

CM109 Build your first Shiny app

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Plan

- What is Shiny?
- Examples of Shiny in action
- Basic working parts of Shiny
- Build a simple app

What is Shiny?

Delicious
cheese



<http://stockarch.comImage>

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Amazing,
elegant
appetizer

Image from:
<http://simplystated.realsimple.com/2010/11/01/baked-brie-fresh-365/>

Heat



What is Shiny?

R scripts



<http://stockarch.com/Image>

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html
css
for design
and
interactivity

package
“shiny”



<http://simplystated.realsimple.com/2010/11/01/baked-brie-fresh-365/>

elegant,
interactive
app

Shiny in action

This will be familiar to you:

<http://shinyapps.stat.ubc.ca/STAT545/peer-review/>

Hosted examples:

<http://spark.rstudio.com/ahmed/drift/>

<http://shinyapps.stat.ubc.ca/r-graph-catalog/>

Run locally:

Phyloseq + Shiny (McMurdie and Holmes, 2014)

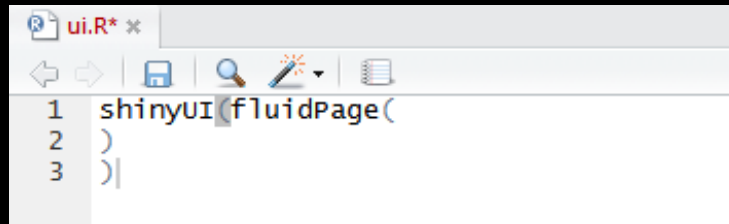
```
library("phyloseq")
```

```
library("shiny")
```

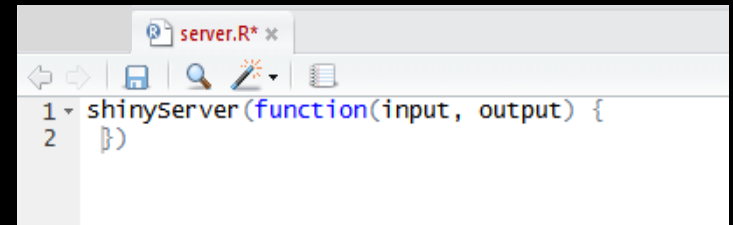
```
shiny::runGitHub("shiny-phyloseq","joey711")
```

Anatomy of a Shiny App

Two scripts: ui.R and server.R



```
1 shinyUI(fluidPage(  
2 )  
3 )|
```



```
1 shinyServer(function(input, output) {  
2 })
```

Anatomy of a Shiny app



How can we arrange things in Shiny?

```
shinyUI(fluidPage(  
  titlePanel(),  
  sidebarLayout(  
    sidebarPanel(),  
    mainPanel()  
  )  
))
```

Gapminder Shiny app

Choose country and
years from Gapminder
data set

Country

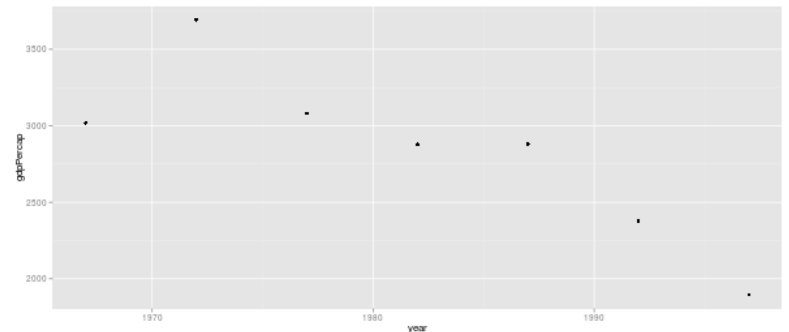
Djibouti

Range of years:



