How we have improved testing

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Collabora Online

LibreOffice Technology

Technical Day
COOL days

What is Cypress?

Web testing framework

- Tests end-to-end system with user interaction

- Asynchronous

- Retriable assertions

- Most of our client-side tests are Cypress tests

Cypress tests are faster

Removed calls to cy.wait()

- Targeted the most impactful ones first

- Instead of waiting: Let Cypress do the work!

  - Add more specific assertions

  - Replace .then() with .should()

  - Click on buttons instead of divs

Tests are more stable

Examples:

- Force click toolbar buttons that are off screen
  Instead of interacting with toolbar to scroll

- New assertion to verify sheet contents directly
  Replaces error-prone cell-by-cell verification

- New insertComment helper
  Same behavior for all doc types

50% Faster
With an increase in stability

Improved logging

Using 3rd party plugin cypress-terminal-report

- Reduced size by 60% by removing noise

- Custom logging for custom command cy.cGet()

- Improved display of failures

- Logging from helper functions
  makes up for flat logs, lack of backtrace

Improved logging

```
<< loadTestDoc - end
>> clickOnFirstCell - start
click    59, 185
cGet     #test-div-overlay-cell-cursor-border
fail:
Test failed: desktop/calc/bottom_bar_spec.js / Calc bottom bar tests. / Bottom tool bar.

Timed out retrying after 10000ms:
Expected to find element: `#test-div-overlay-cell-cursor-border`, but never found it.

/home/neilguertin/build/online-master/cypress test/integration tests/common/calc helper.js:47:14
   46 |          cy.cGet('#test-div-overlay-cell-cursor-border')
 > 47 |              .should(function (elem) {
      |                  ^
   48 |              expect(helper.Bounds.parseBoundsJson(elem.text()).left).to.be.equal(0);
```

Improved logging

Impact

- Immediately identify file, location, and failure cause

- Trace log and test code side-by-side

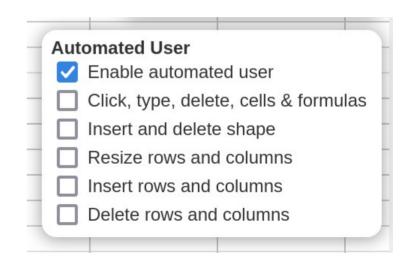- Writing tests and investigating failures is much easier

Automated User

Tool for interactive or manual testing

- There are bugs that only appear with multiple users

- Randomize user settings
  Language, zoom, theme, etc.

- Interact with the document
  Click, type, insert, delete, etc.

- Extensible

Automated User
- ☑ Enable automated user
- ☐ Click, type, delete, cells & formulas
- ☐ Insert and delete shape
- ☐ Resize rows and columns
- ☐ Insert rows and columns
- ☐ Delete rows and columns

Performance tests

Work in progress

- Measure Time, Cycles, or Messages

  - Cycles measured with callgrind, more repeatable than time

- Track data over time, identify regressions

- Coming soon

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Future

There is lots to do!

- Continuing to make our automated tests:

  - More complete

  - Faster

  - More robust

  - Easier to write

Thank you!

By Neil Guertin

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