Getting started

on the right foot

teach-shiny.rbind.io

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Which of the following four descriptions gives you a **better sense** of the final product?

(1)

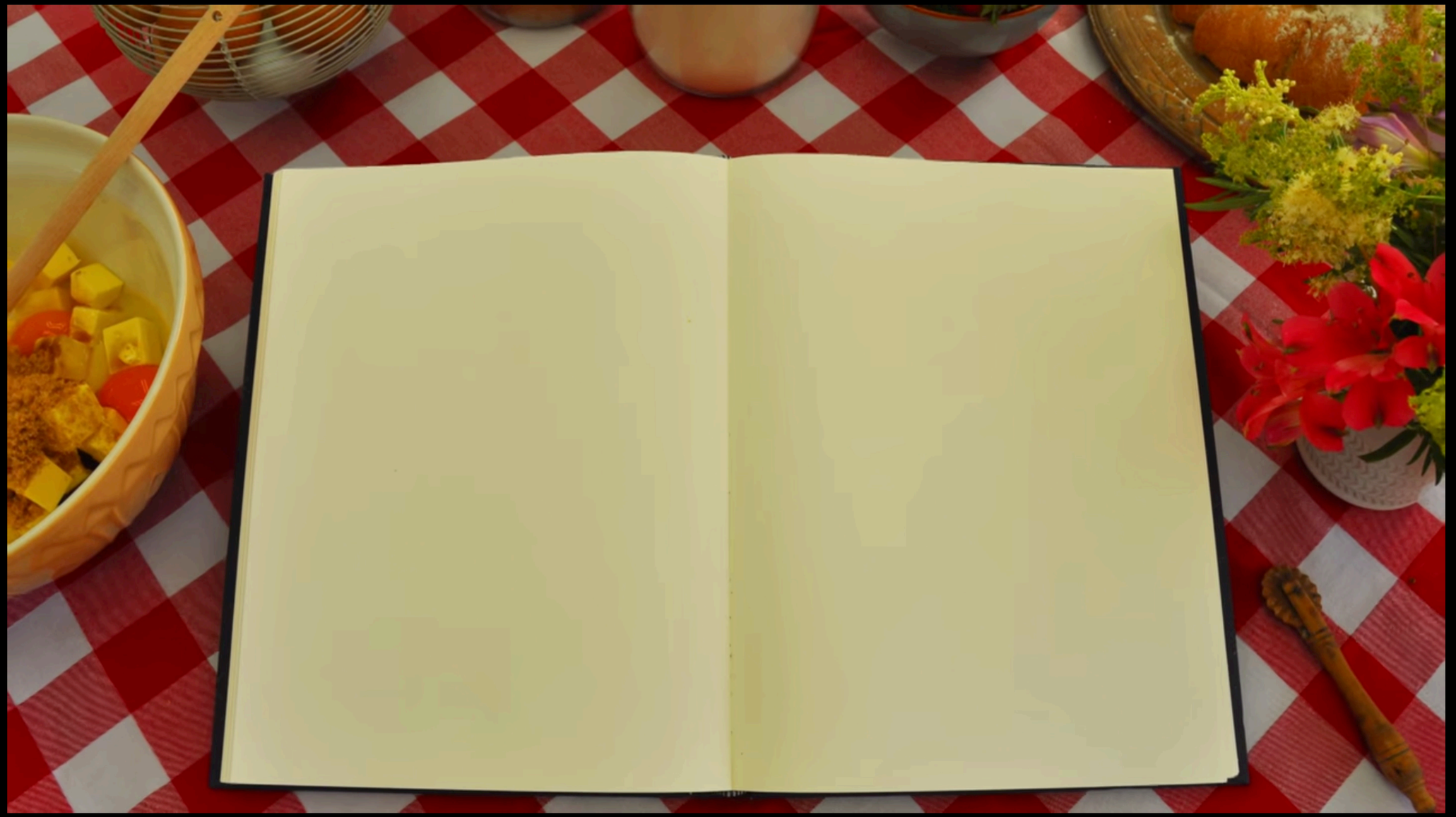
Pineapple and Coconut Sandwich Cake

(2) Pineapple and Coconut Sandwich Cake

(3)

Pineapple and Coconut Sandwich Cake

(4)



Which of the following four descriptions would give your learners (who are new to Shiny) a **better sense** of the final product?

(1)

What is Shiny?

- **shiny** is an R package that makes it incredibly easy to build interactive web applications with R.
- In a Shiny app, automatic "reactive" binding between inputs and outputs and extensive prebuilt widgets make it possible to build beautiful, responsive, and powerful applications with minimal effort.
- Today will will learn how to build Shiny apps, and along the way learn the basics of reactive programming.

