Shiny development

in an academic vs. business setting

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github.com/DusRUG

Hello shiny!

Welcome
Create
Instructions

Instructions Settings

Create your mosaic instructions!

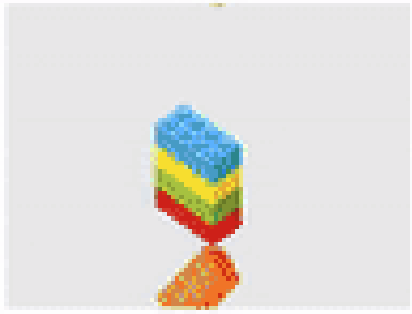
Define the number of steps used in your customized LEGO mosaic instructions. The maximum number of steps is 40.

1 — 40

Bricks Required

Diagram | Table

Instructions



Organisations

- ~5 months

- Tech company
- NASDAQ-listed
- ~1,300 employees

- ~9 years

- Research institute
- Non-profit
- ~300 employees

Organisational mindset

- Emphasis on impact/pragmatism
- Utility is key (iterative shipments)
  - Logging (shinyEventLogger + bupaR)
- Work in teams
  - Readable code (style guide, maybe use something like styler/lintr)

- Emphasis on novelty/publications
- Reproducibility is key*
  - DRY reproducible reports (shinymeta)

- Work alone
  - Can use exotic packages

* Probably even truer in research related sectors

Organisational mindset: code quality

- Code quality is a departmental priority
- Surrounded by developers

Testing:

- testthat (unit tests)
- shinytest/RSelenium (integration tests)
- golem (apps as packages)

- Few incentives for maintainable software
- Starting to change

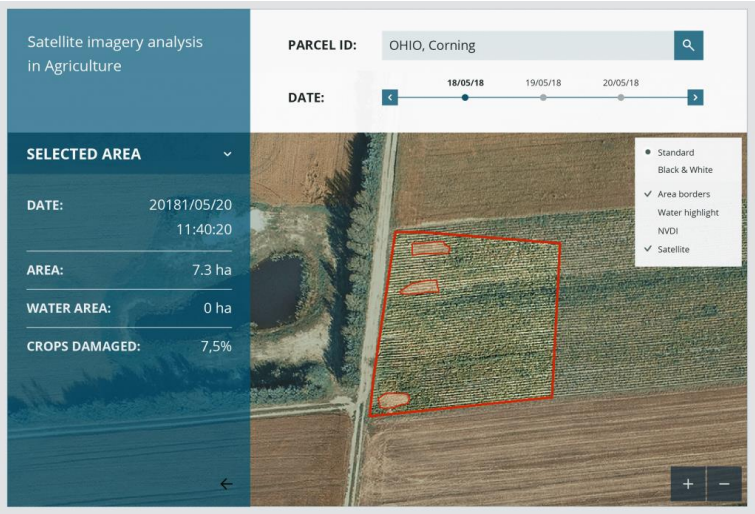
Performance:

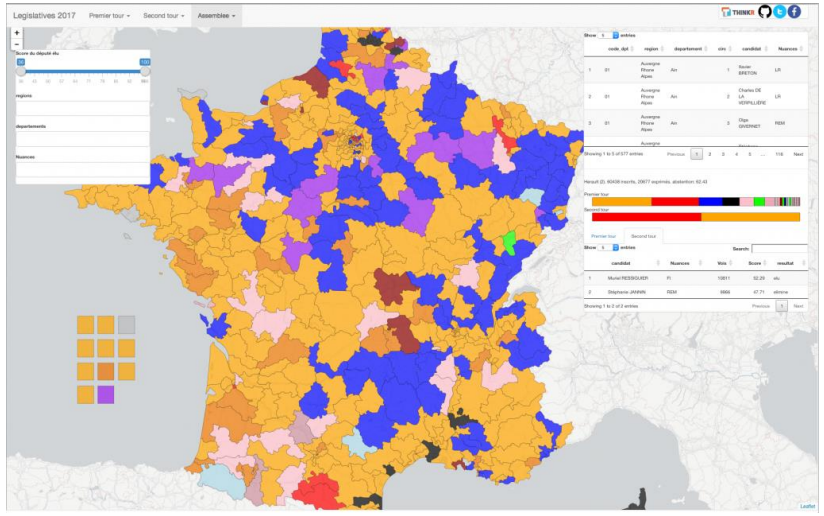
- being aware of scoping rules
- profvis (profile)
- microbenchmark (benchmark)
- caching

