



{shinytest2}

Regression testing for Shiny applications



Barret Schloerke

RStudio / Shiny Team

  @schloerke

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 -  R Packages, Chapter 12: Testing
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 -  Mastering Shiny, Chapter 21: Testing
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- Familiar with `{shinytest}` and `{testthat}`?
 - Imagine 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







- Unit Testing for R





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







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 - Test **existing App behavior** for consistency over time





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`testthat::expect_snapshot_file()`
 - `variant support!`



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- `AppDriver`
 - Expectation methods leverage `testthat::expect_snapshot_file()`
 - `variant` support!
- Built on `{chromote}`
 - View live test App in Chrome browser
 - Familiar debugging tools in Chrome browser



Demo!

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 - Use `shiny::exportTestValues()` !
- Initial snapshot file contents **must be verified** by hand
 - Comparisons against **static values** are *always valid*
- Minimize usage of `AppDriver$expect_screenshot()` calls
 - Cannot compare images across Operating Systems or R Versions
- If developing a package, you must install it before testing locally

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Questions?

How does {shinytest2}
orchestrate everything?

