

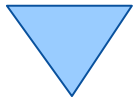


A TESTRUNNER APPLICATION FOR ooREXXUNIT

2007 International Rexx Symposium
Tampa, Florida, U.S.A. (April 2007)

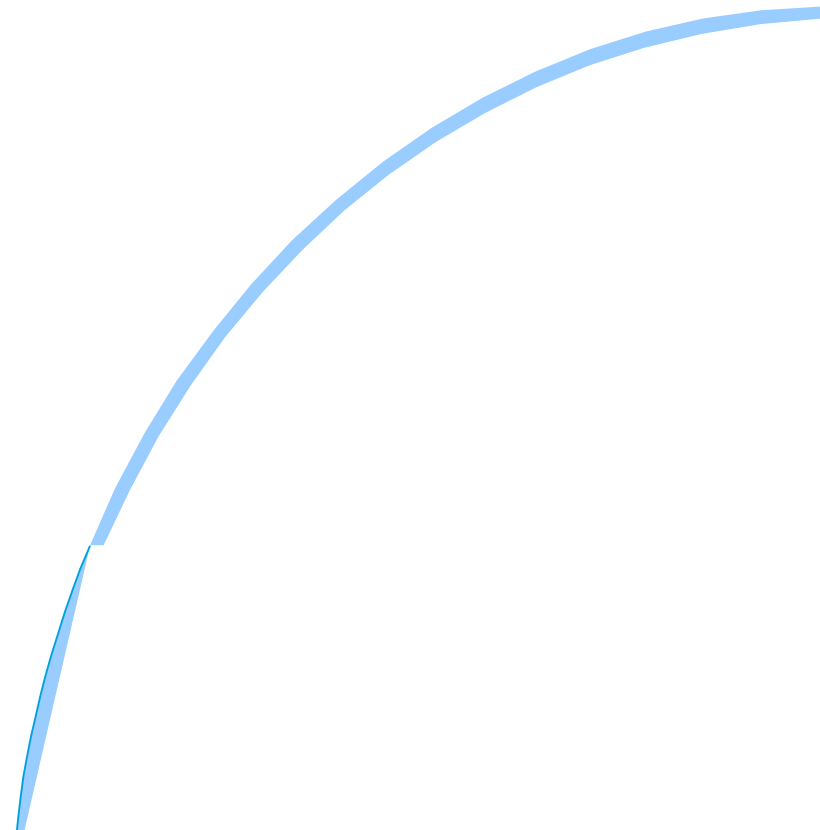
Rony G. Flatscher (Rony.Flatscher@wu-wien.ac.at)

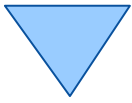
Wirtschaftsuniversität Wien, Austria (<http://www.wu-wien.ac.at>)



Agenda

- ooRexxUnit
- Architecture of TeRA
 - Configuration
 - Examples
- Roundup and Outlook





ooRexxUnit

- Modelled after JUnit
- Allows creating, invoking and managing arbitrary testCases (= testmethods) in testUnit programs
 - Test cases for routines and methods
 - Specification and regression testing
- Creating and collecting ooRexx testUnit programs allows testing ooRexx itself
 - With the help of the community we might establish a comprehensive set of tests over time!

ooRexxUnit, an Example (Snippet)

