



Getting started on the right foot

teach-shiny.rbind.io

Mine Çetinkaya-Rundel

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@minebocek

mine-cetinkaya-rundel

mine@rstudio.com



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

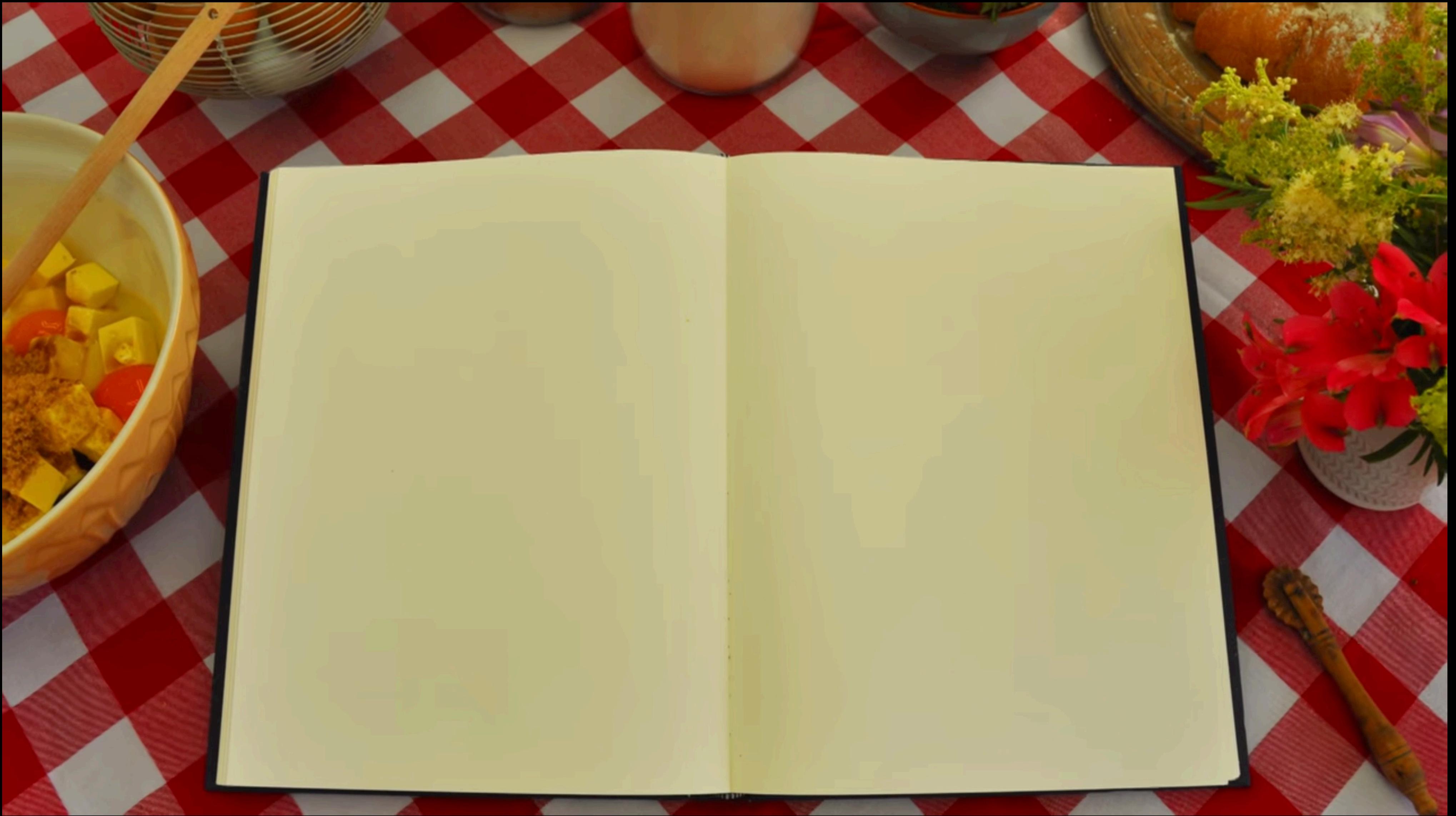


(3)

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)

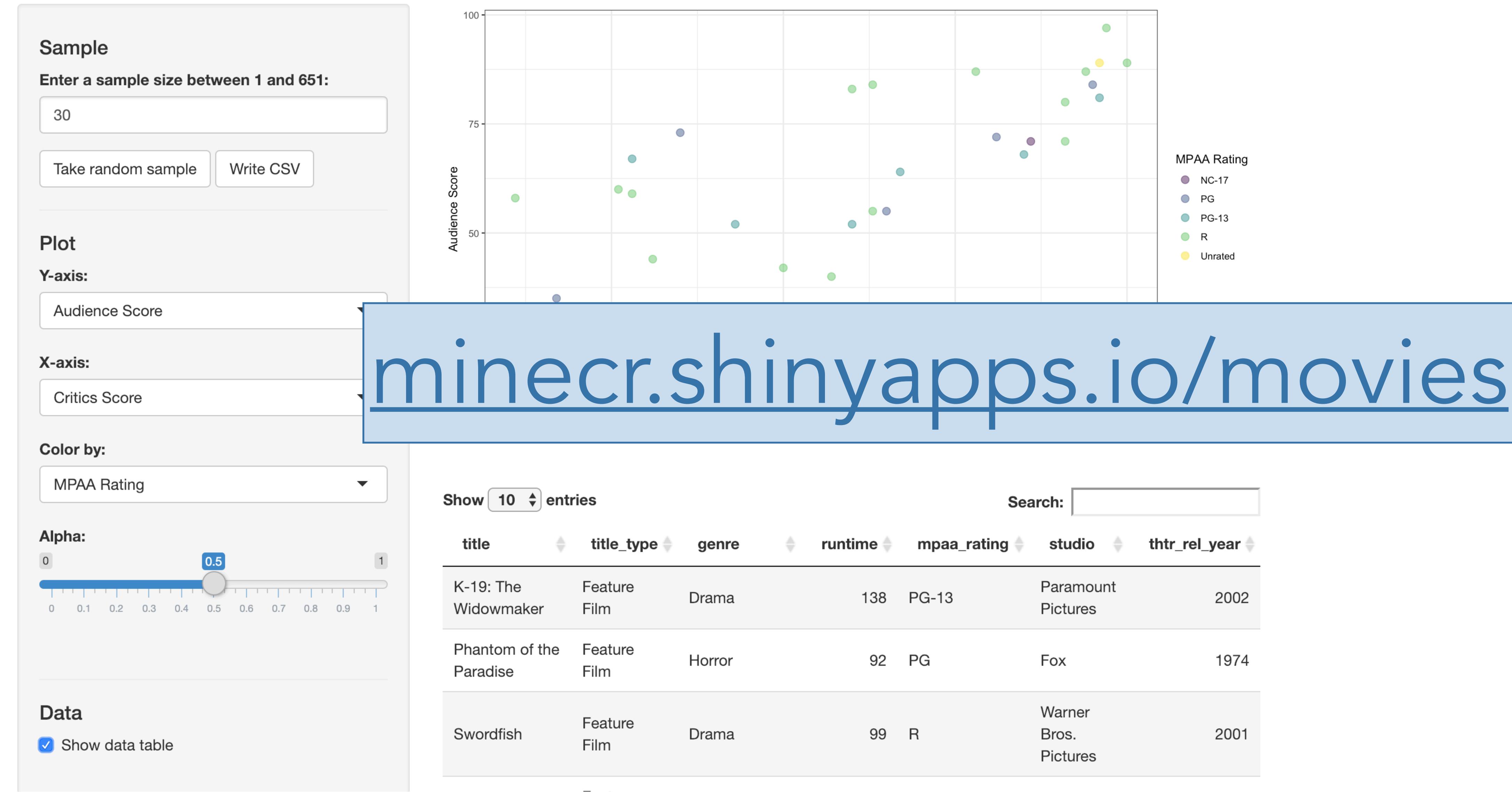
what is Shiny?