(2)

Movie browser

Sample

Enter a sample size between 1 and 651:

30

Take random sample | Write CSV

Plot

Y-axis:

Audience Score

X-axis:

Critics Score

Color by:

MPAA Rating

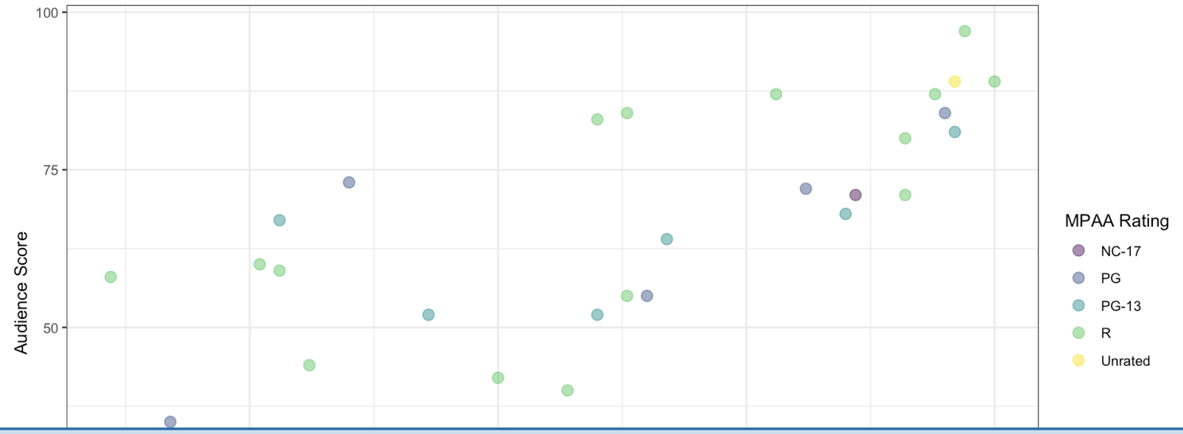
Alpha:

0 0.5 1

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

Data

☑ Show data table

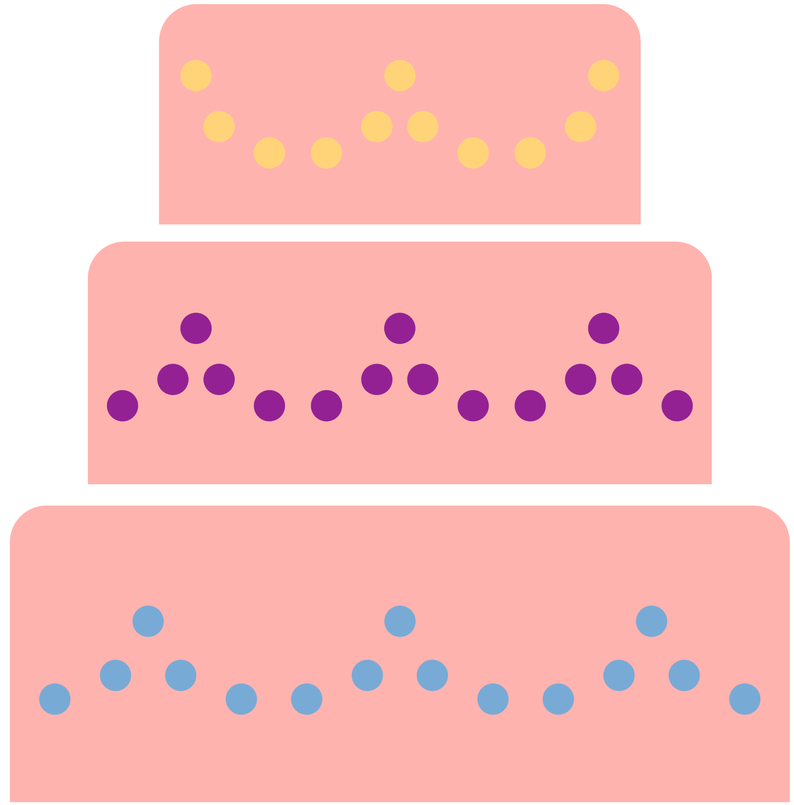


minecr.shinyapps.io/movies

Show 10 entries Search:

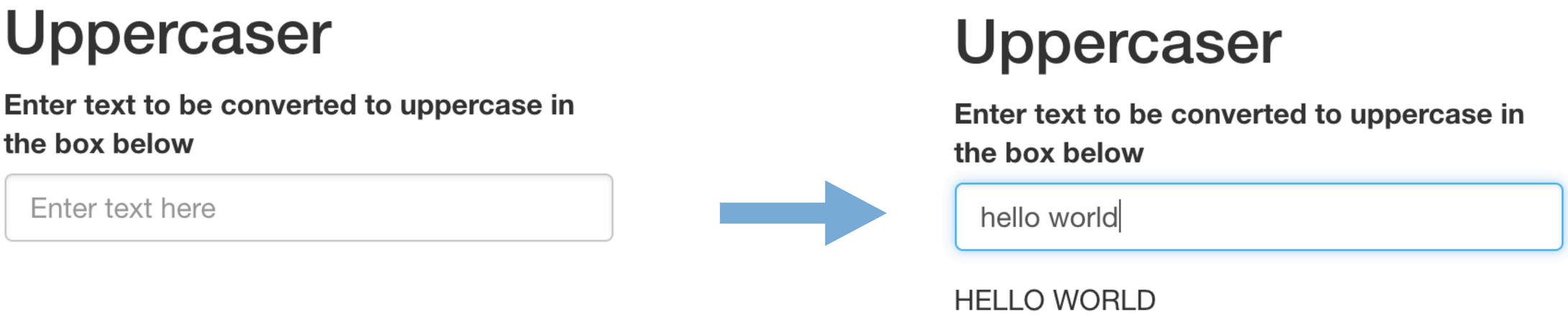
title	title_type	genre	runtime	mpaa_rating	studio	thtr_rel_year
K-19: The Widowmaker	Feature Film	Drama	138	PG-13	Paramount Pictures	2002
Phantom of the Paradise	Feature Film	Horror	92	PG	Fox	1974
Swordfish	Feature Film	Drama	99	R	Warner Bros. Pictures	2001

start with cake



Which of the following two examples is more likely to be **interesting** for a wide range of learners?

(1)


Uppercaser
Enter text to be converted to uppercase in the box below
Enter text here
Uppercaser
Enter text to be converted to uppercase in the box below
hello world
HELLO WORLD

(2)

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Color by:

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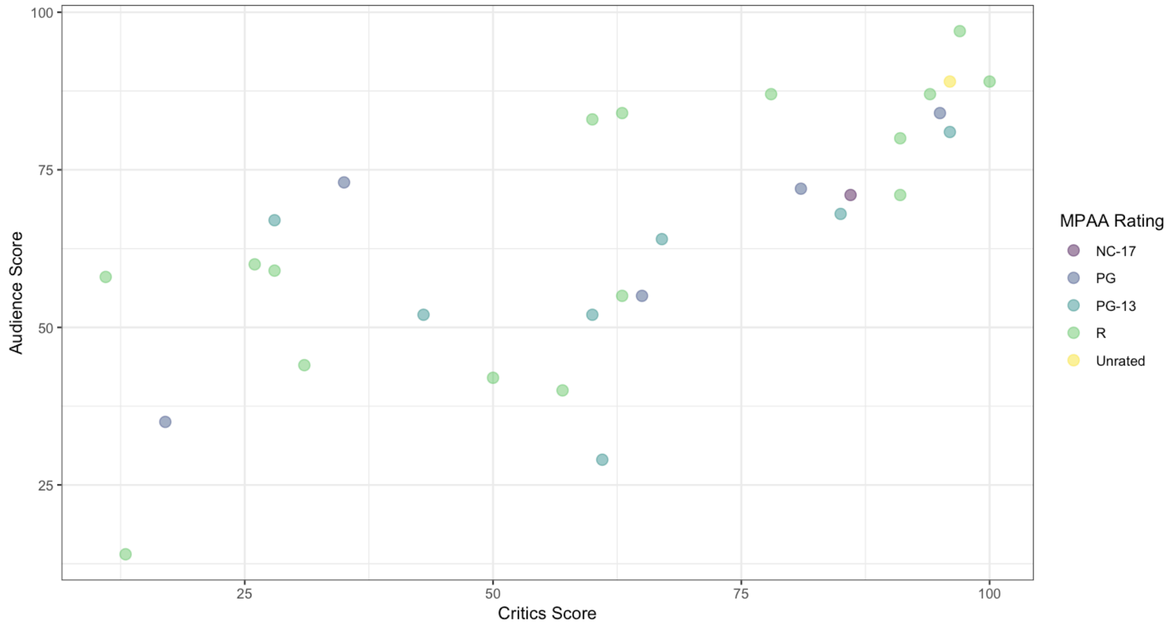
0 0.5 1

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

Data

☑ Show data table



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K-19: The Widowmaker	Feature Film	Drama	138	PG-13	Paramount Pictures	2002
Phantom of the Paradise	Feature Film	Horror	92	PG	Fox	1974
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with great examples,
comes a great amount of code…

but let's focus on the task at hand...

