PHARMAVERSE TEAL HACKATHON KICK-OFF

HOSTED BY R CONSORTIUM + R MEDICINE

Dony Unardi
Peyman Eshghi

R consortium

R Medicine

APR 2026

teal

Dony Unardi

Principal Data Scientist, Data Sciences

Roche/Genentech

`teal` Engineering Team Lead

uteals

Peyman Eshghi

Senior Principal Technical Lead

Johnson & Johnson

Teal Enhancement for Cross-Industry Adoption

Agenda

1. Introduction to `teal` framework
2. Introduction to `uteal` R package
3. Hackathon Workflow
4. What you will gain
5. Additional Resources

What is {teal}?

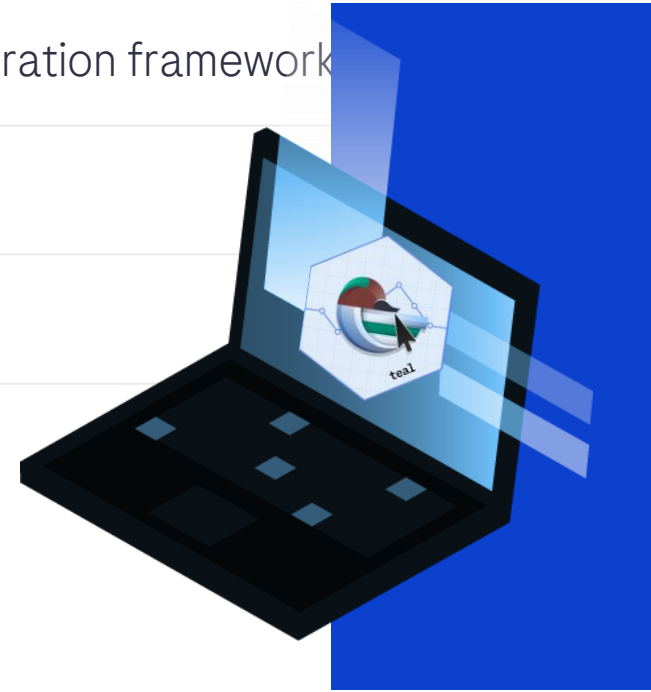
Open-source R Shiny-based interactive data exploration framework

Modularized and standardized building blocks

Collection of specialized R packages

Streamlines creation of web-apps that offers:

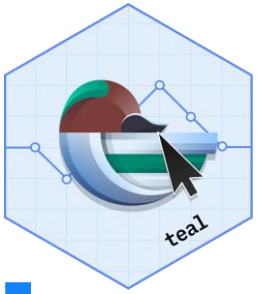
- Dynamic filtering facility
- Code reproducibility
- Reporting engine
- Many data summarization and visualizations