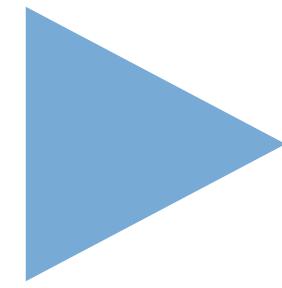
- ▶ **shiny** is an R package that makes it incredibly easy to build interactive web applications with R.
- ▶ In a Shiny app, automatic "reactive" binding between inputs and outputs and extensive prebuilt widgets make it possible to build beautiful, responsive, and powerful applications with minimal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



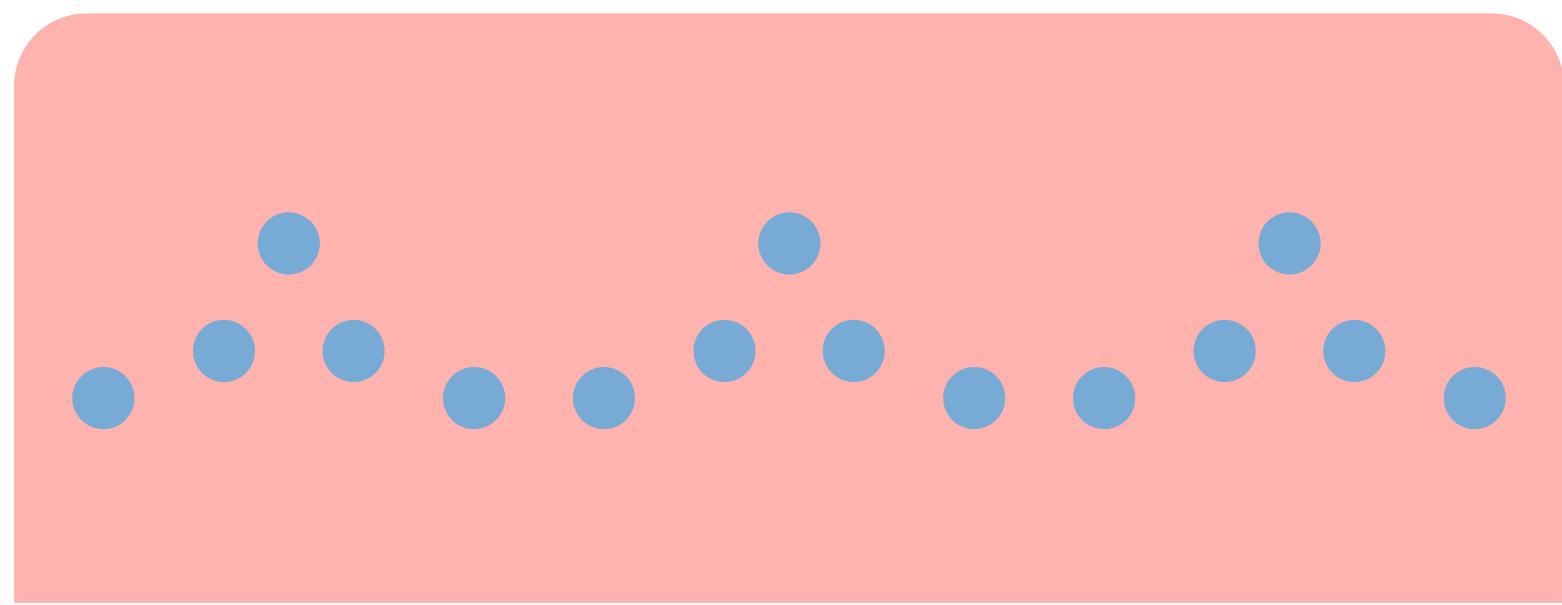
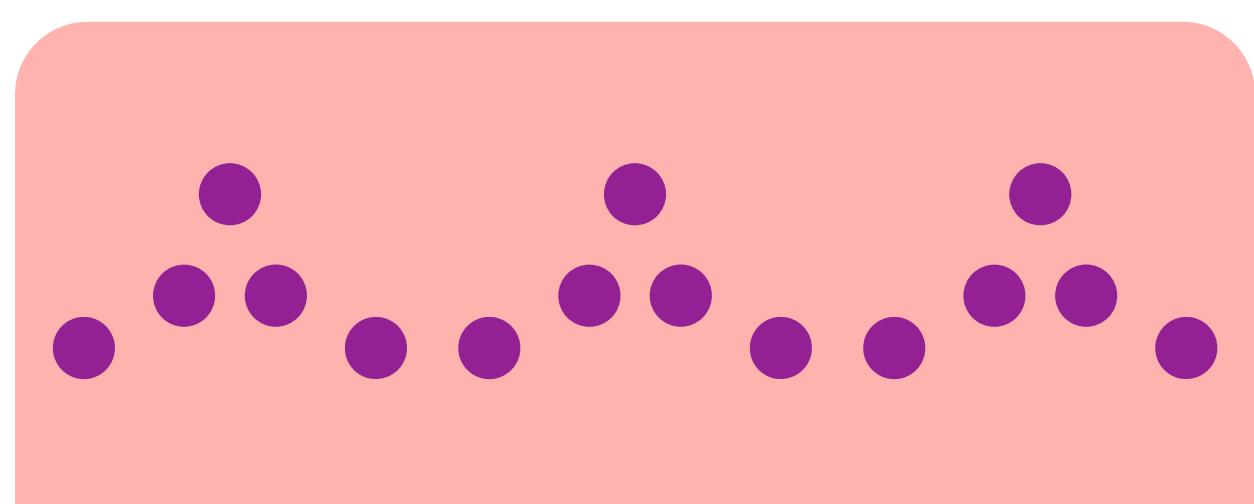
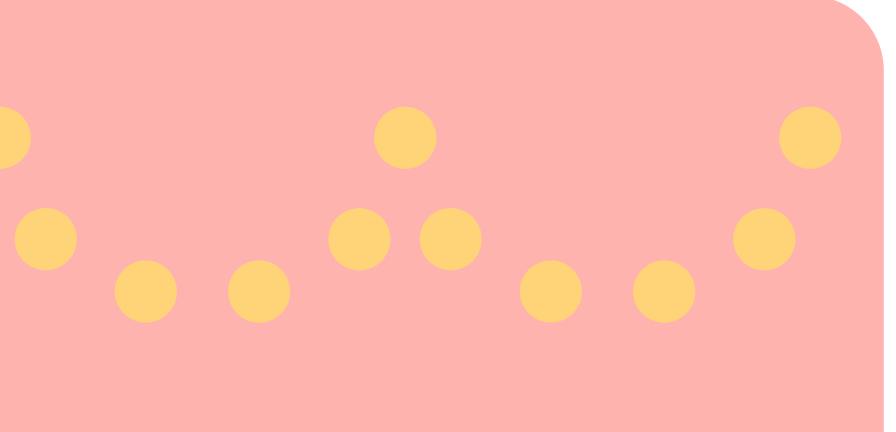
(2)