Testing of BIFs: ABBREV, ABS

```
/* ... cut ... */  
mandatoryTestMethods=.list~new -- no mandatory tests for this testCase class  
testUnitList=.list~of( .array~of( .someTestClass.testUnit, mandatoryTestMethods) )
```

```
-----  
-- ==> the following code needs not to be individualized <===  
/* ... cut ... */
```

```
::requires ooRexxUnit.cls -- load the ooRexxUnit classes
```

```
::class "someTestClass.testUnit" subclass TestCase public
```

```
-- test the ABBREV BIF, using examples from the documentation  
::method "test_ABBREV"  
self~assertTrue( "subTest1", ABBREV('Print', "Pri") )  
self~assertFalse("subTest2", ABBREV("PRINT", "Pri") )  
self~assertFalse("subTest3", ABBREV("PRINT", "PRI", 4) )  
self~assertFalse("subTest4", ABBREV("PRINT", "PRY") )  
self~assertTrue( "subTest5", ABBREV("PRINT", "") )  
self~assertFalse("subTest6", ABBREV("PRINT", "", 1) )
```

```
-- test the ABS BIF, using examples from the documentation  
::method "testABS"  
self~assertEquals("subTest1", 12.3 , ABS( 12.3) )  
self~assertEquals("subTest1b", 12.3 , ABS( '12.3' ) )  
self~assertEquals("subTest2", 0.307, ABS( ' -0.307' ) )  
self~assertEquals("subTest3", 0 , ABS( ' -0' ) )  
self~assertEquals("subTest4", 0 , ABS( ' +0' ) )  
self~assertEquals("subTest5", 0 , ABS( ' - 0 ' ) )  
self~assertEquals("subTest6", 0 , ABS( ' + 0 ' ) )
```

ooRexxUnit, an Example (Snippet)

OO Style of Testing ABBREV, ABS

```
/* ... cut ... */
mandatoryTestMethods=.list~new -- no mandatory tests for this testCase class
testUnitList=.list~of( .array~of( .someTestClass.testUnit, mandatoryTestMethods) )
```

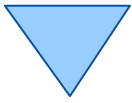
```
-----
-- ==> the following code needs not to be individualized <===
/* ... cut ... */
```

```
::requires ooRexxUnit.cls -- load the ooRexxUnit classes
```

```
::class "someTestClass.testUnit" subclass TestCase public
```

```
-- test the ABBREV method, using examples from the documentation
::method "test_ABBREV"
self~assertTrue("subTest1", 'Print'~ABBREV("Pri") )
self~assertFalse("subTest2", "PRINT"~ABBREV("Pri") )
self~assertFalse("subTest3", "PRINT"~ABBREV("PRI", 4) )
self~assertFalse("subTest4", "PRINT"~ABBREV("PRY") )
self~assertTrue("subTest5", "PRINT"~ABBREV("") )
self~assertFalse("subTest6", "PRINT"~ABBREV("", 1) )
```

```
-- test the ABS method, using examples from the documentation
::method "testABS"
self~assertEquals("subTest1", 12.3 , 12.3~ABS )
self~assertEquals("subTest1b", 12.3 , '12.3'~ABS )
self~assertEquals("subTest2", 0.307, ' -0.307'~ABS )
self~assertEquals("subTest3", 0 , ' -0'~ABS )
self~assertEquals("subTest4", 0 , ' +0'~ABS )
self~assertEquals("subTest5", 0 , ' - 0 '~ABS )
self~assertEquals("subTest6", 0 , ' + 0 '~ABS )
```



ooRexxUnit

- Over the time numerous testUnits
- testUnits spread out
 - different directories
 - different partitions
 - different network shares
- Code changes with the need to run testUnits
- testUnit results compared by
 - run (earlier runs with later ones)
 - by authors

▼ TeRA, 1

- Student's work (Rainer Kegel)
 - Learned programming
 - Learned unit testing with ooRexxUnit
 - MutableBuffer testUnit
 - Learned DHTML
 - Learned CSS
 - Learned XML
 - Learned XSLT
- License same as ooRexx: CPL

▼ TeRA, 2

- Configuring TeRA
 - "configure_TeRa.rex"
 - (re-)creates "configure_TeRA.hta")
 - Allows defining and maintaining directories
 - Starting point for searching test units, including subdirectories
 - Configuration is stored in "config.html"
 - 'Can be deleted
 - GUI realized as HTA
 - Microsoft "Hypertext Application"



Configure TeRA



Enter the path to the test units' root directory (required)

D:\Programme\TeRA

add

Stated paths

D:\Programme\TeRA

delete

Please close the window after setting the paths and restart 'TeRA.rex'

