

ZUOZ REFERENCE MANUAL		Pages (1/120)
Author : Dipayan Sengupta	Version: ZUOZ Version 5.2	Date :21-12-2012

Zuoz Reference Manual (Zuoz 5.2)

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5.1	20/12/12	Soham Ghosh	Added Zbrowser.SelectFromListBoxById
5.2	21/12/12	Chayan Hazra	Added Zbrowser.GetFrameHandle Atom
5.2	11/01/13	Soham Ghosh	Added Zjson.MachElementsbyIndex Atom
5.2	11/01/13	Soham Ghosh	Added Zjson.MatchForElements Atom
5.2	18/01/13	Soham Ghosh	Added SelectMultipleFromDropDownByIdAndValue Atom

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1 Introduction

- ZUOZ is a collection of atom libraries (pearls), organized by application domain and functionality, intended to be used in test case design.

1.1 Document Purpose

- The Reference Guide provides all the detailed information about the atoms in ZuoZ and also how to use them.

1.2 Intended Audience

- This Reference Manual is intended for system administrators, who would be installing and managing ZuoZ using Zug.

1.3 References and Other Related Documents

The following documents provide additional useful information about Automature's other products, and how they relate to ZuoZ.

1. Zug User Manual
2. Chur Reference Guide

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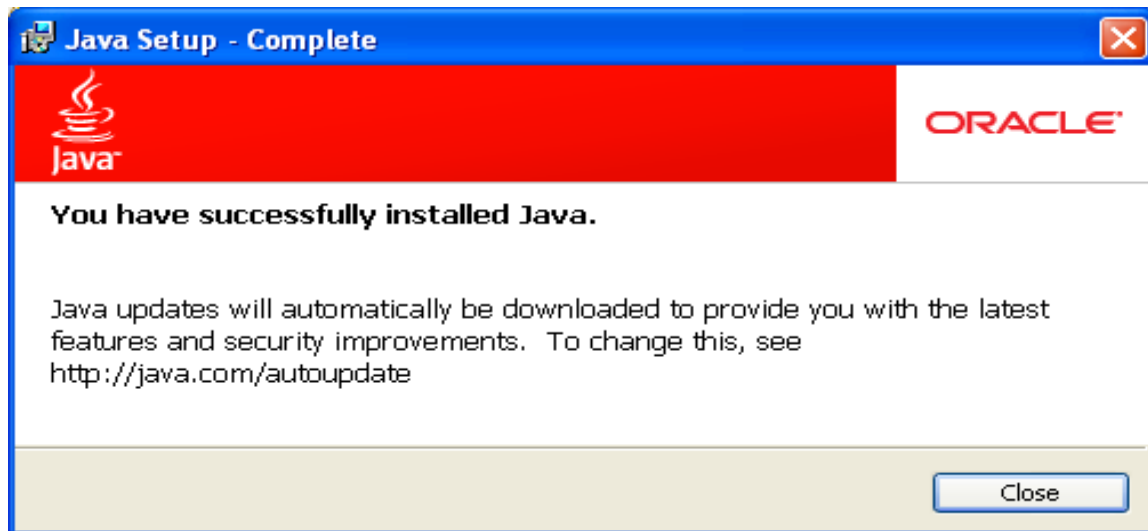
2 Dependencies

Before running ZUOZ on a computer, it has to meet some basic requirements:

Operating System – Microsoft Windows XP or higher

Software – Java(TM) SE Runtime Environment 1.6

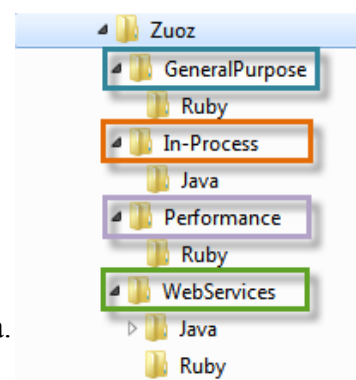
<http://www.oracle.com/technetwork/java/javase/downloads/index.html>



2.1 Zuoz Atom Library distribution:

Zuoz atoms are distributed as individual files which are organized in separate directories based on their characteristics. There are 5 basic categories.

1. General Purpose Atoms are written in Ruby.
2. In-Process Atoms are written in Java. The zuoz-inprocess.jar contains **Zbrowser** and **Zstring** and other atoms.
3. 2.Performance Atoms are written in Ruby.
4. 3.Web Application atoms are written in Ruby.
5. 4.Web Service related atoms written in Ruby and Java.



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2.2 Zuoz Set Up with Zug

ZugINI Configuration for Zuoz

Zug can call the external java jar files as builtin atoms through chur spreadsheet. To make it happen the ZugINI.xml parsing is need. Inside the Zug installation directory the ZugINI.xml file can be edited to by putting the values in the tags.

To set up zuoz, kindly insert the following inputs as shown below:

```
<inprocesspackage>
  < inprocesspackage language="java" name="Zbrowser">
    <file-path>C:\Programfiles\Automature\ZUOZ\Bultins</file-path>
    <jar-package>com.automature.zuoz.builtins.zbrowser</jar-package>
    <class-name>BrowserOperations</class-name>
  </inprocesspackage>
```

2.3 Zuoz Set Up for different packages

To add various external jar files, please insert the packages in the following way:

ZXML Package

```
<inprocesspackage language="java" name="ZXml">
  <file-path>C:\Program Files\Automature\ZUOZ\Bultins</file-path>
  <jar-package>com.automature.zuoz.inprocess.zxml</jar-package>
  <class-name>XMLOperation</class-name>
</inprocesspackage>
```

ZREST Package

```
<inprocesspackage language="java" name="ZRest">
  <file-path>C:\Program Files\Automature\ZUOZ\Bultins</file-path>
  <jar-package>com.automature.zuoz.inprocess.zrest</jar-package>
  <class-name>WebServiceOperation</class-name>
</inprocesspackage>
```

ZFileOps Package

```
<inprocesspackage language="java" name="ZFileOps">
  <file-path>C:\Program Files\Automature\ZUOZ\Bultins</file-path>
  <jar-package>com.automature.zuoz.inprocess.zfileops</jar-package>
  <class-name>FileOperation</class-name>
</inprocesspackage>
```

ZString Package

```
<inprocesspackage language="java" name="ZString">
  <file-path>C:\Program Files\Automature\ZUOZ\Bultins</file-path>
  <jar-package>com.automature.zuoz.inprocess.zstring</jar-package>
  <class-name>StringOperation</class-name>
</inprocesspackage>
```


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ZJSON Package

```
<inprocesspackage language="java" name="ZJson">
    <file-path>C:\Program Files\Automature\ZUOZ\Inprocess</file-path>
    <jar-package>com.automature.zuoz.inprocess.zjson</jar-package>
    <class-name>JSONOperation</class-name>
</inprocesspackage>
```

ZDB Package

```
<inprocesspackage language="java" name="ZDB">
    <file-path>C:\Program Files\Automature\ZUOZ\Inprocess</file-path>
    <jar-package>com.automature.zuoz.inprocess.zdb</jar-package>
    <class-name>DBOperation</class-name>
</inprocesspackage>
```

ZFTP Package

```
<inprocesspackage language="java" name="ZFTP">
    <file-path>C:\Program Files\Automature\ZUOZ\Inprocess</file-path>
    <jar-package>com.automature.zuoz.inprocess.zftpops</jar-package>
    <class-name>FtpOperation</class-name>
</inprocesspackage>
```

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3 Web Application Based Atoms

All the Atoms in this section are available in Zbrowser In process package file. These atoms are referenced in CHUR spreadsheet as **Zbrowser.<atomname>** because of the mapping done in ZugINI.xml.

3.1 Browser Launch Related Atoms

Many of the software applications today are written as web-based applications to be run in an Internet browser. Thus the first step of automation is to launch various browsers and test the applications in different platforms. There are various atoms in zuoz which launch different browsers with a given URL.

3.1.1 OpenBrowserWithUrl

Description

Creates an instance of a IE browser in Windows platform. or Firefox browser if in Linux Platform and navigates to a particular URL, then returns the browser handle into a context variable.

Returned Messages:

- Error while putting driver object in hash list = Browser object has not been instantiated
- Error while finding browser with given url = Url not found

Supported Browsers:

Default browser for each operating system i.e. Internet Explorer in Windows Platform and Firefox in Linux/Ubuntu Platform.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional ?
URL	Address of the webpage to be opened in browser.	Scalar	Valid string representing a URL	Input	Required
BrowserHandle	Name of context variable, where window handle can be returned.	Scalar	any ASCII word	Output	Required

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Example:

Zbrowser.OpenBrowserWithUrl("http://www.google.com", handle)

1	TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2
2							
3	TS001	opening the default browser			SetContextVar	handle	
4					Zbrowser.OpenBrowserWithUrl	http://google.com	handle
5							

In the above example we show how to open <http://google.com> in the default browser of an operating system in a chur spreadsheet.

In the first line, we declare a context variable named handle.

In the next line we call the Atom as Zbrowser.OpenbrowserWithUrl with the arguments URL and the handle. The window handle of the browser is stored in this context variable named handle.

3.1.2 Initialize

Description

Creates an instance of the browser and returns the window handle of the browser into a context variable.

For the firefox browser, it is possible to choose a specific user profile for the browser, to inherit custom settings that control behavior of the browser. Please see section 3.1.6 for more information.

Returned Messages:

- Error while creating Firefox object = Invalid name of the browser
- Error while putting firefox driver object in hash list = Firefox object has not been instantiated
- Error while putting firefox driver handle in children hash list = Could not find the instance of firefox in the memory location
- Error while creating IE object = Invalid name of the browser
- Error while putting IE driver object in hash list = IE object has not been instantiated
- Error while putting IE driver handle in children hash list = Could not find the instance of IE in the memory location

Supported Browsers:

To initialize a browser , kindly give any one of the inputs in ActionArg_2 column :

Internet Explorer : **ie**

Mozilla Firefox : **firefox**

Google Chrome : **chrome**

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For Browser-less operation:

Html Unit Driver : **htmlunit**

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>
BrowserHandle	Name of context variable, where window handle can be returned.	Scalar	any ASCII word	Output	Required
Browser	Name of the browser whose instance has to be created .	Scalar	Valid string representing name of the browser	Input	Required

Example:

Zbrowser.Initialize(handle,"firefox")

1	TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2
2							
3	TS002	opening a particular browser			SetContextVar	handle	
4					Zbrowser.Initialize	handle	firefox
5							

In the above example we show how to open a particular browser in a chur spreadsheet.

In the first line, we declare a context variable named handle.

In the next line we call the Atom as Zbrowser.Initialize with the arguments handle and the browser name firefox. The window handle of the browser is stored in this context variable named handle.

To be noted: This atom simply launches a user defined browser WITHOUT opening any page.

3.1.3 GoToURL

Description

Goes to a particular URL

Returned Messages:

- Error while getting to an URL =Cannot navigate to page with the given url

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome,

For Browser-less operation:

Html Unit Driver : **htmlunit**

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<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direct ion</u>	<u>Optional ?</u>
BrowserHandle	Browser handle of window or a frame, where link is to be clicked is located.	Scalar	valid window handle returned by OpenBrowserWith Url or Initialize	Input	Required
Url	A valid URL where the control has to navigate.	Scalar	string representing valid URL of a page	Input	Required

Example:

Zbrowser.GoToURL(%handle%, "Url of the Navigating page")

1	TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2
2							
3	TS003	opening a particular browser			SetContextVar	handle	
4					Zbrowser.Initialize	handle	firefox
5					Zbrowser.GoToURL	%handle%	http://yahoo.com
6							

In the above example we show how to navigate to a particular URL.

In the first two lines we simply open a firefox browser which returns the value of the window handle to the context variable handle.

In the next line we call the Atom Zbrowser.GoToURL with the value of the window handle and the URL.

To be noted: This atom needs the value of the window handle. Hence to execute this atom, one must call any of the atoms OpenBrowserWithUrl or Initialize first.

3.1.4 FindBrowserWithTitle

Description

Finds a browser with a given title and returns the browser handle into a context variable

Example:

Zbrowser.FindBrowserWithTitle("google", handle)

Returned Messages:

- Error while getting children window handle=Window handle for new popup couldn't be found
- Error while getting children window titles= Window title for new popup couldn't be found
- Cannot find new window with the given title=Title entered for the new window couldn't be found

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome

For Browser-less operation:

Html Unit Driver : **htmlunit**

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
Title	Title of the browser window to find.	Scalar	any string representing a valid title	Input	Required	none
BrowserHandle	Name of context variable, where window handle can be returned.	Scalar	any ASCII word	Output	Required	none

3.1.5 WaitForWindow

Description

Waits for the input window title till it appears or the time out expires.

Example:

Zbrowser.WaitForWindow(“%handle%”, “PageTitle”, “30”)

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome

For Browser-less operation:

Html Unit Driver : **htmlunit**

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>
BrowserHandle	Browser handle of window or a frame	Scalar	valid window handle returned by OpenBrowserWithUrl or Initialize	Input
Title	Name of the page title for which it will wait	Scalar	ASCII string (word)	Input
Time	The maximum time limit the atom will wait for the window title to appear	Scalar	In Second	Input

Returned Messages:

- Error while finding the new window title=Page title couldn't be found
- Error since time out has expired= Page title couldn't be found

3.1.5.1 WaitForWindow

Description

Waits for a page element till it appears or the time out expires. You can search for

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Example:

Zbrowser.WaitForWindow(%handle%,,"id","PageTitle", "30")

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome

For Browser-less operation:

Html Unit Driver : **htmlunit**

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>
BrowserHandle	Browser handle of window or a frame	Scalar	valid window handle returned by OpenBrowserWithUrl or Initialize	Input
AttributeName	Type of the attribute for which it will wait	Scalar	Id,name,xpath	Input
AttributeValue	Corresponding value of the attribute.	Scalar	any ASCII word	Input
Time	The maximum time limit the atom will wait for the window element to appear	Scalar	In Second	Input

Returned Messages:

- AtomExecutionException message logged in log error file and the error message shown in console.

3.1.6 SetFirefoxProfile

Description

It sets a custom profile for firefox.

Example:

Zbrowser.SetFirefoxProfile("Profilename")

Supported Browsers:

Mozilla Firefox

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional ?</u>	<u>Default Value</u>
ProfileName	Specifies the name of the profile for firefox	Scalar	Valid Firefox Profile Names	Input	Required	none

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3.1.7 CloseBrowser

Description

It closes the browser.

Example:

```
zbrowser.CloseBrowser(%BrowserHandle%)
```

Returned Messages:

Error while closing Browser=Text field id is invalid

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome

For Browser-less operation:

Html Unit Driver : **htmlunit**

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame to be closed.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none

3.1.8 GetFrameHandle

Description

Returns the handle of a frame (using the frame id or its name) in a context variable.

Example:

```
zbrowser.GetFrameHandle(%BrowserHandle%, "Frame", "Result")
```

Returned Messages:

AtomExecutionException message logged in log error file and the error message shown in console.

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome

For Browser-less operation:

Html Unit Driver : **htmlunit**

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<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>
BrowserHandle	Browser handle of window or a frame where the frame exists.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required
Frame	The name or the identifier of the frame.	Scalar	Name or ID	Input	Required
Result	The name of the context variable where the handle of the frame is returned.	Scalar	Valid string representing name of the frame.	Output	Required

3.2 Text Field Related Atoms

The following atoms are used to read and write text in a webpage.

3.2.1 SetTextByName

Description

Set text in a text field by its Name

Returned Messages:

- Error while finding element by text field name=Text field name is invalid
- Error while setting text field with value=Value cannot be inserted at the specified field

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome

For Browser-less operation:

Html Unit Driver : **htmlunit**

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where field to be populated is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
FieldName	Internal name of the field control.	Scalar	string representing a valid form field name	Input	Required	none
Text	Text to be entered.	Scalar	any string	Input	Required	none

Example:

Zbrowser.SetTextByName(%BrowserHandle%, "Field Description", "Text")

The following description shows how to search your desired text in Google. The Action_arg2 in the 5th Row is "q". This is the search field description of the webpage google.com. The Search_Text is your desired text that you want to search which should be defined in the macros sheet.

1	TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3
2								
3	TS001	To search a test in google			SetContextVar	handle		
4					Zbrowser.OpenBrowserWithUrl	\$URL	handle	
5					Zbrowser.SetTextByName	%handle%	q	\$Search_text
6								

3.2.2 SetTextById

Description

Set text in a text field by its Id

Returned Messages:

- Error while finding element by text field id=Text field id is invalid
- Error while setting text field with value=Value cannot be inserted at the specified field id

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?	Default Value
BrowserHandle	Browser handle of window or a frame, where field to be populated is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
FieldId	Internal ID of form field control.	Scalar	string representing a valid form field ID	Input	Required	none
Text	Text to be entered.	Scalar	any string	Input	Required	none

Example:

Zbrowser.SetTextById(%BrowserHandle%, "FieldId", "Text")

3.2.3 SetTextByIndex

Description

Set text in a text field by its tab index.