Country selected Djibouti

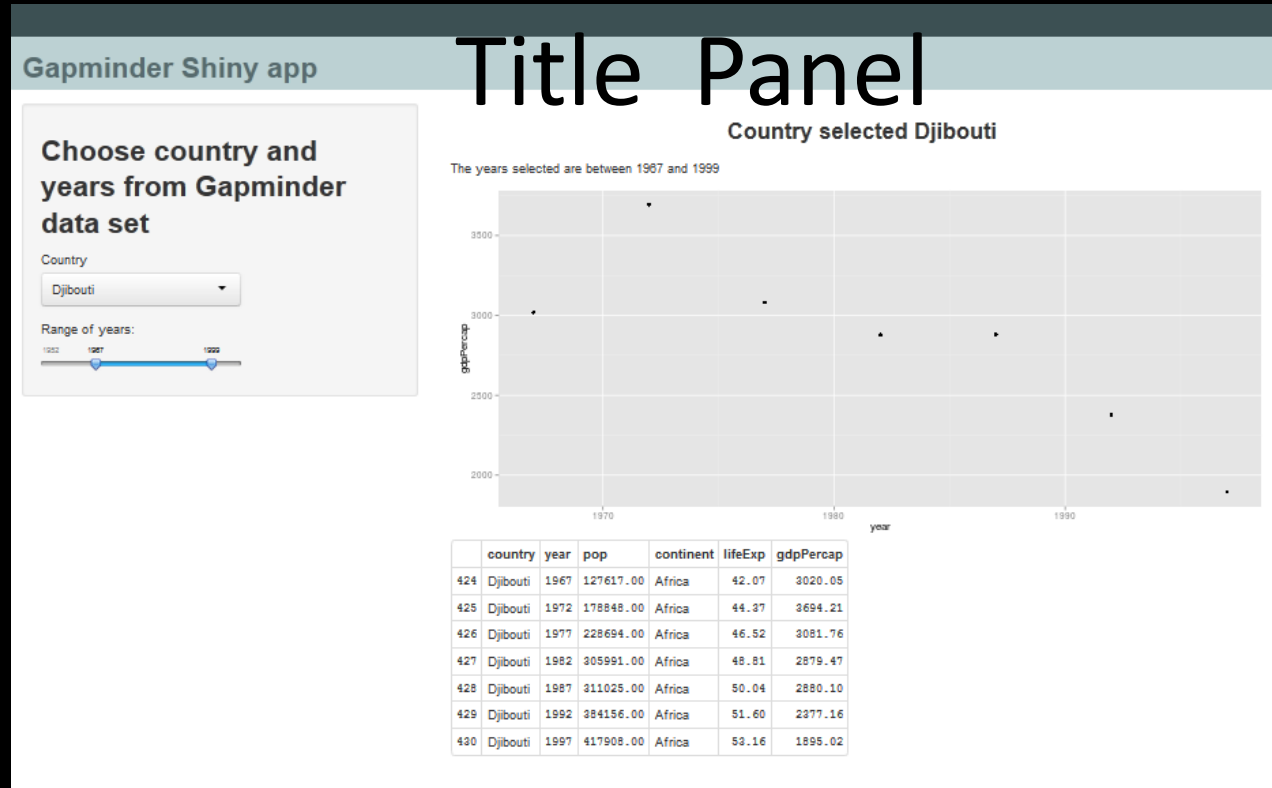
The years selected are between 1967 and 1999



	country	year	pop	continent	lifeExp	gdpPercap
424	Djibouti	1967	127617.00	Africa	42.07	3020.05
425	Djibouti	1972	178848.00	Africa	44.37	3694.21
426	Djibouti	1977	228694.00	Africa	46.52	3081.76
427	Djibouti	1982	305991.00	Africa	48.81	2879.47
428	Djibouti	1987	311025.00	Africa	50.04	2880.10
429	Djibouti	1992	384156.00	Africa	51.60	2377.16
430	Djibouti	1997	417908.00	Africa	53.16	1895.02