▼ TeRA, 3

- Running TeRA
 - "TeRa.rex"
 - (re-)creates "TeRA.hta")
 - Makes sure that subdirectories are created
 - Makes sure that Rexx programs are copied into it
 - Subdirectory "logfiles" contains all created logfiles
 - GUI realized as HTA
 - Main program for using TeRA
 - Represents test unit file names as a hierarchy
 - Flags test units that had problems (errors, failures)
 - Allows picking test units, runs them and creates XML



- all testunits
- ooRexx
- Base
- String

- all String Tests
- OK

username:

comment:

D:\Programme\TeRA\logfiles\log_20070430_17.28.00_rony.xml - Microsoft Internet Ex...

Datei Bearbeiten Ansicht Favoriten Extras ?

Zurück Suchen Favoriten

Adresse D:\Programme\TeRA\logfiles\log_20070430_17.28.00_rony.xml Wechseln zu Links

USERNAME: rony

COMMENT: Run should be o.k.

COUNTS:

TESTRUNS:	1
ERRORCOUNTS:	0
FAILURECOUNTS:	0
RUNCOUNTS:	4

Testsuite started: 17:28:00.295000

Testsuite started: 20070430

ooRexx.Base.String.OK.testUnit

Start: 20070430 17:28:00.295000

TESTABS

ooRexx.Base.String.OK.testUnit

START: 20070430 17:28:00.295000

END: 20070430 17:28:00.295000

OKAY

TEST_ABBREV

ooRexx.Base.String.OK.testUnit

START: 20070430 17:28:00.295000

END: 20070430 17:28:00.295000

OKAY

End: 20070430 17:28:00.295000

Time testsuite ended: 17:28:00.295000

Date testsuite ended: 20070430

hide okay hide failure hide error

Fertig Arbeitsplatz

D:\Programme\TeRA\logfiles\log_20070430_17.29.46_rony.xml - Microsoft Internet Ex...

Datei Bearbeiten Ansicht Favoriten Extras ?

Zurück Suchen Favoriten

Adresse D:\Programme\TeRA\logfiles\log_20070430_17.29.46_rony.xml Wechseln zu Links

ooRexx.Base.String.OK.testUnit
Start: 20070430 17:29:46.688000

TESTABS ooRexx.Base.String.OK.testUnit

START: 20070430 17:29:46.688000
END: 20070430 17:29:46.688000
OKAY

TEST_ABBREV ooRexx.Base.String.OK.testUnit

START: 20070430 17:29:46.688000
END: 20070430 17:29:46.688000

FAILURE

idx=[ADDITIONAL] value: [an Array]
[@assertFailure assertTrue: expected=[1], actual=[0], subTest6]
idx=[CODE] value: [93.964]
idx=[CONDITION] value: [SYNTAX]
idx=[DESCRIPTION] value: [ooRexxUnit.cls - source of syntax exception 'FAIL' method invocation in class 'ASSERT'.]
idx=[ERRORTXT] value: [Incorrect call to method]
idx=[INSTRUCTION] value: [SIGNAL]
idx=[MESSAGE] value: [Application error: @assertFailure assertTrue: expected=[1], actual=[0], subTest6]
idx=[POSITION] value: [482]
idx=[PROGRAM] value: [D:\Programme\TeRA\OOOREXXUNIT.CLS]
idx=[PROPAGATED] value: [1]
idx=[RC] value: [93]
idx=[TRACEBACK] value: [a List]
[482 *.* RAISE syntax 93.964 array (msg) description ("ooRexxUnit.cls - source of syntax exception 'FAIL' method invocation in class 'ASSERT'.")]
[472 *.* self~fail(sTmp || arg(1)) -- fail with msg]
[137 *.* self~assertTrue("subTest6", .false, ABBREV("PRINT", "", 1)) -- <== not .true !]

End: 20070430 17:29:46.688000
Time testsuite ended: 17:29:46.688000
Date testsuite ended: 20070430

hide okay hide failure hide error

Fertig Arbeitsplatz

D:\Programme\TeRA\TeRA_files\lastlog.xml - Microsoft Internet Explorer

Datei Bearbeiten Ansicht Favoriten Extras ?