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Returned Messages:

- Error while finding element by text field index=Text field index is invalid
- Error while setting text field with value=Value cannot be inserted at the specified field

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

Example:

Zbrowser.SetTextByIndex(%BrowserHandle%, 3,"atom library add-on for zug")

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where field to be populated is located.	Scalar	valid window handle returned by OpenBrowserWith Url	Input	Required	none
FieldName	Tab index position of the text field	Scalar	Integer representing any tab index position	Input	Required	none
Text	Text to be entered.	Scalar	any string	Input	Required	none

3.2.4 SetMultipleTextByName

Description

Sets multiple number of text fields in a page using the name attribute

Returned Messages:

- Error with unequal number of elements in each list=No match found between the field names and the corresponding values
- Error while trying to find Text Field by Name=Invalid field name present in the list
- Error while trying to set Text Field with value=Field Value could not be set at the corresponding invalid field name

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where the table is located.	Scalar	a valid window handle returned by OpenBrowserWithUrl	Input	Required	none
ListOfNames	List of internal	Vector	a colon separated list	Input	Required	none


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	names of the text fields.	of text field names enclosed within square brackets	d
ListOfText	List of text to be set in text fields.	Vector a colon separated list of strings enclosed within square brackets	Input Require d none

Example:

The following example shows how to log into gmail using this atom

```
Zbrowser.SetMultipleTextByName(%BrowserHandle%,
"[Email:Passwd]", "[ericviewer:eric6789]" )
```

1	TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3
2								
3	TC002	Login into gmail			SetContextVar	handle		
4					Zbrowser.OpenBrowserWithUrl	http://gmail.com	handle	
5					Zbrowser.SetMultipleTextByName	%handle%	[Email:Passwd]	[ericviewer:eric6789]
6					Zbrowser.ClickButtonById	%handle%	signin	
7		Destroying the variable			UnsetContextVar	handle		
8								

3.2.5 SetMultipleTextById

Description

Sets multiple number of text fields in a page using the id attribute

Returned Messages:

- Error with unequal number of elements in each list=No match found between the field names and the corresponding values
- Error while trying to find Text Field by id=Invalid field id is present in the list
- Error while trying to set Text Field with value=Field Value couldn't be set at the specified invalid field id

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?	Default Value
BrowserHandle	Browser handle of window or a frame, where the text field is located.	Scalar	a valid window handle returned by OpenBrowserWithUrl	Input	Required	none
ListOfId	List of internal identifiers of the text fields.	Scalar	a colon separated list of text field ids enclosed within square brackets	Input	Required	none
ListOfText	List of text to be set in text fields.	Scalar	a colon separated list of strings enclosed	Input	Required	none

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within square brackets

Example:

```
Zbrowser.SetMultipleTextById(%BrowserHandle%,
"[Email:Passwd]", "[ericviewer:eric6789]" )
```

3.2.6 SetMultipleFieldTypesByName

Description

Sets multiple number of text fields and select lists in a page

Example:

```
zbrowser.SetMultipleFieldTypesByName(%BrowserHandle%,
"[product_name:product_id:month:day:year]", "[MS-Word:MSW1:June:2:2010]")
```

Returned Messages:

- Error with unequal number of elements in each list = No match found between the field names and the corresponding values
- Error while trying to find Field by Name = Invalid field name present in the list
- Error while trying to set Field with value = Field Value could not be set at the corresponding invalid field name

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>
BrowserHandle	Browser handle of window or a frame, where the text fields and/or select lists are located.	Scalar	a valid window handle returned by OpenBrowserWithURL	Input
ListOfFieldIds	List of names of fields to be set.	Scalar	colon separated list of field names enclosed within square brackets	Input
ListOfTexts	List of text to be set in text fields and/or select lists.	Scalar	colon separated list of texts enclosed within square brackets	Input

3.2.7 SetMultipleTextByIndex

Description

Sets multiple number of text fields in a page using the name attribute

Returned Messages:

- Error with unequal number of elements in each list=No match found between the field names and the corresponding values
- Error while trying to find Text Field by tab Index=Invalid field index present in the list

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- Error while trying to set Text Field with index=Field Value could not be set at the corresponding invalid field name

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional ?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where the table is located.	Scalar	a valid window handle returned by OpenBrowserWithUrl	Input	Required	none
ListOfNames	List of tab index position of the text field	Vector	a colon separated list of text field tab indexes enclosed within square brackets	Input	Required	none
ListOfText	List of text to be set in text fields.	Vector	a colon separated list of strings enclosed within square brackets	Input	Required	none

Example:

`Zbrowser.SetMultipleTextByName(%BrowserHandle%, "[2:4:5]","[MS-Word:To create text files]"`

3.2.8 FindDivText*

3.2.9 GetTagAttributeValueByTagValue*

3.2.10 MatchTextByClassName

Description

Matches the attribute of a tag by its class name with a text. Passes if match found else raises an exception.

Returned Messages:

- Error while finding element by class name=class name is invalid
- Cannot find required text in the given element.

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where field to be populated is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none

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ClassName	Class name of the tag whose attribute you want to match	Scalar	String representing any class name	Input	Required	none
Text	Text to be entered.	Scalar	any string	Input	Required	none

Example:

Zbrowser.MatchTextByClassName (%BrowserHandle%, “patternViewPage” , "value")

3.2.11 MatchTextByClassNameWithTimeout*

3.2.12 GetValueOfElement

Description

Retrieves the value of an element in a web page to a context variable by the attribute name and attribute value.

Syntax:

```
Zbrowser.GetValueOfElement ("%BrowserHandle%",  
"attribute_name", "attribute_value", "Result")
```

Example:

Address

Kolkata

```
<label for="Subject_Address_field" class="control-label">Address</label>
<div class="control-group inline">
<input id="Subject_Address_field" type="text" value="Kolkata" maxlength="100">
```

Zbrowser.GetValueOfElement(“%handle%”, “id”, “Subject_Address_field”, “result”)

This atom returns the value “*Kolkata*” in the context variable *result*.

Returned Messages:

- **Failure:** AtomExecutionException message logged in log error file and the error message shown in console.

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?	Default Value
BrowserHandle	Browser handle of window or a frame.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
Attribute_name	The type of attribute	Scalar	Id,xpath,name	Input	Required	none
Attribute_value	Value of the attribute	Scalar	any ASCII string	Input	Required	none
Result	A context variable where the result will be returned	Scalar	any ASCII string	Output	Required	none

3.3 Tables Related Atoms

3.3.1 ClickLinkInTableByRowColumnAndLinkIndex

Description

Clicks a link using the row number, column number and the position of the link within a table.

Returned Messages:

- Error while getting children window handle=Window handle for new popup couldn't be found
- Error while getting children window titles= Window title for new popup couldn't be found
- Cannot find new window with the given title=Title entered for the new window couldn't be found

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
BrowserHandle	Browser handle of window or a frame, where the table is located.	Scalar	a valid window handle returned by OpenBrowserWith Url	Input	Required
TableId	Internal Identifier of the table	Scalar	any string representing a valid table id.	Input	Required
RowNumber	A particular row number within a table,where counting starts from the header row.	Scalar	any positive integer value	Input	Required
ColumnNumber	A particular column number within a table.	Scalar	any positive integer value	Input	Required
Index	A particular index within a table cell,that has the link to be clicked.	Scalar	any positive integer value	Input	Required

Example:

```
Zbrowser.ClickLinkInTableByRowColumnAndLinkIndex( %BrowserHandle%,
"ProductList",%RowNumber%,%ColumnNumber%,"1")
```


3.3.2 GetRowCountInTable

Description

Returns the number of rows in a table by its table ID, into a context variable

Returned Messages:

- Error while finding table tags=Give table tag couldn't be found
- Cannot find table with the given identifier or invalid table identifier= Table identifier specified couldn't be found on the page

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional ?</u>
BrowserHandle	Browser handle of window or a frame, where the table is located.	Scalar	a valid window handle returned by OpenBrowserWithUrl	Input	Required
TableId	Internal Identifier of the table.	Scalar	any string representing a valid table id	Input	Required
RowCount	Returns the number of rows in the table into a context variable.	Scalar	any integer number	Output	Required

Example:

```
Zbrowser.GetRowCountInTable(%BrowserHandle%,"ProductList",Row_Count)
```

3.3.3 GetStringOccurrenceCountInTable*

3.3.4 GetTableRowNrByColumnNameAndText

Description

Returns the table row number into a context variable by the name of the column and the text inside that particular column

Returned Messages:

- Error while getting header row in tables=Tag value cannot be found
- Error while selecting cells from header row in table= Attribute with the given name doesn't exist
- Cannot find column name in the first row of the table=Cannot perform click operation as the attribute name doesn't exist
- Error while selecting table rows=Rows not found for the specified column and text
- Error while selecting a cell in table=
- Error cannot find cell with the given text=Cell not present for the test specified

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Supported Browsers:

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<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direct ion</u>	<u>Optional ?</u>
BrowserHandle	Browser handle of window or a frame, where the table is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required
TableId	Internal Identifier of the table.	Scalar	any string representing a valid table id	Input	Required
ColumnName	Name of the column where the particular text to be searched.	Scalar	any string	Input	Required
TextualContent	Text to be searched inside the table.	Scalar	any string	Input	Required
RowNo	Returns the row number, where the text is found into a context variable.	Scalar	any string representing a valid context variable name	Output	Required

Example:

```
Zbrowser.GetTableRowNrByColumnNameAndText(%BrowserHandle%, "ProductList", "Product Name", "ZERMATT", RowNumber)
```

3.3.5 GetTableColumnNrByColumnName

Description

Returns the table column number into a context variable by the name of that column

Returned Messages:

- Error while getting header row in tables=Header specified for the table row couldn't be found
- Error while selecting cells from header row in table= Cells not found for the header specified
- Cannot find column name in the first row of the table=Column name couldn't be found at the row specified
- Cannot find table with the given identifier or invalid table identifier=Table identifier is invalid

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direct ion</u>	<u>Optional ?</u>	<u>Default Value</u>
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BrowserHandle	Browser handle of window or a frame, where the table is located.	Scalar	a valid window handle returned by OpenBrowserWithUrl	Input	Required none
TableId	Internal Identifier of the table.	Scalar	any string representing a valid table id	Input	Required none
ColumnName	Name of a column within the table to be searched.	Scalar	any string representing a name of a column	Input	Required none
ColumnNo	Returns the column number of the particular column into a context variable.	Scalar	any string representing a valid Context Variable name	Output	Required none

3.3.6 GetTextInTableByRowAndColumnNumber*

3.4 Click Link and Image Related Atoms

3.4.1 ClickLinkBySrc

Description

Clicks a link by its Src

Returned Messages:

- Error while finding Link by Src =Invalid Src
- Error while clicking Link = Timeout for the link has expired

Supported Browsers:

Internet Explorer,Mozilla Firefox,Google Chrome,Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional ?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where the table is located.	Scalar	a valid window handle returned by OpenBrowserWithUrl	Input	Required	none
Source	Src of the link to be clicked.	Scalar	any string	Input	Required	none

Example:

Zbrowser.ClickLinkBySrc(%BrowserHandle%, "src of the link")

3.4.2 ClickLinkByHref

Description

Clicks a link by its Href

Returned Messages:

- Error while finding Link by href=Invalid Href
- Error while clicking Link=Timeout for the link has expired

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional ?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame.	Scalar	a valid window handle returned by OpenBrowserWithUrl	Input	Required	none
Href	Hyperlink reference of the link to be clicked.	Scalar	any string representing a valid Href	Input	Required	none

Example:

Zbrowser.ClickLinkByHref(%BrowserHandle%, "href of the link")

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3.4.3 ClickLinkById

Description

Clicks a link by its Id

Returned Messages:

- Error while finding Link by Id=Cannot find link with the given id
- Error while clicking Link=Timeout for the link has expired

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?	Default Value
BrowserHandle	Browser handle of window or a frame, where link to be clicked is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
LinkId	Internal ID of link to be clicked.	Scalar	string representing a valid link ID	Input	Required	none

Example:

`Zbrowser.clickLinkById(%BrowserHandle%, "id attribute of the link")`

3.4.4 ClickLinkByTagValueAndAttributeNameAndValue

Description

Clicks a link By its tag value, attribute name and value of the link

Returned Messages:

- Error while finding elements with anchor tags =Tag value cannot be found
- Error while finding attribute with attribute name = Attribute with the given name doesn't exist
- Error while clicking attribute with attribute name = Cannot perform click operation as the attribute name doesn't exist

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?	Default Value
BrowserHandle	Browser handle of window or a frame, where the table is located.	Scalar	a valid window handle returned by OpenBrowserWithUrl	Input	Required	none

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TagValue	Name of the starting tag	Scalar	any string representing a valid tag of the link.	Input	Required	none
AttributeName	A particular attribute name present within the tag of the link.	Scalar	any string representing the attribute name for the tag	Input	Required	none
AttributeValue	Attribute value for the corresponding attribute name within tag of the link.	Scalar	any string representing the value for the attribute name	Input	Required	none

Example:

Zbrowser.ClickLinkByTagValueAndAttributeNameAndValue(%BrowserHandle%, "font",title,"Name of the product")

3.4.5 ClickLinkByText

Description

Clicks a link by its Text

Returned Messages:

- Error while finding Link by link text=Lin with the given text doesn't exist
- Error while clicking Link=Click operation fails for the given link

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?	Default Value
Browser Handle	Browser handle of window or a frame, where link is to be clicked is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
Text	Text displayed on the link to be clicked.	Scalar	string representing a valid link ID	Input	Required	none

Example:

Zbrowser.ClickLinkByText(%BrowserHandle%, "go to page")

3.4.6 ClickImageByTitle

Description

Clicks a link using the title of the image

Example:

Zbrowser.ClickImageByTitle(%BrowserHandle%, "Click Image")

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Returned Messages:

- Error while finding Image Tags=Cannot find the respective tag for the image
- Error while clicking link by image title=Click operation fails on the link

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
Browser Handle	Browser handle of window or a frame, where link is to be clicked is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
Title	Title of the image on the link that is be clicked.	Scalar	string representing a valid title	Input	Required	none

3.4.7 ClickImageBySrc

Description

Clicks a link using the src of the image

Returned Messages:

- Error while finding link by Image src = Cannot find the respective tag for the image
- Error while clicking link by image src=Click operation fails on the link

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
Browser Handle	Browser handle of window or a frame, where link is to be clicked is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
src	Source of the image on the link that is be clicked.	Scalar	string representing a valid image source	Input	Required	none

Example:

```
Zbrowser.ClickImageByTitle(%BrowserHandle%,
"http://google/Preferences/banner.jpg")
```

3.4.8 ClickElementByXPath

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Description

Clicks an element by its xpath.

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
Browser Handle	Browser handle of window or a frame, where link is to be clicked is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
xpath	Xpath of the element that is to be clicked.	Scalar	string representing a valid xpath	Input	Required	none

Example:

```
Zbrowser.clickElementByXPath(%BrowserHandle%, "  
//*[@id='RepairData_ExteriorRepairs']/div/button ")
```

N.B : Replace the " with ' in the xpath while passing them to the atom.

3.5 Click Button Related Atoms

3.5.1 ClickButtonByValue

Description

Clicks the button in a page by its value

Returned Messages:

- Error while finding Button by value = Button Tag Not Found, Cannot Locate the button tag using xpath

Example:

`Zbrowser.ClickButtonByValue(%BrowserHandle%, "Value attribute of the button")`

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direct ion</u>	<u>Optiona l?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where link is to be clicked is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
Value	Text of the button to be clicked	Scalar	any string	Input	Required	none

3.5.2 ClickButtonByClassName

Description

Clicks a button by the attribute as class name

Returned Messages:

- Error while finding Button by class name=Text field id is invalid
- Error while clicking button by class name=Value cannot be inserted at the specified field id

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Dire ction</u>	<u>Optional ?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame.	Scalar	a valid window handle returned by	Input	Required	none

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OpenBrowserWithUrl				
Name	Name of the button to be clicked.	Scalar	any string representing a valid button	Input Required none

Example:

Zbrowser.ClickButtonByClassName(%BrowserHandle%, "jump")

3.5.3 ClickButtonByName

Description

Clicks a button by its name

Returned Messages:

- Error while finding Button by name=Text field id is invalid
- Error while clicking button by name=Value cannot be inserted at the specified field id

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional ?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame.	Scalar	a valid window handle returned by OpenBrowserWithUrl	Input	Required	none
Name	Name of the button to be clicked.	Scalar	any string representing a valid button	Input	Required	none

Example:

Zbrowser.ClickButtonByName(%BrowserHandle%, "jump")

3.5.4 ClickButtonById

Description

Clicks a button by its ID

Returned Messages:

- Error while finding Button by id=Text field id is invalid
- Error while clicking button by id=Value cannot be inserted at the specified field id

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Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome,

For Browser-less operation:

Html Unit Driver : htmlunit

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional ?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where button to be clicked is located.	literal	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
ButtonId	Internal ID of button to be clicked.	Scalar	string representing a valid button ID	Input	Required	none

Example:

Zbrowser.ClickButtonById(%BrowserHandle%, "jump")

3.5.5 ClickRadioById

Description

Clicks a radio button by its unique ID

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where radio button to be clicked is located.	literal	valid window handle returned by OpenBrowserWithUrl or Initialize atom	Input	Required	none
Radio_ButtonId	Internal ID of radio button to be clicked.	Scalar	string representing a valid button ID	Input	Required	none

Browser-less Operations:

Html Unit Driver : htmlunit

Example:

Zbrowser.ClickRadioById(%BrowserHandle%, "option_1")

<u>TestCase ID</u>	<u>Description</u>	<u>property</u>	<u>Step</u>	<u>Action</u>	<u>ActionArg_1</u>	<u>ActionArg_2</u>
TID001				SetContextVar	BrowserHandle	
				ZBROWSER.INITIALIZE	BrowserHandle	chrome
				Zbrowser.GoToURL	%BrowserHandle%	SURL
				Zbrowser.ClickRadioById	%BrowserHandle%	Option_1

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N.B : The unique id of a radio button looks like:

```
<input type="radio" name="Answer_Options" id="Option_1" value="Yes"
```

3.5.6 ClickRadioByNameAndValue

Description

Clicks a radio button by its name and value

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Dire</u> <u>ction</u>	<u>Optional?</u>
BrowserHandle	Browser handle of window or a frame.	Scalar	a valid window handle returned by OpenBrowserWithUrl or Initilize atom	Input	Required
Name	Name of the radio button to be selected	Scalar	any string representing a valid button	Input	Required
Value	Value of the corresponding name of the radio button to be clicked	Scalar	any string representing a valid button value		

Example:

```
Zbrowser.ClickRadioByNameAndValue(%BrowserHandle%, "sex", "male")
```

3.5.7 ClickButtonByText

Description

Clicks a button by its Text

Returned Messages:

- Error while finding Button by Text=Text field id is invalid
- Error while clicking button by Text=Value cannot be inserted at the specified field id

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome,

For Browser-less operation:

Html Unit Driver : htmlunit

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Dire</u> <u>ction</u>	<u>Optional</u> <u>?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame,	literal	valid window handle returned by	Input	Required	none

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where button to be clicked is located.	OpenBrowserWithUrl
ButtonText Text Field within the button tags	Scalar string representing a valid button ID
Input Required	none

Example:

`Zbrowser.ClickButtonByText(%BrowserHandle%, "Submit")`

3.6 DropDown Related Atoms

3.6.1 SelectFromDropDownByName

Description

Select value in Dropdownlist located in Table

Returned Messages:

- Error while finding dropdown by Name=Dropdown name for the field is invalid
- Error while setting dropdown with value=Dropdown value not present in the list

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where the table is located.	Scalar	a valid window handle returned by OpenBrowserWith URL	Input	Required	none
Name ofDropDownList	Value of dropdownlist name.	Scalar	valid dropdownlist name	Input	Required	none
Value ofDropDownList	Value of dropdownlist.	Scalar	valid dropdownlist value	Input	Required	none

Example:

`Zbrowser.SelectFromDropdownbyName(%BrowserHandle%,"table1","2")`

3.6.2 SelectFromDropDownById

Description

Select from multiple options in a dropdown list by ID

Returned Messages:

- Error while finding dropdown by Id = Invalid drop down id
- Error while setting dropdown as value =Given drop down text not found

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional ?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where drop down control is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
DropDownId	Internal ID of dropdown control.	Scalar	string representing a valid dropdown control	Input	Required	none
OptionId	Internal ID representing option to choose.	Scalar	string representing a valid choice	Input	Required	none

Example:

Zbrowser.SelectFromDropDownById(%BrowserHandle%, "dropdown1","ZERMATT")

3.6.3 SelectFromDropDownByNameUsingText

Description

Selects from the drop down list using their names

Returned Messages:

- Error while finding dropdown by Name = Invalid drop down id
- Error while setting dropdown with text =Drop down Text not found

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional ?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where dropdown is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
DropDownName	Internal ID of dropdown control.	Scalar	string representing a valid dropdown control	Input	Required	none
DropDownText	Text representing option to choose.	Scalar	any text string	Input	Required	none

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Example:

Zbrowser.SelectFromDropDownByNameUsingText(%BrowserHandle%,"product_id", "MYPRODUCT")

3.6.4 SelectFromMultipleDropDownByName

Description

Selects multiple number of dropdown lists using their name

Returned Messages:

- Error while finding dropdown by Name = Invalid drop down name
- Error while setting dropdown with value =Drop down Value not found
- Error with unequal number of elements in each list=No match found between the field names and the corresponding values

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>
BrowserHandle	Browser handle of window or a frame, where the dropdown is located.	Scalar	a valid window handle returned by OpenBrowserWithUrl	Input	Required
ListOfDropDownNames	List of internal names of the dropdowns	Scalar	a colon separated list of dropdown values enclosed within square brackets	Input	Required
ListOfDropDownText	List of visible texts representing options to choose from each dropdown element	Scalar	a colon separated list of strings enclosed within square brackets	Input	Required

Example

Zbrowser.SelectFromMultipleDropDownByName(%BrowserHandle%,"[Country:State:City]","[India:Maharashtra:Mumbai]")

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3.6.5 SelectFromMultipleDropDownById

Description

Selects multiple number of dropdown lists using their Id.

Returned Messages:

- Error while finding dropdown by Id = Invalid drop down Id
- Error while setting dropdown with Id =Drop down Id not found
- Error with unequal number of elements in each list=No match found between the field names and the corresponding values

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional ?</u>
BrowserHandle	Browser handle of window or a frame, where dropdown is located.	Scalar	a valid window handle returned by OpenBrowserWithUrl	Input	Required
ListOfDropDownId	List of internal identifiers of the dropdowns	Scalar	a colon separated list of text field ids enclosed within square brackets	Input	Required
ListOfDropDownText	List of texts representing options to choose from each dropdown element	Scalar	a colon separated list of strings enclosed within square brackets	Input	Required

Example

```
zbrowser.SelectFromMultipleDropDownById(%BrowserHandle
%,"[CountryId:StateId:CityId]","[India:Maharashtra:Mumbai]" )
```

3.6.6 MatchFromDropDownByName

Description

Matches whether inputted value is present in Dropdownlist.

Returned Messages:

- Error while finding Dropdown = Invalid drop down id
- Error while Matching Dropdown value = Drop Down text not found

Supported Browser:

Internet Explorer,Mozilla Firefox,Google Chrome,Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional ?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where dropdown is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
DropDownListName	Name of the Dropdown List.	Scalar	any valid dropdownlist name	Input	Required	none
DropDownValue	Value to be searched in Dropdown.	Scalar	Any valid Dropdown value	input	Required	none

Example:

Zbrowser.MatchFromDropDownByName(%BrowserHandle%,"product_id", "MYPRODUCT")

3.6.7 SelectFromDropDownByIdAndValue

Description

Select from multiple options in a dropdown list by its unique value after selecting the dropdown with its ID.

Returned Messages:

- Error while finding dropdown by Id = Invalid drop down id
- Error while setting dropdown as value =Given drop down value not found

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional ?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where dropdown control is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
DropDownId	Internal ID of dropdown control.	Scalar	string representing a valid dropdown control	Input	Required	none
OptionId	Value of the visible option to be chosen.	Scalar	string representing a valid choice	Input	Required	none

Example:

Zbrowser.SelectFromDropDownById(%BrowserHandle%, "dropdown1","1")

N.B: In the above example 1 is the id for visible text "ZERMATT".

3.6.8 SelectMultipleFromDropDownByIdAndValue

Description

It select value from multiple Drop-Down list by its Id.

Returned Messages:

- Error while finding dropdown by Id = Invalid drop down id
- Error while setting dropdown as value =Given drop down value not found

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

Parameter Name	Purpose	Type	Valid Values	Direction	Optional ?	Default Value
BrowserHandle	Browser handle of window or a frame, where drop down control is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
DropDownId	Internal ID of dropdown control.	Scalar	string representing a valid dropdown control	Input	Required	none
OptionId	Value of the visible option to be chosen.	Scalar	string representing a valid choice	Input	Required	none

Example:

```
Zbrowser.SelectFromDropDownById(%BrowserHandle%,
"[car:country:Product]", "[audi:USA:zuoz]")
```

3.7 Alert Box and List Box Related Atoms

3.7.1 AcceptAlert

Description

Accepts the Alert by clicking on OK button within a default timeout

Returned Messages:

- Error while switching to alert window = Handle of the alert not found
- Error while clicking OK button in alert window = Default time out set as 30 milli seconds for the alert has expired

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where Alert box is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none

Example:

`Zbrowser.AcceptAlert(%BrowserHandle%)`

3.7.2 AcceptAlertWithTimeOut

Description

Accepts the Alert by clicking on OK button within a specific time out

Returned Messages:

- Error while switching to alert window = Handle of the alert not found
- Error while clicking OK button in alert window =Time out for the alert has expired

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where the alert box is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
TimeOut	Time out set for the alert in milli seconds.	Scalar	Valid time interval in milli seconds	Input	Required	none

Example:

`Zbrowser.AcceptAlertWithTimeOut(%BrowserHandle%, "1000")`

3.7.3 DeclineAlert

Description

Decline the Alert by clicking on cancel button within a default time out

Returned Messages:

- Error while switching to alert window = Handle of the alert not found
- Error while dismissing alert = Default time out set as 30 milli seconds for the alert has expired

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Supported Browsers:

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<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where the alert box is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none

Example:

Zbrowser.DeclineAlert(%BrowserHandle%)

3.7.4 DeclineAlertWithTimeOut

Description

Decline the Alert by clicking on cancel button within as specific time out

Returned Messages:

- Error while switching to alert window = Handle of the alert not found
- Error while dismissing alert =Time out for the alert has expired

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where the alert box is located.	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
TimeOut	Time out set for the alert in milliseconds.	Scalar	Valid time interval in milliseconds	Input	Required	none

Example:

Zbrowser.DeclineAlertWithTimeOut(%BrowserHandle%,"1000")

3.7.5 GetTextInAlert

Description

Returns the text of a alert box

Returned Messages:

- Error while switching to alert box=Cannot get the alert box handle
- Error while retrieving text in alert box=Cannot read text from the alert box

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Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where the pop up is raised.	Scalar	a valid window handle returned by OpenBrowserWithUrl	Input	Required	none
PopupText	Returns the text in pop up into this context variable.	Scalar	any string	Output	Required	none

Example:

```
Zbrowser.GetTextInAlert(%BrowserHandle%, AlertText)
```

3.7.6 GetTextInAlertWithTimeOut

Description

Returns the text of a popup in a context variable within a specific time out

Returned Messages:

- Error while switching to alert = Cannot get the handle of the alert box
- Error while retrieving text in alert = Cannot read text from the alert box
- Alert not supported = Alerts are by default disabled

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>
Browser Handle	Browser handle of window or a frame, where the pop up is raised.	Scalar	a valid window handle returned by OpenBrowserWithUrl	Input	Required
AlertText	Returns the text in alert into this context variable.	Scalar	any string	Output	Required
TimeOut	Time out set for the alert in milli seconds.	Scalar	Valid time interval in milli seconds	Input	Required

Example:

```
Zbrowser.GetTextInAlertWithTimeOut(%BrowserHandle%,AlertText,"100")
```

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3.7.7 SelectFromListBoxByName

Description

Selects from the list box using the names present

Returned Messages:

- Error while finding ListBox by Name = Invalid list box id
- Error while setting ListBox with value = Text under list box not found

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, Html Unit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional ?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where list box is located	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
ListBoxName	Name of ListBox.	Scalar	any valid listbox name	Input	Required	none
ListBoxValue	The value to be checked whether it is present in the ListBox	Scalar	any valid input	Input	Required	none

Example:

```
Zbrowser.SelectFromListBoxByName(%BrowserHandle%,"list_box_name",
"MYNAME")
```

3.7.8 SelectFromListBoxById

Description

Selects an option from the list box using the Id.

Returned Messages:

- Error while finding ListBox by Id = Invalid list box id
- Error while setting ListBox with value = Text under list box not found

Supported Browsers:

Internet Explorer, Mozilla Firefox, Google Chrome, HtmlUnit Driver

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional ?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where list box is located	Scalar	valid window handle returned by OpenBrowserWithUrl	Input	Required	none
ListBoxId	Id of the ListBox.	Scalar	any valid listbox Id	Input	Required	none
ListBoxValue	The value to be checked whether it is present in the ListBox	Scalar	any valid input	Input	Required	none

Example:

Zbrowser.SelectFromListBoxById(%BrowserHandle%,"list_box_Id", "MYNAME")

3.8 Verification Atoms for Web Application

3.8.1 MatchRowValuesInTable

Description

Matches a row within a table of specified columns with a list of values

Return Codes:

- 0 = Success
- 1 = Cannot find browser with the given browser handle
- 2 = Unequal number of arguments passed in each list
- 3 = Table not found
- 4 = Required row don't exist
- 5 = Cannot find column with given column name
- 6 = Values don't match

Supported Browsers

Internet Explorer ,Internet Explorer, Mozilla Firefox

Additional Comments

In CHUR, the column names list and values list must be a colon separated list without inverted commas and within square brackets

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Parameter Name	Purpose	Type	Valid Values	Direct ion	Optional?	Default Value
BrowserHandle	Browser handle of window or a frame, where the table is located.	Scalar	a valid window handle returned by OpenBrowserWith URL	Input	Required	none
TableId	Identifier of the table.	Scalar	any valid table identifier	Input	Required	none
ListOfColumnNames	List of column names whose values of a particular row should be verified.	Scalar	colon separated list of column names enclosed within square brackets	Input	Required	none
ListOfValues	List of expected values in a row.	Scalar	colon separated list of expected values enclosed within square brackets	Input	Required	none
Row_Nr	Row number of the table to be verified.	Scalar	any integer value	Input	Required	none

Example

```
MatchRowValuesInTable(%BrowserHandle%,
"ProductList","[Name:Description:Place:Date]","[ZUOZ:Atom Library
Addon:05-03-2010]","3")
```

3.8.2 MatchFromDropDownByName

Description

Matches whether inputted value is present in Dropdownlist.

Return Codes:

0 = Success

1 = Cannot find browser with the given browser handle

2 = Cannot find select list with the given Id or invalid select list Id

3 = Sum of text field values do not match with the value of the last text field

4= No Values in DropDown match given value

Supported Browsers

Internet Explorer, Mozilla Firefox

Parameter Name	Purpose	Type	Valid Values	Directio n	Optional?
BrowserHandle	Browser handle of window or a frame, where the dropdown is located.	Scalar	a valid window handle returned by OpenBrowserWithURL	Input	Required
DropdownlistName	Name of the Dropdown List.	Scalar	any valid dropdownlist name	Input	Required
Dropdown Value	Value to be searched in Dropdown.	Scalar	Any valid Dropdown value	input	Required

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Example

MatchFromDropDownByName(%BrowserHandle%,"Dropdown1","value1")

3.8.3 MatchFromListBoxByName

Description

Matches whether inputted value is present in Listbox.

Return Codes:

0 = Success

1 = Cannot find browser with the given browser handle

2 = Cannot find select list with the given Id or invalid select list Id

3= No Values in ListBox match given value

Supported Browsers

Internet Explorer, Mozilla Firefox,

Additional Comments

Support for Firefox will follow shortly

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional ?</u>	<u>Default Value</u>
BrowserHandle	Browser handle of window or a frame, where the listbox is located.	Scalar	a valid window handle returned by OpenBrowserWith URL	Input	Required	none
ListBoxName	Name of the Listbox.	Scalar	any valid listbox name	Input	Required	none
ListBoxValue	Value to be searched in Listbox.	Scalar	Any valid Listboxvalue	input	Required	none

Example

MatchFromListBoxByName(%BrowserHandle%,"Listbox1","value1")

3.8.4 MatchFromRadioGroupByValue

Description

Matches whether radiogroup with given value is checked.

Return Codes:

0 = Success

1 = Cannot find browser with the given browser handle

2 = Cannot find radio group with the given value

Supported Browsers

Internet Explorer, Mozilla Firefox

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Parameter Name	Purpose	Type	Valid Values	Direction	Optional?	Default Value
Browser Handle	Browser handle of window or a frame, where the radio group is located.	Scalar	a valid window handle returned by OpenBrowserWithURL	Input	Required	none
RadioGroupValue	Value of the radio group to be checked.	Scalar	any valid radiogroup value	Input	Required	none

Example

MatchFromRadioGroupByValue(%BrowserHandle%,"radiovalue1")

3.8.5 VerifyTextualContent

Description

Verifies whether the page contains the particular text or not.

Return Codes:

- 0 = Success
- 1 = Cannot find browser with the given browser handle
- 2 = Page does not contains the text

Supported Browsers

Internet Explorer, Mozilla Firefox

Parameter Name	Purpose	Type	Valid Values	Direction	Optional ?	Default Value
BrowserHandle	Browser handle of window or a frame, where the text is located.	Scalar	a valid window handle returned by OpenBrowserWithUrl	Input	Required	none
Text	Verify whether this Text is present within the page or not.	Scalar	any string	Input	Required	none

Example

VerifyTextualContent(%BrowserHandle%, "Can modify planning data on this page")

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3.8.6 VerifyDifferenceOfTextFieldValuesById

Description

Computes the difference of two text field values and matches with another text field values

Return Codes:

- 0 = Success
- 1 = Cannot find browser with the given browser handle
- 2 = Cannot work with more the two elements in this list
- 3 = Cannot find text field with the given id or invalid text identifier
- 4 = Difference of text field values do not match with the value of the text field in the third argument

Supported Browsers

Internet Explorer, Mozilla Firefox

Additional Comments

In CHUR ,the list of text field identifiers must be a colon separated list without inverted commas and within square brackets

Parameter Name	Purpose	Type	Valid Values	Direct ion	Optional?	Default Value
BrowserHandle	Browser handle of window or a frame, where the text fields are located.	Scalar	a valid window handle returned by OpenBrowserWithURL	Input	Required	none
ListOfTextFieldIds	List of identifiers to calculate the difference between the two text field values.	Scalar	colon separated list of text field identifiers enclosed within square brackets	Input	Required	none
TextFieldIds	Identifier of the field whose value will be matched with the difference.	Scalar	a valid text field identifier	Input	Required	none

Example

```
VerifyDifferenceOfTextFieldValuesById(%BrowserHandle%,
"[total:discount]","grandtotal")
```

3.8.7 VerifyTotalOfNumericFieldsById

Description

Computes the sum of the values of first 'n-1' text field identifiers and matches with the value of 'n'th text field identifier

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Return Codes:

- 0 = Success
- 1 = Cannot find browser with the given browser handle
- 2 = Cannot find text field with the given id or invalid text field identifiers
- 3 = Sum of text field values do not match with the value of the last text field

Supported Browsers

Internet Explorer, Mozilla Firefox

Additional Comments

In CHUR ,the list of text field identifiers must be a colon separated list without inverted commas and within square brackets

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?	Default Value
BrowserHandle	Browser handle of window or a frame, where the text fields are located.	Scalar	a valid window handle returned by OpenBrowserWithURL	Input	Required	none
ListOfTextFieldsIds	Read values from this text fields and complete the verification.	Scalar	colon separated list of text field identifiers enclosed within square brackets	Input	Required	none

Example

VerifyTotalOfNumericFieldsById(%BrowserHandle%, "[total:tax:grandtotal]")

4 General Purpose Atoms

All the Atoms in this section are available in Zstring In process package file. These atoms are referenced in CHUR spreadsheet as **ZString.<atom-name>** because of the mapping done in ZugINI.xml.

4.1 Compare

Description

Compares two strings (case - insensitive), if matches exits with status 0, else exits with status 1.

Example

Zstring.compare("Hello","Hi")

Zstring.compare("Red", "Orange", "The colors are different")

For the second comparison, Zug will return the following error in the display -

"Red does not match Orange" ; The colors are different.

Return Codes:

0 = Strings match

1 = Strings do not match

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
FirstString	First value to be compared with	Scalar	any string value	Input	Required
SecondString	Second value to be compared with	Scalar	any string value	Input	Required
Error Message	User defined error message	Scalar	any string value	Input	Optional

4.2 CompareRowCount

Description

It compares the difference of two integer values with an expected value.