Workflow with {teal}

Building modularized web-apps is quick and easy

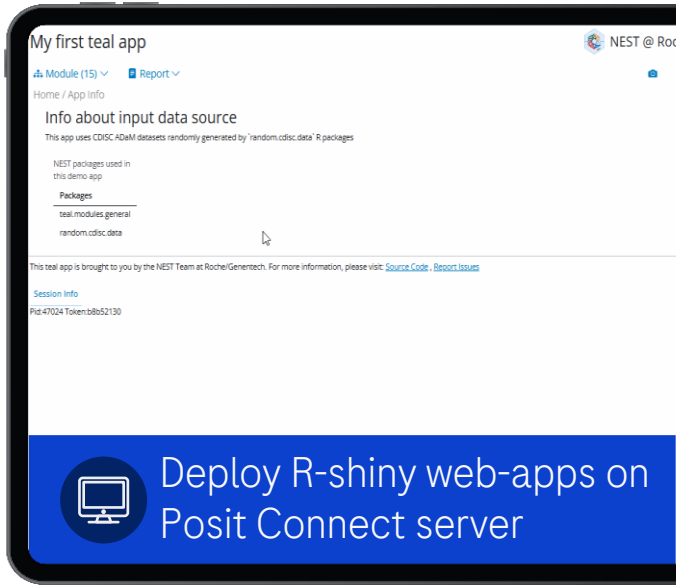
`teal` **framework**



***teal* modules**

```
teal.modules.clinical
teal.modules.general
teal.osprey
teal.goshawk
```

posit Connect



teal Framework R Packages

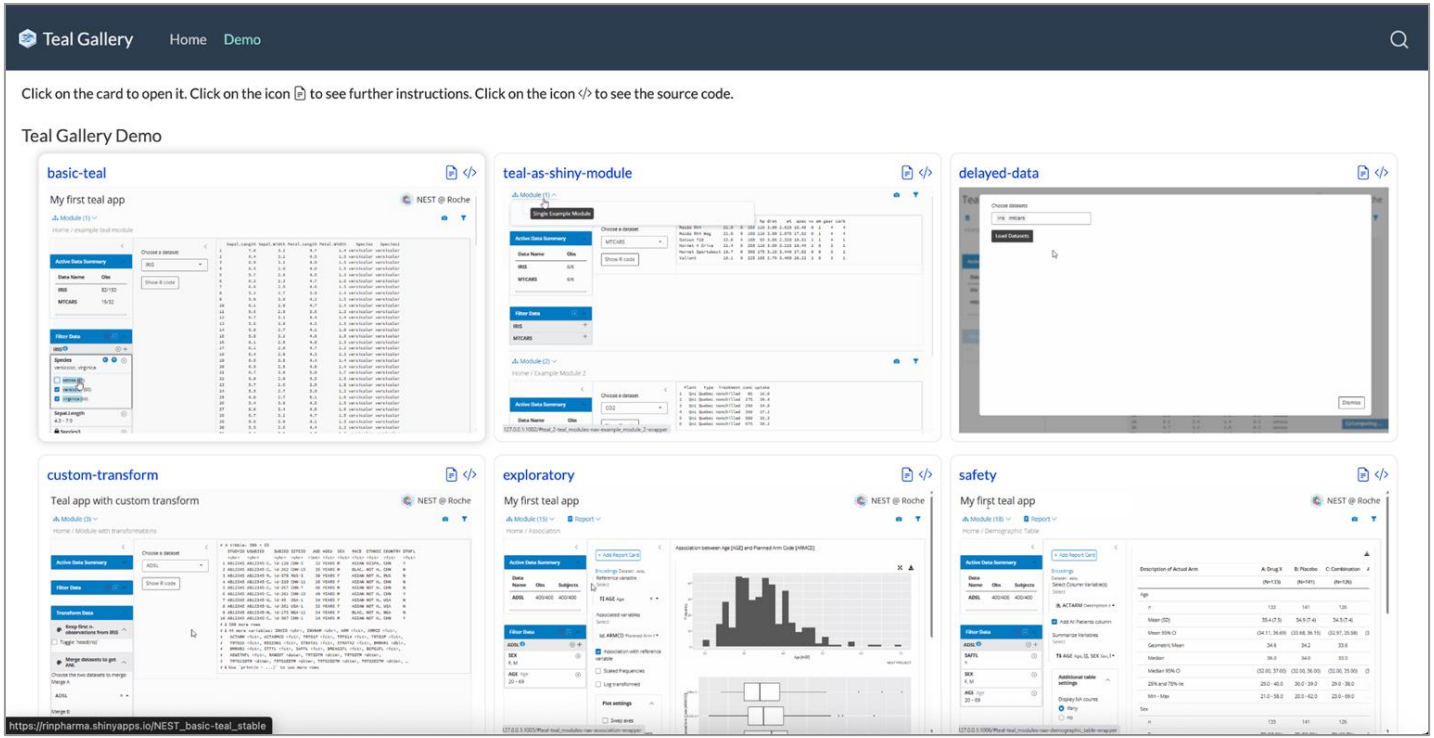
- teal: shiny-based interactive exploration framework for analyzing data.
- teal.gallery: gallery of sample teal apps.
- teal.widgets: shiny components used within teal.
- teal.reporter: allows teal applications to generate reports.
- teal.slice: provides a filtering panel to allow subset of data.
- teal.data: creating and loading the data needed for teal applications.
- teal.code: handles reproducibility of outputs.
- teal.transform: standardizes extracting and merging data
- teal.logger: standardizes logging within teal framework.