Zurück Suchen Favoriten Wechseln zu Links

Adresse file:///D:/Programme/TeRA/TeRA_files/lastlog.xml#ooRexx.Bas

Testsuite started: 20070430

ooRexx.Base.String.OK.testUnit
Start: 20070430 17:31:06.432000

TESTABS

ooRexx.Base.String.OK.testUnit

START: 20070430 17:31:06.432000
END: 20070430 17:31:06.432000

ERROR

idx=[ADDITIONAL]	value: [an Array]
[ABS]	
[+ 0A]	
idx=[CODE]	value: [93.943]
idx=[CONDITION]	value: [SYNTAX]
idx=[DESCRIPTION]	value: []
idx=[ERRORTXT]	value: [Incorrect call to method]
idx=[INSTRUCTION]	value: [SIGNAL]
idx=[MESSAGE]	value: [ABS method target must be a number; found " + 0A"]
idx=[POSITION]	value: [147]
idx=[PROGRAM]	value: [D:\Programme\TeRA\rgf.testUnits\ooRexx.Base.String.OK.testUnit]
idx=[PROPAGATED]	value: [1]
idx=[RC]	value: [93]
idx=[TRACEBACK]	value: [a List]

[147 *.* self~assertEquals("subTest6" , 0 , ABS(' + 0A')) -- <===]

TEST_ABBREV

ooRexx.Base.String.OK.testUnit

START: 20070430 17:31:06.442000
END: 20070430 17:31:06.442000

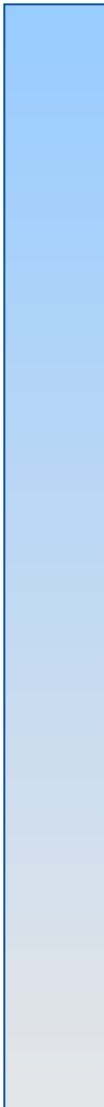
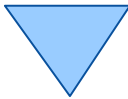
OKAY

End: 20070430 17:31:06.442000

Time testsuite ended: 17:31:06.442000
Date testsuite ended: 20070430

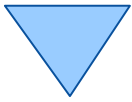
hide okay hide failure hide error

Fertig Arbeitsplatz



▼ TeRA, 4

- Comparing logs
 - "TeRa-compareLogs.rex"
 - (re-)creates "TeRA-compareLogs.hta"
 - Makes sure that subdirectories are created
 - Makes sure that Rexx programs are copied into it
 - GUI realized as HTA
 - Allows browsing (old) log files
 - Allows comparing two log files
 - Allows to show/hide failures and errors



TeRA - compare Tests



COMPARE LOG FILES

- log_20070430_21.11.13_rony.xml
- log_20070430_21.12.46_noUserNamedYet.xml
- log_20070430_21.11.13_rony.xml
- log_20070430_21.12.46_noUserNamedYet.xml