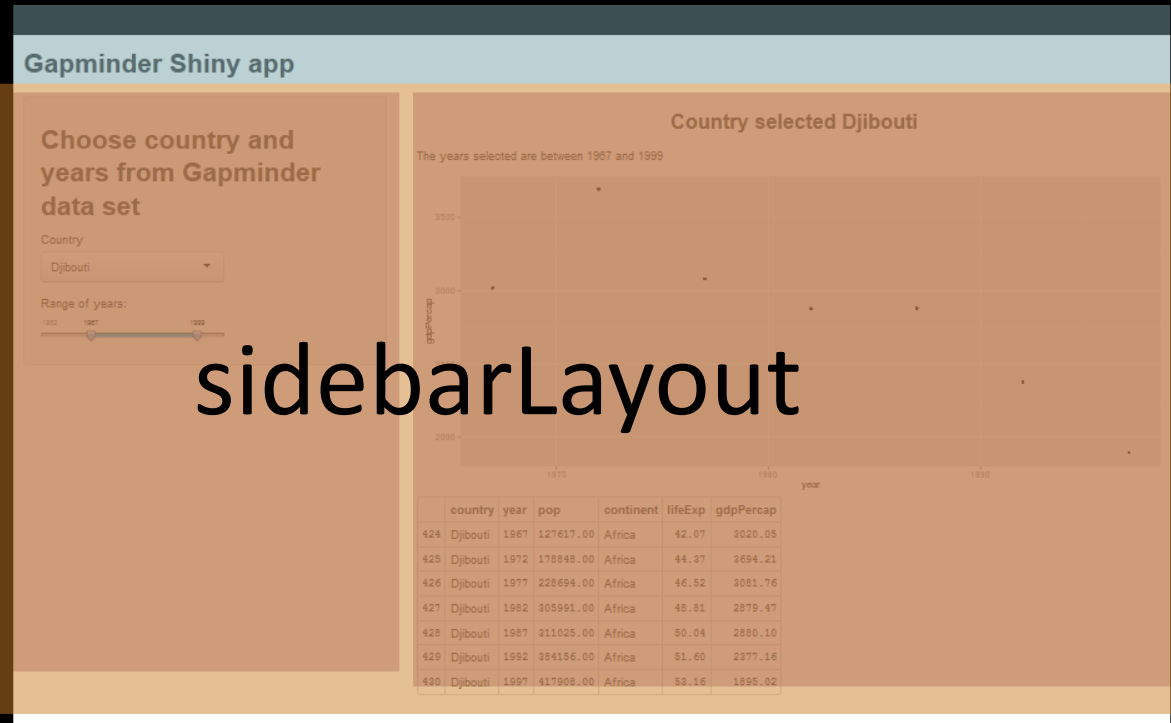
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    sidebarPanel(),  
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))
```



How can we arrange things in Shiny?

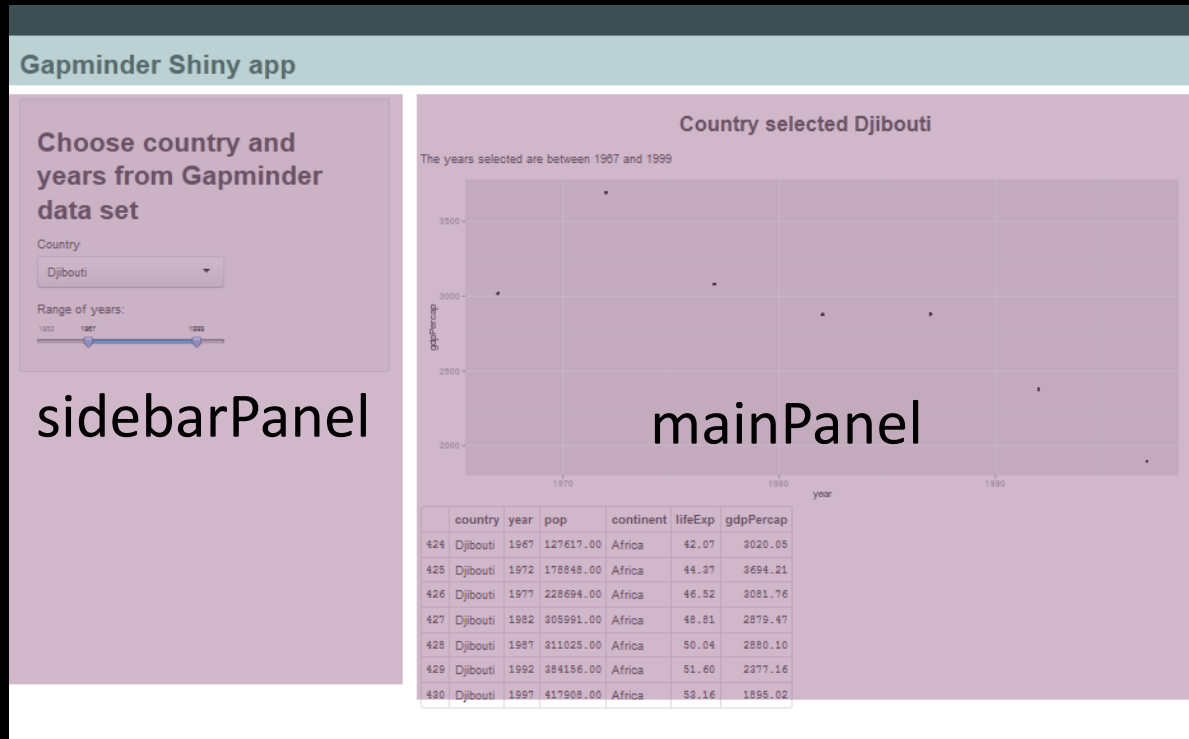
```
shinyUI(fluidPage  
(  
  titlePanel(),  
  sidebarLayout(  
    sidebarPanel(),  
    mainPanel()  
  )  
))
```



sidebarLayout

How can we arrange things in Shiny?

```
shinyUI(fluidPage  
(  
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  sidebarLayout(  
    sidebarPanel(),  
    mainPanel()  
  )  
))
```



How can we interact with an app?

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`

Help text

Note: help text isn't a true widget, but it provides an easy way to add text to accompany other widgets.

`helpText`

Numeric input

1

`numericInput`

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`

How do you run these apps?

- On your own computer:
 - `runApp()` # needs the path to the directory
 - `runUrl()` # needs the url
 - `runGitHub()` # needs the repository (and subdirectory if applicable)
- Hosted on web:
 - ShinyApps.io (easy deployment from within Rstudio: we will do this)
 - Shiny Pro server (host your app using your own server –like our peer review submission app)

What are we building together?

Gapminder Shiny app

Choose country and
years from Gapminder
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Country

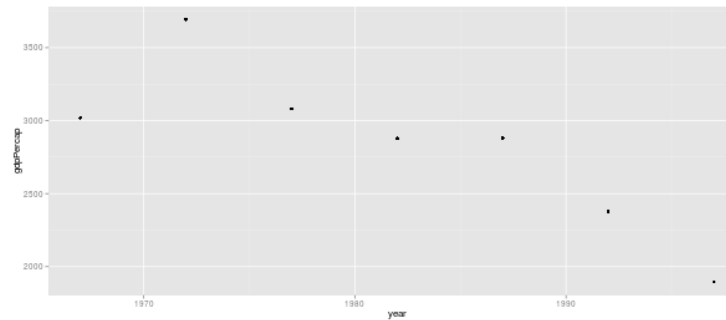
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