Movie browser





start
with
cake



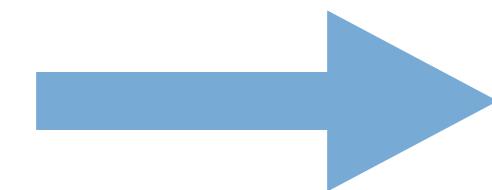


Which of the following two examples is more likely to be **interesting** for a wide range of learners?

(1)

Uppercaser

Enter text to be converted to uppercase in
the box below



Uppercaser

Enter text to be converted to uppercase in
the box below

HELLO WORLD

(2)

Movie browser

Sample

Enter a sample size between 1 and 651:

[Take random sample](#) [Write CSV](#)

Plot

Y-axis:

Audience Score

X-axis:

Critics Score

Color by:

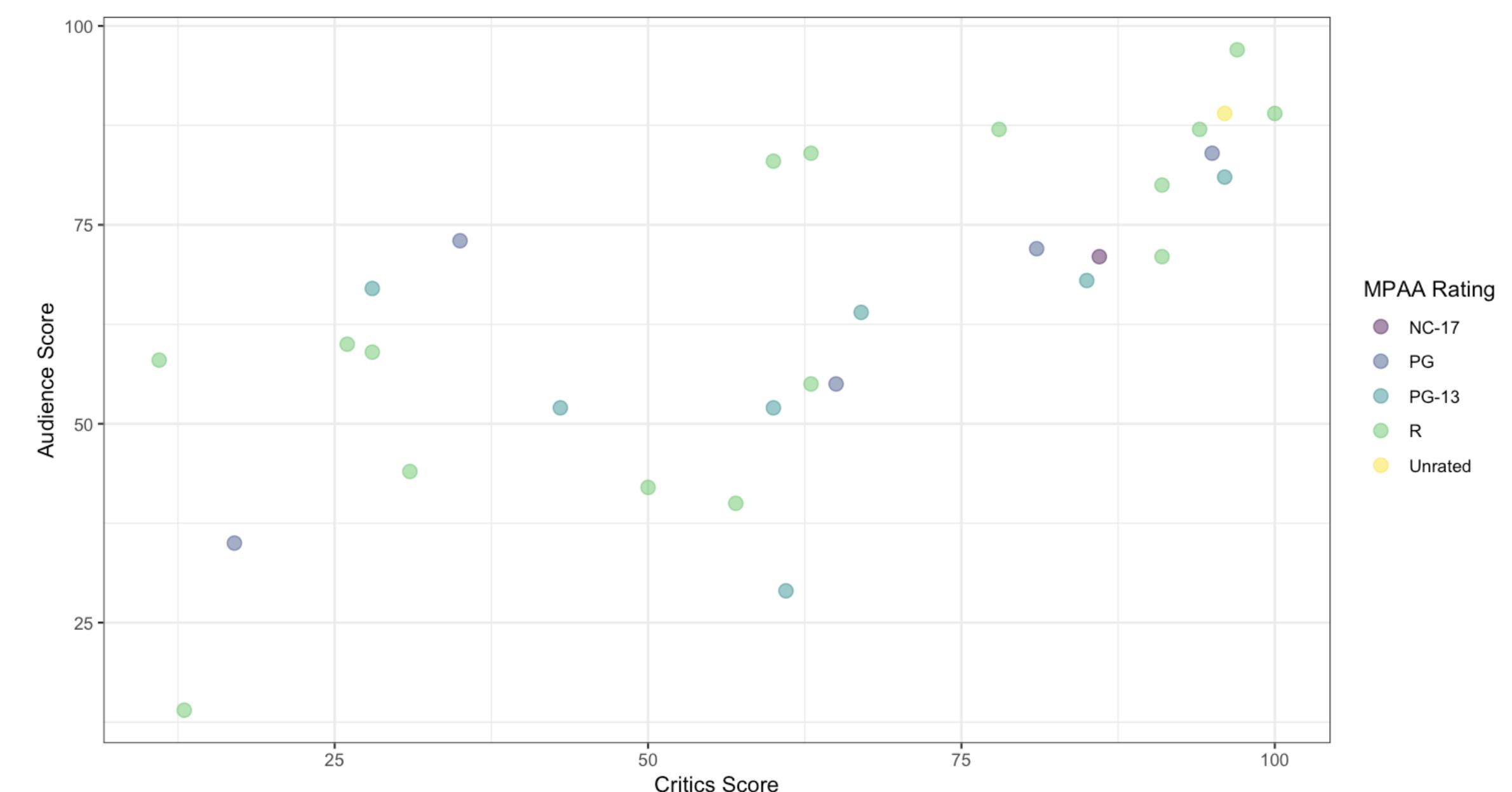
MPAA Rating

Alpha:

0 0.5 1

Data

Show data table



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

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",
                       "IMDB number of votes" = "imdb_num_votes",
                       "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:

Plot

Y-axis: Audience Score

X-axis: Critics Score

Color by: MPAA Rating

Alpha: 0.5

Data

Show data table

Sample

Enter a sample size between 1 and 651:

Plot

Y-axis: IMDB rating

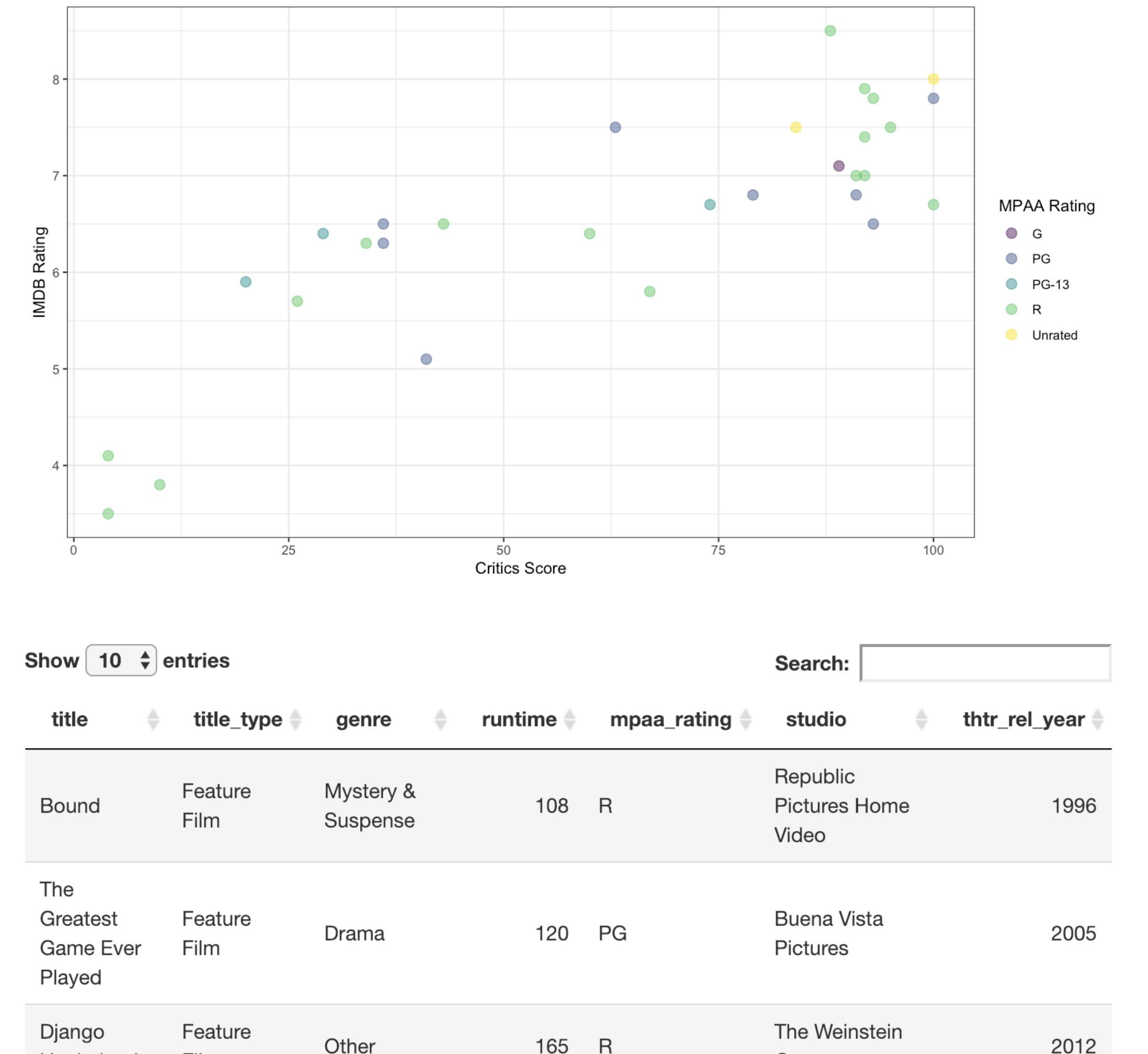
X-axis: Critics Score

Color by: MPAA Rating

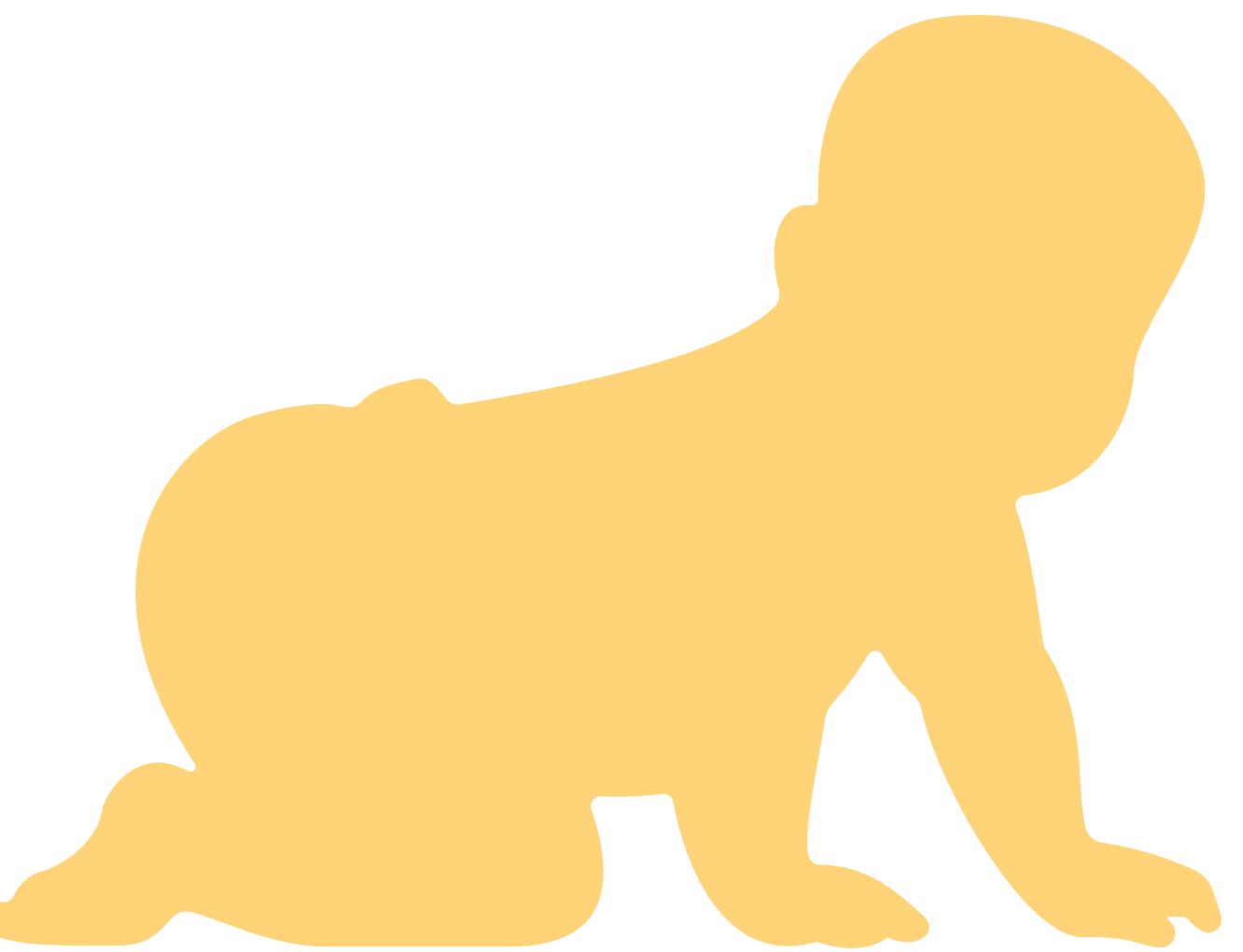
Alpha: 0.5

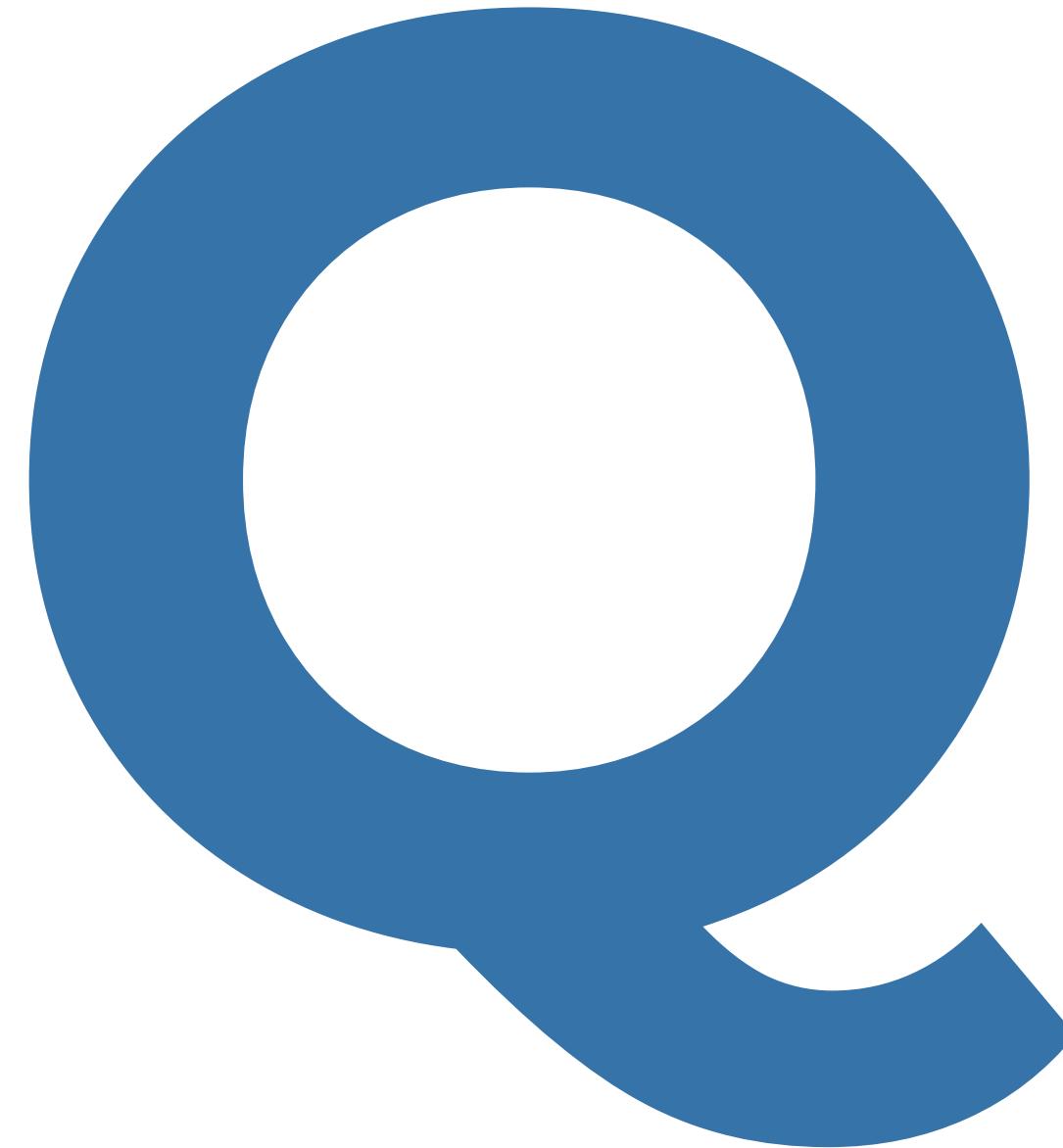
Data

Show data table



skip
▶ baby
steps





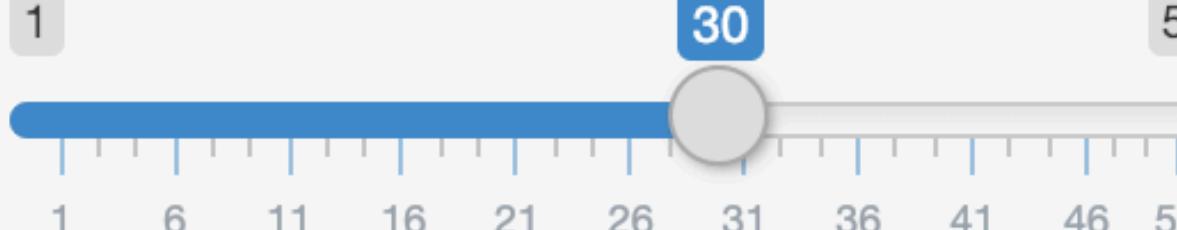
Which of the following two visualizations is more likely to **motivate** learners to want to learn more?