It calculates the difference of the first number with the second number and compares it with the third number,if they are same the atom completes successfully else exits with exit status 1

Example

Zstring.compareRowCount("3","1","2")

Zstring.compareRowCount("5","6","-1")

Return Codes:

0 = Difference of first number from the second number matches the expected value

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1 = Difference of first number from the second number do not match with the expected value

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?	Default Value
FirstValue	Any number from which the second number will be subtracted	Scalar	any integer number	Input	Required	none
SecondValue	Any number that will be subtracted from the first number	Scalar	any integer number	Input	Required	none
ExpectedValue	Any number to match the difference between the first two values	Scalar	any integer number	Input	Required	none

4.3 MatchSubstring

Description

Verifies whether a sub string is present in a given string.

Example

`Zstring.MatchSubstring("Hello","He")`

`Zstring.MatchSubstring("Hello","llo")`

Return Codes:

0 = Sub string is present in the given string

1 = Sub string is not present in the given string

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?	Default Value
ActualString	Actual string	Scalar	any string	Input	Required	none
SubString	To check whether this string is in the actual string.	Scalar	any string	Input	Required	none

4.4 GetElementInListByIndex

Description

Returns an element from a list of elements by its position in a context variable

Return Codes:

0 = Success

1 = Cannot find any element in that position of the list

Additional Comments

In CHUR ,the list of numbers must be a colon separated list without inverted commas and within square brackets

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Example

Zstring.GetElementInListByIndex("[ZERMATT:ZUG:ZUOZ:DAVOS:CHUR]", "3", ELEMENT)

Parameter Name	Purpose	Type	Valid Values	Direct ion	Optional?	Default Value
ListOfElements	Colon separated list of elements	Scalar	colon separated valid list of elements enclosed within square brackets	Input	Required	none
ElementPosition	Any position within the list	Scalar	any integer value	Input	Required	none
Element	Returns the element in this context variable	Scalar	any string	Input	Required	none

4.5 getDate

Description

Returns the formatted with '-' Current Date in a context variable.

Return Codes:

0 = Success

1 = Insufficient Arguments

Example

Zstring.getDate("Date")

TestCase ID	Description	property	Step	Action	ActionArg_1
comment	retrieving the system date				
ZS005FW	GetDate-fair weather testing			SetContextVar	get_date
				Zstring.getDate	get_date
				Print	%get_date%
				UnSetContextVar	get_date

The output in the Console is as follows:

```
[ZS005FW] Action ZSTRING.GETDATE SUCCESSFULLY Executed
[ZS005FW] Executed Action Print with values [2012-09-06]
```

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?	Default Value
Date	A context variable where the system date will be returned.	Scalar	Must be a Context Variables	Input	Required	None

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4.6 getTime

Description

Returns the formatted with ':' Current Time in a context variable.

Return Codes:

0 = Success

1 = Insufficient Arguments

Example

`Zstring.getTime("Time")`

TestCase ID	Description	property	Step	Action	ActionArg_1
comment	retrieving the system time				
ZS0011FW	GetTime-fair weather testing			SetContextVar	get_time
				Zstring.getTime	get_time
				Print	%get_time%
				UnSetContextVar	get_date

The output for the above testcase will print **15:40:49** in the console

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
Time	A context variable where the system Time will be returned.	Scalar	Must be a Context Variables	Input	Required	None

4.7 CleanUtfBOM

Description

This atom removes Byte Order Marking for UTF-8, UTF-16,UTF-32 character set.

Return Codes:

0 = Success

1 = Insufficient Arguments

Example

`Zstring.CleanUtfBOM("Input Context Var Name", "Output Context Var Name")`

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
Input Context Variable	Read the content	Scalar	Must be a Context Variables	Input	Required	None

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Output Context Variable	Returns the Scalar formatted content	Must be a Context Variables	Output	Required None
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4.8 GenGUID

Description

Generates unique GUID

Return Codes:

0 = Success

1 = Insufficient Arguments

Example

Zstring.genGUID(GUID_value)

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
GUID_value	A context variable to store the GUID	Scalar	Any String	Input	Required	None

4.9 Random

Description

Generates a random string and returns it to a context variable.

Example

Zstring.Random(n(3), randomstring)

This returns a 3-digit random number to the context variable.

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>
RandomString Type	Specifies the String length and string type e.g. numeric, alphanumeric etc	Scalar	Look into the table below	Input	Required
randomstring	To store the random string	Scalar	Any String	Output	Required

Random String Type

Option	Description	Example
n(x)	It creates a x-digit random number.	n(5)=57826

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n(x:y)	It creates a number having digits ranging from x to y (where x<y)	n(2:4)=219
A(x)	It creates a string having x no. of uppercase letters	A(4)=SKBT
A(x:y)	A string having uppercase letters whose length ranges from x and y (where x<y)	A(3:6)=PFNYS
a(x)	It creates a string having x no. of lowercase letters	a(2)=kt
a(x:y)	A string having lowercase letters whose length ranges from x and y (where x<y)	a(4:7)=duwvsf
x(z)	It creates an alphanumeric string of length z	x(4)=D5zo
x(m:n)	It creates an alphanumeric string whose length ranges from m and n (where m<n)	X(2:5)=o9sd
R(a,b,c)	It generates a random output from a list of comma separated given inputs.	R(Red,Green,Blue)= Blue

The above options can also be taken together in a string.

Example- Random Telephone number "001-R(11,22,33)-n(4)-n(4)" might generate 001-11-2334-9987"

The following is an example of generating random address

Example -

TestCase ID	Descript	prop	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
comment	Generating a random address							
ZS004				SetContextVar	address			
				AppendToContextVar	address	n(3) A(3:5) R(Road,Street,Lane), A(5) City, \$US_States	USA,Pin-	n(5)
				ZSTRING.random	%address%	address		
				print	%address%			

Here \$US_States contains a list of all the states of USA.

The output of the above testcase :

```
[ZS004] Action ZSTRING.RANDOM SUCCESSFULLY Executed
[ZS004] Executed Action print with values [494 LWE Lane, DHFKY City,North Dakota
USA,Pin- 76120]
```

The following testcase is an example of generating random name:

TestCase ID	Descript	prop	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
comment	Generating a random name							
ZS003				SetContextVar	FirstName=R(John ,James ,Pat)			
				SetContextVar	MiddleName=R(S.,F.,H.)			
				SetContextVar	LastName=R(Smith, Jones ,Miller)			
				SetContextVar	Name			
				AppendToContextVar	Name	%FirstName%	%MiddleName%	%LastName%
				ZSTRING.random	%Name%	Name		
				print	%Name%			

The output of the above testcase:

```
[ZS003] Action APPENDTOCONTEXTVAR SUCCESSFULLY Executed
[ZS003] Execution Started Action ZSTRING.random with values [R<John ,James ,Pat
>R<S.,F.,H.>R< Smith, Jones ,Miller>, Name]
[ZS003] Action ZSTRING.RANDOM SUCCESSFULLY Executed
[ZS003] Executed Action print with values [John F.Miller]
```

4.10 Eval

Description

Zug has access to a SQLite Database, which can be accessed without any database credentials. This gives the user direct access to all the SQLite core functions. This atom converts any formula into a SQL statement, execute it against the SQLite DB, and returns the result into a context variable.

Here is a link to the SQLite core functions.

http://www.sqlite.org/lang_corefunc.html.

Syntax:

`ZString.Eval (Execute_formula, result)`

Example:

`ZString.Eval (ltrim('testing','t'), result)`

Another Example shown below:

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2
comment	Executes any SQLite formula and stores in a context variable					
ZS009FW				SetContextVar	Result	
				Zstring.eval	max(2,20,255,512)	Result
				Print	%Result%	
				UnsetContextVar	Result	

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
Execute_formula	Any SQLite core function	Scalar	Must be any of the formulas stated in this page .	Input	Required
Result	The result of the execution is stored in this context variable.	Scalar	any string	Output	Required

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4.11 ChooseByIndex

Description

Returns a particular value from a given list of values separated by a particular symbol by stating the index number and returns it to a context variable.

Syntax:

```
Zstring.ChooseByIndex(index_number, values, separator, result)
```

Example:

```
Zstring.ChooseByIndex(3, Venice#Boston#Dubai#Paris, #, result)
```

The above result will store the value Dubai.

A	B	C	D	E	F	G	H	I
Test Case ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
comment	Retrieves a particular value from a list for a given index and stores it in a context variable							
ZS010FW				SetContextVar	Result			
				Zstring.choosebyindex	2	Venice#Paris#London#Dubai#Tokyo	#	Result
				Print	%Result%			
				UnsetContextVar	Result			

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
index_number	Index of the value in the list of values	Scalar	any string	Input	Required
values	A String or a list of values separated by a particular symbol	Scalar	any string	Input	Required
separator	The particular symbol which separates the different values in the list	Scalar	any string	Input	Required
result	Returns the value of the desired key in the context variable	Scalar	Any string	Output	Required

4.12 GetEnvVariable

Description

Reads a particular value of the specified environment variable¹ and returns it to a context variable.

Syntax:

```
Zstring.GetEnvironmentVariable(Env_variable, Result)
```

¹ To know the Process Environment Variables, type **set** in the command prompt.

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Example:

If we want to know the OS of the system then,

Zstring.GetEnvVariable(OS,Env_var_result)

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2
comment	Fair Weather Testing for GetEnvVariable					
ZS012FW				SetContextVar	Env_result	
				Zstring.GetEnvVariable	OS	Env_result
				Print	%Env_result%	

4.12 SetEnvVariable

Description

It sets a given value to a specific environment variable².

Syntax:

Zstring.SetEnvironmentVariable (Env_variable,Your Value)

Example:

Zstring.GetEnvVariable(USERNAME, your_name)

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2
comment	Fair Weather Testing for SetEnvVariable					
ZS013FW				SetContextVar	Env_result	
				Zstring.SetEnvVariable	USERNAME	Anonymous

² To know the Process Environment Variables, type **set** in the command prompt.

5 Performance Testing Atoms

The list of Performance Testing Atoms are :

Nr	Name	Purpose
1	remote_proc_io	Connects to the remote server machine for getting Disk I/O usage for a given process using SSH
2	remote_proc_net	Connects to the remote server machine for getting net usage for a given process using SSH
3	remote_proc_net_mb	Connects to the remote server machine for getting net usage for a given process in megabytes using SSH
4	remote_proc_stat	Connects to the remote server machine for getting CPU usage for a given process using SSH
5	remote_Zug	Connects to the remote server machine for invoking the zug with specific arguments using SSH

5.1 remote_proc_io

Description

Returns the read bytes and write bytes of Disk I/O usage in a remote server machine for a particular process in two different context variables while it takes the inputs of Hostname with port number of ssh server,username,password and the particular process

Example

```
remote_proc_io("hostname:port","username:password","processname",context
var1,contextvar2)
```

Return Codes:

0 = Success

1 = Insufficient Arguments

Additional Comments

A SSH server client is needed. In Chur sheet the all the arguments must be mentioned in the proper way as per the example

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?	Default Value
Hostname:port	Sets the hostname of server machine with port	Vector	any string	Input	Required	:22
username:password	Sets the username and the password of the host machine	Vector	any string	Input	Required	none
processname	Sets the process name on which it fetches the reports on usage of Disk/IO	Scalar	any string	Input	Required	none
context variable	two context variables for storing the recorded reports of read bytes and write bytes	Scalar	any string	Input	Required	none

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5.2 remote proc net

Description

Returns the receive bytes and transmit bytes of network usage in a remote server machine for a particular process in two different context variables while it takes the inputs of Hostname with port number of ssh server,username,password and the particular process

Example

```
remote_proc_net("hostname:port","username:password","processname",contextvar1,contextvar2)
```

Return Codes:

0 = Success

1 = Insufficient Arguments

Additional Comments

Support for Firefox will follow shortly

A SSH server client is needed. In Chur sheet the all the arguments must be mentioned in the proper way as per the example

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
Hostname:port	Sets the hostname of server machine with port	Vector	any string	Input	Required	:22
username:password	Sets the username and the password of the host machine	Vector	any string	Input	Required	none
processname	Sets the process name on which it fetches the reports on usage of network	Scalar	any string	Input	Required	none
context variable	two context variables for storing the recorded reports of receive bytes and transmit bytes	Scalar	any string	Input	Required	none

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5.3 remote proc net mb

Description

Returns the receive bytes and transmit bytes of network usage in a remote server machine for a particular process in two different context variables while it takes the inputs of Hostname with port number of ssh server,username,password and the particular process

Example

```
remote_proc_net_mb("hostname:port","username:password","processname",contextvar1,contextvar2)
```

Return Codes:

0 = Success

1 = Insufficient Arguments

Additional Comments

Support for Firefox will follow shortly

A SSH server client is needed. In Chur sheet the all the arguments must be mentioned in the proper way as per the example

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direct ion</u>	<u>Optio nal?</u>	<u>Default Value</u>
Hostname:port	Sets the hostname of server machine with port	Vecto r	any string	Input	Requir ed	:22
username:password	Sets the username and the password of the host machine	Vecto r	any string	Input	Requir ed	none
processname	Sets the process name on which it fetches the reports on usage of network	Scala r	any string	Input	Requir ed	none
context variable	two context variables for storing the recorded reports of recieve MB and transmit MB	Scala r	any string	Input	Requir ed	none

5.4 remote proc stat

Description

Returns the cpu user time and cpu system time of CPU usage in a remote server machine for a particular process in two different context variables while it takes the inputs of Hostname with port number of ssh server,username,password and the particular process

Example

```
remote_proc_stat("hostname:port","username:password","processname",contextvar1,contextvar2)
```

Return Codes:

0 = Success

1 = Insufficient Arguments

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Additional Comments

A SSH server client is needed. In Chur sheet the all the arguments must be mentioned in the proper way as per the example

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
Hostname:port	Sets the hostname of server machine with port	Vector	any string	Input	Required	:22
username:password	Sets the username and the password of the host machine	Vector	any string	Input	Required	none
processname	Sets the process name on which it fetches the reports on usage of CPU usage	Scalar	any string	Input	Required	none
context variable	two context variables for storing the recorded reports of cpu user time and cpu system time	Scalar	any string	Input	Required	none

5.5 remote Zug

Description

Connects and executes zug with specific arguments with a specific arguments

Example

```
remote_Zug("hostname:port", "username:password", "zug_arguments")
```

Return Codes:

0 = Success

1 = Insufficient Arguments

Additional Comments

A SSH server client is needed. In Chur sheet the all the arguments must be mentioned in the proper way as per the example

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>	<u>Default Value</u>
Hostname:port	Sets the hostname of server machine with port	Vector	any string	Input	Required	:22
username:password	Sets the username and the password of the host machine	Vector	any string	Input	Required	none
zugargument	Sets the argument on which it executes the remote zug	Scalar	any string	Input	Required	none

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6 Web Service Atoms

All the Atoms in this section are available in ZRest In process package file. These atoms are referenced in CHUR spreadsheet as **Zrest.<atom-name>** because of the mapping done in ZugINI.xml.

The following atoms can be used to send request and parse the response for any webservice.

6.1 RestClient

Description

Sends the request to a web service (GET, DELETE, POST, PUT and HEAD)

When the method is GET or DELETE, the mode can either FILE or CV (i.e. a context variable)
When the method is POST or PUT, the mode can be either CV2CV (context variable to a context variable) or CV2FILE (context variable to a file) or FILE2CV (file to a context variable) or FILE2FILE (a file to a file).

Example

```
RestClient("url","GET", response, mode, Content-Type=text/html;charset=utf-8&&Connection=Keep-Alive, response_header status)
```

OR

```
RestClient("url","DELETE", response, mode, Content-Type=text/html;charset=utf-8&&Connection=Keep-Alive, response_header status)
```

Return Codes:

Success: Response stored in context variable here 'response'

Failure: RestClientException message logged in log error file and message shown in console.

The following are the parameters for GET method:

Parameter Name	Purpose	Type	Valid Values	Direct ion	Optiona l?	Defaul t Value
url	First Argument which must be a valid url	Scalar	any string	Input	Required	none
method	Should be GET	Scalar	any string	Input	Required	none
Response	Response data from the server to be returned in it(ContextVariable)	Scalar		Output	Required	none
mode	Specifies whether the input and output variables will be context variables or files	Scalar	FILE or CV	Input	Require d	none
RequestHeader	Header value to be set	Scalar	Double ampersand (&&)	Input	Required	default

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			separated key value pairs or default		
ResponseHeader	Context variable name to store the header sent by the server	Scalar	any string	Output	Optional none
Status	Context variable name to store the response code of the server	Scalar	any string	Output	Optional none

Example:

The following example shows how to use the GET method to download an image from a given URL. The same image was downloaded manually. The checksum for both the files downloaded manually and the one we got using the GET method were computed and compared for verification. Also the status returned by the RestClient was also compared with the expected status code.

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4	ActionArg_5	ActionArg_6	ActionArg_7
Init				SetContextVar	response_header						
				SetContextVar	status						
				SetContextVar	Checksum_GET						
				SetContextVar	Checksum_MANUAL						
comment	to test the GET method for an image										
ZR001	fair weather testing for GET			ZRest.RestClient	\$800into600_image_url	GET	\$Downloaded_image_file	FILE	default	response_header	status
	Computing the checksum of the downloaded file			ZfileOps.ComputeChecksum	\$Downloaded_image_file	MD5	Checksum_GET				
	computing the checksum of the same file manually downloaded			ZfileOps.ComputeChecksum	\$Manually_Downloaded_same_file	MD5	Checksum_MANUAL				
	verifying the status			Zstring.compare	%status%	200					
	Verifying that the download was successful			Zstring.compare	%Checksum_GET%	%Checksum_MANUAL%					
Cleanup				UnSetContextVar	response_header						
				UnSetContextVar	status						
				UnSetContextVar	Checksum_GET						
				UnSetContextVar	Checksum_MANUAL						

The following are the parameters for DELETE method:

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?	Default Value
url	First Argument which must be a valid url	Scalar	any string	Input	Required	none
method	Should be DELETE	Scalar	any string	Input	Required	none
Response	Response data from the server to be returned in it(ContextVariable)	Scalar	It should be blank.	Output	Required	none
mode	Specifies whether the input and output variables will be context variables or files	Scalar	FILE or CV	Input	Required	none
RequestHeader	Header value to be set	Scalar	Double ampersand (&&) separated key value pairs or	Input	Required	default

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default						
ResponseHeader	Context variable name to store the header sent by the server	Scalar	any string	Output	Optional	none
Status	Context variable name to store the response code of the server	Scalar	any string	Output	Optional	none

Example:

The following example shows how to use the DELETE method to delete an image from a given URL. Also the status returned by the RestClient was also compared with the expected status code.

