Who am I?

- ORD post-doc, NHEERL GED
- Research focus on water quality assessment and indicator development
- Specific interests in statistical modelling, data assimilation, graphics, ***open-science and reproducible research***
- Dedicated R user and contributor since 2007 (research, blogs, packages)

Reproducible research

Science is a process, not a product

reproducible research - reproduce results from an experiment or analysis conducted by another.

The use of these tools increases transparency and accessibility
= better science





Introduction to Shiny

Where does Shiny fit with reproducible research?

Shiny is a web application framework for R

- From the command line to a graphical user interface
- Make your data, models, and graphics interactive
- Integrated completely as an open source tool

Tools like Shiny improve ***accessibility*** and ***communication***

Comparison

Shiny is not Qlik Sense, Qlik Sense is not Shiny

"Qlik Sense is storytelling for the ***business user***" - Patrik Lundblad, Qlik Visualization Advocate

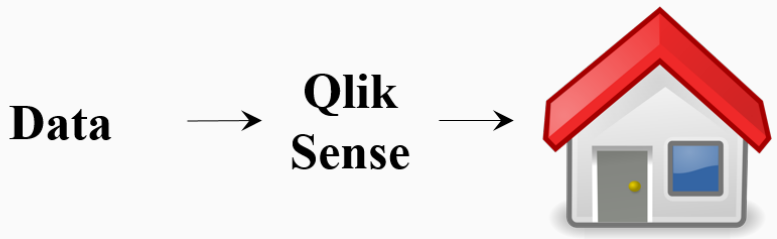
Shiny combines the computational power of R with the interactivity of the modern web. `http://shiny.rstudio.com/`

R is a data analysis software, programming language, environment for statistical analysis, open-source software project, and community
`http://www.inside-r.org/what-is-r`

Comparison

To use a metaphor - the application is a building with a purpose

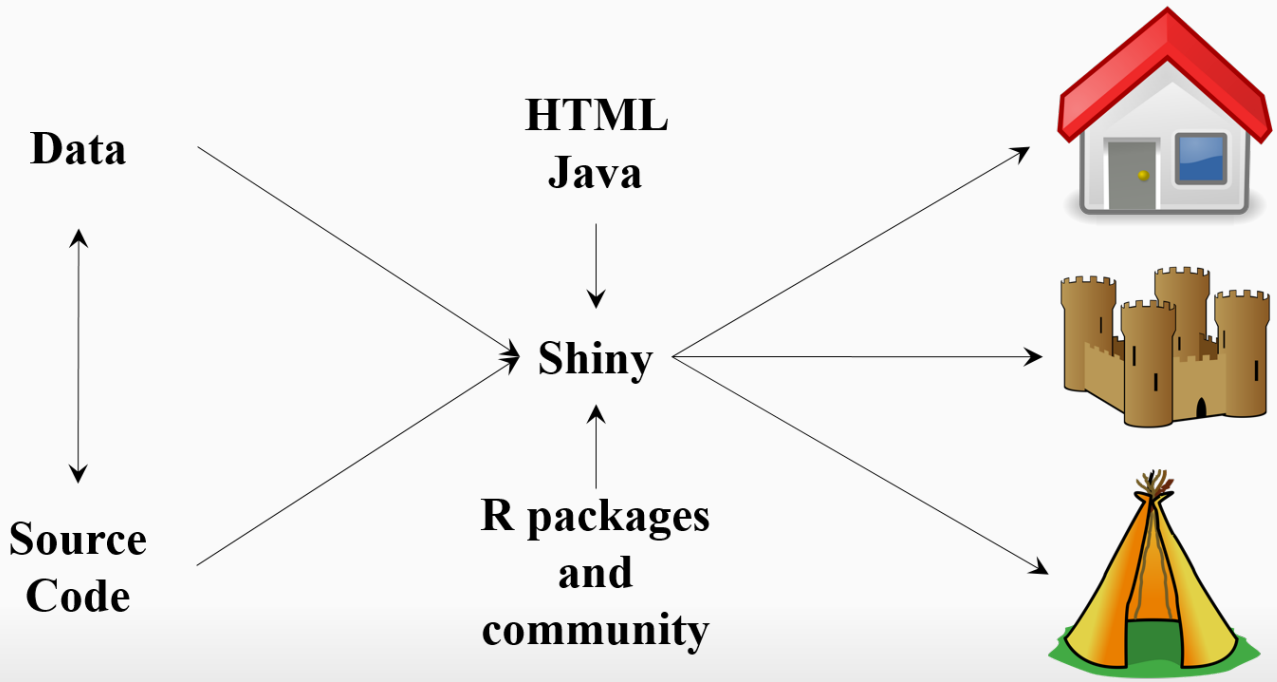
Qlik Sense is a house that you have not designed



Comparison

To use a metaphor - the application is a building with a purpose

Shiny provides the building blocks for any structure you can design



Comparison

Shiny as an application for ***science***:

- Increased accessibility to information within and outside of the research community
- All open-source, no need for license and under active development
- Not just for the advanced user...

Additional links

Shiny gallery: `http://www.showmeshiny.com/`

Open-source policy info: `https://github.com/18F/open-source-policy/blob/master/policy.md`

Open R communities: `https://ropensci.org/`

Open tools for other languages: `http://adilmoujahid.com/posts/2015/01/interactive-data-visualization-d3-dc-python-mongodb/`, `http://bokeh.pydata.org/en/latest/docs/gallery.html`