



Taking Testing Mountain (By Strategy)

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Tests are good...

Tests are good...
...and more tests are better

Tests are good...
BUT
...and more tests are better

We have a problem

[add description](#)

 No changes.

 Triggered by Gerrit: <https://gerrit.libreoffice.org/60160>

 Started by user [Stephan Bergmann](#)

 Started by upstream project [Gerrit for master](#) build number [13908](#)
originally caused by:

- Triggered by Gerrit: <https://gerrit.libreoffice.org/60160>

S	R	Job	Build #	Duration	Console
		<i>buildstep</i>			
		gerrit_linux_clang_dbgutil	build #14527 (31 min)		
		gerrit_linux_gcc_release	build #14307 (21 min)		
		gerrit_mac	build #14598 (28 min)		
		gerrit_windows	build #15399 (1 hr 13 min)		
		gerrit_windows	build #15410 (1 hr 28 min)		
		gerrit_windows	build #15420 (1 hr 17 min)		
		gerrit_windows	build #15425 (1 hr 40 min)		

Page generated: Sep 8, 2018 9:13:16 AM CEST [REST API](#) [Jenkins ver. 2.138](#)

So lets go fix those failures

We have a problem

```
[CUT] filter_tiff_test
Testing file:///data/lo/core/filter/qa/cppunit/data/tiff/pass/CVE-2005-1544-1.tiff:
Tested file:///data/lo/core/filter/qa/cppunit/data/tiff/pass/CVE-2005-1544-1.tiff:
Fail (1ms)
/data/lo/core/unotest/source/cpp/filters-test.cxx:145:TiffFilterTest::testCVEs
equality assertion failed
- Expected: 1
- Actual   : 0
- file:///data/lo/core/filter/qa/cppunit/data/tiff/pass/CVE-2005-1544-1.tiff

TiffFilterTest::testCVEs finished in: 1ms
filters-test.cxx:145:Assertion
Test name: TiffFilterTest::testCVEs
equality assertion failed
- Expected: 1
- Actual   : 0
- file:///data/lo/core/filter/qa/cppunit/data/tiff/pass/CVE-2005-1544-1.tiff

Failures !!!
```

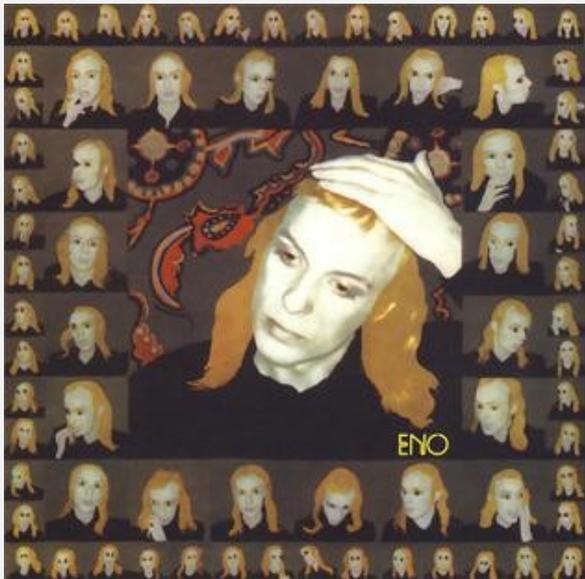
We have a problem

```
bool bRes;
if (!bExport)
    bRes = load(rFilter, realUrl, rUserData, nFilterFlags,
               nClipboardID, nFilterVersion);
else
    bRes = save(rFilter, realUrl, rUserData, nFilterFlags,
               nClipboardID, nFilterVersion);
sal_uInt32 nEndTime = osl_getGlobalTimer();

if (bEncrypted)
    CPPUNIT_ASSERT_EQUAL(osl::FileBase::E_None, osl::File::remove(sTmpFile));

fprintf(stderr, "Tested %s: %s (%" SAL_PRIuUINT32 "ms)\n",
        aRes.getStr(), bRes?"Pass":"Fail", nEndTime-nStartTime);
if (nExpected == test::indeterminate)
    continue;
filterStatus nResult = bRes ? test::pass : test::fail;
CPPUNIT_ASSERT_EQUAL_MESSAGE(aRes.getStr(), nExpected, nResult);
```

The Department of Cheesy Talk Titles



By Source, Fair use, <https://en.wikipedia.org/w/index.php?curid=18764822>

Oblique Strategies:

Over one hundred worthwhile dilemmas

- Do something boring
- Look closely at the most embarrassing details and amplify them
- Don't be afraid of things because they're easy to do
- Honor thy error as a hidden intention
- Don't break the silence
- Humanise something free of error
- Is it finished?
- Mute and continue
- What mistakes did you make last time?
- Shut the door and listen from outside

Step 0: Write failing tests

- Test Driven Development
- Makes sure test code is actually executed
 - No forgotten `CPPUNIT_TEST(myTest)`
- Helps make sure failing test outputs useful information
 - If you care for that from the outset

Step 1: Understand what you test

```
Subject: Test File: sc/qa/unit/data/functions/fods/chiinv.fods:
        fails with Assertion
To: libreoffice@lists.freedesktop.org
Date: Wed, 31 Aug 2016 19:30:35 +0100
```

[...]

