# HUDK 4051: LEARNING ANALYTICS: PROCESS & THEORY

2/24/20 10:32 PM

# Events


https://www.eventbrite.com/e/data-science-day-2020-columbia-university-tickets-86128772477?utm_source=sendinblue&utm_campaign=Events_Weekly_February_25&utm_medium=email


https://www.dli.tech.cornell.edu/autonomousvehicles


https://www.eventbrite.com/e/data-for-good-p-anandan-ceo-wadhwani-ai-tickets-92723152445?utm_campaign=Events_Weekly_February_25&utm_medium=email&utm_source=sendinblue

*Open laptop, install*


https://github.com/rstudio/shiny

# Shiny

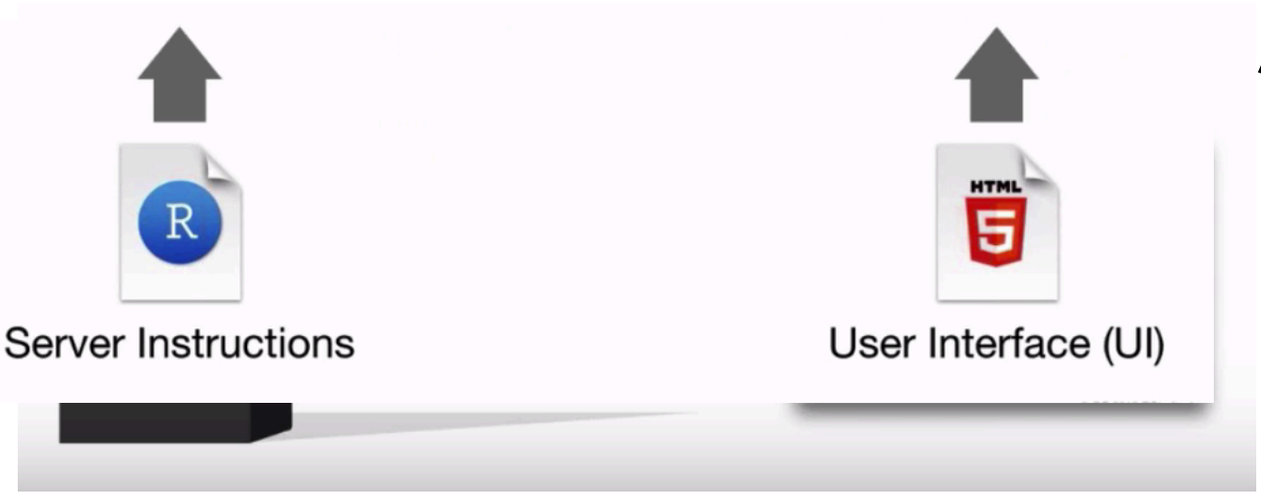
- Web Application Framework
- Allows you to make html applications from within R
- For us that means interactive data visualizations
- Example A*
- Example B*
- Shiny Gallery

# Shiny

- Architecture
- Template
- Adding elements
- Reactive inputs
- Reactive results

# Shiny Architecture

- Two components:
  - Computer running R
  - Webpage running html (user interface)


*

# Shiny Template

```
library(shiny)

ui <- fluidPage()

server <- function(input, output) {}

shinyApp(ui = ui, server = server)
```

*Example*
*HTML*

# Shiny Template

```
library(shiny)

ui <- fluidPage()

server <- function(input, output) {}

shinyApp(ui = ui, server = server)
```

*Example*
*Stop Sign*

# Input Functions

Things that your user will see and manipulate.

# Input Functions

**Buttons**

Action

Submit

`actionButton()`
`submitButton()`

**Single checkbox**

Choice A

`checkboxInput()`

**Checkbox group**

Choice 1
Choice 2
Choice 3

`checkboxGroupInput()`

**Date input**

2014-01-01

`dateInput()`

**Date range**

2014-01-24 to 2014-01-24

`dateRangeInput()`

**File input**

Choose File No file chosen

`fileInput()`

**Numeric input**

1

`numericInput()`

**Password Input**

••••••••••

`passwordInput()`

**Radio buttons**

Choice 1
Choice 2
Choice 3

`radioButtons()`

**Select box**

Choice 1

`selectInput()`

**Sliders**

0 50 100

0 25 75 100

`sliderInput()`

**Text input**

Enter text...

`textInput()`

# Input Function Syntax

```
xxxInput(inputId = “”, label = “”…)
```

Internal use

External use

*Example*

# Output Function

Things that your user will see when they manipulate something in your web app.