Example

```
RestClient("url","POST",requestbody, response, mode, Content-
Type=text/html;charset=utf-8&&Connection=Keep-Alive, response_header,
status)
```

OR

```
RestClient("url","PUT",requestbody, response, mode, Content-
Type=text/html;charset=utf-8&&Connection=Keep-Alive, response_header,
status)
```

The following are the parameters for POST method:

Parameter Name	Purpose	Type	Valid Values	Direct ion	Optiona l?	Defaul t Value
url	First Argument which must be a valid url	Scalar	any string	Input	Required	none
method	Should be POST	Scalar	any string	Input	Required	none
requestbody	Post data to send to be sent to the webservice	Scalar	any string	Input	Optional	none
Response	Response data from the server to be returned in it(ContextVariable)	Scalar		Output	Required	none
mode	Specifies whether the input and output variables will be context variables or files	Scalar	CV2CV, CV2FILE, FILE2CV, FILE2FILE	Input	Required	none
RequestHeader	Header value to be set	Scalar	Double ampersand (&&) separated key value pairs or default	Input	Required	default
ResponseHeader	Context variable name to store the header sent by the server	Scalar	any string	Output	Optional	none
Status	Context variable name to store the response code of the server	Scalar	any string	Output	Optional	none

Example:

In the following testcase we are setting the Request Header and reading the response header and

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sending an image to the server and receiving the same image from the server.

TestCase ID	Descr	property	Step	Action	ActionArg 1	ActionArg 2	ActionArg 3	ActionArg 4	ActionArg 5	ActionArg 6	ActionArg 7	ActionArg 8
AS001				<u>SetContextVar</u>	reg_header							
				<u>SetContextVar</u>	header							
				<u>SetContextVar</u>	status							
				<u>SetContextVar</u>	returnvalue							
				<u>Zrest.FormatHttpRequestHeader</u>	reg_header	Content-Type&&Date	image/jpeg;charset=utf-8&&Tue, 08 May 2012 17:59:11 IST					
				<u>ZRest.RestClient</u>	http://192.168.0.5:9494/rest/test	POST	\$ImageFile	\$ReturnedImageFile	FILE2FILE	%reg_header%	header	status
				<u>ZRest.getvaluefromheader</u>	%header%	date	returnvalue					
				<u>ZString.compare</u>	%returnvalue%	%returnvalue%						
				<u>UnSetContextVar</u>	reg_header							
				<u>UnSetContextVar</u>	header							
				<u>SetContextVar</u>	returnvalue							
				<u>UnSetContextVar</u>	status							

The following are the parameters for PUT method:

Parameter Name	Purpose	Type	Valid Values	Direct ion	Optiona l?	Defaul t Value
url	First Argument which must be a valid url	Scalar	any string	Input	Required	none
method	Should be PUT	Scalar	any string	Input	Required	none
requestbody	Post data to send to be sent to the webservice	Scalar	any string	Input	Optional	none
Response	Response data from the server to be returned in it(ContextVariable)	Scalar		Output	Required	none
mode	Specifies whether the input and output variables will be context variables or files	Scalar	CV2CV, CV2FILE, FILE2CV, FILE2FILE	Input	Require d	none
RequestHeader	Header value to be set	Scalar	Double ampersand (&&) separated key value pairs or default	Input	Required	default
ResponseHeader	Context variable name to store the header sent by the server	Scalar	any string	Output	Optional	none
Status	Context variable name to store the response code of the server	Scalar	any string	Output	Optional	none

Example:

In the following testcase we are setting the Request Header and reading the response header and sending an image to the server and receiving the same image from the server.

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TestCase ID	Description	property	Step	Action	Actioning_1	Actioning_2	Actioning_3	Actioning_4	Actioning_5	Actioning_6	Actioning_7	
AS001				SetContextVar	req_header							
				SetContextVar	header							
				SetContextVar	status							
				SetContextVar	returnvalue							
				TestFormatHttpRequestHeader	req_header	Content-Type&&Date	image/jpeg; charset=utf-8&&Tue 02 Dec 2012 17:10:10 IST					
				TestRestClient	http://192.168.0.5:9494/testhe	PUT	SingleFile	\$ReturnedImageFile	FILE2FILE	%req_header%	header	status
				Testgetvaluefromheader	%header%	date	returnvalue					
				Rating.compare	%returnvalue%							
				UnSetContextVar	req_header							
				UnSetContextVar	header							
				UnSetContextVar	returnvalue							
				UnSetContextVar	status							

The following are the parameters for **HEAD** method:

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?	Default Value
url	First Argument which must be a valid url	Scalar	any string	Input	Required	none
method	Should be HEAD	Scalar	any string	Input	Required	none
RequestHeader	Header value to be set	Scalar	Double ampersand (&&) separated key value pairs or default	Input	Required	default
ResponseHeader	Context variable name to store the header sent by the server	Scalar	any string	Output	Required	none
Status	Context variable name to store the response code of the server	Scalar	any string	Output	Optional	none

Example

```
RestClient("url", "HEAD", Content-Type=text/html; charset=utf-8&&Connection=Keep-Alive, response_header, status)
```

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6.2 FormatHttpRequestHeader

Description

It takes a context variable, keylist and valuelist for formatting it as an ampersand(&) key-value pair

Example

```
FormatHttpRequestHeader("context variable",keylist,valuelist)
```

Return Codes:

Success: Returns the key=value pair in a context variable

Failure: AtomExecutionException by Zuoz.

To see the list of HTTP header fields, [click here](#).

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
context variable	First Argument which is the return value of the formatted output of this atom(ContextVariable)	Scalar	any string	Input	Required
Keylist	List of Ampersand (&) separated Header field names	Scalar	any string	Input	Required
Valuelist	List of Ampersand (&) separated header field values	Scalar	any string	Input	Required

Example:

In the following example we have set two fields [Content-Type](#) and From in the HTTP header.

Also we have shown how to use the GET method and storing the response in a context variable.

Test Case ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4	ActionArg_5	ActionArg_6	ActionArg_7
comment	verifying the FormatHttpRequestHeader										
ZR002	setting the values for different fields in HTTP header			Zrest.FormatHttpRequestHeader	req_header	Content-Type&&From	text/plain&&automature@automature.com				
	Storing the HTTP response in a context variable			Zrest.RestClient	\$url_having_text	GET	Text_Stored_in_CV	CV	%req_header%	response_header	status
	Verifying the text stored in context variable			Zstring.MatchSubstring	%Text_Stored_in_CV%	\$Verify_text_in_URL					
	Verifying the text in request header			Zstring.MatchSubstring	%req_header%	automature@automature.com					

Here is the snapshot of fiddler tool when the above test case was run

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Request Headers				
GET / HTTP/1.1				
Client				
Accept: text/html, image/gif, image/jpeg, *; q=.2, */*; q=.2				
User-Agent: Java/1.6.0_22				
Entity				
Content-Type: text/plain				
Miscellaneous				
From: automature@automature.com				
Transport				
Connection: keep-alive				
Host: zermatt.manimitra.in				
Get SyntaxView	Transformer	Headers	TextView	ImageView
Response Headers				
HTTP/1.1 200 OK				
Cache				
Date: Wed, 09 May 2012 11:47:31 GMT				
Vary: Accept-Encoding				
Entity				
Content-Length: 177				
Content-Type: text/html				
ETag: "a08a8-b1-4a2b8ff6f1cf6"				
Last-Modified: Sun, 08 May 2011 00:42:29 GMT				
Miscellaneous				
Accept-Ranges: bytes				
Server: Apache/2.2.17 (Ubuntu)				
Transport				
Connection: Keep-Alive				
Keep-Alive: timeout=15, max=100				

6.3 GetValueFromHeader

Description

Retrieves the value of a header field by its key name

Example

```
GetValueFromHeader(null=HTTP/1.1 200 OK&&Content-Type=text/html; charset=utf-8&&Server=WEBRick/1.3.1 (Ruby/1.9.2/2011-02-18)&&Date=Mon, 07 May 2012 13:23:11 GMT&&Content-Length=28521&&Connection=Keep-Alive, date, returnvalue)
```

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>
HTTPHeader Value	The Value of the Header	Scalar	any string	Input	Required
HeaderFieldName	Name of the header field whose value is to be retrieved	Scalar	any string	Input	Required
ReturnValue	Name of a context variable to store the value of a header field given its key	Scalar	any string	Input	Required

Example:

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4	ActionArg_5	ActionArg_6	ActionArg_7
ZR003				ZRest.RestClient	\$url having text	GET	\$Text_stored_in_a_file	FILE	default	response_header	status
				Zrest.GetValueFromHeader	%response_header%	Content-Length	Header_field_value				
				Print	%Header_field_value%						

Request Headers

GET / HTTP/1.1

Client

Accept: text/html, image/gif, image/jpeg, *; q=.2, */*; q=.2

User-Agent: Java/1.6.0_22

Transport

Connection: keep-alive

Host: zermatt.manimitra.in

Get SyntaxView Transformer Headers Te

Response Headers

HTTP/1.1 200 OK

Cache

Date: Wed, 09 May 2012 13:26:52 GMT

Vary: Accept-Encoding

Entity

Content-Length: 177

Content-Type: text/html

ETag: "a08a8-b1-4a2b8ff6f1cf6"

Last-Modified: Sun, 08 May 2011 00:42:29 GMT

Miscellaneous

Accept-Ranges: bytes

Server: Apache/2.2.17 (Ubuntu)

Transport

Connection: Keep-Alive

Keep-Alive: timeout=15, max=100

Command Prompt

```

Running TestCase ID ZR003
[ZR003] Execution Started Action ZRest.RestClient
nimitra.in/, GET, C:\Files\ZR003.txt, FILE, default

[ZR003] Action ZREST.RESTCLIENT SUCCESSFULLY Executed
[ZR003] Execution Started Action Zrest.GetValueFromHeader
/1.1 200 OK&&Date=Wed, 09 May 2012 13:26:52 GMT&&Last-Modified=Sun, 08 May 2011 00:42:29 GMT&&ETag=pt-Ranges=bytes&&Content-Length=177&&Vary=Accept-Encoding, max=100&&Connection=Keep-Alive&&Content-Type=text/html
[ZR003] Action ZREST.GETVALUEFROMHEADER SUCCESSFULLY Executed
[ZR003] Executed Action Print with values [177]

STATUS : PASS FOR TestCase ID ZR003
*****

Running TestCase ID Cleanup
[CLEANUP] Action UNSETCONTEXTUAR Execution STARTED

```

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7 XML Atoms

All the Atoms in this section are available in Zxml In process package file. Hence all the Atoms are referenced in CHUR spreadsheet as **Zxml.<atom-name>**. The following atoms can read/parse any xml content.

```
<root>
  <languages>
    <language name="Ruby">
      <extension>rb</extension>
      <interpreter>ruby</interpreter>
      <path>C:\Ruby\bin</path>
    </language>
  </languages>
  <inprocesspackages>
    <inprocesspackage name="ZBrowser">
      <file-path>C:\Program Files\Automature\ZUOZ\Inprocess</file-path>
      <jar-package>com.automature.zuoz.inprocess.zbrowser</jar-package>
      <class-name>BrowserOperation</class-name>
    </inprocesspackage>
    <inprocesspackage name="ZString">
      <file-path>C:\Program Files\Automature\ZUOZ\Inprocess</file-path>
      <language>Java</language>
      <interpreter>java.exe</interpreter>
    </inprocesspackage>
  </inprocesspackages>
  <configurations>
    <mvm-configuration jvm-max-memorysize="853">4000</mvm-configuration>
    <mvm-configuration jvm-max-memorysize="455">3000</mvm-configuration>
  </configurations>
</root>
```

7.1 GetTagValues

Description

It gets all the tag values of a xml content and returns the comma separated values in a context variable.

Example

```
Zxml.GetTagValues(xml, keytagname, returntagvalues)
```

Return Codes:

Success: Response stored in context variable here 'returntagvalues'

Failure: AtomExecutionException message logged in log error file and message shown in console.

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<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>
xml	First Argument must contain a valid xml content. It must be passed by reference i.e. as a Context Variable name.	Scalar	any valid xml structure	Input	Required
keytagname	Specify the path to the desired node, separated by #	Scalar	any string	Input	Required
returntagvalues	Returns comma separated values of the tags inside the key tag name.	Scalar	any string	Input	Required

Example:

In the following example we read the file content which is as stated in the beginning of this chapter.

The key_tag_path is root#languages#language.

The atom returns the tag values as **rb,ruby,C:\Ruby\bin**

TestCase	Descripti	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3
comment	Fair weather testing for GetTagValues						
ZX001FW				SetContextVar	FileContent		
				ZFileOps.ReadFileContent	\$filepath	FileContent	
				Zxml.GetTagValues	FileContent	\$key_tag_path	ReturnTagVal
				print	%ReturnTagVal%		

7.2 GetAttributeValues

Description

It gets the attribute values of a xml content while passing the attribute names list and returns the comma separated values in a context variable.

Example

```
Zxml.GetAttributeValues(xml,keytagname,attributename,returnattributevalues)
```

Return Codes:

Success: Response stored in context variable here 'returnattributevalues'

Failure: AtomExecutionException message logged in log error file and message shown in console.

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>
xml	First Argument must contain a valid xml content. It must be passed by reference i.e. as a Context Variable name.	Scalar	any valid xml structure	Input	Required
keytagname	Specify the path to the desired node, separated by #	Scalar	any string	Input	Required
attributename	Name of the attributes to be read.	Scalar	any string	Input	Required

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returnattributevalues	Returns comma separated attribute values of the tags inside the key tag name.	Scalar	any string	Input	Required
-----------------------	---	--------	------------	-------	----------

Example:

In the following example we read the file content which is as stated in the beginning of this chapter.

The key_second_tag_path is root#inprocesspackages

The atom will return attribute values **Zbrowser,ZString**

TestCase	Descripti	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
comment	Fair weather testing for GetAttributeValues							
ZX002FW				SetContextVar	FileContent			
				ZFileOps.ReadFileContent	\$filepath	FileContent		
				Zxml.GetAttributeValues	FileContent	\$key_second_tag_path	\$attribute_name	ReturnAttributeVal
				print	%ReturnAttributeVal%			

7.3 GetAttributeAndTagValues

Description

Its gets the attributes and tag values of a xml content, while passing keytagname and returns the values in a comma separated list, in a context variable.

Example

```
Zxml.GetAttributeAndTagValues(xml, keytagname, attributename, returnattributevalues, returntagvalues)
```

Return Codes:

Success: Response stored in context variable here 'returnattributevalues' and 'returntagvalues'

Failure: AtomExecutionException message logged in log error file and message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
xml	First Argument must contain a valid xml content. It must be passed by reference i.e. as a Context Variable name.	Scalar	any valid xml structure	Input	Required
keytagname	Specify the path to the desired node, separated by #	Scalar	any string	Input	Required
attributename	Name of the attributes to be read.	Scalar	any string	Input	Required
returnattributevalues	Returns comma separated attributes of the tags inside the tag name.	Scalar	any string	Output	Required
returntagvalues	Returns comma separated values of the tags inside the key tag name.	Scalar	any string	Output	Required

Example:

In the following example we read the file content which is as stated in the beginning of this chapter.

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The key_third_tag_path is root#configurations and the second_attribute_name is jvm.-max-memorysize

The atom returns the attribute values as **853,455** and returns tag values as **4000,3000**.

TestCase	Descripti	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4	ActionArg_5
comment	Fair weather testing for getAttributeAndTagValues								
ZX003FW				SetContextVar	FileContent				
				ZFileOps.ReadFileContent	\$filepath	FileContent			
				Zxml.getAttributeAndTagValues	FileContent	\$key_third_tag_path	\$second_attribute_name	ReturnAttributeVal	ReturnTagVal
				print	%ReturnAttributeVal%				
				print	%ReturnTagVal				

7.4 GetTagValueByIndex

Description

Its gets the tag values of a xml content, while passing keytagname and keyindex, it returns the values in a comma separated list, in a context variable.

Example

```
Zxml.GetTagValueIndex(xml, keytagname, keyindex, returntagvalue)
```

Return Codes:

Success: Response stored in context variable here 'returntagvalue'

Failure: AtomExecutionException message logged in log error file and message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
xml	First Argument must contain a valid xml content. It must be passed by reference i.e. as a Context Variable name.	Scalar	any valid xml structure	Input	Required
keytagname	Specify the path to the desired node, separated by #	Scalar	any string	Input	Required
keyindex	Index of the tag.	Scalar	any string	Input	Required
returntagvalue	Returns comma separated values of the tags inside the key tag name.	Scalar	any string	output	Required

Example:

In the following example we read the file content which is as stated in the beginning of this chapter.

The key_second_tag_path is root#inprocesspackages and the keyindex is 2.

The atom returns the tag value **C:\Program Files\Automature\ZUOZ\Inprocess,Java, java.exe**

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TestCase	Descripti	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
comment	Fair weather testing for getTagValueByIndex							
ZX004FW				SetContextVar	FileContent			
				ZFileOps.ReadFileContent	\$filepath	FileContent		
				ZXml.getTagValueByIndex	FileContent	\$key_second_tag_path	2	ReturnTagVal
				print	%ReturnTagVal			

7.5 GetTagNames

Description

Returns the tag names in a particular tag of a xml content as a comma separated list in a context variable.

Example

Syntax:

```
Zxml.GetTagNames(xml_content, tagname_path, returntagnames)
```

Example:

```
Zxml.GetTagNames(xml_content, root#languages#language, returntagnames)
```

The contextvariablename will contain the following string -
extension, interpreter, path

```
Zxml.GetTagNames(xml_content, root#inprocesspackages#inprocesspackage[2], returntagnames)
```

The contextvariablename will contain the following string - file-path, language, interpreter

Return Codes:

Success: Response stored in context variable here 'returntagnames'

Failure: AtomExecutionException message logged in log error file and message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
xml_content	First Argument must contain a valid xml content. It must be passed by reference i.e. as a Context Variable name.	Scalar	any valid xml structure	Input	Required
tagname_path	Specify the path to the desired node, separated by #	Scalar	any string	Input	Required
returntagnames	Returns comma separated names of the tags inside the key tag name.	Scalar	any string	Input	Required

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Example:

In the following example we read the file content which is as stated in the beginning of this chapter. The key_fourth_tag_path is root#inprocesspackages#inprocesspackage[2]

The atom returns the tag names as file-path,language,interpreter.