(1)

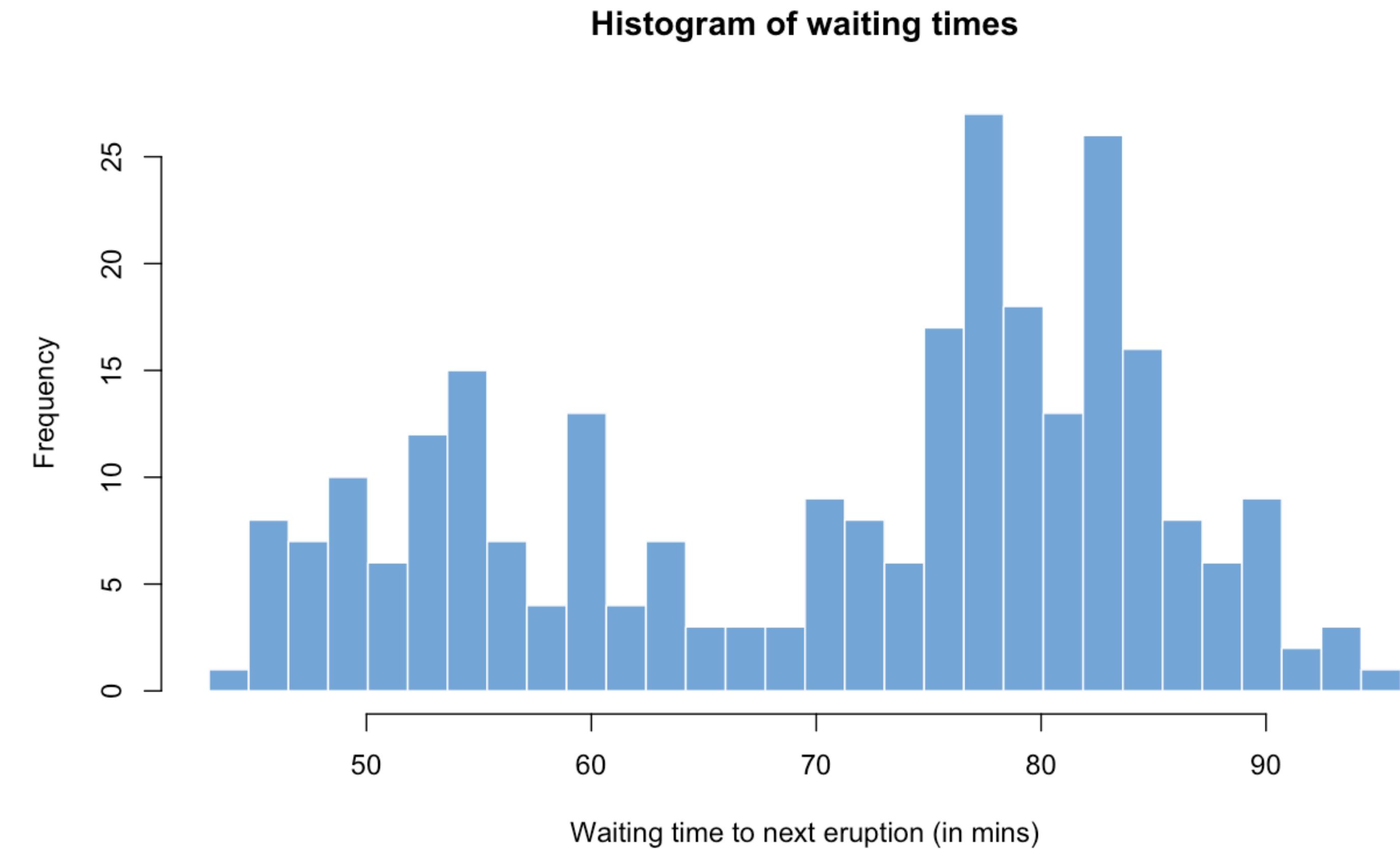
Hello Shiny!

Number of bins:

1 30 50



1 6 11 16 21 26 31 36 41 46 50



(2)

Movie browser

Sample

Enter a sample size between 1 and 651:

[Take random sample](#) [Write CSV](#)

Plot

Y-axis:

Audience Score

X-axis:

Critics Score

Color by:

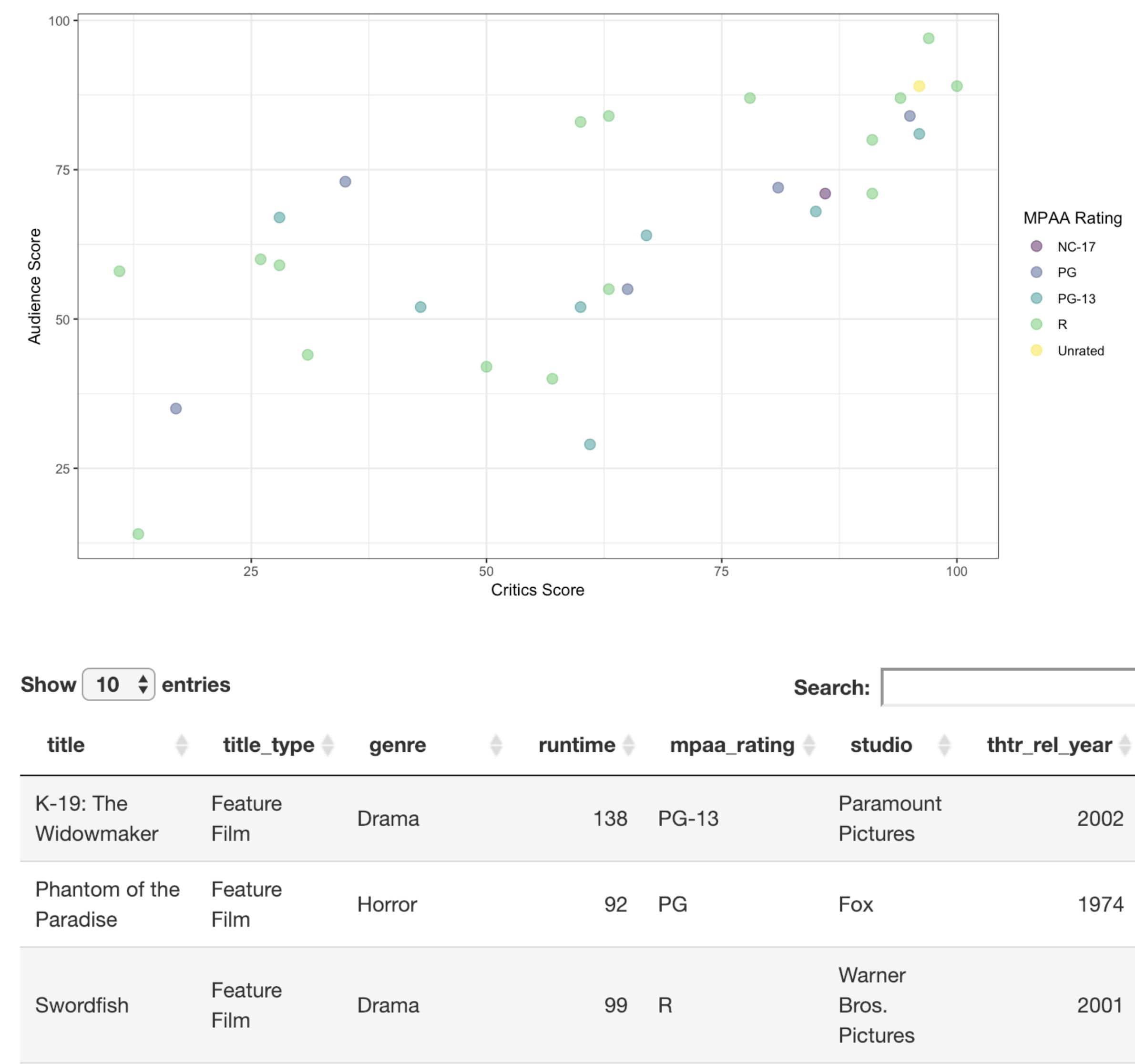
MPAA Rating

Alpha:

