



{shinytest2}

Regression testing for Shiny applications

Barret Schloerke

RStudio / Shiny Team



  @schloerke

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<https://r-pkgs.org/tests.html>
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 - Image your `{shinytest}` test script inside a `{testthat}` test
 - `shinytest2::migrate_from_shinytest()`

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- Why use `{shinytest2}`?
 - Consistent App behavior over time
 - Working with a team
 - Critical features must always exist
 - Wanting to make large code changes
 - Updating dependencies
 - Too many features to remember!!



Demo!



All too familiar



workflow

All too familiar workflow

1. Add some reactivity
2. Click "Run App"
3. **Experiment** with it in the viewer to see if it works
4. Rinse and repeat









- Formal Unit tests
 - `expect_equal(x, y)`
 - `expect_snapshot_file(test_file)`



- Formal Unit tests
 - `expect_equal(x, y)`
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- Goals
 - Fewer bugs
 - Better code structure
 - Easier restarts
 - Robust code









- **Regression Testing** for Shiny applications
 - Test **existing App behavior** for consistency over time



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- **Regression Testing** for Shiny applications
 - Test **existing App behavior** for consistency over time
- `record_test()`
- `AppDriver`
 - Expectation methods leverage `testthat::expect_snapshot_file()`
- `variant` support!



- **Regression Testing** for Shiny applications
 - Test **existing App behavior** for consistency over time
- `record_test()`
- `AppDriver`
 - Expectation methods leverage `testthat::expect_snapshot_file()`
 - `variant` support!
- Built on `{chromote}`
 - View live test App
 - Familiar debugging tools in Chrome



Demo!

Limitations

- Try to limit testing to objects that you own
 - Use `shiny::exportTestValues()` !
- Initial snapshot file expectations **must be verified** by hand
 - Comparisons against **static values** are *always valid*
- Minimize usage of `AppDriver$expect_screenshot()` calls
 - Cannot compare across Operating Systems or R Versions

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Regression testing for Shiny applications

- Slides: <https://bit.ly/2022-appsilon-shinytest2>
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 - Getting Started article
 - Many other articles!
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Questions?

How does {shinytest2}
orchestrate everything?