TestCase	Descripti	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3
comment	Fair weather testing for GetTagNames						
ZX005FW				SetContextVar	FileContent		
				ZFileOps.ReadFileContent	\$filepath	FileContent	
				Zxml.GetTagNames	FileContent	\$key_fourth_tag_path	ReturnTagNames
				print	%ReturnTagNames%		

7.6 ConvertXMLtoJSON

Description

Converts a simple XML to JSON text format and returns it to a context variable

Example

Syntax:

```
Zxml.ConvertXMLtoJSON(xml, json)
```

Following is the example of a simple XML. The JSON text will be stored in the context variable json.

XML text	JSON text
<pre><root> <languages> <language name="Ruby"> <extension>rb</extension> <interpreter>ruby</interpreter> <path>C:\Ruby\bin</path> </language> </languages> </root></pre>	<pre>{ "root": { "languages": { "language": { "-name": "Ruby", "extension": "rb", "interpreter": "ruby", "path": "C:\\Ruby\\bin" } } } }</pre>

Return Codes:

Success: Response stored in 'context variable json'.

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
xml	First Argument must contain a valid xml content. It must be passed by reference i.e. as a Context Variable name.	Scalar	any string	Input	Required
kson	Returns the XML content in that context variable	Scalar	Any string	Output	Required

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Following is the simple testcase to convert an xml text to json text.

TestCase	Descripti	property	Step	Action	ActionArg_1	ActionArg_2
comment	Fair weather testing for ConvertXMLtoJSON					
ZX006FW				SetContextVar	FileContent	
				ZFileOps.ReadFileContent	\$filepath	FileContent
				Zxml.convertXMLtoJSON	FileContent	Converter
				ZfileOps.WriteFileContent	Converter	\$jsonwritefilepath

7.7 AddTag

Description

Appends a XML tag to the XML text and returns the modified XML text to a context variable.

Example

Syntax:

```
Zxml.AddTag(xml, keyTagName, tag_name, tag_value, modified_xml)
```

Example 1:

```
Zxml.AddTag (xml, root#languages#language,version,1.6,modified_xml)
```

The modified_xml will contain the string as shown below:

XML text	Modified XML text
<pre><root> <languages> <language name="Ruby"> <extension>rb</extension> <interpreter>ruby</interpreter> <path>C:\Ruby\bin</path> </language> </languages> </root></pre>	<pre><root> <languages> <language name="Ruby"> <extension>rb</extension> <interpreter>ruby</interpreter> <path>C:\Ruby\bin</path> <version>1.6</version> </language> </languages> </root></pre>

Parameter Name	Purpose	Type	Valid Values	Directi on	Optional?
xml	First Argument must contain a valid xml content. It must be passed by reference i.e. as a Context Variable name.	Scalar	any valid xml structure	Input	Required
keytagname	Specify the path to the desired node, separated by #	Scalar	any string	Input	Required
tag_name	Name of the tag to be added	Scalar	any string	Input	Required
tag_value	Value of the tag to be added	Scalar	any string	Input	Required
modified_xml	Returns the XML content in that context variable	Scalar	Any string	Output	Required

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Example:

In the following example we read the file content which is as stated in the beginning of this chapter. The key_tag_path is **root#languages#language**. The add_tag name is **version** and the add_tag_value is **1.6**.

The modified xml is stored in the ReturnTagVal. It contains an additional tag **<version>1.6</version>**

TestCase	Descripti	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4	ActionArg_5
comment	Fair weather testing for AddTag								
ZX007FW				SetContextVar	FileContent				
				ZFileOps.ReadFileContent	\$filepath	FileContent			
				Zxml.AddTag	FileContent	\$key_tag_path	\$add_tag_name	\$add_tag_value	ReturnTagVal

7.8 AddAttribute

Description

Adds a XML tag attribute to a particular tag in a XML and returns the modified XML text to a context variable.

Example

Syntax:

```
Zxml.AddAttribute(xmlcontent, keyTagName, attributename,
attributevalue, modified_xml)
```

Example 1:

```
Zxml.AddAttribute
(xmlcontent, root#languages#language#version,major,1.6,modified_xml)
```

The modified_xml will contain the string as shown below:

XML text	Modified XML text
<pre><root> <languages> <language name="Java"> <version> <extension>rb</extension> <interpreter>ruby</interpreter> <path>C:\Ruby\bin</path> <version> </language> </languages> </root></pre>	<pre><root> <languages> <language name="Java"> <version major="1.6"> <extension>rb</extension> <interpreter>ruby</interpreter> <path>C:\Ruby\bin</path> </version> </language> </languages> </root></pre>

Parameter Name	Purpose	Type	Valid Values	Directi on	Optional?
xmlcontent	First Argument must contain a valid xml content. It must be passed by reference i.e. as a Context Variable name.	Scalar	any valid xml structure	Input	Required

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keytagname	Specify the path to the desired node, separated by #	Scalar	any string	Input	Required
attributename	Name of the attribute to be added	Scalar	any string	Input	Required
attributevalues	Value of the attribute to be added	Scalar	any string	Input	Required
modified_xml	Returns the XML content in that context variable	Scalar	Any string	Output	Required

Example:

In the following example we read the file content which is as stated in the beginning of this chapter. The key_tag_path is **root#languages**. The add_attrb_name is **version** and the add_attrb_value is **1.8.7**.

The ReturnTagVal will contain the tag **<language name="Ruby" version="1.8.7">** which was previously **<language name="Ruby">**

TestCase	Descripti	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4	ActionArg_5
comment	Fair weather testing for AddAttribute								
ZX008FW				SetContextVar	FileContent				
				ZFileOps.ReadFileContent	\$filepath	FileContent			
				Zxml.addAttribute	FileContent	\$key_tag_path	\$add_attrb_name	\$add_attrb_val	ReturnTagVal

7.9 ReadXMLNode

Description

Returns a XML node in a context variable as a string.

Example

Syntax:

```
Zxml.readXMLNode(xmlcontent, keyTagName, return_xml_node)
```

Example:

```
Zxml.readXMLNode(xml_content, root#languages#language, return_xml_node)
```

The return_xml_node will contain the following string -

```
<extension>rb</extension>
<interpreter>ruby</interpreter>
<path>C:\Ruby\bin</path>
```

Return Codes:

Success: Response stored in context variable here 'returntagnames'

Failure: AtomExecutionException message logged in log error file and message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
xmlcontent	First Argument must contain a valid xml content. It must be passed by reference i.e. as a Context Variable name.	Scalar	any valid xml structure	Input	Required
keytagname	Specify the path to the desired node, separated by #	Scalar	any string	Input	Required
return_xml_node	Returns the XML content in	Scalar	Any string	Output	Required

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that context variable

Example:

In the following example we read the file content which is as stated in the beginning of this chapter. The key_tag_path is **root#languages#language**.

The ReturnTagVal will contain the tag

<extension>rb</extension>

<interpreter>ruby</interpreter>

<path>C:\Ruby\bin</path>

TestCase	Descripti	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3
comment	Fair weather testing for ReadXMLNode						
ZX009FW				SetContextVar	FileContent		
				ZFileOps.ReadFileContent	\$filepath	FileContent	
				Zxml.readXMLNode	FileContent	\$key_tag_path	ReturnTagVal

7.10 GetTagValuesByAttribute

Description

Its gets the tag values of a xml content by specifying the attribute name and value, returns the values as a comma separated list, in a context variable.

Example

Syntax:

```
Zxml.GetTagValuesByAttribute(xmlcontent, keyTagName, key_attribute_name, key_attribute_value, return_tag_values)
```

Example:

```
Zxml.GetTagValuesByAttribute(xmlcontent, root#inprocesspackages#inprocesspackage,name,ZBrowser,returnContextVar)
```

The Context variable return_tag_values will contain the following string:

C:\Program Files\Automature\ZUOZ\Inprocess, com.automature.zuoz.inprocess.zbrowser, BrowserOperation

Return Codes:

Success: Response stored in context variable here 'returnattributevalues' and 'returntagvalues'

Failure: AtomExecutionException message logged in log error file and message shown in console.

Parameter Name	Purpose	Type	Valid Values	Directi on	Optional?
xmlcontent	First Argument must contain a valid xml content. It must be passed by reference i.e. as a Context Variable name.	Scalar	any valid xml structure	Input	Required
keytagname	Specify the tag attribute node, separated by #	Scalar	any string	Input	Required
key_attribute_name	Name of the attribute	Scalar	any string	Input	Required
key_attribute_value	Value of the attribute	Scalar	any string	Output	Required
return_tag_values	Returns the tag values as a comma separated list in that context variable	Scalar	Any string	Output	Required

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Example:

In the following example we read the file content which is as stated in the beginning of this chapter. The key_second_tag_path is **root#inprocesspackages** .

The key_attrib_name is **name** and the key_attrib_value is **ZString**.

The ReturnTagVal will contain the tag values as a comma separated list

C:\Program Files\Automature\ZUOZ\Inprocess,Java,java.exe

TestCase	Descripti	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4	ActionArg_5
comment	Fair weather testing for GetTagValuesByAttribute								
ZX010FW				SetContextVar	FileContent				
				ZFileOps.ReadFileContent	\$filepath	FileContent			
				Zxml.GetTagValuesByAttribu	FileContent	\$key_second_tag_path	\$key_attrib_name	\$key_attrib_val	ReturnTagVal

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8 File Operation Atoms

All the Atoms in this section are available in ZFileOps In process package file. Hence all the Atoms are referenced in CHUR spreadsheet as **ZFileOps.<atom-name>**. The following atoms can use the basic functionality of any context variable, like setcontextvar, appendtocontextvar etc. More than that there is another new atom which can be used to store a file content inside a context variable.

8.1 ReadFileContent

Description

It reads the content of the file from a given file path and stores/saves the content in a context variable.

Example

```
ReadFileContent (filepath, filecontent)
```

Return Codes:

Success: Response stored in context variable 'filecontent'.

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
filepath	First Argument which must be a valid fully qualified path or a relative path. It can be passed as a context variable.	Scalar	any valid file path	Input	Required
filecontent	File content stored(not More than 1 mb).	Scalar	any string	Output	Required

Example:

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3
XML001				ZFileOps.ReadFileContent	\$filepath	FileContent	

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8.2 WriteFileContent

Description

It stores the content in the context variable to a file in a given file path. If the file does not exist then it creates a new file, else it over-writes the file with the content.

Example

```
WriteFileContent(filecontent, filepath)
```

Return Codes:

Success: Response stored in the given file.

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>
filecontent	Content stored(not More than 1 mb) in the context variable.	Scalar	any string	Input	Required
filepath	Second Argument which must be a valid fully qualified path or a relative path. It can be passed as a context variable.	Scalar	any valid file path	Input	Required

8.3 GetFileSize

Description

Returns the file size in a context variable in bytes.

Example

```
GetFileSize(filepath, filesize)
```

Return Codes:

Success: Response stored in 'filesize'.

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>
filepath	Must be a valid fully qualified path or a relative path.	Scalar	any valid file path	Input	Required
filesize	Context variable name passed by reference to store the file size	Scalar	Any string	Output	Required

8.4 ComputeChecksum

Description

It computes the checksum of a file in given format/algorithm.

Example

```
computeChecksum(filepath,data_integrity_verify_algorithm, get_checksum)
```

Return Codes:

Success: Response stored in context variable 'get_checksum'.

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
filepath	Must be a valid fully qualified path or a relative path.	Scalar	any valid file path	Input	Required
data_integrity_verify_algorithm	A secure hash algorithm to compute the checksum.	Scalar	MD5 or SHA1	Input	Required
get_checksum	Context variable name passed by reference to store the file checksum.	Scalar	Any string	Output	Required

Test Case ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3
ZF004	Computing the checksum of the downloaded file			ZfileOps.ComputeChecksum	\$Downloaded_Image_file	SHA1	Checksum_GET

Secure Hash Algorithm

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9 JSON Atoms

All the Atoms in this section are available in ZJSON In process package file. These atoms are referenced in CHUR spreadsheet as **Zjson.<atom-name>** because of the mapping done in ZugINI.xml.The following atoms can be used to read, parse or add any JSON content.

The following is an example of a JSON text:

```
{
  "glossary": {
    "title": "example glossary",
    "GlossDiv": {
      "title": "S",
      "GlossList": {
        "GlossEntry": {
          "ID": "SGML",
          "SortAs": "SGML",
          "GlossTerm": "Standard Generalized Markup Language",
          "Acronym": "SGML",
          "Abbrev": "ISO 8879:1986",
          "GlossDef": {
            "para": "A meta-markup language, used to create markup languages such as DocBook.",
            "GlossSeeAlso": ["GML", "XML"]
          },
          "GlossSee": "markup"
        }
      }
    }
  }
}
```

9.1 GetObject

Description

Returns a JSON object as a string to the context variable.

Example

Syntax:

```
ZJSON.GetObject(JSON_text, object_tree, object_list)
```

Example:

```
ZJSON.GetObject(JSON_text, glossary#GlossDiv#GlossList#GlossEntry,
object_list)
```

The context variable object_list will contain the string

“ ID, SortAs, GlossTerm, Acronym, Abbrev, GlossDef, GlossSee “

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3
comment	Fair weather testing for getObject atom						
ZJ001FW				ZFileOps.ReadFileContent	\$JSON_filepath	FileContent	
				ZJSON.getObject	FileContent	\$JSON_object_tree	JSON_object

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Return Codes:

Success: Response stored in 'contextvariablename'.

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>
JSON_text	Must be a valid JSON text (which should be passed as reference) i.e. name of the Context Variable where JSON text is stored.	Scalar	any string	Input	Required
object_tree	Specify the path to the desired object, separated by #	Scalar	any string	Input	Required
object_list	Returns all the keys as a comma separated list in that object	Scalar	Any string	Output	Required

9.2 GetObjectKeys

Description

Returns a comma separated list of keys within a JSON object to the context variable.

Example

Syntax:

```
ZJSON.GetObjectKeys(JSON_text, object_tree, object_keys)
```

Example:

```
ZJSON.GetObjectKeys(JSON_text,
glossary#GlossDiv#GlossList#GlossEntry#GlossDef, object_keys)
```

The object_keys will contain the string “[para,GlossSeeAlso](#)”

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3
comment	Fair weather testing for getObjectKeys						
ZJ002FW				ZFileOps.ReadFileContent	\$JSON_filepath	FileContent	
				ZJSON.getObjectKeys	FileContent	\$JSON_object_tree	JSON_keys

Return Codes:

Success: Response stored in 'object_keys'.

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>
JSON_text	Must be a valid JSON text (which should be passed as reference) i.e. name of the Context Variable where JSON text is stored.	Scalar	any string	Input	Required
object_tree	Specify the path to the desired object, separated by #	Scalar	any string	Input	Required

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object_keys	Returns the value of the desired object in the context variable	Scalar	Any string	Output	Required
-------------	---	--------	------------	--------	----------

9.3 GetObjectValueByKey

Description

Returns the value of a particular key within a JSON object to the context variable.

Example

Syntax:

```
ZJSON.GetObjectValueByKey(JSON_text, object_tree, key_name, key_value)
```

Example 1:

```
ZJSON.GetObjectValueByKey (JSON_text,
glossary#GlossDiv#GlossList#GlossEntry, SortAs ,key_value)
```

The context variable key_value will contain the string “ ISO 8879:1986 “.

Example 2:

```
ZJSON.GetObjectValueByKey (JSON_text,
glossary#GlossDiv#GlossList#GlossEntry#GlossDef, GlossSeeAlso, key_value)
```

The context variable key_value will contain the string “ [GML", "XML"] “

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
comment	Fair weather testing for getObjectValueByKey							
ZI003FW				ZFileOps.ReadFileContent	\$JSON_filepath	FileContent		
				ZJSON.getObjectValueByKey	FileContent	\$JSON_object_tree 3	GlossSeeAlso	JSON_object

Return Codes:

Success: Response stored in 'key_value'.

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
JSON_text	Must be a valid JSON text (which should be passed as reference) i.e. name of the Context Variable where JSON text is stored.	Scalar	any string	Input	Required
object_tree	Specify the path to the desired object, separated by #	Scalar	any string	Input	Required
key_name	Name of a key within the object	Scalar	any string	Input	Required
key_value	Returns the value of the desired key in the context variable	Scalar	Any string	Output	Required

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9.4 GetObjectKeyValueByIndex

Description

Returns the value of a particular key within a JSON object to the context variable for a given key ndex.

Example

Syntax:

```
ZJSON.GetObjectKeyValueByIndex(JSON_text, object_tree, key_index, key_value)
```

Example 1:

```
ZJSON.GetObjectKeyValueByIndex (JSON_text, glossary#GlossDiv#GlossList#GlossEntry, 5 ,key_value)
```

The key_value will contain the string “ SGML “.

Example 2:

```
ZJSON.GetObjectValueByKey (JSON_text, glossary#GlossDiv#GlossList#GlossEntry#GlossDef, 1, key_value)
```

The context variable key_value will contain the string "A meta-markup language, used to create markup languages such as DocBook."

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
comment	Fair weather testing for getObjectKeyValueByIndex							
ZJ004FW				ZFileOps.ReadFileContent	\$JSON_filepath	FileContent		
				ZJSON.getObjectKeyValueByIndex	FileContent	\$JSON_object_tree	\$key_index	JSON_object

Return Codes:

Success: Response stored in 'key_value'.

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
JSON_text	Must be a valid JSON text (which should be passed as reference) i.e. name of the Context Variable where JSON text is stored.	Scalar	any string	Input	Required
object_tree	Specify the path to the desired object, separated by #	Scalar	any string	Input	Required
key_index	Index of a key within the object	Scalar	any string	Input	Required
key_value	Returns the value of the desired key in the context variable	Scalar	Any string	Output	Required

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9.5 AddObject

Description

Appends a JSON object to the JSON text and returns the modified JSON text to a context variable.

