

1. Shiny のギャラリー

(Shiny によるデータサイエンス演習)

<https://www.kkaneko.jp/cc/shiny/index.html>

金子邦彦



- ◆ Shiny は、ビジュアルでインタラクティブ
Webブラウザでボタン、スライダ、メニュー
等を操作すると、直ちに結果が得られる
- ◆ データ解析機能は Rシステムが担う

Shiny でのデータテーブル表示例



Basic DataTable

Manufacturer: Transmission: Cylinders:

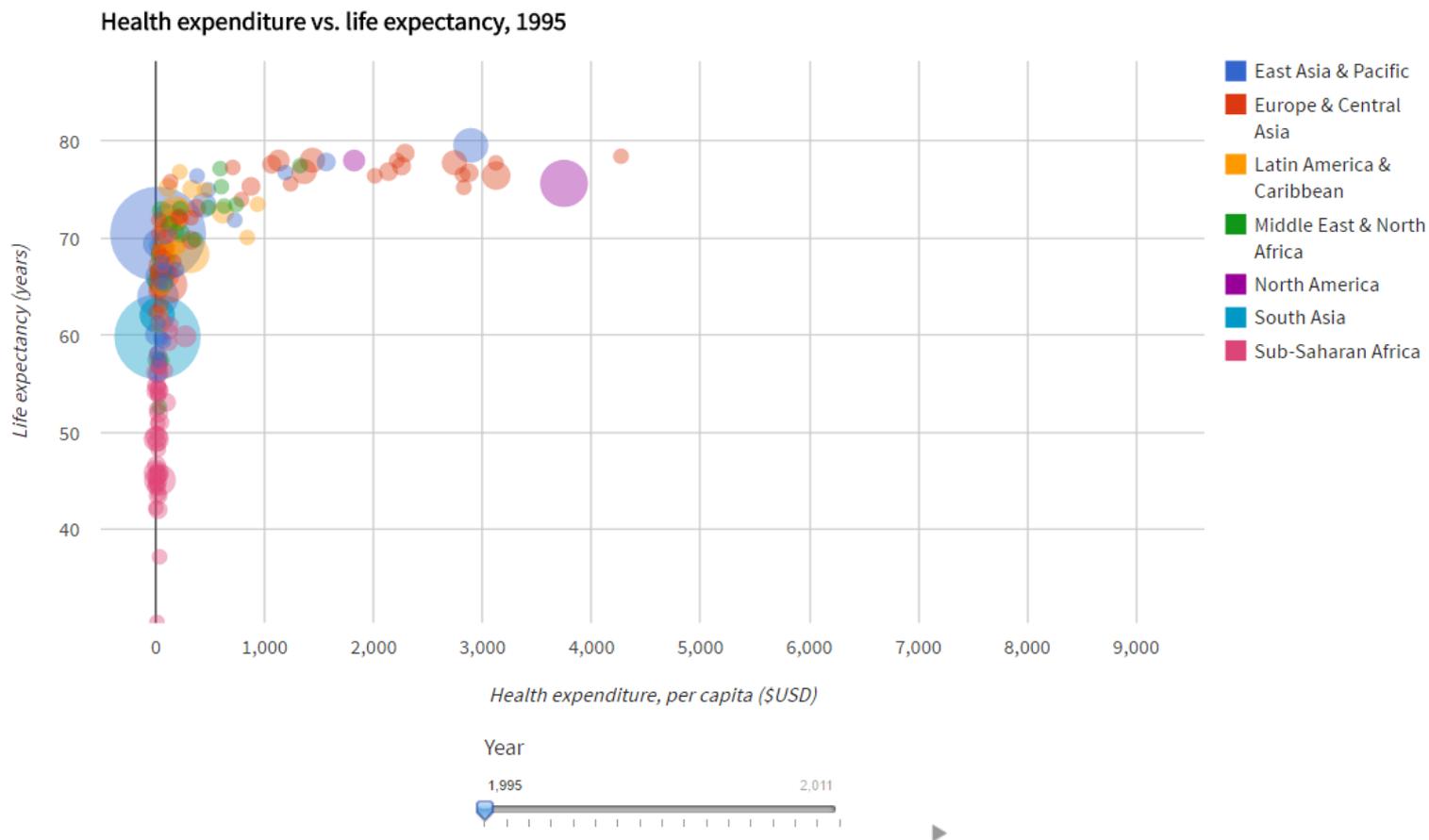
Show entries Search:

	manufacturer	model	displ	year	cyl	trans	drv	cty	hwy	fl	class
1	audi	a4	1.8	1999	4	auto(l5)	f	18	29	p	compact
2	audi	a4	1.8	1999	4	manual(m5)	f	21	29	p	compact
3	audi	a4	2	2008	4	manual(m6)	f	20	31	p	compact
4	audi	a4	2	2008	4	auto(av)	f	21	30	p	compact
5	audi	a4	2.8	1999	6	auto(l5)	f	16	26	p	compact
6	audi	a4	2.8	1999	6	manual(m5)	f	18	26	p	compact
7	audi	a4	3.1	2008	6	auto(av)	f	18	27	p	compact
8	audi	a4 quattro	1.8	1999	4	manual(m5)	4	18	26	p	compact
9	audi	a4 quattro	1.8	1999	4	auto(l5)	4	16	25	p	compact
10	audi	a4 quattro	2	2008	4	manual(m6)	4	20	28	p	compact

Showing 1 to 10 of 234 entries

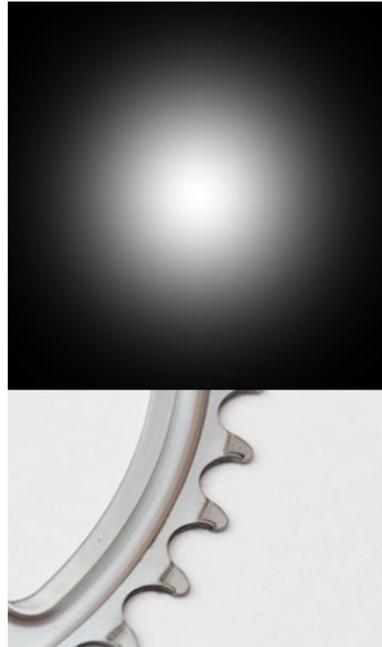
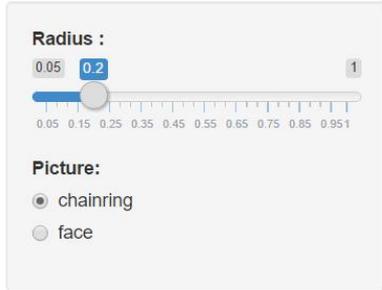
Previous ... Next

Shiny でのグラフ表示例



Shiny での表示例

Client data and query string example



画像の表示例

An irrational number $\sqrt{2}$ and a fraction

$$1 - \frac{1}{2}$$

and a fact about π :

$$\frac{2}{\pi} = \frac{\sqrt{2}}{2} \cdot \frac{\sqrt{2+\sqrt{2}}}{2} \cdot \frac{\sqrt{2+\sqrt{2+\sqrt{2}}}}{2} \dots$$

Dynamic output 1:

$$\alpha^2$$

and output 2

$$3^2 + 4^2 = 5^2$$

and output 3

$$\sin^2(\theta) + \cos^2(\theta) = 1$$

The busy Cauchy distribution

$$\frac{1}{\pi\gamma \left[1 + \left(\frac{x-x_0}{\gamma} \right)^2 \right]}$$

If X is a Cauchy random variable, then

$$P(X \leq 1.897) = 0.846$$

数式の表示例

Shiny のウィジェットの例

Distribution type:

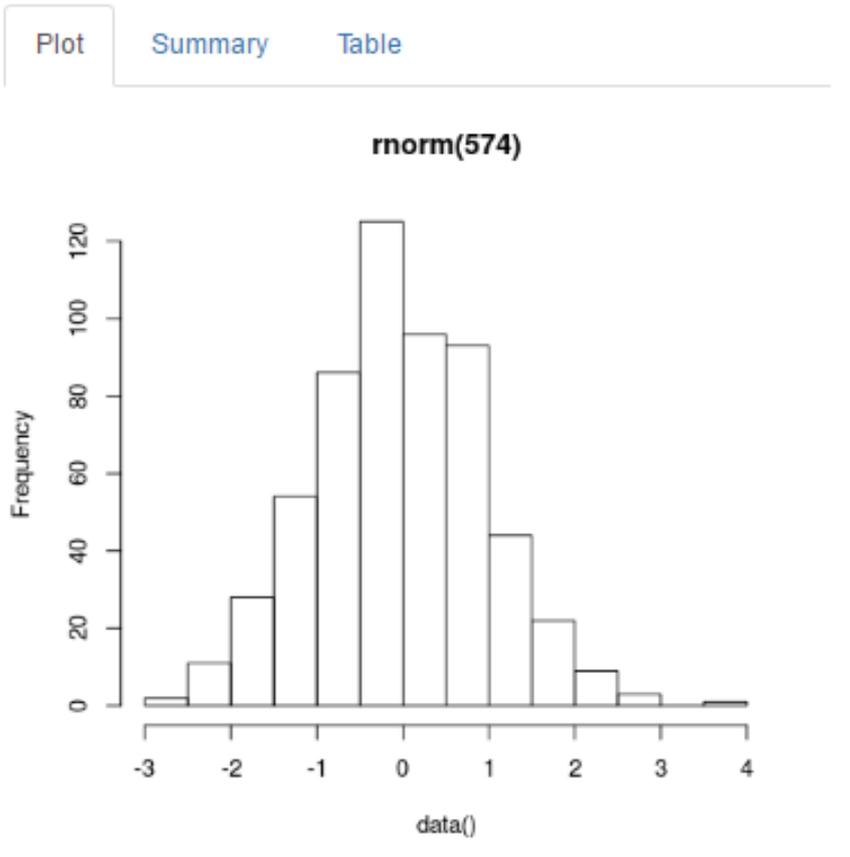
- Normal
- Uniform
- Log-normal
- Exponential

Number of observations:

1 574 1,000



1 201 401 601 801



Shiny のウィジェットの種類



- ◆ メニュー
- ◆ ボタン
- ◆ チェックボックス
- ◆ ラジオボタン
- ◆ スライダー
- ◆ フォーム
- ◆ 日付入力用ボックス
- ◆ ファイルアップロード

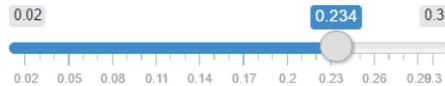
A screenshot of the Shiny widget gallery, displaying a grid of 12 different widget types. Each widget is shown in a light gray box with a title and a small example of the widget in use. Below each example is a "Current Value:" field and a "See Code" button. The widgets include: Action button, Single checkbox, Checkbox group, Date input, Date range, File input, Numeric input, Radio buttons, Select box, Slider, Slider range, and Text input. The File input widget shows a message in Japanese: "ファイルを選択してください" (Please select a file).

表示方法のバリエーション



- ◆ アプリを簡単に作ることができる
- ◆ Webページの中に、ウィジェット、グラフなどを埋め込むこともできる

Change the aspect ratio

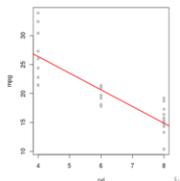


Here is a spark line  that shows you the time series `sunspots`. Note when you render inline plots, you must provide both `width` and `height` values (in pixels), because it is not possible for `shiny` to figure out the width and height values automatically in this case. We used `40` as the fixed height here, and a changing width (calculated from the function `sunspots_width()`) depending on the aspect ratio.

