Choropleth Basics

Ari Lamstein
Course Outline

1. Introduction
2. Choroplethr Basics
3. Variables and Vintages
4. Data Details
5. Learning More
Choropleth Basics

• Loading the package
• Viewing example data
• Mapping example data
• Customizing maps
Choropleth Basics

- Loading the package
- Viewing example data
- Mapping example data
- Customizing maps
library(choroplethr)
library(choroplethrMaps)
Verification

Checkmark means “loaded”
install.packages vs. library

Run library each time you load Rstudio
Choroplethr Basics

- Loading the package
- Viewing example data
- Mapping example data
- Customizing maps
?df_pop_state

? Means “help”
```r
> data(df_pop_state)
> df_pop_state

<table>
<thead>
<tr>
<th>region</th>
<th>value</th>
</tr>
</thead>
<tbody>
<tr>
<td>alabama</td>
<td>4777326</td>
</tr>
<tr>
<td>alaska</td>
<td>711139</td>
</tr>
<tr>
<td>arizona</td>
<td>6410979</td>
</tr>
<tr>
<td>arkansas</td>
<td>2916372</td>
</tr>
<tr>
<td>california</td>
<td>37325068</td>
</tr>
<tr>
<td>colorado</td>
<td>5042853</td>
</tr>
<tr>
<td>connecticut</td>
<td>3572213</td>
</tr>
<tr>
<td>delaware</td>
<td>900131</td>
</tr>
<tr>
<td>district of columbia</td>
<td>605759</td>
</tr>
<tr>
<td>florida</td>
<td>18885152</td>
</tr>
<tr>
<td>georgia</td>
<td>9714569</td>
</tr>
<tr>
<td>hawaii</td>
<td>1362730</td>
</tr>
<tr>
<td>idaho</td>
<td>1567803</td>
</tr>
<tr>
<td>illinois</td>
<td>12823860</td>
</tr>
<tr>
<td>indiana</td>
<td>6485530</td>
</tr>
<tr>
<td>iowa</td>
<td>3047646</td>
</tr>
<tr>
<td>kansas</td>
<td>2851183</td>
</tr>
</tbody>
</table>
```

`data(df_pop_state)`

Load the data
View(df_pop_state)

Click “region” and “value” to sort
Choropleth Basics

• Loading the package
• Viewing example data
• Mapping example data
• Customizing maps
state_choropleth(df_pop_state)
(region, value) pairs
Choropleth Basics

• Loading the package
• Viewing example data
• Mapping example data
• Customizing maps
Create a choropleth of US States

Description

The map used is state.map in the package choroplethMaps. See state.regions in the choroplethMaps package for a data.frame that can help you coerce your regions into the required format.

Usage

`state_choropleth(df, title = "", legend = "", num_colors = ?, zoom = NULL, reference_map = FALSE)

Arguments

df
A data.frame with a column named "region" and a column named "value". Elements in the "region" column must exactly match how regions are named in the "region" column in state.map.

title
An optional title for the map.

legend
An optional name for the legend.

num_colors
The number of colors to use on the map. A value of 0 uses a divergent scale (useful for visualizing negative and positive numbers). A value of 1 uses a continuous scale (useful for visualizing outliers), and a value in [2, 9] will use that many quantiles.

zoom
An optional vector of states to zoom in on. Elements of this vector must exactly match the names of states as they appear in the "region" column of state.regions.

reference_map
If true, render the choropleth over a reference map from Google Maps.

Examples

```r
## Not run:
# default parameters
data(df_pop_state)
state_choropleth(df_pop_state,
legend = "Population")
```
Customizing Maps

- Title and legend
- Scale
- Zoom
- Reference map
state_choropleth(df_pop_state)
state_choropleth(df_pop_state,
    title = "2012 State Population Estimates",
    legend = "Population")
Customizing Maps

- Title and legend
- Scale
- Zoom
- Reference map
state_choropleth(df_pop_state, num_colors = 7)
state_choropleth(df_pop_state, num_colors = 2)
state_choropleth(df_pop_state, num_colors = 1)
Customizing Maps

- Title and legend
- Scale
- Zoom
- Reference map
state_choropleth(df_pop_state,
    zoom = c("california", "oregon", "washington"))
```r
> library(choroplethrMaps)
> data(state.regions)
> state.regions

<table>
<thead>
<tr>
<th>region</th>
<th>abb</th>
<th>fips.numeric</th>
<th>fips.character</th>
</tr>
</thead>
<tbody>
<tr>
<td>alaska</td>
<td>AK</td>
<td>2</td>
<td>02</td>
</tr>
<tr>
<td>alabama</td>
<td>AL</td>
<td>1</td>
<td>01</td>
</tr>
<tr>
<td>arkansas</td>
<td>AR</td>
<td>5</td>
<td>05</td>
</tr>
<tr>
<td>arizona</td>
<td>AZ</td>
<td>4</td>
<td>04</td>
</tr>
<tr>
<td>california</td>
<td>CA</td>
<td>6</td>
<td>06</td>
</tr>
<tr>
<td>colorado</td>
<td>CO</td>
<td>8</td>
<td>08</td>
</tr>
<tr>
<td>connecticut</td>
<td>CT</td>
<td>9</td>
<td>09</td>
</tr>
<tr>
<td>district of columbia</td>
<td>DC</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>delaware</td>
<td>DE</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>florida</td>
<td>FL</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>georgia</td>
<td>GA</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>hawaii</td>
<td>HI</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>iowa</td>
<td>IA</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>idaho</td>
<td>ID</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>illinois</td>
<td>IL</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>indiana</td>
<td>IN</td>
<td>18</td>
<td>18</td>
</tr>
</tbody>
</table>
```
Customizing Maps

- Title and legend
- Scale
- Zoom
- Reference map
state_choropleth(df_pop_state,
    zoom = c("california", "oregon", "washington"))
state_choropleth(df_pop_state,
    num_colors = 1,
    zoom = c("california", "oregon", "washington"),
    reference_map = TRUE)
Choroplethr Basics

- Loading the package
- Viewing example data
- Mapping example data
- Customizing maps