teal Modules R Packages

- teal.modules.general: general analysis modules for exploring any data types
- teal.modules.clinical: modules for analyzing CDISC data and clinical trial reporting with tern R package
- teal.osprey: modules for analyzing and reporting early-phase clinical trial data with osprey R package
- teal.goshawk: modules for analyzing and visualizing biomarker data with goshawk R package
- teal.modules.hermes: modules for analyzing and visualizing RNAseq data with hermes R package

teal.gallery

https://insightsengineering.github.io/teal.gallery/demo.html

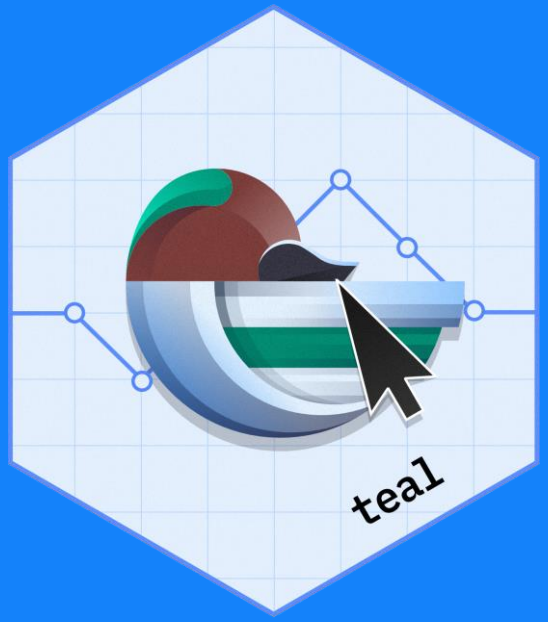


What's new with {teal}

V1.0 Release!

🎉 🎉 🎉

teal v1.0 Release!



Install from CRAN

Installation

```
install.packages("teal")
install.packages("teal.modules.general")
```

Learning Materials

- Getting Started with `teal`:
  - A Complete Guide to Getting Started with teal
  - Building Clinical Data Analysis Apps with teal

- Example apps:
  - https://insightsengineering.github.io/teal.gallery/demo.html

- Vignettes:
  - Getting Started with teal
  - Create custom teal module
  - Add Reporter feature to your custom teal module

What is {uteals}?

Shared utilities to extend the {teal} module ecosystem

An R package providing reusable building blocks for {teal} apps

Focuses on common **decorators**, **transformators**, and helper utilities

Developed by the PHUSE working group: Teal Enhancements for Industry Adoption

Status: actively developed; features evolve via vignettes and releases

Why {uteals}?

- Reduces repeated effort by standardising common enhancements across modules
- Improves consistency of outputs (look-and-feel, footers/titles, watermarks, plot composition)
- Adds ready-to-use transformation logic that can be wired into teal workflows
- Facilitates sharing common useful utilities across industry (e.g. utilities to manage module sets and access control)

Installation

```
install.packages("teal")
install.packages("teal.modules.general")
install.packages("teal.modules.clinical")
install.packages("uteals")
```

Learning Materials

- Getting Started with `uteals`:

  Use the official docs to learn the workflow, reference functions, and see examples
  https://phuse-org.github.io/uteals/index.html

Hackathon Workflow

Issues for Hackathon

Track A

Track B

Development Workflow

1. Assign the issue to yourself
2. Fork the related teal repository
3. Create a new branch to solve the issue
4. Create a PR to submit your solution
    a. In the PR description, starts with sentence “Fix #<issue number>” and brief explanation on the solution.
    b. We also encourage to provide code snippet and screenshot to prove that your solution is working.
5. Label the PR with `TrackA_RMedicine_Hackathon_Apr2026` or `TrackB_RMedicine_Hackathon_Apr2026`

Communication Channel

- Join the R Medicine slack workspace here
- Join the #hackathon channel
- teal development team will be on stand-by to answer any questions

What you will gain

- Be recognized in our next release
- Build experience in open-source contribution
- Learn directly from experienced open-source developers

Hackathon Day

23 APR 2026

11:00 AM – 3:00 PM (EST)

8:00 AM – 12:00 PM (PST)

5:00 PM - 9:00 PM (Central European Time)

Q & A