

Group Meeting: Shiny Analyses → Interactive Apps

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Meeting materials available on: github.com/sahildshah1/shiny-groupmtg

Introduction

Install/Run Shiny apps

Shiny is an R package that makes it easy to build apps

Install Shiny

- `install.packages("shiny")`

Running a Shiny app in a directory called `my-app`

1. `library(shiny)`
2. `runApp('my-app')`

R session will be busy while Shiny app is active

- Run another Shiny app → Open another R session
- Get R session back → Hit `esc`

Examples of Shiny apps

Examples built into Shiny package: Run from R or view online

- [http://shiny.rstudio.com/tutorial/lesson1/#Go Further](http://shiny.rstudio.com/tutorial/lesson1/#Go_Further)
- Each demonstrates a feature of Shiny apps
- Examples open in 'showcase' mode with the ui.R and server.R scripts in the display.

Gallery of examples available online:

- <http://shiny.rstudio.com/gallery/>
- Contains useful examples to learn from

shiny.rstudio.com/*

- Tutorial → shiny.rstudio.com/tutorial
- Articles → shiny.rstudio.com/articles
- NB 'cf. *.html' in the rest of the slides are shiny.rstudio.com pages

Google + Stack Overflow

Build a Shiny app

'Hello Shiny' Example

View example online

<http://shiny.rstudio.com/tutorial/lesson1/>

OR

Run example in R

```
library(shiny)  
runExample("01_hello")
```

Structure of a Shiny app

Each app needs its own directory

Two R scripts saved together in a directory

- `ui.R` : controls layout and appearance of app
- `server.R`: contains instructions needed to build app

'Hello Shiny' example layout

- `fluidPage`, `sidebarLayout` → Define layout
- Customize layout → cf. [articles/layout-guide.html](#)

Place widgets and R objects in layout

- widgets (eg. slider) → cf. tutorial/lesson3
 - `*Input` functions create widgets
 - Access widget value in R object with the widget's label
- R object (eg. plot) → cf. tutorial/lesson4
 - `*Output` functions create R objects
 - The arg of `*Output` has to match R object's label in `server.R`

Build R objects in shinyServer function

- The output 'list' stores R objects
 - `render*` function: instructions to create object → `tutorial/lesson4`
 - Element name labels R object and should match argument of `*Output` function in `ui.R`
- The input 'list' stores values of widgets
 - Call a widget value inside a `render*` function using the label of the widget

Where you put code in `server.R` determines how many times run

Execution of commands in server → cf. [tutorial/lesson5/](#)

- **Outside of shinyServer:** Run once (eg. library, load, source)
- **In shinyServer:** Run once a user visits app (eg. record session info)
- **In render*:** Run each time user changes a widget

Customize/ Manage larger apps

App with multiple distinct sub-components → Navbar Pages and Fluid Grid

- <http://shiny.rstudio.com/articles/layout-guide.html>
- <http://shiny.rstudio.com/gallery/navbar-example.html>
- NB. navbarMenu cannot be the first item in the navbarPage

Search-able/Sort-able table from dataframe → DataTable

- <http://shiny.rstudio.com/gallery/basic-datatable.html>
- <https://rstudio.github.io/DT/shiny.html>

R Studio article

- <http://shiny.rstudio.com/articles/modules.html>

source *.R files → `source(.,local=TRUE)$value`

- `local=TRUE` → stat.ethz.ch/R-manual/R-devel/library/base/html/source.html
- `$value` → <http://stackoverflow.com/questions/30534674>

Meeting materials: skeleton-app → Directory/file structure
Available on github.com/sahildshah1/shiny-groupmtg