Example

Syntax:

```
ZJSON.AddObject(JSON_text, object_tree, key_name, key_value,
modified_json_text)
```

Example 1:

```
ZJSON.AddObject (JSON_text,
glossary#GlossDiv#GlossList#GlossEntry#GlossDef,"ABC", ["A","B","C","D"],
modified_json_text)
```

The context variable modified_json_text will contain the string

Input JSON text				Output JSON text					
<pre>{ "glossary": { "title": "example glossary", "GlossDiv": { "title": "S", "GlossList": { "GlossEntry": { "ID": "SGML", "SortAs": "SGML", "GlossTerm": "Standard Generalized Markup Language", "Acronym": "SGML", "Abbrev": "ISO 8879:1986", "GlossDef": { "para": "A meta-markup language, used to create markup languages such as DocBook.", "GlossSeeAlso": ["GML", "XML"] }, "GlossSee": "markup" } } } }</pre>				<pre>{ "glossary": { "title": "example glossary", "GlossDiv": { "title": "S", "GlossList": { "GlossEntry": { "ID": "SGML", "SortAs": "SGML", "GlossTerm": "Standard Generalized Markup Language", "Acronym": "SGML", "Abbrev": "ISO 8879:1986", "GlossDef": { "para": "A meta-markup language, used to create markup languages such as DocBook.", "GlossSeeAlso": ["GML", "XML"], "ABC": ["A","B","C","D"] }, "GlossSee": "markup", "XXX": "YYY" } } } }</pre>					
TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4	ActionArg_5
comment	Fair weather testing for getObject atom								
ZJ005FW				ZFileOps.ReadFileContent	\$JSON_filepath	FileContent			
				ZJSON.addObject	FileContent	\$JSON_object_tree3	\$key_name	\$key_value	JSON_object
				ZFileOps.WriteFileContent	JSON_object	\$writefilepath			

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Return Codes:

Success: Response stored in 'modified_json_text'.

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional ?
JSON_text	Must be a valid JSON text (which should be passed as reference) i.e. name of the Context Variable where JSON text is stored.	Scalar	any string	Input	Required
object_tree	Specify the path to the desired object, separated by #	Scalar	any string	Input	Required
key_name	Name of a key to be inserted.	Scalar	any string	Input	Required
key_value	Value of the above key to be inserted.	Scalar	any string	Input	Required
modified_json_text	Returns all the keys as a comma separated list in that object	Scalar	Any string	Output	Required

9.6 ConvertJSONtoXML

Description

Converts a simple JSON text to XML format and returns it to a context variable

Example

Syntax:

```
ZJSON.ConvertJSONtoXML(JSON_text, converted_to_xml)
```

Following is the example of a simple JSON text. The XML text will be stored in the context variable converted_to_xml.

JSON text	XML text
<pre>{ "note": { "to": "Tove", "from": "Jani", "heading": "Reminder", "body": "Don't forget me this weekend!" } }</pre>	<pre><note> <to>Tove</to> <from>Jani</from> <heading>Reminder</heading> <body>Don't forget me this weekend! </body> </note></pre>

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TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2
comment	Fair weather testing for converting JSON to XML					
ZJ006FW				ZfileOps.ReadFileContent	\$filepath	FileContent
	converting to XML			ZJSON.convertJSONtoXML	FileContent	Converter
				ZfileOps.WriteFileContent	Converter	\$xmlwritefilepath

Return Codes:

Success: Response stored in 'converted_to_xml'.

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional ?
JSON_text	Must be a valid JSON text (which should be passed as reference) i.e. name of the Context Variable where JSON text is stored.	Scalar	any string	Input	Required
converted_to_xml	Returns the XML content in that context variable	Scalar	Any string	Output	Required

9.7 Zjson.MatchElementsbyIndex

Description

It matches the elements of an object of a JSON array using index of that object.

Example

The following is an example of a JSON text:

```
{
  "name": "John Smith",
  "age": 32,
  "employed": true,
  "address": {
    "street": "701 First Ave.",
    "city": "Sunnyvale, CA 95125",
    "country": "United States"
  },
  "children": [
    {
      "name": "Richard",
      "age": 7
    },
    {
      "name": "Susan",
      "age": 4
    },
    {
      "name": "James",
      "age": 3
    }
  ]
}
```

Syntax:

Zjson.matchElementsbyIndex (JSON_text, object_tree, key_value-elements, object_Index)

Example 1:

```
Zjson.matchElementsbyIndex( JSON_text, children, "name": "Richard", "age" : 7, 1)
```

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Return Codes:

Success: Return 0

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional ?</u>
JSON_text	Must be a valid JSON text (which should be passed as reference) i.e. name of the Context Variable where JSON text is stored.	Scalar	any string	Input	Required
object_tree	Specify the name of the json array	Scalar	any string	Input	Required
key_value-elements	List of elements to be match. Should be pass by context-Variables	Scalar	any string	Input	Required
object_Index	Array Index number in which key_value-elements is present.	Scalar	any string	Input	Required

9.8 Zjson.MatchForElements

Description

It matches the elements of an object in a particular Json text.

Example

The following is an example of a JSON text:

```
{
  "medications": {
    "aceInhibitors": {
      "name": "lisinopril",
      "strength": "10 mg Tab",
      "dose": "1 tab",
      "route": "PO",
      "sig": "daily",
      "pillCount": "#90",
      "refills": "Refill 3"
    },
    "antianginal": {
      "name": "nitroglycerin",
      "strength": "0.4 mg Sublingual Tab",
      "dose": "1 tab",
      "route": "SL",
      "sig": "q15min PRN",
      "pillCount": "#30",
      "refills": "Refill 1"
    },
    "anticoagulants": {
      "name": "warfarin sodium",
      "strength": "3 mg Tab",
      "dose": "1 tab",
      "route": "PO",
      "sig": "daily",
      "pillCount": "#90",
      "refills": "Refill 3"
    },
    "betaBlocker": {
      "name": "metoprolol tartrate",
      "strength": "25 mg Tab",
      "dose": "1 tab",
      "route": "PO",
```


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```

        "sig": "daily",
        "pillCount": "#90",
        "refills": "Refill 3"
    },
    "diuretic": {
        "name": "furosemide",
        "strength": "40 mg Tab",
        "dose": "1 tab",
        "route": "PO",
        "sig": "daily",
        "pillCount": "#90",
        "refills": "Refill 3"
    },
    "mineral": {
        "name": "potassium chloride ER",
        "strength": "10 mEq Tab",
        "dose": "1 tab",
        "route": "PO",
        "sig": "daily",
        "pillCount": "#90",
        "refills": "Refill 3"
    }
},
"labs": [
    {
        "name": "Arterial Blood Gas",
        "time": "Today",
        "location": "Main Hospital Lab"
    },
    {
        "name": "BMP",
        "time": "Today",
        "location": "Primary Care Clinic"
    },
    {
        "name": "BNP",
        "time": "3 Weeks",
        "location": "Primary Care Clinic"
    },
    {
        "name": "BUN",
        "time": "1 Year",
        "location": "Primary Care Clinic"
    },
    {
        "name": "Cardiac Enzymes",
        "time": "Today",
        "location": "Primary Care Clinic"
    },
    {
        "name": "CBC",
        "time": "1 Year",
        "location": "Primary Care Clinic"
    },
    {
        "name": "Creatinine",
        "time": "1 Year",
        "location": "Main Hospital Lab"
    },
    {
        "name": "Electrolyte Panel",
        "time": "1 Year",
        "location": "Primary Care Clinic"
    },
    {
        "name": "Glucose",
        "time": "1 Year",
        "location": "Main Hospital Lab"
    },
    {
        "name": "PT/INR",
        "time": "3 Weeks",
        "location": "Primary Care Clinic"
    },
    {
        "name": "PTT",
        "time": "3 Weeks",
        "location": "Coumadin Clinic"
    }
],

```

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```

{
  "name": "TSH",
  "time": "1 Year",
  "location": "Primary Care Clinic"
},
"imaging": [
  {
    "name": "Chest X-Ray",
    "time": "Today",
    "location": "Main Hospital Radiology"
  },
  {
    "name": "Chest X-Ray",
    "time": "Today",
    "location": "Main Hospital Radiology"
  },
  {
    "name": "Chest X-Ray",
    "time": "Today",
    "location": "Main Hospital Radiology"
  }
]
}

```

Syntax:

`Zjson.matchForElements(JSON_text,object_tree,key_value-elements,key_value)`

Example 1 :

```

Zjson.matchForElements( JSON_text,medications#anticoagulants,
"name":"warfarin sodium","sig":"daily", returnval)

```

Return Codes:

Success: Return 0

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional ?
JSON_text	Must be a valid JSON text (which should be passed as reference) i.e. name of the Context Variable where JSON text is stored.	Scalar	any string	Input	Required
object_tree	Specify the path to the desired object, separated by #	Scalar	any string	Input	Required
key_value-elements	List of elements to be match. Should be pass by context-Variables.	Scalar	any string	Input	Required
key_value	Returns the value of the desired key in the context variable.	Scalar	any string	Input	Required

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10 Database Atoms

All the Atoms in this section are available in ZDB In process package file. These atoms are referenced in CHUR spreadsheet as **Zdb.<atom-name>** because of the mapping done in ZugINI.xml.

The following atoms can be used to connect as well as disconnect and also execute any DML queries and retrieve the result.

10.1 Connect

Description

Connects to a specific database, validates user credentials, and returns a handle for the connection in a context variable. This handle can subsequently be used to query the database, or execute other SQL statements against the database. Note that the connection is not thread-safe, i.e. not more than a single database operation can be concurrently executed using the same database handle.

Example

Syntax:

```
ZDB.Connect (Username, Password, Database_URL, Database_type,
Connection)
```

Example:

```
ZDB.Connect (JohnSmith, secret, localhost/Framework, MySQL, Connect1)
```

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>
Username	Username of the database	Scalar	any string	Input	Required
Password	Password of the database	Scalar	any string	Input	Required
Database_URL	States the Database connection URL. Example- <Mysqlhostmachine>/<DatabaseName>	Scalar	A string representing the IP address, a hostname, or the domain qualified hostname of the database machine, plus the name of the database	Input	Required
Database_type	Specifies Database Server Name.	Scalar	Any string	Input	Required
Connection	Returns the connection in a context variable	Scalar	Any string	Output	Required

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Example:

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4	ActionArg_5
Comment	Connects to a database								
TDB001				SetContextVar	Connect1				
				ZDB.Connect	zermattuser	user	192.168.0.31/Framework	MySQL	Connect1
				print	%Connect1%				

10.2 Disconnect

Description

Disconnects or destroys the database connection.

Example

Syntax:

ZDB.Disconnect (ConnectionValue)

Example:

ZDB.Disconnect (%Connect1%)

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
ConnectionValue	The handle of the database connection which was returned in a context variable, from a previous call to Connect.	Scalar	any string	Input	Required

Example:

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4	ActionArg_5
Comment	Disconnects from a Database								
TDB002				SetContextVar	Connect1				
				ZDB.Connect	\$Username	user	192.168.0.31/Framework	MySQL	Connect1
				ZDB.Disconnect	%Connect1%				

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10.3 Execute

Description

Executes a DML statement. There are three types of DML queries that this atom can execute - INSERT, UPDATE and DELETE.

Zuoz Context-Variables for Execute atom

Zuoz defines and maintains some automatic global context variables for the Execute Atom. These variables may be used by the test case designer for developing test cases.

Name	Purpose	Comments	Output
ZUOZ_ZDB_ROWCOUNT	Returns the number of rows returned.	If there are no rows affected, then it returns zero.	A numeric value.

Example

Syntax:

```
ZDB.Execute (Connection_value, Execute_query)
```

Example:

```
ZDB.Execute (%Connect1%, $Execute_query)
```

Here the macro \$execute_query can have any DML query.

```
$execute_query=INSERT into role (role_name, description) VALUES ('Zug Client', 'for testing')
```

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4	ActionArg_5
Comment	Connects to a database								
Init				SetContextVar ZDB.Connect	Connect1	zermattuser	user	192.168.0.31/Framework MySQL	Connect1
Comment	Executes a DML statement								
TDB003				ZDB.Execute print	%Connect1%	\$Execute_query			
					%ZUOZ_ZDB_ROWCOUNT%				
Cleanup				ZDB.Disconnect UnsetContextVar	%Connect1%	Connect1			

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
Connection_value	The handle of the database connection which was returned in a context variable, from a previous call to Connect.	Scalar	any string	Input	Required
Execute_query	Any DML query	Scalar	MYSQL or	Input	Required

MS-SQL

10.4 Query

Description

Executes a DQL statement.

Zuoz Context-Variables for Query atom

Zuoz defines and maintains some automatic global context variables for the Query Atom. These variables may be used by the test case designer for developing test cases.

Name	Purpose	Comments	Output
ZUOZ_ZDB_ROWS	Returns the number of rows affected.	If there are no rows affected, then it returns zero.	A numeric value.
ZUOZ_ZDB_<COLUMN_NAME>	Returns the Last row from the result set for a given Column Name	Here <COLUMN_NAME> states the column name to be fetched from the select query. It returns only one row.	A string
ZUOZ_ZDB_RESULTSET XML	Returns the result set in a XML format	The format is shown below.	A XML string

The output of the above context variable ZUOZ_ZDB_RESULTSETXML will be of the following format:

```
<Results>
  <Row><column_name1>valueA1</column_name1>
    <column_name2>valueB1</column_name2>
  </Row>
  <Row><column_name1>valueA2</column_name1>
    <column_name2>valueB2</column_name2>
  </Row>
</Results>
```

While selecting rows with special character please give a alias name

Example

```
SELECT Count(*) As TotalCount FROM product
```

Example

Syntax:

```
ZDB.Query(Connection_value,Select_query)
```

Example:

```
ZDB.Query(%Connect1%,$Select_query)
```

Here the macro \$select_query can have any DML query.

```
$Select_query=SELECT role_name,description FROM role WHERE description='for testing'
```

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TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4	ActionArg_5
Comment	Connects to a database								
Init				<u>SetContextVar</u> <u>ZDB.Connect</u>	Connect1				
					zermattuser	user	192.168.0.31/Framework MySQL		Connect1
Comment	Executes any DQL statement								
TDB004				<u>ZDB.Query</u>	%Connect1%	\$Select_query			
				print	%ZUOZ_ZDB_ROWS%				
				print	%ZUOZ_ZDB_ROLE_NAME%				
				print	%ZUOZ_ZDB_RESULTSETXML%				
Cleanup				<u>ZDB.Disconnect</u> <u>UnsetContextVar</u>	%Connect1%				
					Connect1				

The output of the above %ZUOZ_RESULTSETXML% is as follows:

<Results>

<Row>

<role_name>test role</role_name>

<description>for testing</description>

</Row>

<Row>

<role_name>Zug Client</role_name>

<description>for testing</description>

</Row>

<Row>

<role_name>DB Client</role_name>

<description>for testing</description>

</Row>

</Results>

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
Connection_value	The handle of the database connection which was returned in a context variable, from a previous call to Connect.	Scalar	any string	Input	Required
Select_query	Any DQL query	Scalar	any string	Input	Required

10.5 WaitFor

Description

The atom allows the testcase to wait until a specific condition has been met or the timeout elapses. The atom will execute the SQL statement repeatedly, at 1 sec intervals (the default, unless overridden by the testcase).

Note that the SQL statement is expected to return a value, which may be a string or an integer.

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Zuoz Context-Variables for WaitFor atom

Zuoz defines and maintains an automatic global context variable for the WaitFor Atom. This variable may be used by the test case designer for developing test cases.

Name	Purpose	Comments	Default Value
ZUOZ_ZDB_Retry_Interval_Seconds	States the timeout interval for the testcase to waitDefines the interval in seconds for the atom to wait between successive attempts	The value of this variable can be altered using SetContextVar	If the user <u>does not</u> change the value of this context variable, then the default interval is 1 sec.

Syntax:

```
ZDB.WaitFor(DBHandle, DBQuery, Value_For_Comparison, Condition_Operator, Timeout_In_Seconds)
```

Example:

```
ZDB.WaitFor(%Connect1%,$Execute_query,5,EQ,10)
```

TestCase ID	Descriptio	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4	ActionArg_5
Comment	Executes WaitFor atom to wait for a specific condition to be met till the time out elapses								
TDB005				SetContextVar	Connect1				
				SetContextVar	ZUOZ_ZDB_Retry_Interval_Seconds=2				
				ZDB.Connect	\$Username	\$Password	\$DatabaseURL	\$DB_type	Connect1
				ZDB.WaitFor	%Connect1%	\$Mysqlquery	\$Value	\$Condition	\$Timeout
Cleanup				ZDB.Disconnect	%Connect1%				

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
Connection_value	The handle of the database connection which was returned in a context variable, from a previous call to Connect.	Scalar	any string	Input	Required
Select_query	A SQL query, that returns a value to be compared	Scalar	any string	Input	Required
Value_for_Comparison	A value that can be used for comparison. It can be interpreted as numeric	Scalar	numeric	Input	Required
Condition_operator	A condition operator e.g ==, >, >=, !=, <, <=	Scalar	EQ, GT, GEQ, NEQ, LT, LEQ	Input	Required
timeout	Duration in seconds the atom will wait for the condition to be met.	Scalar	A string representing a integer value	Input	Required

10.6 Eval

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Description

Zuoz can access any Database such as ORACLE, MSSQL, MYSQL using specified database credentials. This gives the user direct access to all the core functions of the database. This atom converts any function, supported by the underlying database, into a SQL statement, executes it, and returns the result into a context variable.

This atom is useful for doing string manipulations, and leveraging the built in functionality of databases.

Syntax:

ZDB.Eval (DBHandle, Function, Result)

Example:

ZDB.Eval(%Connect1%, \$Formula, result)

TestCase ID	Descriptio	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4	ActionArg_5
Comment	Returns the number of row changes caused by INSERT, UPDATE or DELETE statements since the current database connection was opened.								
TDB006				SetContextVar	Connect1				
				SetContextVar	Result				
				ZDB.Connect	\$Username	\$Password	\$DatabaseURL	\$DB_type	Connect1
				ZDB.Eval	%Connect1%	\$Formula	Result		
Cleanup				ZDB.Disconnect	%Connect1%				

In the above example, the value of \$Formula is *total_changes()*, which returns the number of row changes caused by INSERT, UPDATE or DELETE statements since the current database connection was opened. The result is stored in the context variable cv_result.