- ◆ Word, PDF等でのレポート生成機能もある

```
Here is my regression model:
options(digits = 4)
fit <- lm(regformula(), data = mtcars)
s <- coef(fit)
summary(fit)
##
## Call:
## lm(formula = regformula(), data = mtcars)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -4.981 -2.119  0.222  1.872  7.519
##
## Coefficients:
##           Estimate Std. Error t value Pr(>|t|)
## (Intercept)  37.885      2.074   18.27 < 2e-16 ***
##           -21.876      0.322  -68.02 < 2e-18 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 3.21 on 30 degrees of freedom
## Multiple R-squared:  0.759, Adjusted R-squared:  0.717
## F-statistic: 79.8 on 1 and 30 DF, p-value: 6.11e-18

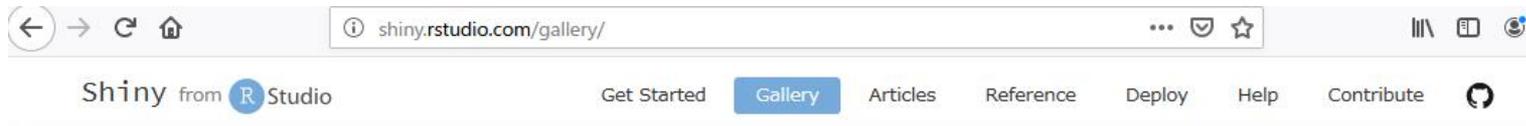
The fitting result is mpg = 37.88464 - 28.759Cyl. Below is a scatter plot with the regression line:
par(mfrow = c(1, 1, 1))
plot(regformula(), data = mtcars, pch = 19, col = 'gray')
abline(fit, col = 'red', lwd = 2)
```



Shiny のギャラリー



- Webページ : <https://shiny.rstudio.com/gallery/>



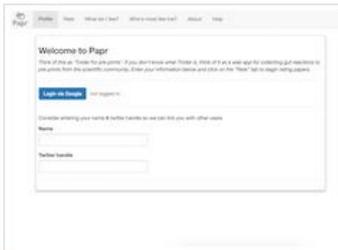
Gallery

Shiny User Showcase

The [Shiny User Showcase](#) contains an inspiring set of sophisticated apps developed and contributed by Shiny users.



Genome browser



Paprr



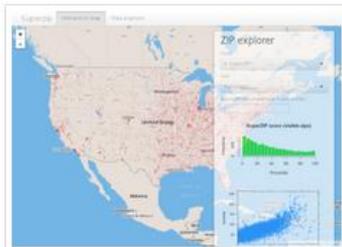
Lego Set Database Explorer



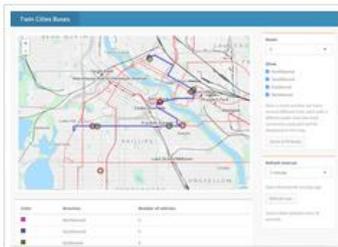
See more

Interactive visualizations

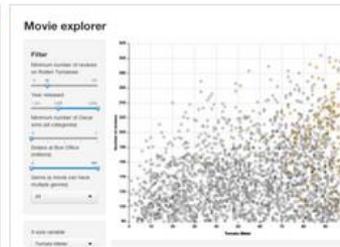
Shiny is designed for fully interactive visualization, using JavaScript libraries like [d3](#), [Leaflet](#), and [Google Charts](#).



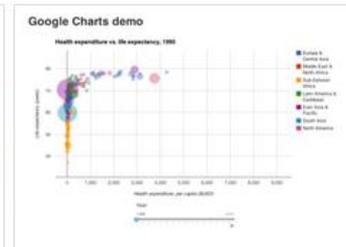
SuperZip example



Bus dashboard



Movie explorer



Google Charts

Shiny のギャラリー ①



「Widgets」のところ

Columns in diamonds to show:

- carat
- cut
- color
- clarity
- depth
- table
- price
- x
- y
- z

DataTables Demo

Columns in diamonds to show:

- carat
- cut
- color
- clarity
- depth
- table
- price
- x
- y
- z

diamonds mtcars iris

Show 10 entries Search:

	carat	cut	color	clarity	depth	table	price	x	y
34408	0.3	Ideal	G	IF	61.3	55	863	4.33	4.35
34667	0.31	Premium	E	VS2	61.7	58	872	4.34	4.31
37691	0.43	Very Good	H	VS2	63.4	55	994	4.82	4.86
3264	0.93	Ideal	I	SI1	61.9	57	3359	6.23	6.21
4461	1.01	Premium	H	SI2	60.1	58	3620	6.55	6.52
37297	0.39	Ideal	G	VVS1	62	56	978	4.66	4.7
12129	1.25	Premium	J	VS2	62	59	5170	6.87	6.9
32585	0.31	Ideal	G	IF	62	54	801	4.35	4.39
20661	1	Very Good	F	VVS2	63	59	8950	6.33	6.36
15804	1.21	Very Good	E	SI1	62.9	58	6324	6.78	6.79