Your turn

The variable selected by default for the Y-axis of the plot is `Audience Score`. Update the app to make the default Y variable to be `IMDB Score`.

```
...

# Select variable for y-axis
selectInput(inputId = "y",
            label = "Y-axis:",
            choices = c("IMDB rating" = "imdb_rating",
                        "IMDB number of votes" = "imdb_num_votes",
                        "Critics Score" = "critics_score",
                        "Audience Score" = "audience_score",
                        "Runtime" = "runtime"),
            selected = "audience_score"),

...
```

```
...

# Select variable for y-axis
selectInput(inputId = "y",
            label = "Y-axis:",
            choices = c("IMDB rating" = "imdb_rating",
                        "IMDB number of votes" = "imdb_num_votes",
                        "Critics Score" = "critics_score",
                        "Audience Score" = "audience_score",
                        "Runtime" = "runtime"),
            selected = "audience_score"),

...
```

```
...

# Select variable for y-axis
selectInput(inputId = "y",
            label = "Y-axis:",
            choices = c("IMDB rating" = "imdb_rating",
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                        "Critics Score" = "critics_score",
                        "Audience Score" = "audience_score",
                        "Runtime" = "runtime"),
            selected = "imdb_rating"),

...
```

Movie browser

Movie browser

Sample

Enter a sample size between 1 and 651:

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Plot

Y-axis: Audience Score

X-axis: Critics Score

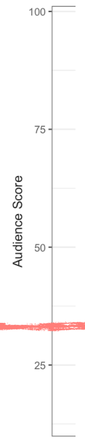
Color by: MPAA Rating

Alpha: 0 — 0.5 — 1

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

Data

Show data table



Show 1

title
K-19: TI Widowr
Phantor Paradis
Swordfi

Movie browser

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Plot

Y-axis: IMDB rating

X-axis: Critics Score

Color by: MPAA Rating

Alpha: 0 — 0.5 — 1

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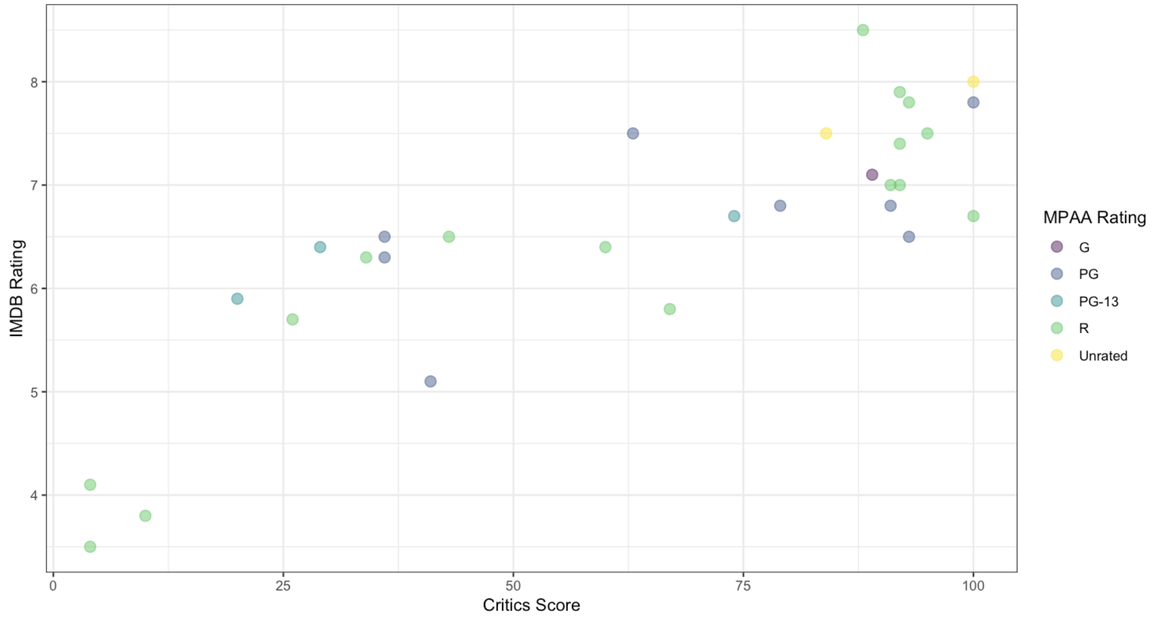
Data

Show data table



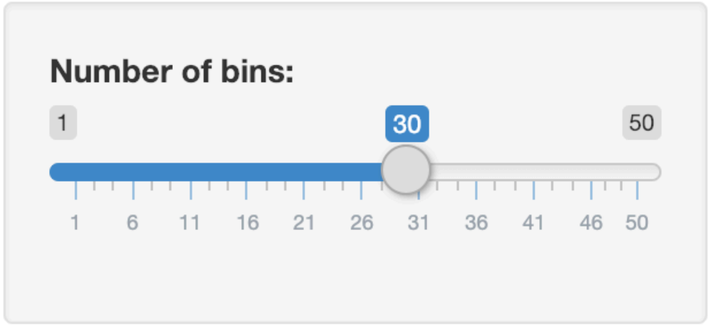
Show 10 entries Search:

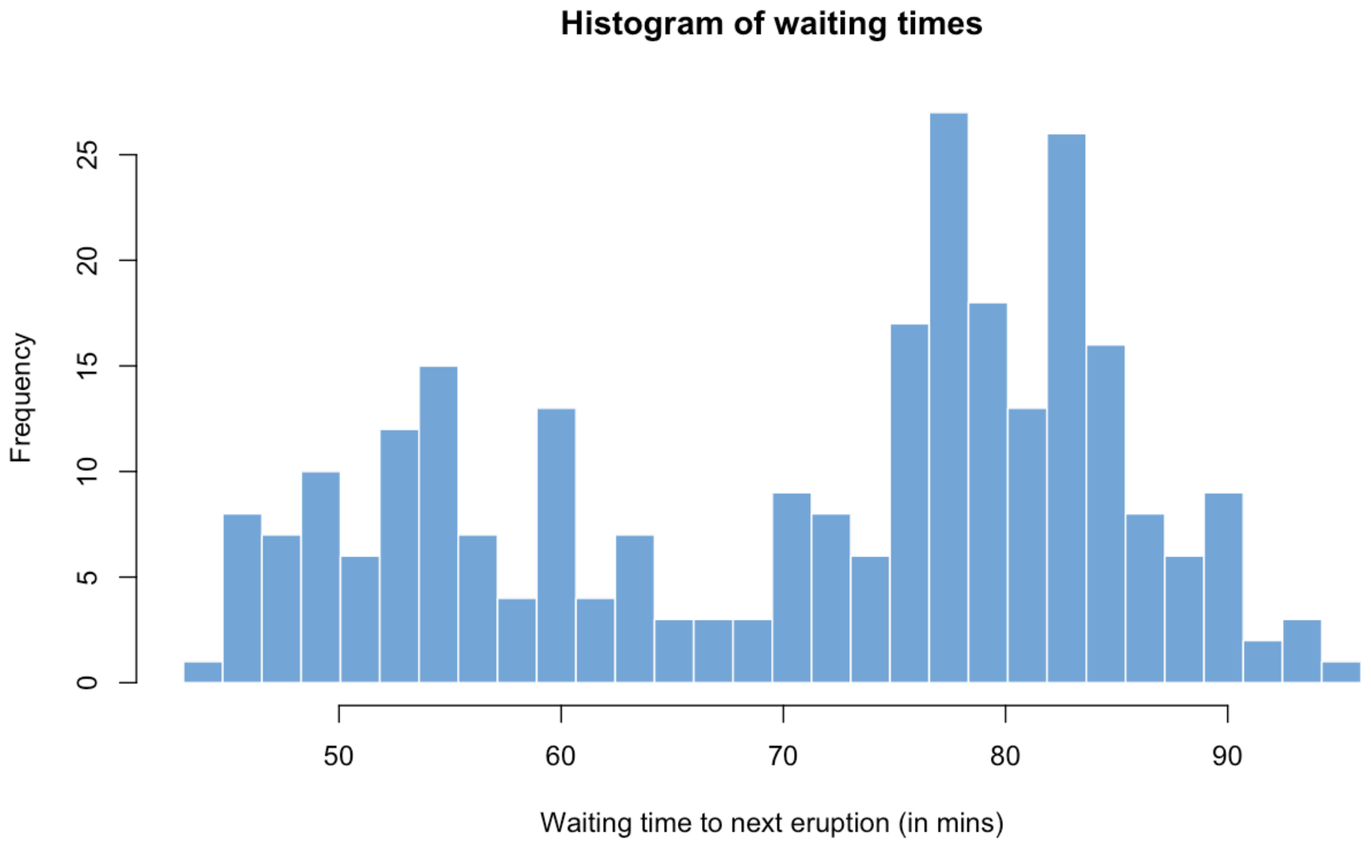
title	title_type	genre	runtime	mpaa_rating	studio	thtr_rel_year
Bound	Feature Film	Mystery & Suspense	108	R	Republic Pictures Home Video	1996
The Greatest Game Ever Played	Feature Film	Drama	120	PG	Buena Vista Pictures	2005
Django	Feature	Other	165	R	The Weinstein	2012

skip baby steps

Which of the following two visualizations is more likely to **motivate** learners to want to learn more?

(1) Hello Shiny!