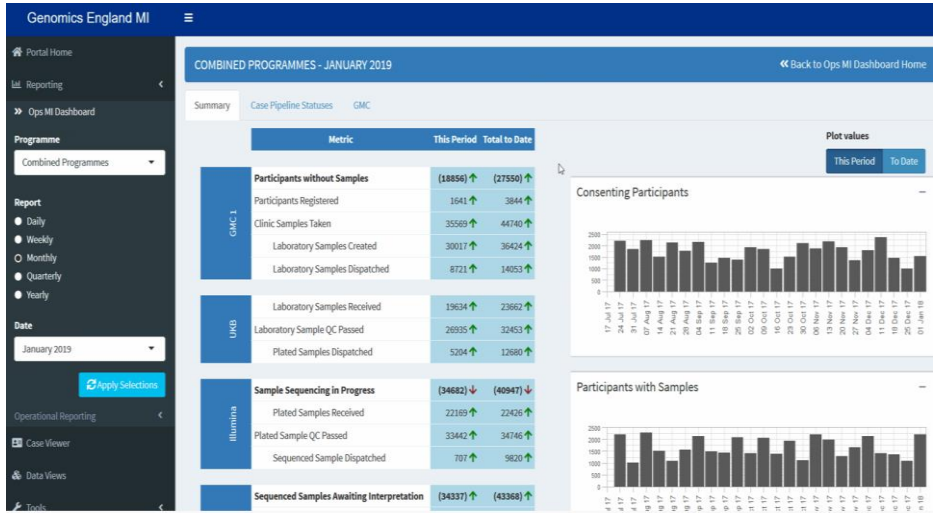
Task complexity

- Dedicated data software and teams
- Dedicated teams for *making* tools
- shiny used to fill gaps:
  often relatively simple
  (complexity outside of app)

Task complexity







[appsilon]

[ThinkR]

[Elucidata]

Note: there are also consultancies who make extremely complicated shiny apps

Task complexity

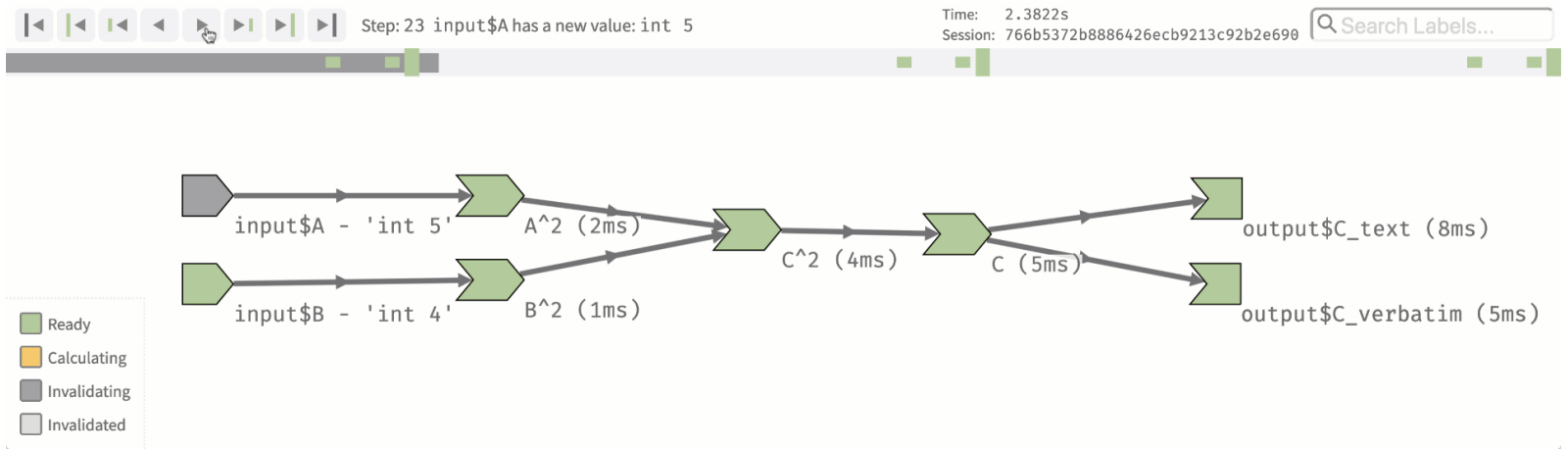
- Dedicated data software and teams
- Dedicated teams for *making* tools
- shiny used to fill gaps:
  often relatively simple
  (complexity outside of app)

- Some specialised software
- Some specialists for *using* tools
- shiny rarely used:
  range from simple to very complex

Note: there are also consultancies who make extremely complicated shiny apps

Task complexity

- reactivity: [reactlog](#) [modules](#)



- UI: [shinyBS](#)/[bsplus](#) (extra bootstrap components)
- UX: [shinyjs](#)
  - easily change the state/style of an element
  - print messages to JS console

IT infrastructure

trivago

- Very supportive
  - Fast response time
- Extensive company-wide infrastructure
- Community of shiny developers & users

- Seem to be under pressure
  - Response time not always predictable
  - Tend to be conservative
- Few top-down requirements/preferences
- Shiny???

- Version control
- Local, staging and production environments
- Number of stakeholders

IT infrastructure: deployment

- desktop apps: photon (shiny + electron)
- scheduled reports: crosstalk (interactivity in static HTML files)

- performance:
  - shinyloadtest (realistic synthetic traffic)
  - plumber (REST API)
  - Shiny in production book

Caveat: this is an area I have no experience in!!

Your turn! :)

- what's obvious to you might not be to me!!
- it doesn't have to be 100% polished
- I'd love to hear more about how you use R:
  - time series/spatial/graph analysis
  - efficient programming
  - statistics/machine learning/etc for dummies
  - making generative art
  - new packages you found/wrote
  - managing/supporting R users
  - … **anything you'd like to share! :)**