

USEABILITY AND RELIABILITY

WHAT DO OUR USER INTERFACES SAY ABOUT
MANTID?

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ABOUT THE MANTID PROJECT

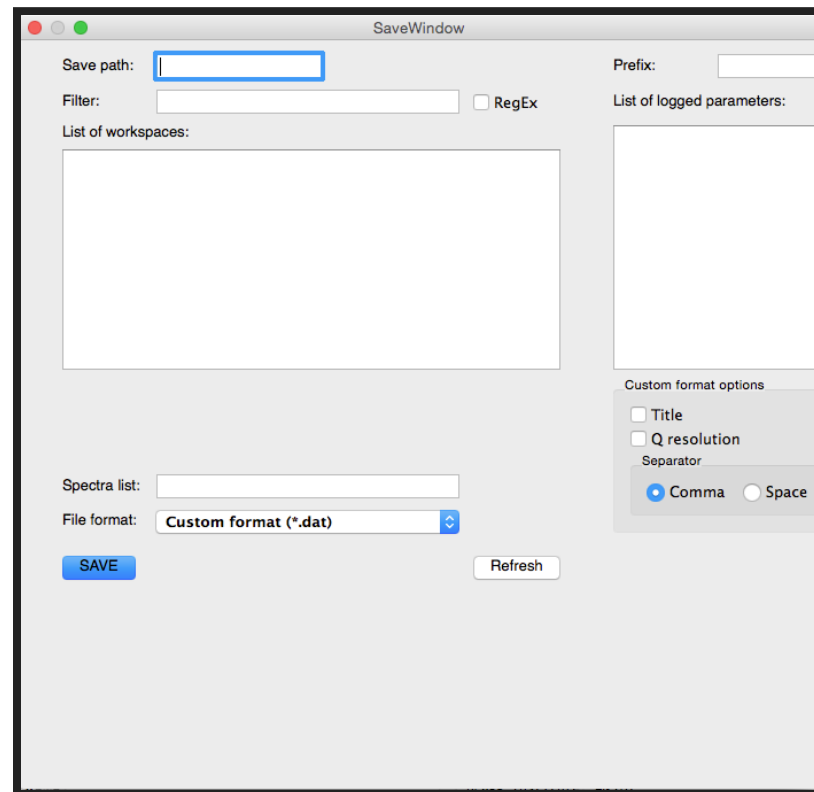
- Unique example of cross-facility, international collaboration in science and engineering
- 62 Developers contributed over the last 12 months
- Zero compiler warnings on all target platforms
- Over 9×10^3 unit tests, over 3×10^2 system tests, over 1×10^2 performance tests
- Highly Commended at UK IT Awards 2015