(2)

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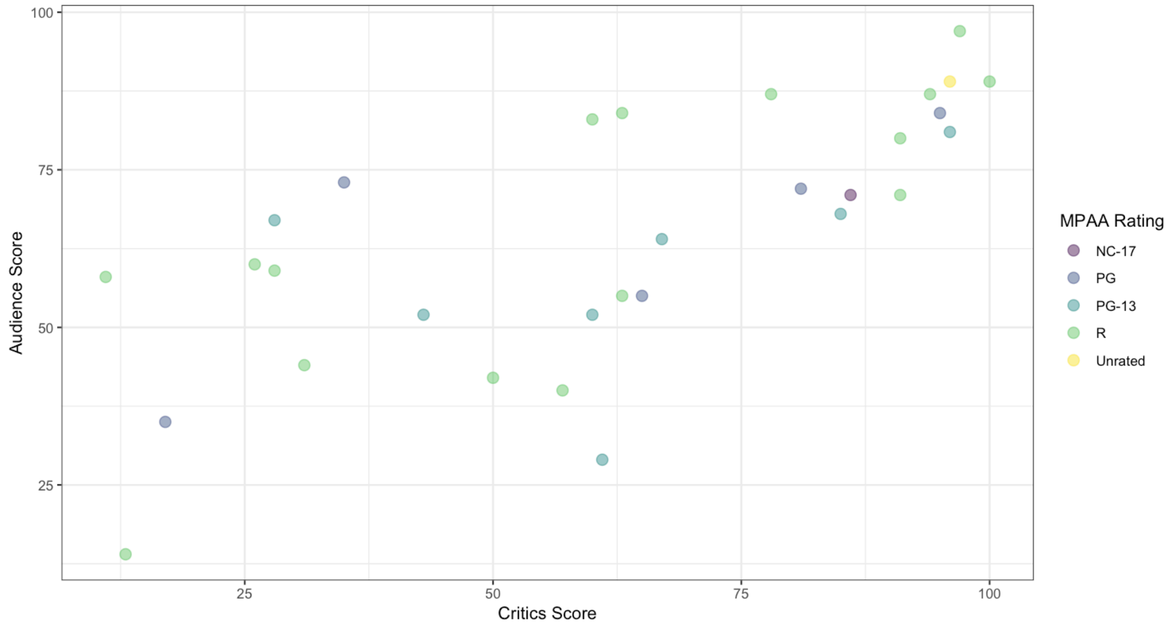

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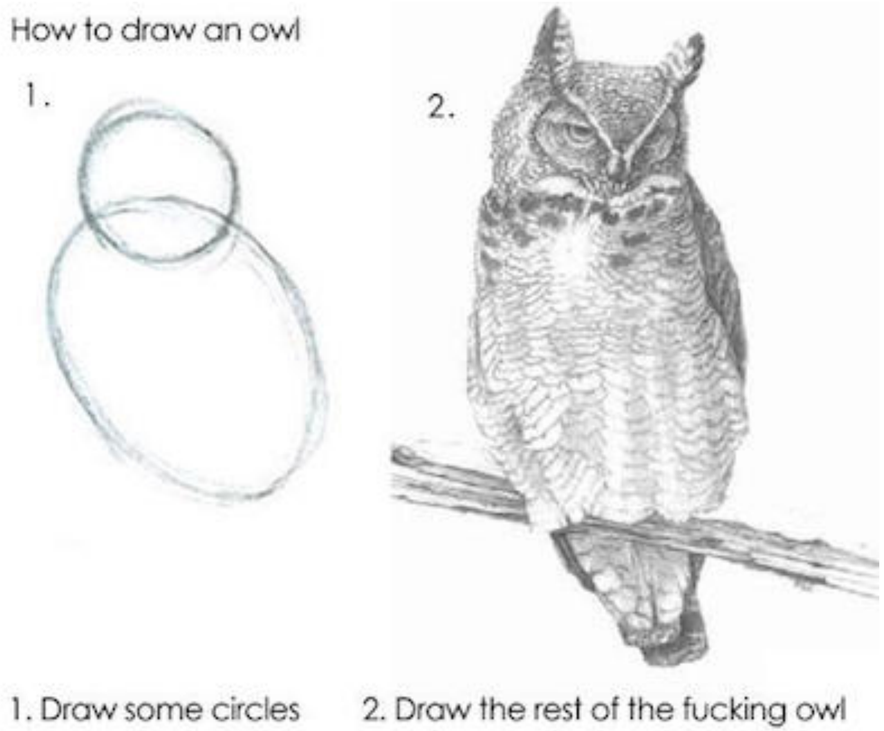
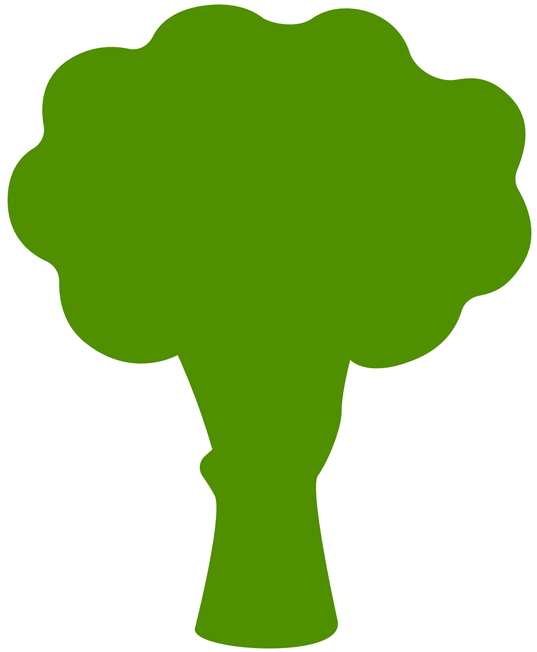
non-trivial examples can be motivating, but need to avoid 👇!

