its parent element. The indentation should always have the same size. No messages should be displayed. Furthermore, no errors should be raised. There is no item or value returned.

3.1.4 Output

Test Case ID	T.3.1.4.001
SRS ID of Functionality	R3.2.4.001
Name of Functionality	Output to HTML (Clear Text)
Classes and Routines	Class: DOCUMENT, routine: accept
Set Up	List of children items only of html type.
Tear Down	Release of list from items.
Test Data	None
Oracle	The content an DOCUMENT object is returned in form of a string representing a valid HTML document. No messages should be displayed. Furthermore, no errors should be raised.

Test Case ID	T.3.1.4.002
SRS ID of Functionality	R3.2.4.002
Name of Functionality	Output to Markdown (Clear Text)
Classes and Routines	Class: MARKDOWN_VISITOR, routine: visitDocument.

Set Up	Class instance for MARKDOWN_VISITOR
Tear Down	Release if any
Test Data	None
Oracle	The content an DOCUMENT object should be returned in form of a string representing a valid markdown document. No messages should be displayed. Furthermore, no errors should be raised.

Test Case ID	T.3.1.4.003
SRS ID of Functionality	R3.2.4.003
Name of Functionality	Markup Output to Local File
Classes and Routines	Class: FILEWRITER, routine: write
Set Up	PLAIN TEXT FILE
Tear Down	None
Test Data	Text file
Oracle	A new text file should have been created, with the given path and content for it.

4 Expected Coverage

Testing is a constantly growing process; the provided test suite represents the test cases near the total coverage.

5 Benchmarks

The benchmark testing aims to determine the execution time of each functional requirement that found its way into the «Markup Generator». This allows to perform statistical evaluations like the calculation of the mean execution time. Each benchmark test should be performed under the same environmental conditions and there should not be any application in active state other than the ones needed for testing purposes. Furthermore, the hardware- and software specifications of the test system should be similar to the specifications of the user systems.