Showing 1 to 10 of 1,000 entries Previous 1 2 3 4 5 ... 100 Next

データテーブルの表示と並べ替え

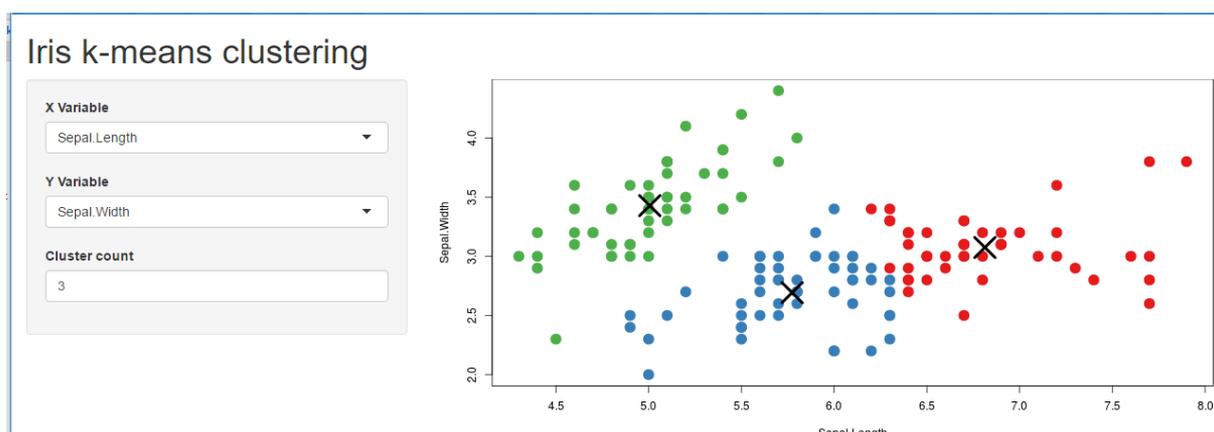
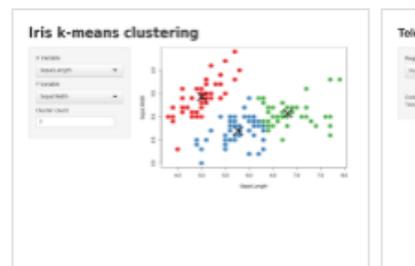
Shiny のギャラリー ②



「Kmeans example」のところ

Start simple

If you're new to Shiny, these simple b



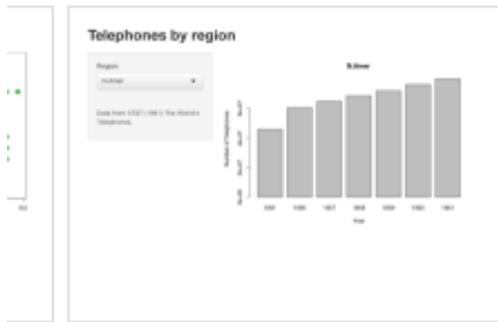
150個のデータをクラスタリング

Shiny のギャラリー ③

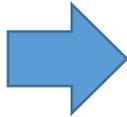


「Telephones by region」のところ

imple but complete applications are d



Telephones by region

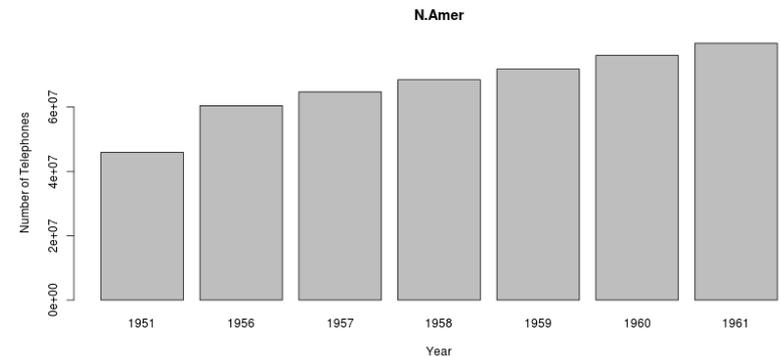


Telephones by region

Region:

N.Amer|

- N.Amer
- Europe
- Asia
- S.Amer
- Oceania
- Africa
- Mid.Amer



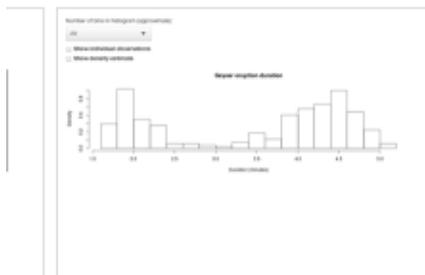
地域ごとに**数を集計**.
その年ごとの**変化**をグラフ表示.

Shiny のギャラリー ④

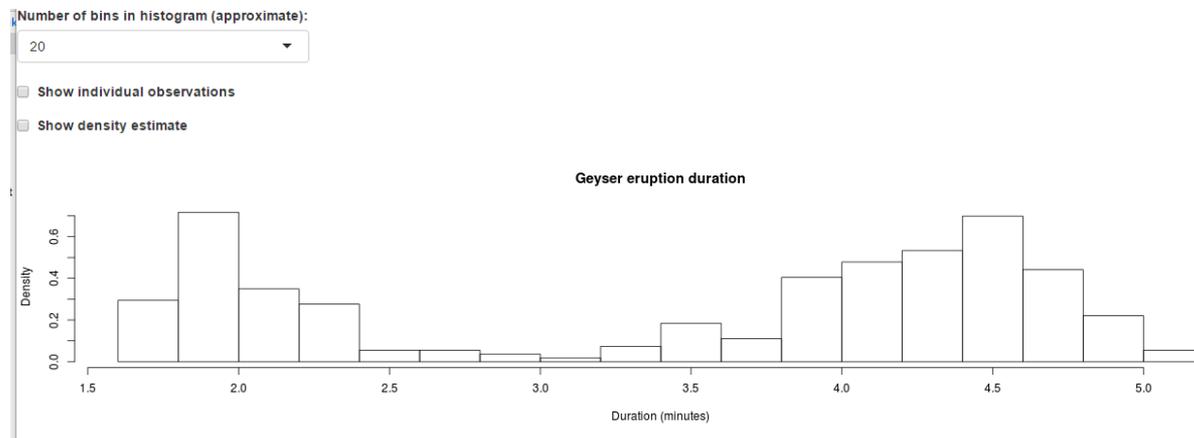
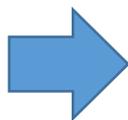


「Faithful」のところ

...e designed for you to study.



Faithful



間欠泉の噴火期間（単位は分）
のヒストグラム

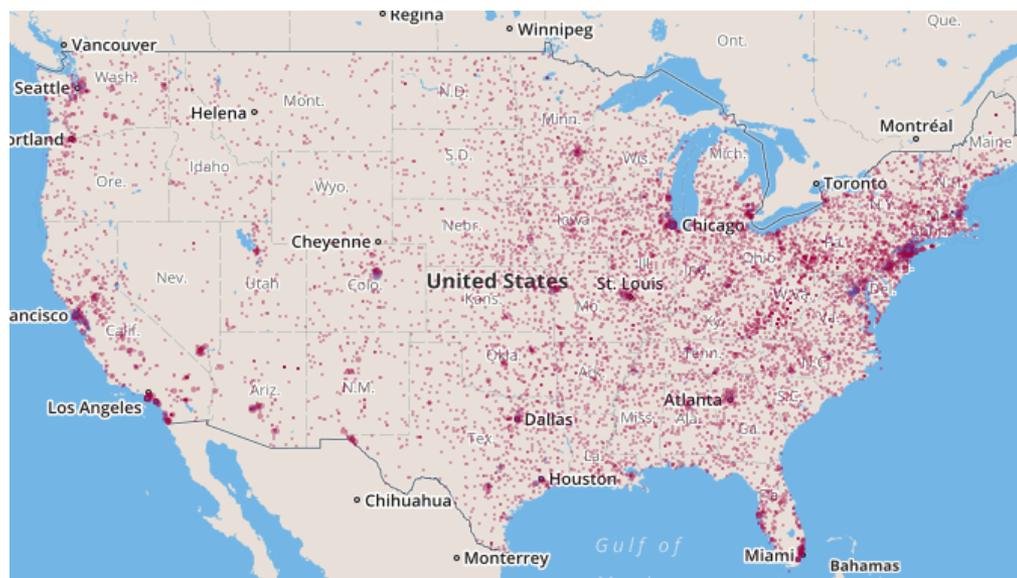
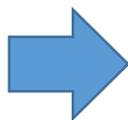
Shiny のギャラリー ⑥