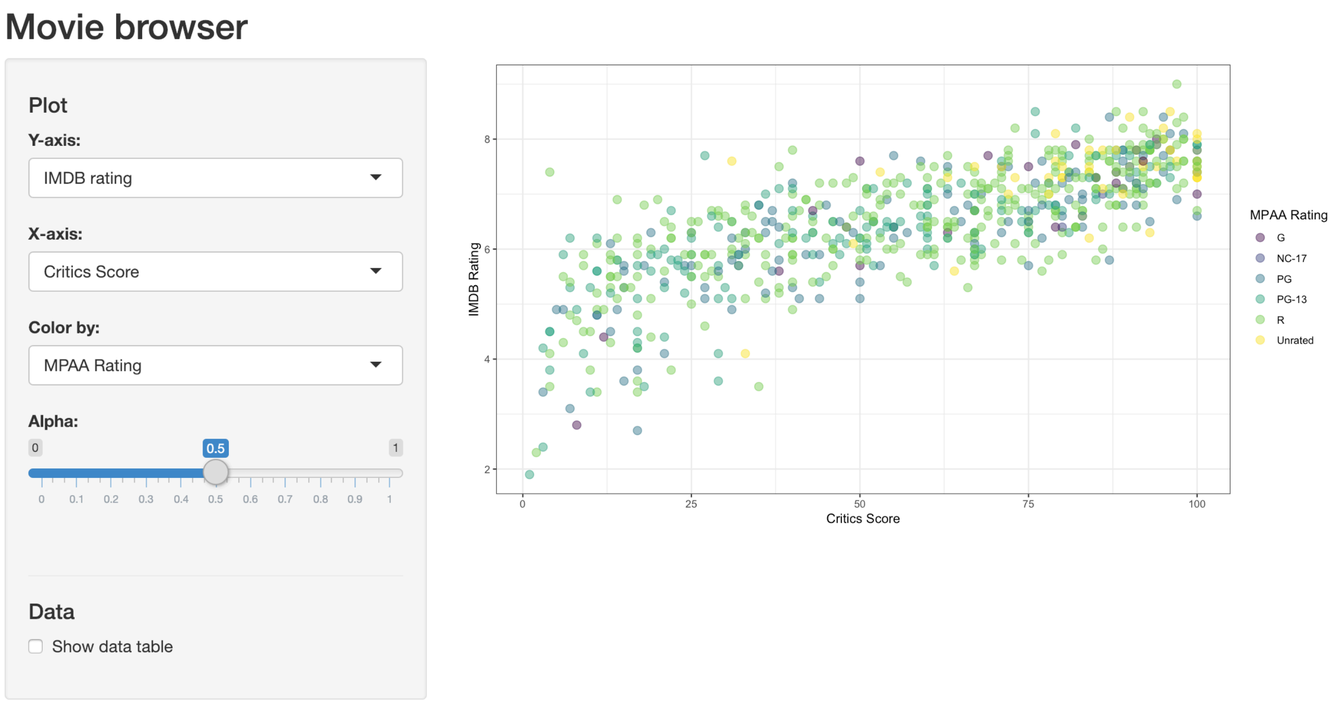


more on this later today…

hide the veggies



Suppose you start with an app like this…



and ask students to add functionality take a random sample (of size input by the user) and plot it

What is ~~wrong~~ unideal about this solution?

Movie browser

Sample

Enter a sample size between 1 and 651:

3

Plot

Y-axis:

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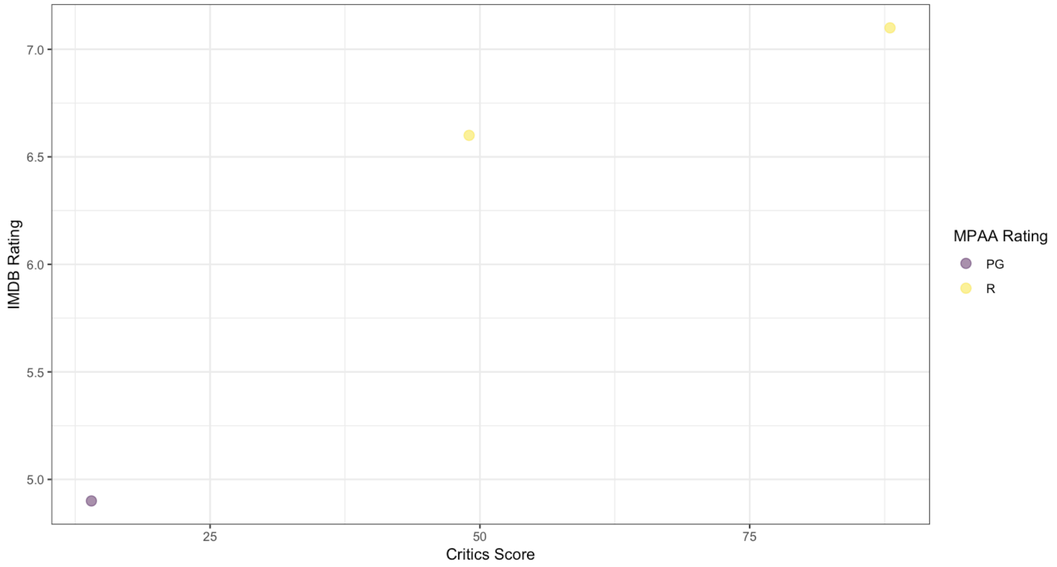
Alpha:

0 0.5 1

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

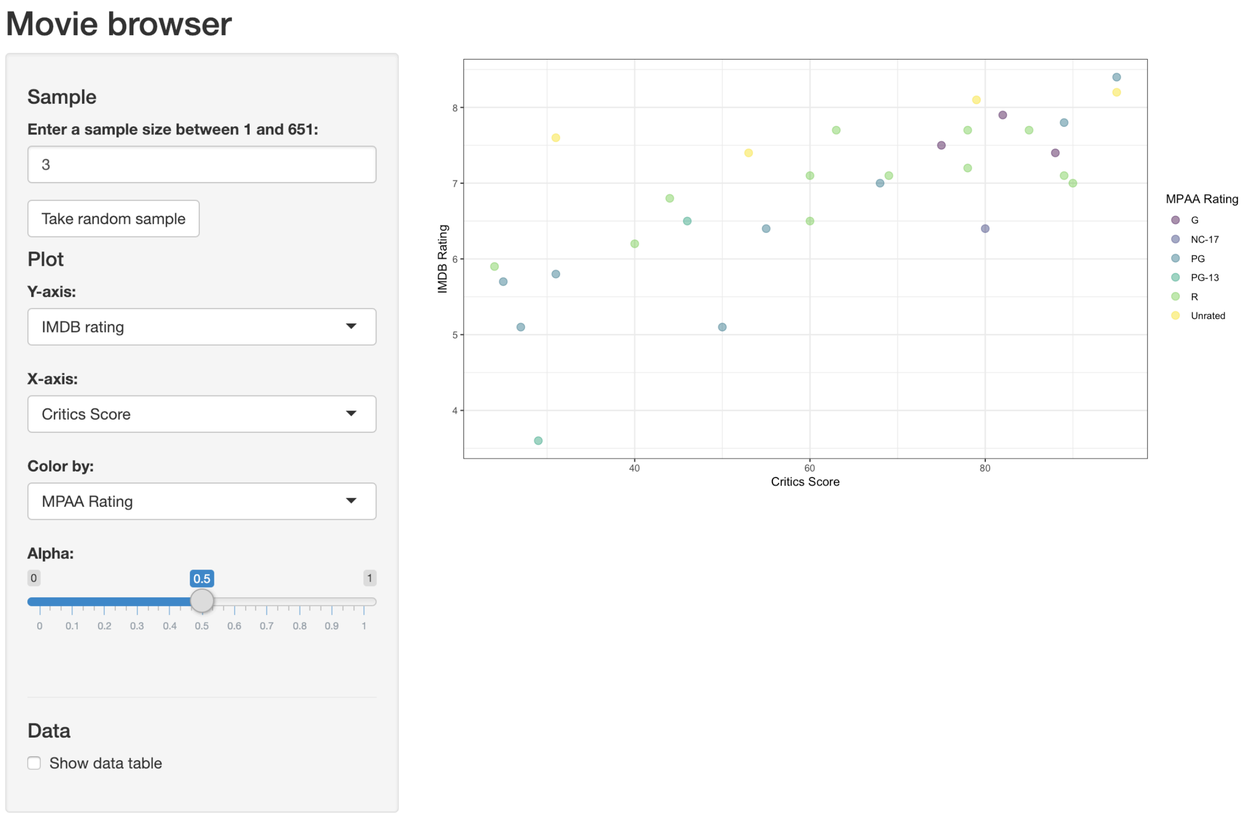
Data

Show data table



Students will encounter lots of new challenges along the way —
let that happen,
and then provide a solution

A better approach uses `actionButton()` and `eventReactive()`



now there's a good motivation
for introducing these not-so-simple concepts

- start with cake
- skip baby steps
- hide the veggies

Your turn

Impromptu workshop 🎉

Get in groups of three and
run the first 3 minutes of a workshop
for an audience of Shiny novices.