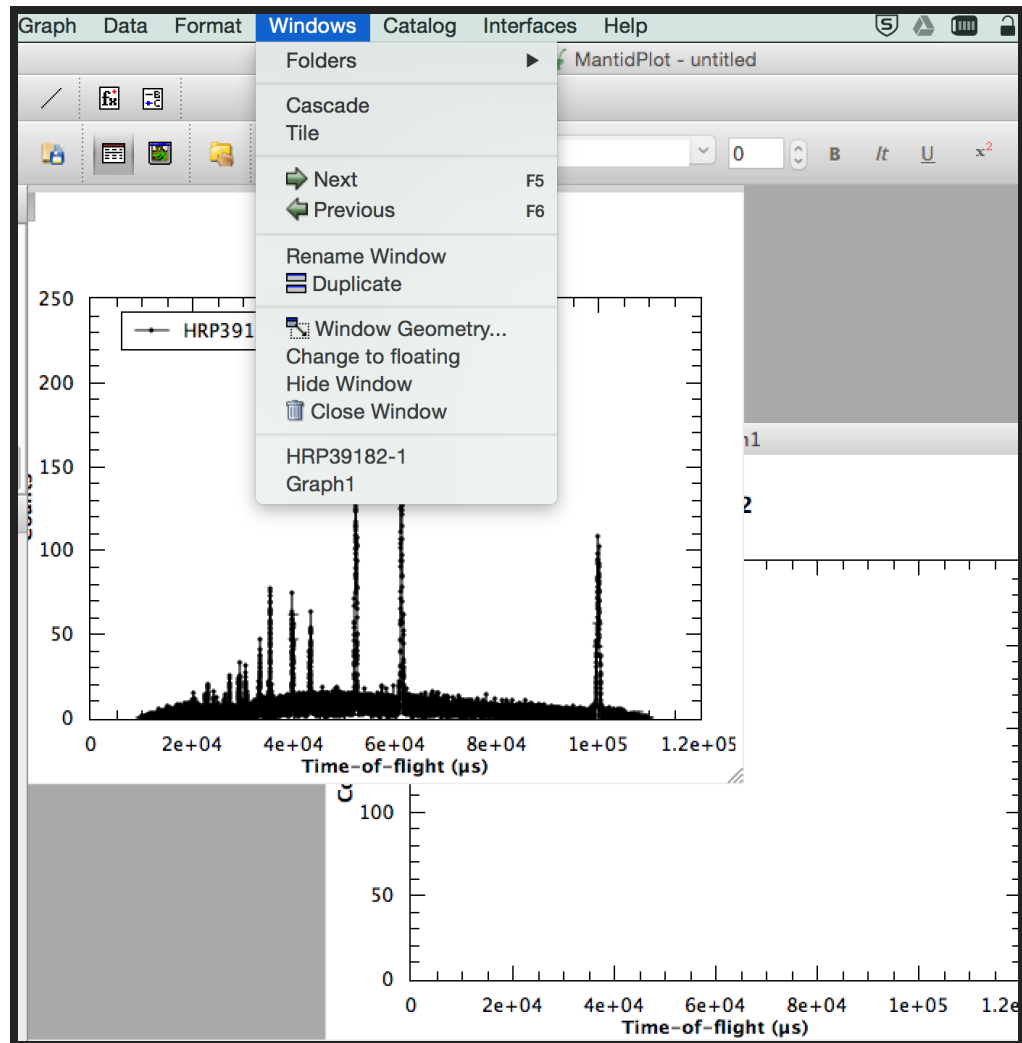
BUT TO MOST USERS

“Custom interface X IS the Mantid Project.”








WE SHIPPED THIS IN VERSION 3.5



WE SHIPPED THIS IN VERSION 3.5



WE SHIPPED THIS IN VERSION 3.5

| | | |
|-----------------------|--------------------------------------|---|
| InputWorkspace | <input type="text"/> |  |
| OutputWorkspace | <input type="text"/> |   |
| InformationWorkspace | <input type="text"/> |   |
| | <input type="checkbox"/> FastLog | |
| StartTime | <input type="text"/> | |
| StopTime | <input type="text"/> | |
| TimeInterval | <input type="text"/> | |
| UnitOfTime | <input type="text" value="Seconds"/> |  |
| LogName | <input type="text"/> | |
| | | |
| TitleOfSplitters | <input type="text"/> | |
| UseParallelProcessing | <input type="text" value="Serial"/> |  |
| NumberOfThreads | <input type="text"/> | |

We have also shipped broken UIs in full releases of Mantis.

WE CAN FIX THINGS

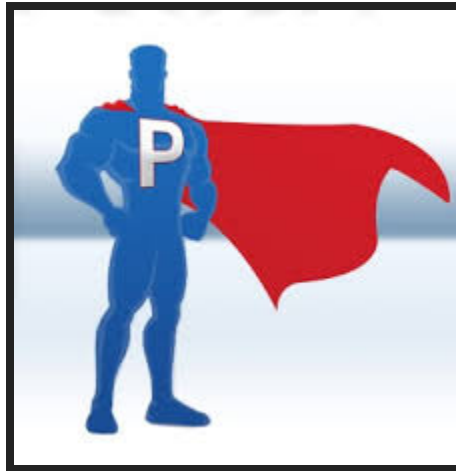
Lets split the problems up

- Improving reliability
- Improving useability

IMPROVING RELIABILITY

To improve the reliability we need feedback. These three approaches have been shown to work.

IMPROVING RELIABILITY: POWER USER



Example: ISIS SANS

IMPROVING RELIABILITY: SQUISH

Squish report

19:05:37 refl_gui_tests - Test cases 1, Passes 25, Fails 0

19:05:54 refl_gui_tests - Test cases 1, Passes 25, Fails 0

Summary - refl_gui_tests

Test cases 1

Tests 25

Passes 25 (including 0 expected failures)

Fails 0 (including 0 unexpected passes)

Errors 0

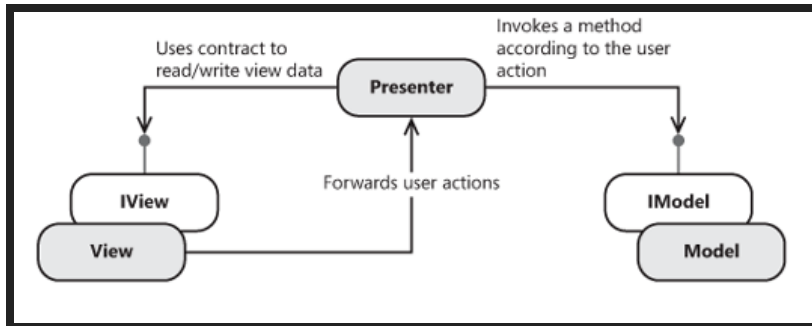
Fatals 0

Results

tst_basic_operation

| | | | | |
|-------|------------------------------------|---|--------------------------------|--|
| START | Fri Dec 18 19:05:37 UTC 2015 | | Start 'tst_basic_operation' | Test 'tst_basic_operation' started |
| PASS | Fri Dec 18 19:05:43 UTC 2015 | /home/builder/Jenkins/workspace/squishtest/MantidPlot/test/squish_test_suites/refl_gui_tests/tst_basic_operation/test.py:89 | Verified | True expression 13460_lvsQ should exist in output |
| PASS | Fri Dec 18 19:05:43 UTC 2015 | /home/builder/Jenkins/workspace/squishtest/MantidPlot/test/squish_test_suites/refl_gui_tests/tst_basic_operation/test.py:90 | Verified | True expression 13460_lvsLam should exist in output |
| PASS | Fri Dec 18 19:05:43 UTC 2015 | /home/builder/Jenkins/workspace/squishtest/MantidPlot/test/squish_test_suites/refl_gui_tests/tst_basic_operation/test.py:91 | Verified | True expression Should have a TOF group in the output |

IMPROVING RELIABILITY: MVP



Test Result : CustomInterfacesTest

0 failures (±0)

221 tests (±0)
Took 5.9 sec.

