

Incorporating Shiny into Dashboards

BUILDING DASHBOARDS WITH FLEXDASHBOARD



Elaine McVey

Director of Data Science

Why should I add Shiny? Or not?

Why

- **Interactivity**
- **Lightweight**

Why not

- Complication
- Hosting

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Why should I add Shiny? Or not?

Why

- Interactivity
- Lightweight

Why not

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If not a Shiny app, then what?

A flexdashboard with Shiny is an *interactive RMarkdown document*

Making it shiny

runtime: shiny

Let's practice!

BUILDING DASHBOARDS WITH FLEXDASHBOARD

The reactive dataframe pattern

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Creating a sidebar

```
Column {data-width=200 .sidebar}
```

Creating a sidebar

Bike Shares Daily

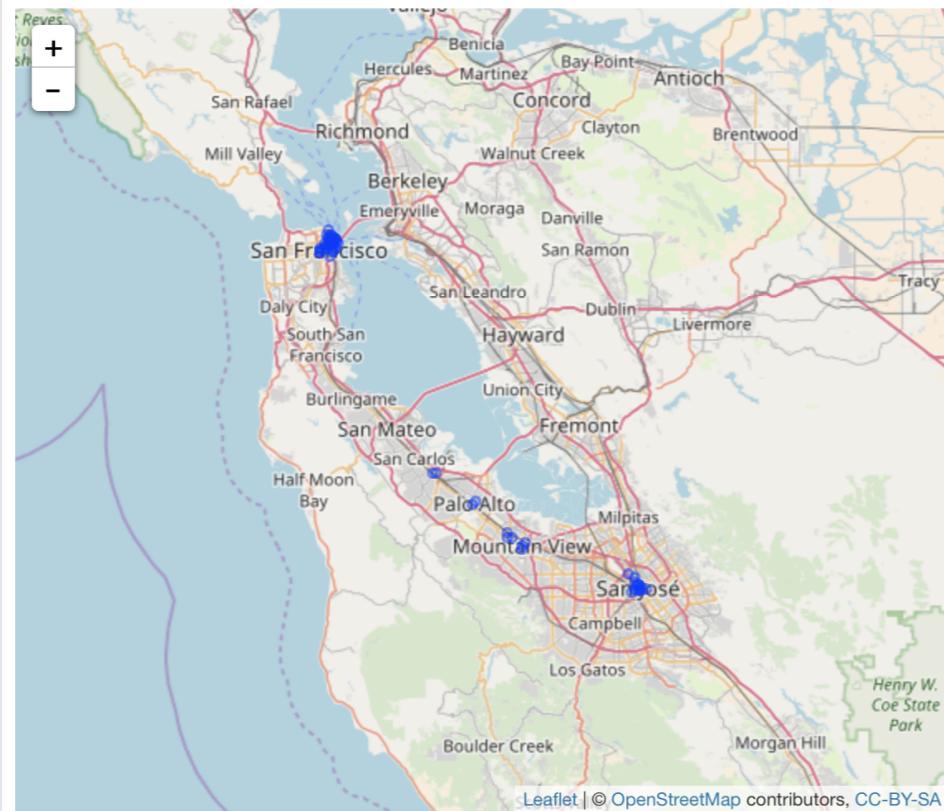
Select maximum trip duration to display (in minutes):

0 120

Select trip origin region to display:

- All
- San Francisco
- San Jose

Origins

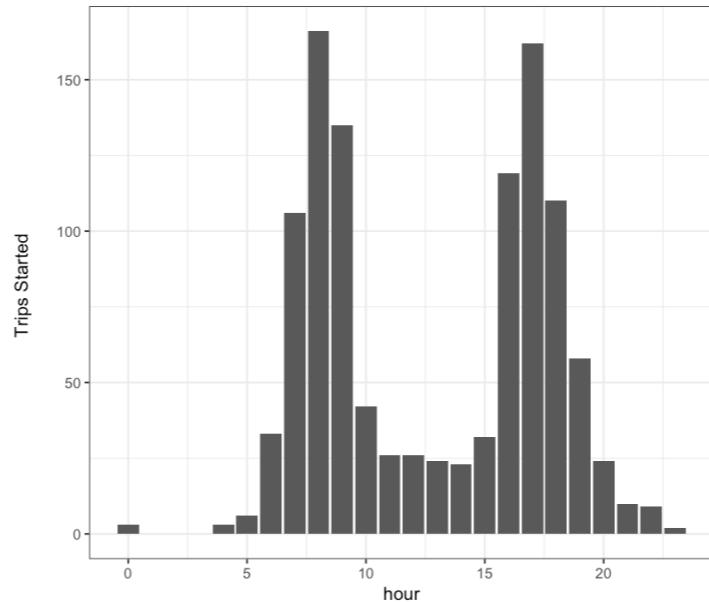


1,119

Total Trips



Trips by Start Time



Adding user inputs

Column {data-width=200 .sidebar}

```
```{r}
sliderInput("duration_slider",
 label = "Select maximum trip duration to display (in minutes):",
 min = 0,
 max = 120,
 value = 15,
 step = 5,
 dragRange = TRUE)
````
```

Making our dataframe reactive

```
```{r}
sliderInput("duration_slider",
 label = "Select maximum trip duration to display (in minutes):",
 min = 0,
 max = 120,
 value = 15,
 step = 5,
 dragRange = TRUE)
```

```
show_trips_df <- reactive({
 trips_df %>%
 filter(duration_sec <= input$duration_slider * 60)
})

```

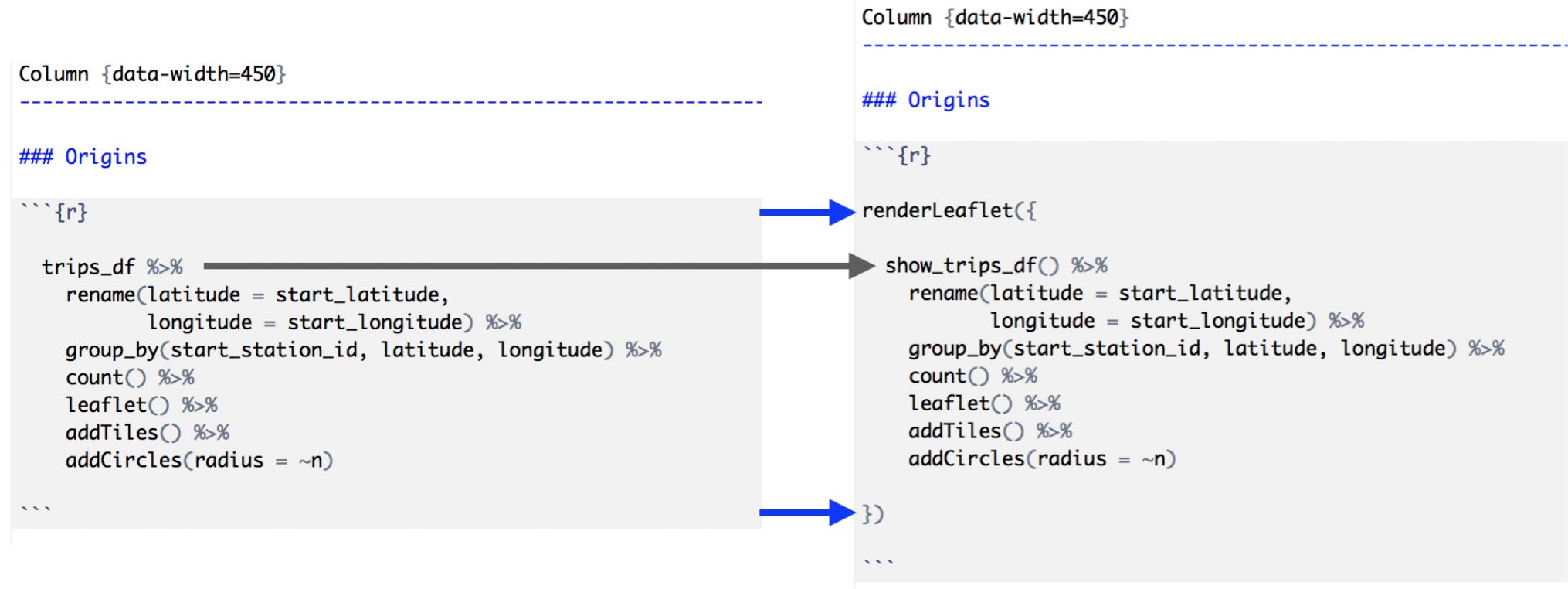
```