uncheck

descending

compare logs

show logfile

CHANGES FOUND

log_20070430_21.11.13_rony

log_20070430_21.12.46_noUserNamedYet

<pre>ooRexx.Base.String.OK.testUnit/TEST_ABBREV failure idx=[ADDITIONAL] [@assertFailure assertTrue: expected=[1], actual=[0]. subTest6] idx=[CODE] idx=[CONDITION] idx=[DESCRIPTION] idx=[ERRORTEXT] idx=[INSTRUCTION] idx=[MESSAGE] idx=[POSITION] idx=[PROGRAM] idx=[PROPAGATED] idx=[RC] idx=[TRACEBACK] [482 *.* RAISE syntax 93.964 array (msg) description ("ooRexxUnit.cls - source of syntax exception 'FAIL' method invocation in class 'ASSERT'.") [472 *.* self~fail(sTmp arg(1)) -- fail with msg] [137 *.* self~assertTrue("subTest6", .false, ABBREV("PRINT", "", 1)) -- <== not true !]</pre>	<pre>ooRexx.Base.String.OK.testUnit/TEST_ABBREV failure idx=[ADDITIONAL] value: [an Array] [@assertFailure assertTrue: expected=[1], actual=[0]. subTest6] idx=[CODE] value: [93.964] idx=[CONDITION] value: [SYNTAX] idx=[DESCRIPTION] value: [ooRexxUnit.cls - source of syntax exception 'FAIL' method invocation in class 'ASSERT'.] idx=[ERRORTEXT] value: [Incorrect call to method] idx=[INSTRUCTION] value: [SIGNAL] idx=[MESSAGE] value: [Application error: @assertFailure assertTrue: expected=[1], actual=[0]. subTest6] idx=[POSITION] value: [482] idx=[PROGRAM] value: [D:\Programme\TeRA\OOREXXUNIT.CLS] idx=[PROPAGATED] value: [1] idx=[RC] value: [93] idx=[TRACEBACK] value: [a List] [482 *.* RAISE syntax 93.964 array (msg) description ("ooRexxUnit.cls - source of syntax exception 'FAIL' method invocation in class 'ASSERT'.") [472 *.* self~fail(sTmp arg(1)) -- fail with msg] [137 *.* self~assertTrue("subTest6", .false, ABBREV("PRINT", "", 1)) -- <== not true !]</pre>
--	---


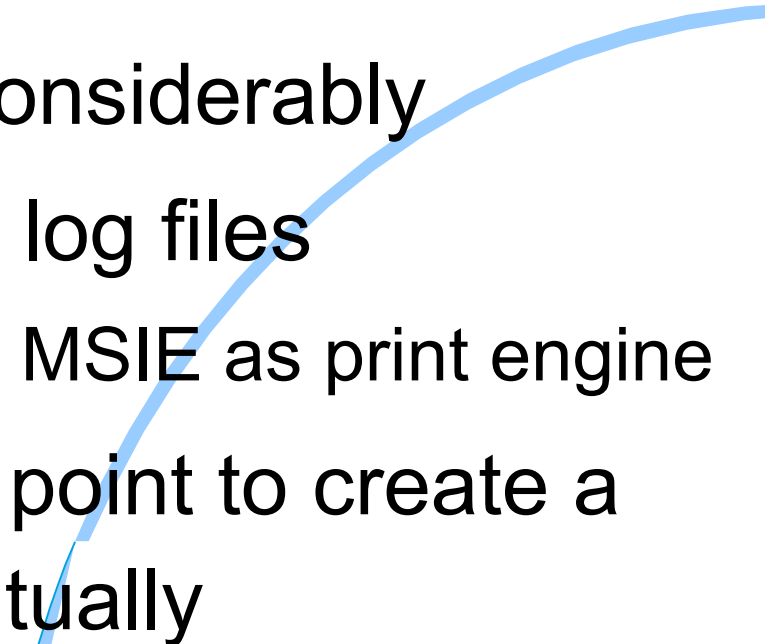
no changes found no changes found

log_20070430_21.12.46_noUserNamedYet

ooRexx.Base.String.OK.testUnit/TESTABS
ooRexx.Base.String.OK.testUnit/TEST_ABBREV



Roundup and Outlook

- 
- A TestRunner application for ooRexxUnit
 - The GUI part needs Microsoft Internet Explorer
 - ooRexx as a macro language embedded in HTML and XML
 - Eases running test units considerably
 - Allows comparing any two log files
 - Can be nicely printed using MSIE as print engine
 - Can be used as a starting point to create a portable GUI version eventually
- 



URLs

- http://wi.wu-wien.ac.at/rgf/diplomarbeiten/2007_Kegel_R/TeRA.pdf
 - "TeRA" Master Thesis
- http://wi.wu-wien.ac.at/rgf/diplomarbeiten/2007_Kegel_R/
 - Directory listing
- <http://wi.wu-wien.ac.at/rgf/rexx/orx18/TeRA/>
 - This presentation as of 2007-04-30
 - Updated set of TeRA programs as of 2007-04-30