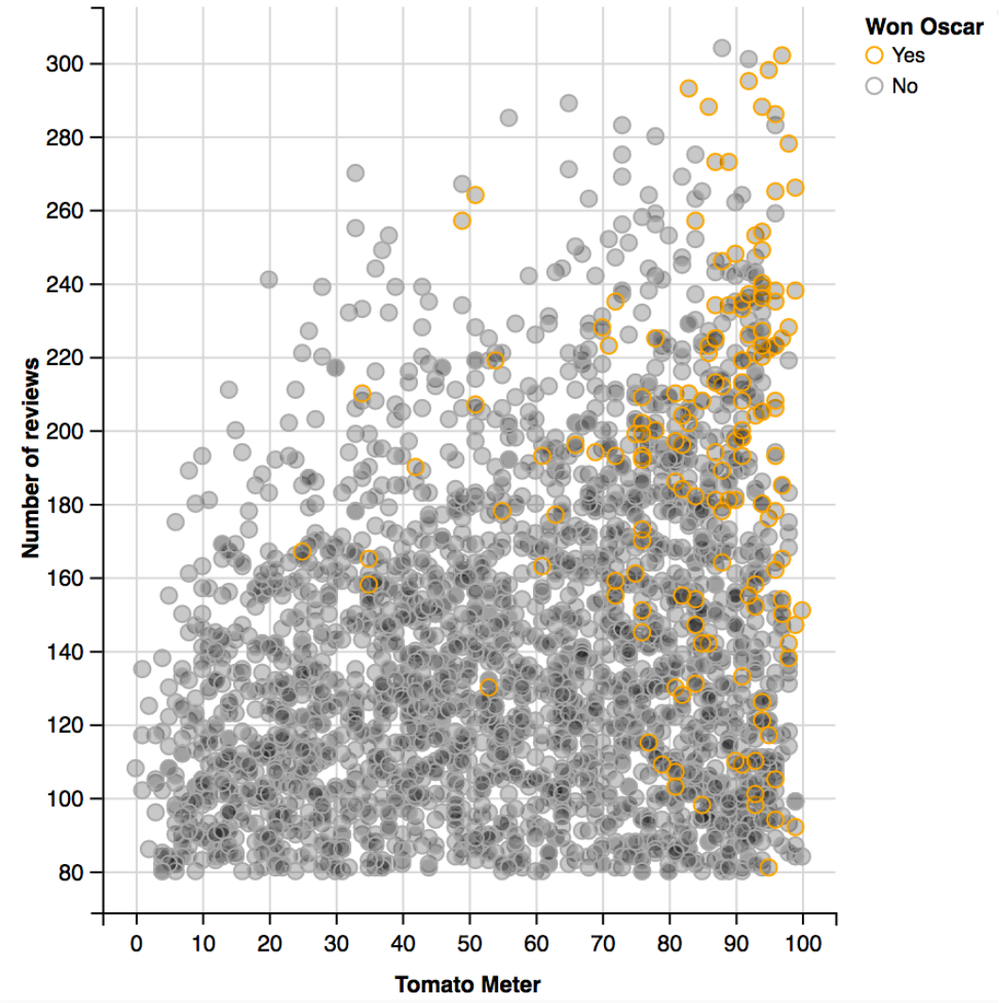
# Output Function

**Manufacturer:** ford

**Transmission:** All

**Show** 10 **entries**

| | manufacturer | model | displ | year | cyl | trans |
|---|---|---|---|---|---|---|
| 1 | ford | expedition 2wd | 4.6 | 1999 | 8 | auto(l4) |
| 2 | ford | expedition 2wd | 5.4 | 1999 | 8 | auto(l4) |
| 3 | ford | expedition 2wd | 5.4 | 2008 | 8 | auto(l6) |
| 4 | ford | explorer 4wd | 4 | 1999 | 6 | auto(l5) |
| 5 | ford | explorer 4wd | 4 | 1999 | 6 | manual(m5) |
| 6 | ford | explorer 4wd | 4 | 1999 | 6 | auto(l5) |
| 7 | ford | explorer 4wd | 4 | 2008 | 6 | auto(l5) |
| 8 | ford | explorer 4wd | 4.6 | 2008 | 8 | auto(l6) |
| 9 | ford | explorer 4wd | 5 | 1999 | 8 | auto(l4) |
| 10 | ford | f150 pickup 4wd | 4.2 | 1999 | 6 | auto(l4) |



# Output Function

| Function | Inserts |
|---|---|
| `dataTableOutput()` | an interactive table |
| `htmlOutput()` | raw HTML |
| `imageOutput()` | image |
| `plotOutput()` | plot |
| `tableOutput()` | table |
| `textOutput()` | text |
| `uiOutput()` | a Shiny UI element |
| `verbatimTextOutput()` | text |

# Output Function Syntax

```
plotOutput(outputId = “name”)
```

*Example*

# Shiny Template

```
library(shiny)

ui <- fluidPage()

server <- function(input, output) {}

shinyApp(ui = ui, server = server)
```

shinyapps.io by RStudio

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