「SuperZip example」 のところ



SuperZip example

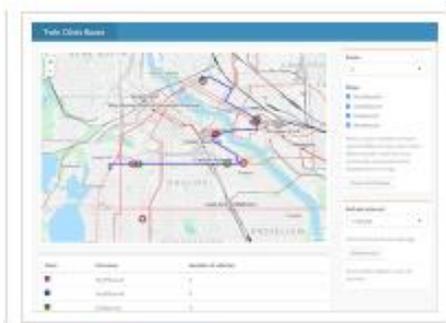


人口, 収入などを地図にプロット
(データは3172件)

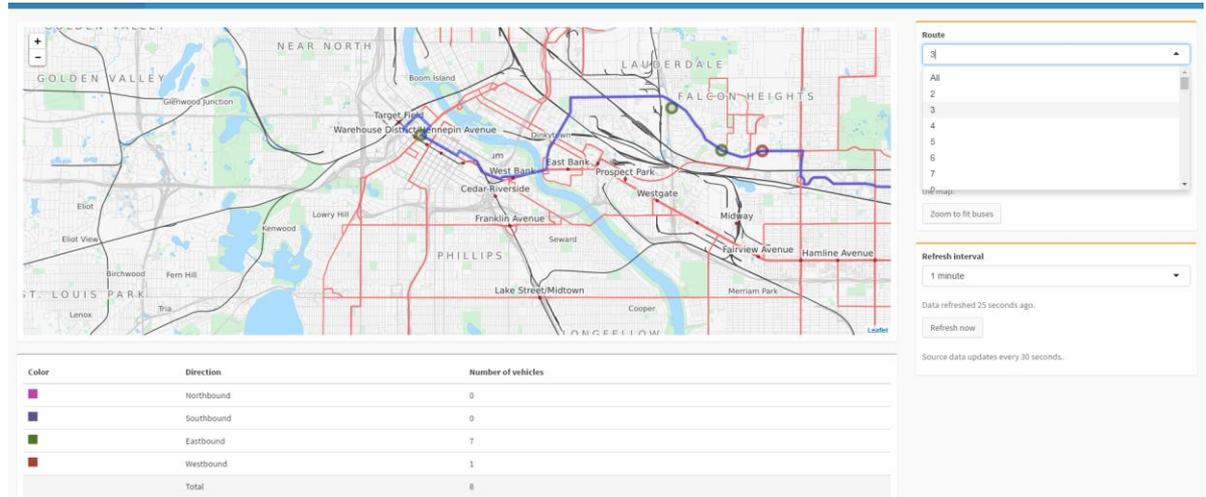
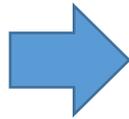
Shiny のギャラリー ⑦



「Interactive Visualization」 のところ



Bus dashboard

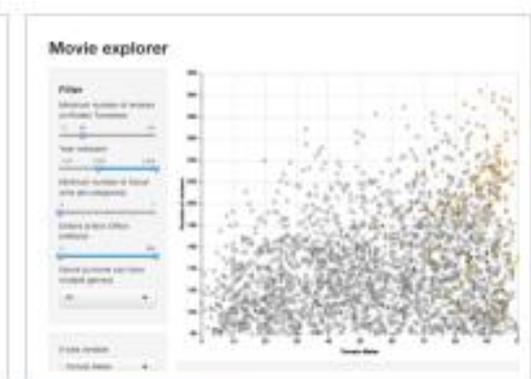


バス路線図

Shiny のギャラリー ⑧



「Interactive Visualization」 のところ



Movie explorer

映画の評価値, 評価数,
年, 映画の長さなどの散布図
(フィルタ機能付き)
(データ: 2557件)