Any suggestions on how I can resolve this problem will be appreciated.

The error is

```
> Testing
> file:///home/master/master/sc/qa/unit/data/functions/fods/chidist.fods:
> Tested
> file:///home/master/master/sc/qa/unit/data/functions/fods/chidist.fods:
> Pass (491ms)
> Testing
> file:///home/master/master/sc/qa/unit/data/functions/fods/chiinv.fods:
> [...]master/sc/qa/unit/functions_test.cxx:80:FunctionsTest::testFormulasFODS
> double equality assertion failed
> - Expected: 1
> - Actual   : 0
> - Delta    : 1e-14
```

Step 1: Understand what you test

```
Subject: Re: Test File: sc/qa/unit/data/functions/fods/chiinv.fods:
        fails with Assertion
To: libreoffice@lists.freedesktop.org
Date: Fri, 16 Sep 2016 12:05:19 +0200
```

[...]

Turns out, the relevant GCC switches are

```
-mfpmath=sse -msse2
```

```
-mfpmath=sse (instead of the x86-32 default of -mfpmath=387)
prevents usage of the extended 80-bit precision for temporary
results. (Which caused e.g. the subtraction in
ScChiDistFunction::GetValue, sc/source/core/tool/interpr3.cxx, to
produce results different from IEEE double, causing the computation
of CHIINV(0.9999999999999999, 1.0000000000000000E+001) in
sc/qa/unit/data/functions/fods/chiinv.fods to produce unexpected
results.) <https://gcc.gnu.org/onlinedocs/gcc-6.2.0/gcc/x86-Options.html#x86-Options> also claims: "The resulting code should be
considerably faster [compared to -mfpmath=387] in the majority of
cases and avoid the numerical instability problems of 387 code
[...]"
```

Step 2: Wet Concrete Test Code

- PragProg DRY Principle: “Don’t Repeat Yourself”
- But test code is different from code under test:
 - It shall be obvious *what* failed from *where* it failed
 - Consider all you have is: test-file+line/expected/actual
 - Test code shall be easy to debug
- Be redundant, spell it out: don’t be DRY, be **wet!**
- Avoid abstractions: be **concrete!**
- Consider CPPUNIT_ASSERT_MESSAGE a red flag

Step 3: Deterministic test code

```
* mst___ finds that debugging a  
randomized test crash isn't entirely  
straightforward...
```

Step 4: Deterministic environment

```
commit 5eb9dd46e9b3ba18afd4f6dac580c4b91e715f43
Date:   Thu Sep 13 14:49:48 2018 +0200
```

More temp copies of test docs in Python/UI Tests

[...]

I had cancelled (ctrl-c) a `make check` midway, when it happened to be in the middle of `UITest_calc_tests2` and **left behind a `sc/qa/uitest/calc_tests/data/.~lock.stableSorting.ods` lock file** (which records, among other things, the host name). I then dropped off a VPN, which caused the host name as seen by L0 to switch from "alpha" to "alpha.fritz.box", then re-started the build as `make check screenshot` (which was the thing I'd originally intended, but forgotten the screenshot target). **The new build hung during `UITest_calc_tests2`'s `sc/qa/uitest/calc_tests2/stableSorting.py`, as loading `sc/qa/uitest/calc_tests/data/stableSorting.ods` found the lock file with non-matching host name in `SfxMedium::LockOrigFileOnDemand`, and hung in `SfxMedium::ShowLockedDocumentDialog` -> `UIInteractionHandler::handle` -> (switch to main thread...) -> `UIInteractionHelper::handleLockedDocumentRequest` -> ... -> `Dialog::Execute`, which just blocks in `svp` mode (which, unlike `--headless`, doesn't cause `Application::IsDialogCancelEnabled`).**

Step 5: Feel the pain

- Subscribe to libreoffice-ci@global.libreoffice.org
 - All failing builds from the Jenkins bots
 - Most failures are test failures
 - Most failure logs have little useful information
- Score hero points by fixing some long-standing bug that plagues the bots



“Do the washing up”

–*Eno/Schmidt, Oblique Strategies*