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
Connection_value	The handle of the database connection which was returned in a context variable, from a previous call to Connect.	Scalar	any string	Input	Required
Execute_formula	Any database core function	Scalar	Must be any of the valid for that given database	Input	Required
Result	The result of the execution is stored in this context variable.	Scalar	any string	Output	Required

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11 FTP Atoms

All the Atoms in this section are available in ZFTP In process package file. These atoms are referenced in CHUR spreadsheet as **ZFTP.<atom-name>** because of the mapping done in ZugINI.xml. The following atoms can be used to connect as well as disconnect to a FTP server.

11.1 Connect

Description

Connects to a specific FTP server, validates user credentials, and returns a handle for the connection in a context variable. This handle can subsequently be used to download files, upload files and get the list of file names along with their details from a ftp server. Note that the connection is not thread-safe, i.e. not more than a single FTP operation can be concurrently executed using the same handle.

Example

Syntax:

```
ZFTP.Connect (Domain,Username,Password,FTPHandle)
```

Example:

```
ZFTP.Connect (192.168.0.2,JohnSmith, secret, FTPHandle)
```

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
Comment								
Connects to a FTP server								
TFTP001				SetContextVar	Connect1			
				ZFTP.Connect	\$FTP_SERVER_URL	\$Username	\$Password	Connect1
				print	%Connect1%			

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
Domain	Domain name and port number of the FTP server	Scalar	An IP-V4 address, and optionally a port number, separated with a colon.	Input	Required
Username	Username of the FTP account	Scalar	any string, representing an authorized account	Input	Required
Password	Password of the FTP account	Scalar	any string, representing a valid password associated with the account	Input	Required
FTPHandle	Returns the connection in a context variable	Scalar	Any string representing the name of a context variable.	Output	Required

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11.2 Disconnect

Description

Disconnects or destroys the connection with the FTP server.

Example

Syntax:

```
ZFTP.Disconnect (FTP_Handle)
```

Example:

```
ZFTP.Disconnect (%FTPHandle%)
```

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>
FTP_Handle	The handle of the FTP connection which was returned in a context variable, from a previous call to Connect	Scalar	The string returned from a previous successful call to Connect	Input	Required

Example:

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
Comment	Disconnects from the FTP Server							
TFTP002				SetContextVar	Connect1			
				ZFTP.Connect	\$FTP_SERVER_URL	\$Username	\$Password	Connect1
				ZFTP.Disconnect	%Connect1%			

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11.3 ChangeDir

Description

Changes from current directory to the desired path in the FTP server.

Example

Syntax:

```
ZFTP.ChangeDir (FTP_Handle, PathName)
```

Example:

```
ZDB.Execute (%Connect1%, $Path_name)
```

Here the macro \$Path_name is assumed to be the name of the desired path in the FTP server. e.g.
\$Path_name=[/Users/Public/Documents](#)

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
Comment		Changes the directory in FTP						
TFTP003				SetContextVar	Connect1			
				ZFTP.Connect	\$FTP_SERVER_URL	\$Username	\$Password	Connect1
				ZFTP.ChangeDir	%Connect1%	\$FTP_path		
Cleanup				ZDB.Disconnect	%Connect1%			

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
FTP_Handle	The handle of the FTP connection which was returned in a context variable, from a previous call to Connect	Scalar	The string returned from a previous successful call to Connect	Input	Required
Path_name	To go to specific path relative to the account's root directory in the FTP server.	Scalar	Specified path	Input	Required

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11.4 Upload

Description

Uploads a file to the current working directory of the FTP server.

Example

Syntax:

```
ZFTP.Upload (FTP_Handle,Full_directory_of_the_File,File_name)
```

Example:

```
ZFTP.Upload(%Connect1%,C:\Users\Public\, Demo.xls)
```

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4	ActionArg_5
Comment	Uploads a file to the FTP server								
TFTP004				SetContextVar	Connect1				
				ZFTP.Connect	\$Username	\$Password	\$DatabaseURL	\$DB_type	Connect1
				ZFTP.Upload	%Connect1%	\$Directory_of_upload_file	\$Filename		
Cleanup				ZFTP.Disconnect	%Connect1%				

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
FTP_Handle	The handle of the FTP connection which was returned in a context variable, from a previous call to Connect	Scalar	The string returned from a previous successful call to Connect	Input	Required
Directory_of_the_file	The fully qualified path of file to be uploaded.	Scalar	any string(must end with \)	Input	Required
File_name	The file to be uploaded along with the extension.	Scalar	any string	Input	Required

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11.5 Download

Description

Downloads a file from the current working directory of the FTP server to a given location.

Example

Syntax:

```
ZFTP.Download (FTP_Handle,File_name_to_be_downloaded,
Destination_directory_of_the_File,)
```

Example:

```
ZFTP.Download(%Connect1%,Demo.xls,C:\Users\Public\Downloads)
```

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
Comment	Downloads a file from the FTP server							
TFTP005				SetContextVar	Connect1			
				ZFTP.Connect	\$FTP_SERVER_URL	\$Username	\$Password	Connect1
				ZFTP.ChangeDir	%Connect1%	\$FTP_path		
				ZFTP.Download	%Connect1%	\$Filename	\$Download_Directory_of_file	
Cleanup				ZFTP.Disconnect	%Connect1%			
				UnsetContextVar	Connect1			

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>
FTP_Handle	The handle of the FTP connection which was returned in a context variable, from a previous call to Connect.	Scalar	The string returned from a previous successful call to Connect	Input	Required
File_name	The file to be downloaded along with the extension.	Scalar	any string	Input	Required
Destination_directory_of_the_File	The fully qualified path where the file will be downloaded.	Scalar	any string(must end with \)	Input	Required

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11.6 GetFileList

Description

Retrieves the list of files along with the detailed information of each file from the current directory in the FTP server to a context variable or to an XML file.

Example

Syntax:

```
ZFTP.GetFileList (FTP_Handle,mode,context_var OR file_name)
```

Example:

```
ZFTP.GetFileList(%Connect1%,CV, file_list)
```

The context variable file_list will contain all the list of files in XML format.

```
ZFTP.GetFileList(%Connect1%, FILE, $file_location )
```

The macro \$file_location specifies the fully qualified path along with the XML file name where the list of files in the FTP server is retrieved.

```
$file_location=C:\Users\Public\Filelist.xml
```

TestCase ID	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
Comment	Retrieves the list of files from the current working directory of the FTP server to a file or a context variable.							
TFTP006				SetContextVar	Connect1			
				SetContextVar	filelist			
				ZFTP.Connect	\$FTP_SERVER_URL	\$Username	\$Password	Connect1
				ZFTP.GetFileList	%Connect1%	CV	filelist	
				ZFTP.GetFileList	%Connect1%	FILE	\$File_loc_with_file_name	
				Print	%filelist%			
				UnsetContextVar	filelist			
Cleanup				ZFTP.Disconnect	%Connect1%			
				UnsetContextVar	Connect1			

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional ?
FTP_Handle	The handle of the FTP connection which was returned in a context variable, from a previous call to Connect	Scalar	The string returned from a previous successful call to Connect	Input	Required
mode	Specifies whether the output variables will be context variable or a file.	Scalar	FILE or CV	Input	Required
Contextvar OR File_name	Returns the XML content in that context variable OR Returns the XML content in an XML file.	Scalar	any string OR Fully qualified path along with filename	Input	Required

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The following is an example of XML that might be returned to the Contextvar or to the File_name.

```
<?xml version="1.0"?>
-<root>-
  <file>
    <file-name>Demo.xls</file-name>
    <file-type>xls</file-type>
    <file-size>2781</file-size>
    <user-name>1000</user-name>
    <last-modified>Fri Jul 27 18:12:00 IST 2012</last-modified>
  </file>
</root>
```

In the above xml, the file-size is in bytes. The user-name states the name of the user owning the file. This may be a string representation of the user number.

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12 Mail Server atoms

All the Atoms in this section are available in ZPOP3 In process package file. These atoms are referenced in CHUR spreadsheet as **ZPOP3.<atom-name>** because of the mapping done in ZugINI.xml. The following atoms can connect as well disconnect from the Mail Server. Also the atoms can read a particular mail as well delete the same.

12.1 Connect

Description

Connects to a specific POP3 Mail server (with an optional port number), validates user credentials, and returns a handle for the connection in a context variable. This handle must subsequently be used for other email operations .

Example

Syntax:

```
ZPOP3.Connect (Contextvariablename, Hostname, Username, Password)
```

Example:

```
ZPOP3.Connect (Connect,pop.googlemail.com:995,ericviewer, eric6789)
```

TestCase	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
Init				SetContextVar	Connect			
comment	Verifying connection to a POP3 Mail server							
TPOP001				ZPOP3.connect	Connect	\$Hostname	\$Username	\$Password
				Print	%Connect%			

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
Contextvariable name	Name of a context variable where the handle will be returned	Scalar	Any string representing the name of a context variable.	Output	Required
Hostname	Server name along with the port number ex- pop.googlemail.com:995	Scalar	Any string representing the hostname, and the POP3 port.	Input	Required
Username	Username of the mail account	Scalar	any string	Input	Required
Password	Password of the mail account	Scalar	any string	Input	Required

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12.2 Disconnect

Description

Disconnects or destroys the connection, represented by the handle, with the POP3 Mail server.

Example

Syntax:

```
ZPOP3.Disconnect (EmailHandle)
```

Example:

```
ZPOP3.Disconnect (%Connect%)
```

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
EmailHandle	The handle of the POP3 connection which was returned in a context variable, from a previous call to Connect.	Scalar	The string returned from a previous successful call to Connect	Input	Required

Example:

TestCase	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
Init				SetContextVar	Connect			
comment	Verifies the disconnection from the server							
TPOP002				ZPOP3.connect	Connect	\$Hostname	\$Username	\$Password
				ZPOP3.disconnect	%Connect%			

12.3 GetNewMsgCount

Description

Returns the count of mails or messages of the specified mail account in the mail server

Example

Syntax:

```
ZPOP3.GetNewMsgCount (EmailHandle, Email_Handle)
```

Example:

```
ZPOP3.GetNewMsgCount (%Connect%, No_of_messages_in_the_server)
```

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Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional ?
EmailHandle	The handle of the POP3 connection which was returned in a context variable, from a previous call to Connect.	Scalar	The string returned from a previous successful call to Connect	Input	Required
Contextvariable name	To return a textual representation of a numeric value which states the no. of mails currently in the server	Scalar	any string, representing the name of a context variable	Output	Required

Example:

TestCase	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
Init				SetContextVar	Connect			
comment	Retrieves the number of messages in the server for a given user							
TPOP003				SetContextVar	No_of_msgs			
				ZPOP3.connect	Connect	\$Hostname	\$Username	\$Password
				ZPOP3.GetNewMsgCount	%Connect%	No_of_msgs		
				Print	%No_of_msgs%			

12.4 GetMessage

Description

Fetches all the attributes such as From, Subject, Date, MIME-Version and Message body of a mail for a given msg_index.

Zuoz Context-Variables for GetMessage atom

Zuoz defines and maintains automatic global context variables for the Execute Atom. These variables may be used by the test case designer for developing test cases.

Name	Purpose	Comments	Output
ZUOZ_POP3_From	Returns the name of the Sender of the mail	It returns the email address along with the name	A string.
ZUOZ_POP3_Subject	Returns the subject of the mail	If blank, it returns nothing .	A string.
ZUOZ_POP3_Date	Returns the Date when the mail was received		A string.
ZUOZ_POP3_MIME-Version	States the version of MIME		A string.
ZUOZ_POP3_MSG-BODY	Returns the body of the mail message	Contains the body of the mail	

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Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Example

Syntax:

```
ZPOP3.GetMessage (EmailHandle,Msg_index)
```

Example:

```
ZPOP3.GetMessage (%connect%,-1)
```

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
EmailHandle	The handle of the POP3 connection which was returned in a context variable, from a previous call to Connect.	Scalar	The string returned from a previous successful call to Connect	Input	Required
Msg_index	Specifies a particular message no. in the mail server	Scalar	1: newest message -1: oldest message n: n th newest message where n is any number.	Input	Required

Example:

TestCase	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
Init				SetContextVar	Connect			
comment	Retrieves all the information for a particular mail							
TPOP004				ZPOP3.connect	Connect	\$Hostname	\$Username	\$Password
				ZPOP3.getMessage	%Connect%	-1		
				Print	The mail sent by	%From%		
				Print	The date when the mail was sent	%Date%		
				Print	Subject of the mail	%Subject%		
				Print	Mime-Version is	%Mime-Version%		
				Print	Content of the mail:	%MSG-BODY%		

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12.5 GetMessageFrom

Description

Fetches all the message attributes such as From, Subject, Date, MIME-Version and Message body of the mail for a given msg_index for a given Sender. In simple words, it fetches the **nth** message of a particular sender or a particular date or a particular subject.

Zuoz Context-Variables for GetMessageFrom atom

The context variables for GetMessageFrom atom are the same as listed under **GetMessage** atom.

Example

Syntax:

```
ZPOP3.GetMessageFrom(EmailHandle,Msg_index, Field_name,Field_value)
```

Example:

```
ZPOP3.GetMessage(%connect%,1, Subject, test mail)
```

TestCase	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
Init				SetContextVar	Connect			
comment	Retrieves all the information for a particular mail for a given field							
TPOP005				ZPOP3.connect	Connect	\$Hostname	\$Username	\$Password
				ZPOP3.getMessageFrom	%Connect%	2	Subject	test mail
				Print	The mail sent by	%From%		
				Print	The date when the mail was sent	%Date%		
				Print	Subject of the mail	%Subject%		
				Print	MIME-Version is	%MIME-Version%		
				Print	Content of the mail:	%MSG-BODY%		

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
EmailHandle	The handle of the POP3 connection which was returned in a context variable, from a previous call to Connect.	Scalar	The string returned from a previous successful call to Connect	Input	Required
Msg_index	Specifies a particular message from a sender no. in the mail server	Scalar	1: newest message -1: oldest message n : nth newest message where n is any number.	Input	Required
Field_name	The particular field of the mail	Scalar	Subject or Date or From	Input	Required
Field_value	The value of the above field	Scalar	Any string	Input	Required

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Example:

TestCase	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
Init				SetContextVar	Connect			
comment	Retrieves all the information for a particular mail for a given field							
TPOP005				ZPOP3.connect	Connect	\$Hostname	\$Username	\$Password
				ZPOP3.getMessageFrom	%Connect%	2	Subject	test mail
				Print	The mail sent by	%From%		
				Print	The date when the mail was sent	%Date%		
				Print	Subject of the mail	%Subject%		
				Print	MIME-Version is	%MIME-Version%		
				Print	Content of the mail:	%MSG-BODY%		

12.6 DeleteMsg

Description

Deletes a particular mail for a given msg_index from the Mail Server.

Example

Syntax:

```
ZPOP3.DeleteMsg (EmailHandle,Msg_index)
```

Example:

```
ZPOP3.DeleteMsg (%connect%, 3)
```

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direct ion	Optional?
EmailHandle	The handle of the POP3 connection which was returned in a context variable, from a previous call to Connect.	Scalar	The string returned from a previous successful call to Connect	Input	Required
Msg_index	Specifies a particular message no. in the mail server	Scalar	1: newest message -1: oldest message n: n th newest message where n is any number.	Input	Required

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Example:

TestCase	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
Init				SetContextVar	Connect			
TPOP006				ZPOP3.connect	Connect	\$Hostname	\$Username	\$Password
				ZPOP3.DeleteMsg	%Connect%	3		
Cleanup				ZPOP3.disconnect	%Connect%			
				UnsetContextVar	Connect			

12.7 DeleteLastMsg

Description

Deletes the last message that was read from the POP3 Mail server.

Example

Syntax:

ZPOP3.DeleteLastMsg (EmailHandle)

Example:

ZPOP3.DeleteLastMsg (%Connect%)

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

<u>Parameter Name</u>	<u>Purpose</u>	<u>Type</u>	<u>Valid Values</u>	<u>Direction</u>	<u>Optional?</u>
EmailHandle	The handle of the POP3 connection which was returned in a context variable, from a previous call to Connect.	Scalar	The string returned from a previous successful call to Connect	Input	Required

Example:

TestCase	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
Init				SetContextVar	Connect			
comment	Deletes a particular message							
TPOP007				ZPOP3.connect	Connect	\$Hostname	\$Username	\$Password
				ZPOP3.DeleteLastMsg	%Connect%			
Cleanup				ZPOP3.disconnect	%Connect%			
				UnsetContextVar	Connect			

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12.8 PurgeAllMsgs

Description

Deletes all the message matching the particular key-value pair from the POP3 Mail server.

Zuoz Environment Variable for PurgeAllMsg atom

The environment variable for PurgeAllMsgs atom is [Deleted-Msg-Count](#). It states the number of messages deleted from the server.

Example

Syntax:

```
ZPOP3.PurgeAllMsgs (EmailHandle, MatchOptions)
```

Example:

```
ZPOP3.PurgeAllMsgs (%Connect%, from=Eric Viewer)
```

Exception:

Failure: AtomExecutionException message logged in log error file and the error message shown in console.

Parameter Name	Purpose	Type	Valid Values	Direction	Optional?
EmailHandle	The handle of the POP3 connection which was returned in a context variable, from a previous call to Connect.	Scalar	The string returned from a previous successful call to Connect	Input	Required
MatchOptions	A key value pair specifying the value of a specific field of the mail.	Scalar	Field_name= Field_values	Input	Required

Example:

TestCase	Description	property	Step	Action	ActionArg_1	ActionArg_2	ActionArg_3	ActionArg_4
Init				SetContextVar	Connect			
comment	Deletes all the messages for a given key-value pair							
TPOP008				ZPOP3.connect	Connect	\$Hostname	\$Username	\$Password
				ZPOP3.PurgeAllMsgs	%Connect%	From=ericviewer@gmail.com		
				Print	%Deleted-Msg-Count%			
Cleanup				ZPOP3.disconnect	%Connect%			
				UnsetContextVar	Connect			