Using the reactive dataframe

```
Column {data-width=450}
-----
### Origins
``{r}
trips_df %>%
  rename(latitude = start_latitude,
         longitude = start_longitude) %>%
  group_by(start_station_id, latitude, longitude) %>%
  count() %>%
  leaflet() %>%
  addTiles() %>%
  addCircles(radius = ~n)
```
Column {data-width=450}

Origins
``{r}
renderLeaflet({
 show_trips_df() %>%
 rename(latitude = start_latitude,
 longitude = start_longitude) %>%
 group_by(start_station_id, latitude, longitude) %>%
 count() %>%
 leaflet() %>%
 addTiles() %>%
 addCircles(radius = ~n)
})
```
...
```

Making dashboard components reactive



Steps to the reactive dataframe pattern

1. Create a sidebar column (using `.sidebar`).
2. Add user inputs to the sidebar (using `xyzInput()` Shiny widgets).
3. Make a "dataframe" that reacts to user inputs (using `reactive()`).
4. Replace the dataframe in the dashboard component code with the reactive version.
5. Wrap each dashboard output with the appropriate Shiny version (`renderXyz()`).

Let's practice!

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Customized inputs for charts

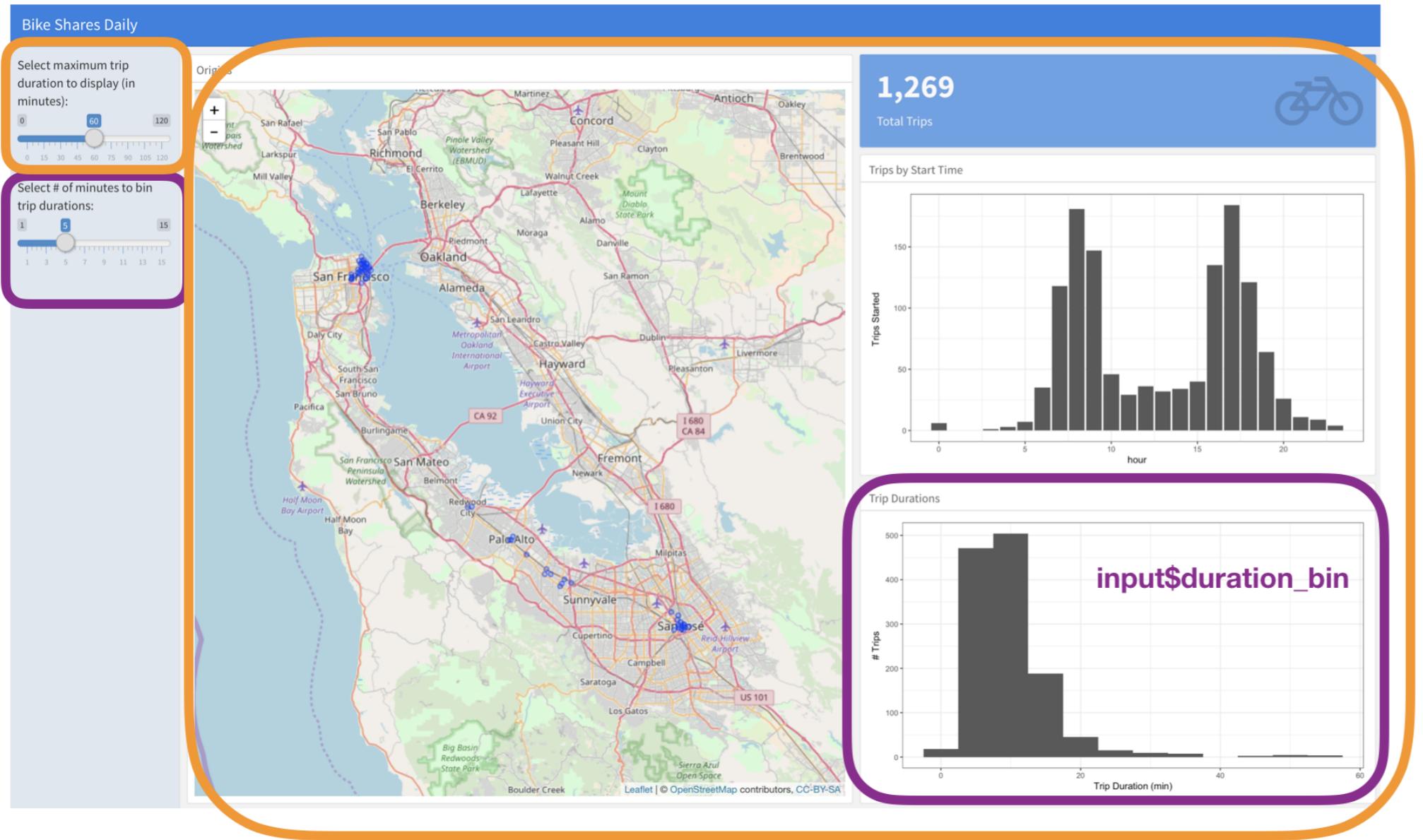
BUILDING DASHBOARDS WITH FLEXDASHBOARD



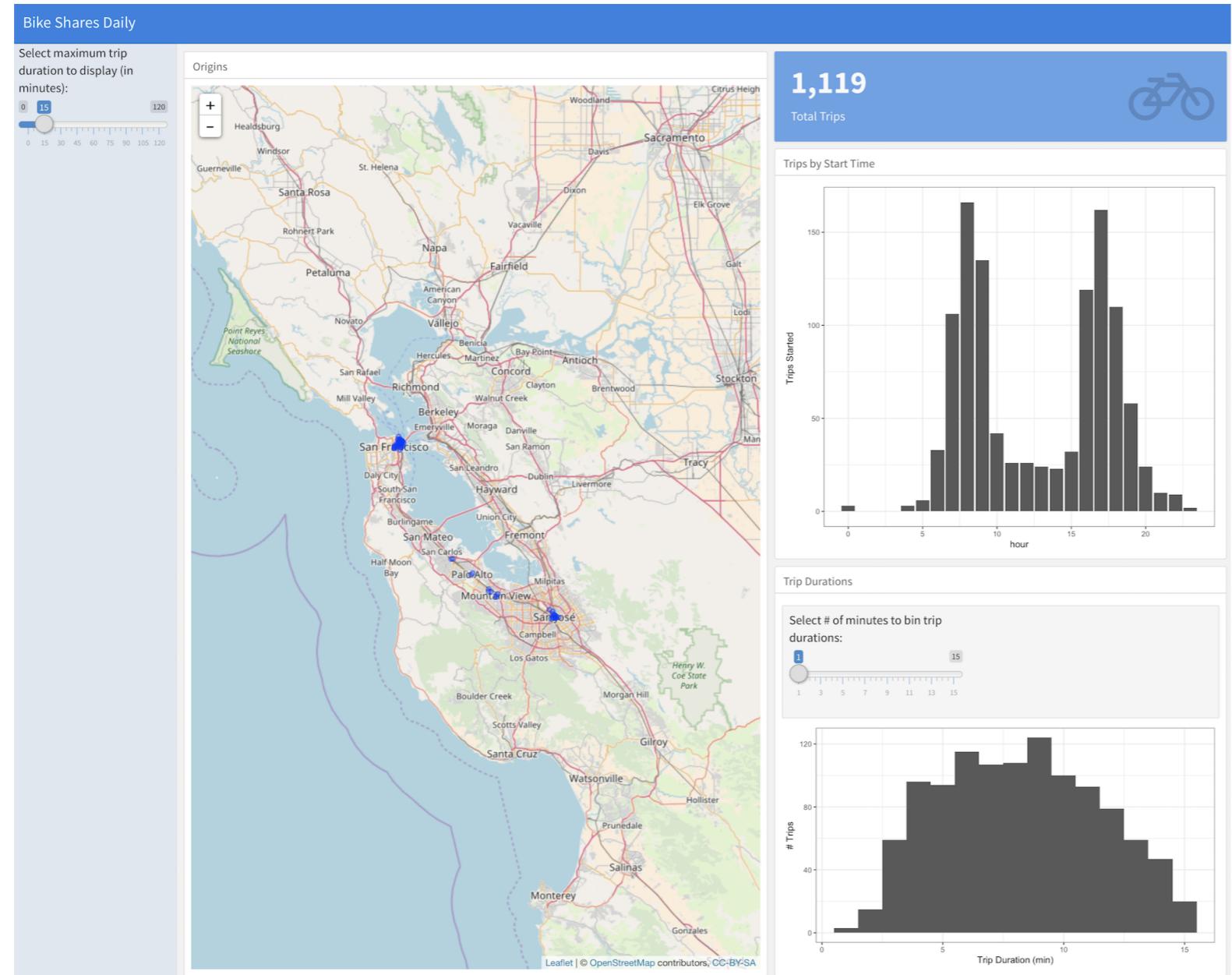
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Chart-specific effects



Moving inputs into charts



Moving inputs into charts

```
```{r}  
→ fillCol(height = 600, flex = c(NA, 1),
 inputPanel(
 sliderInput("xyz_input", ...)
),
 plotOutput("xyzPlot", height = "100%")
)

output$xyzPlot <- renderPlot({
})
...
```
```

Moving inputs into charts

```
```{r}

fillCol(height = 600, flex = c(NA, 1),

```

# Moving inputs into charts

```
```{r}

fillCol(height = 600, flex = c(NA, 1),
  inputPanel(
    sliderInput("xyz_input", ...)
  ),
  → plotOutput("xyzPlot", height = "100%")
)

output$xyzPlot <- renderPlot({
  ...
})```

```

Moving inputs into charts

```
```{r}

fillCol(height = 600, flex = c(NA, 1),
inputPanel(
 sliderInput("xyz_input", ...)
),
plotOutput("xyzPlot", height = "100%")
)

→ output$xyzPlot <- renderPlot({

})

```

```

A shortcut

Global Sidebar `{.sidebar}`

```
=====
```

```
```{r}
```

```
...
```

Overview

```
=====
```

Column `{data-width=650 .tabset}`

```

```

[### Origins](#)

# **Let's practice!**

**BUILDING DASHBOARDS WITH FLEXDASHBOARD**

# Course Recap

BUILDING DASHBOARDS WITH FLEXDASHBOARD



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# Resources

- <https://rmarkdown.rstudio.com/flexdashboard/>
- <https://www.htmlwidgets.org/>

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# Resources

- <https://rmarkdown.rstudio.com/flexdashboard/>
- <https://www.htmlwidgets.org/>
  - leaflet
  - DT (datatable)
  - plotly
  - highcharter

# shinydashboard

- Create a dashboard style layout with just Shiny

# Thank you!

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