All Tests

| Class | Duration | Fail | (diff) | Skip | (diff) | Pass | (diff) | Total | (diff) |
|---|----------|------|--------|------|--------|------|--------|-------|--------|
| ALCBaselineModellingModelTest | 1 ms | 0 | | 0 | | 6 | | 6 | |
| ALCBaselineModellingPresenterTest | 3 ms | 0 | | 0 | | 17 | | 17 | |
| ALCDataLoadingPresenterTest | 2.2 sec | 0 | | 0 | | 16 | | 16 | |
| ALCPeakFittingModelTest | 1 ms | 0 | | 0 | | 3 | | 3 | |
| ALCPeakFittingPresenterTest | 2 ms | 0 | | 0 | | 14 | | 14 | |
| EnggDiffractionPresenterTest | 1.3 sec | 0 | | 0 | | 28 | | 28 | |
| IO_MuonGroupingTest | 48 ms | 0 | | 0 | | 3 | | 3 | |
| ImageROIPresenterTest | 0 ms | 0 | | 0 | | 13 | | 13 | |
| MeasurementItemTest | 0 ms | 0 | | 0 | | 6 | | 6 | |
| MuonAnalysisHelperTest | 40 ms | 0 | | 0 | | 6 | | 6 | |
| ParseKeyValueStringTest | 0 ms | 0 | | 0 | | 1 | | 1 | |
| RefGenerateNotebookTest | 1 ms | 0 | | 0 | | 15 | | 15 | |
| RefLegacyTransferStrategyTest | 0 ms | 0 | | 0 | | 6 | | 6 | |
| RefMainViewPresenterTest | 0.91 sec | 0 | | 0 | | 36 | | 36 | |
| RefMeasureTransferStrategyTest | 0 ms | 0 | | 0 | | 8 | | 8 | |
| RefNexusMeasurementItemSourceTest | 1.2 sec | 0 | | 0 | | 2 | | 2 | |
| StackOfImagesDirTest | 0 ms | 0 | | 0 | | 9 | | 9 | |
| TomographyFacePresenterTest | 31 ms | 0 | | 0 | | 19 | | 19 | |
| UserInputValidatorTest | 0 ms | 0 | | 0 | | 13 | | 13 | |

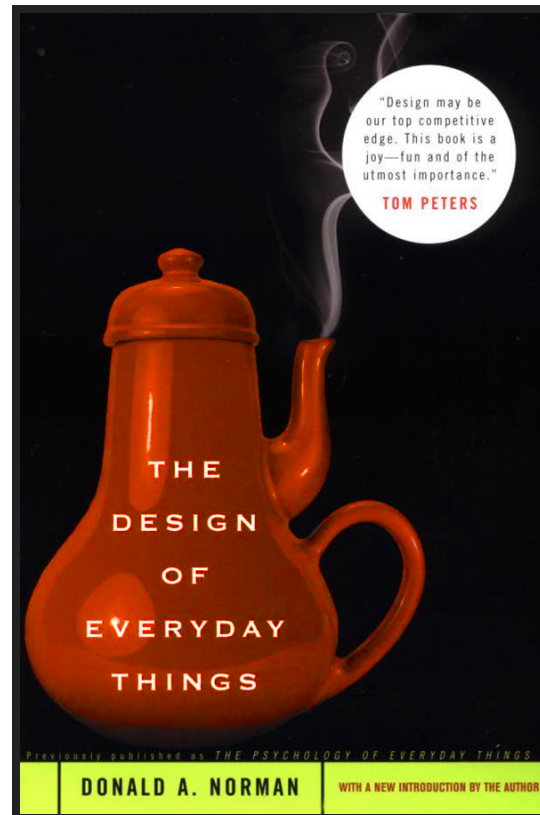
IMPROVING USEABILITY

To improve the usability we also need feedback

Things we should do (and often do already)

- UI Mockups using tool like Basamiq
- Paper prototyping
- Software Prototypes
- Component based software engineering

IMPROVING USEABILITY



THINGS WE SHOULD STOP DOING

- Say things like:

“We'll quickly create a GUI as a first-cut.”

- Have less new developer work on “less critical.” things such as GUIs
- Lean on late unscripted testing to uncover bugs
- Assume that beta testers are all equally thorough

TO MOST USERS

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