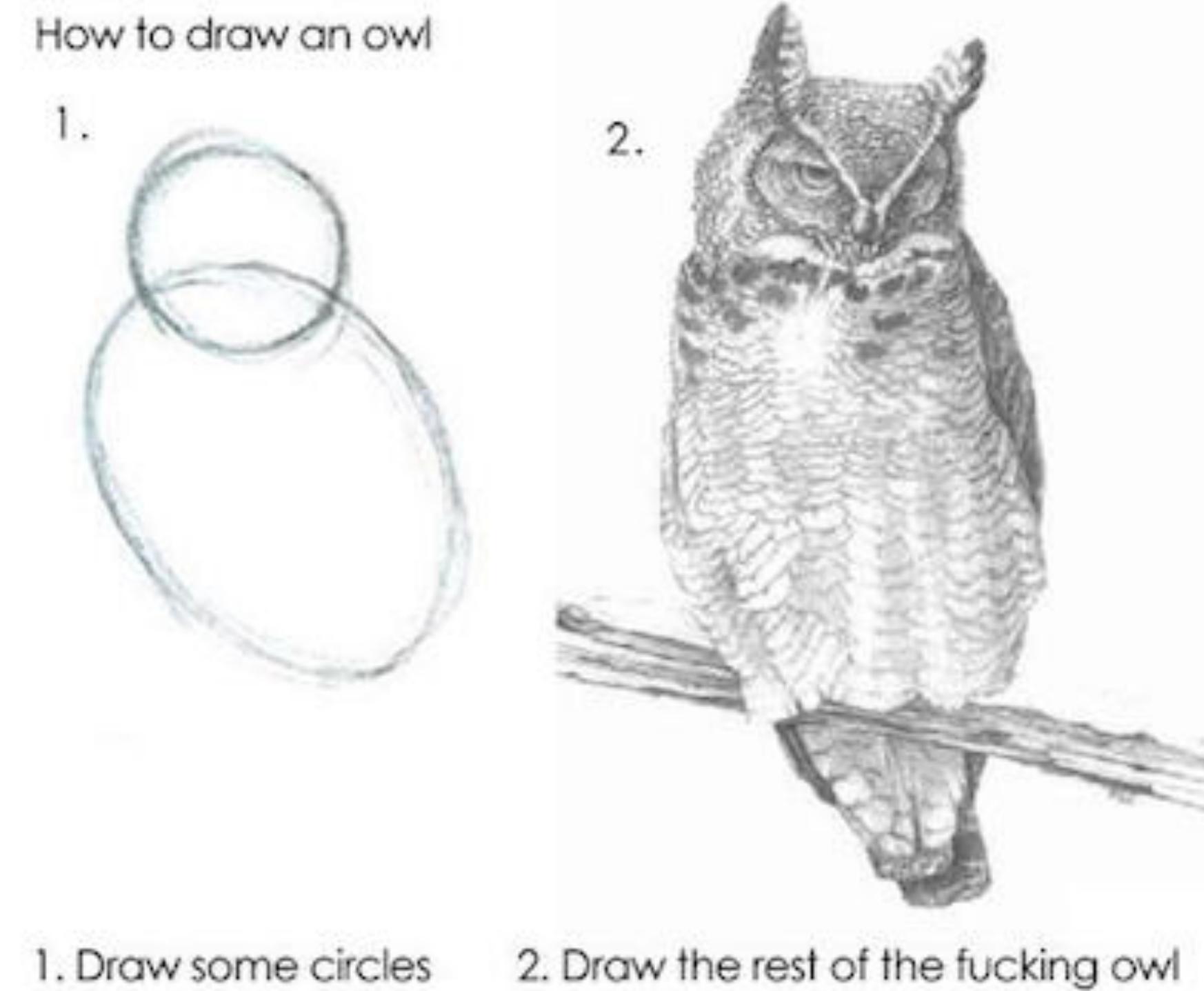
0 0.5 1

Data

Show data table



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



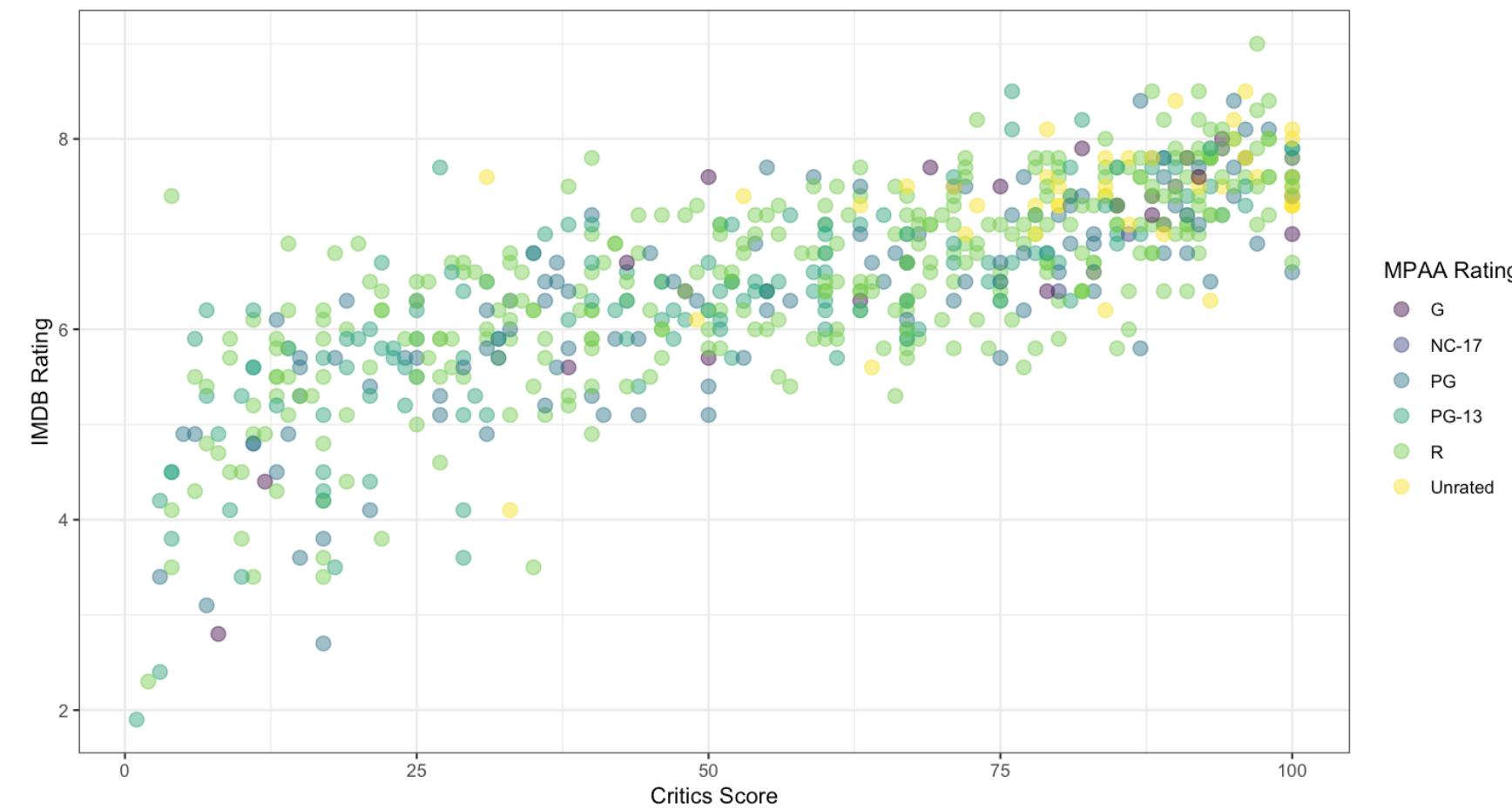
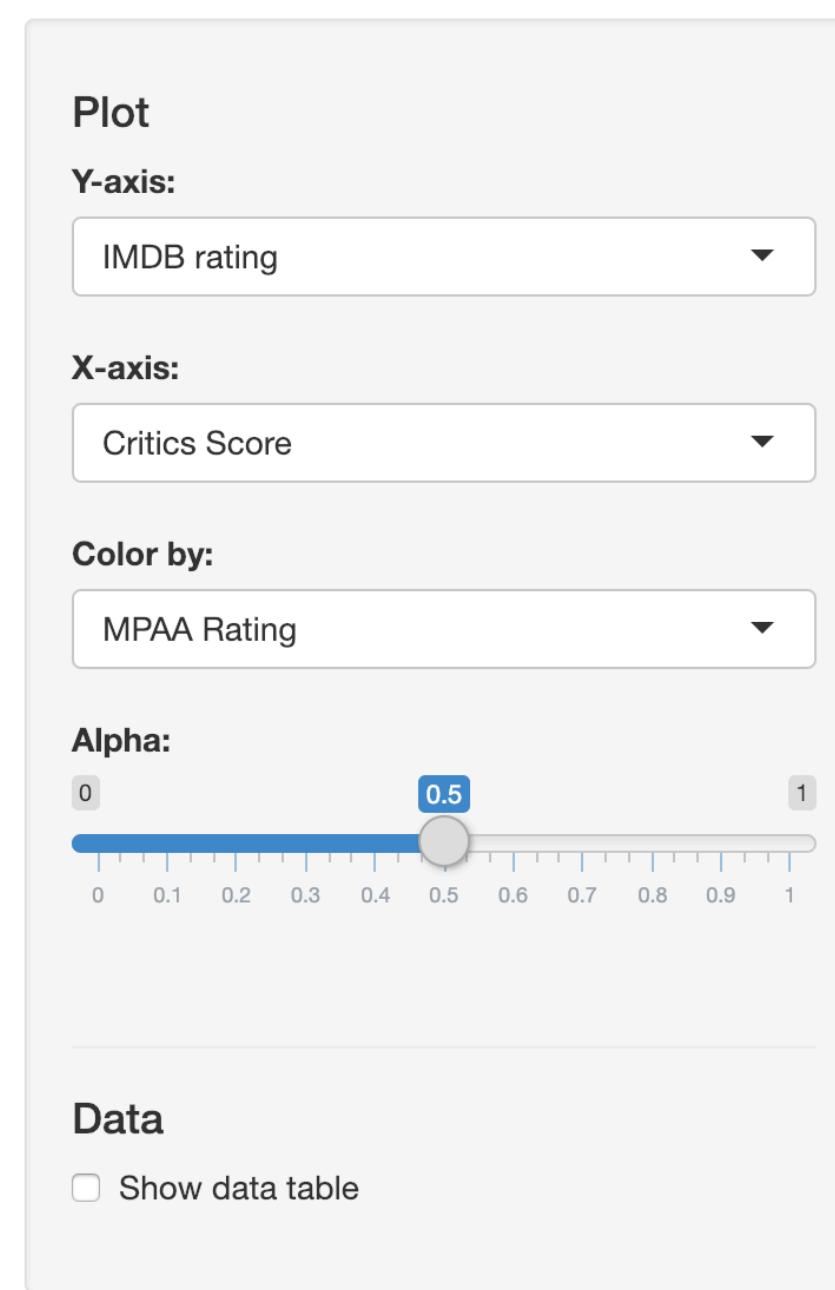
more on this later today...

hide
the
veggies



Suppose you start with an app like this...

Movie browser



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?

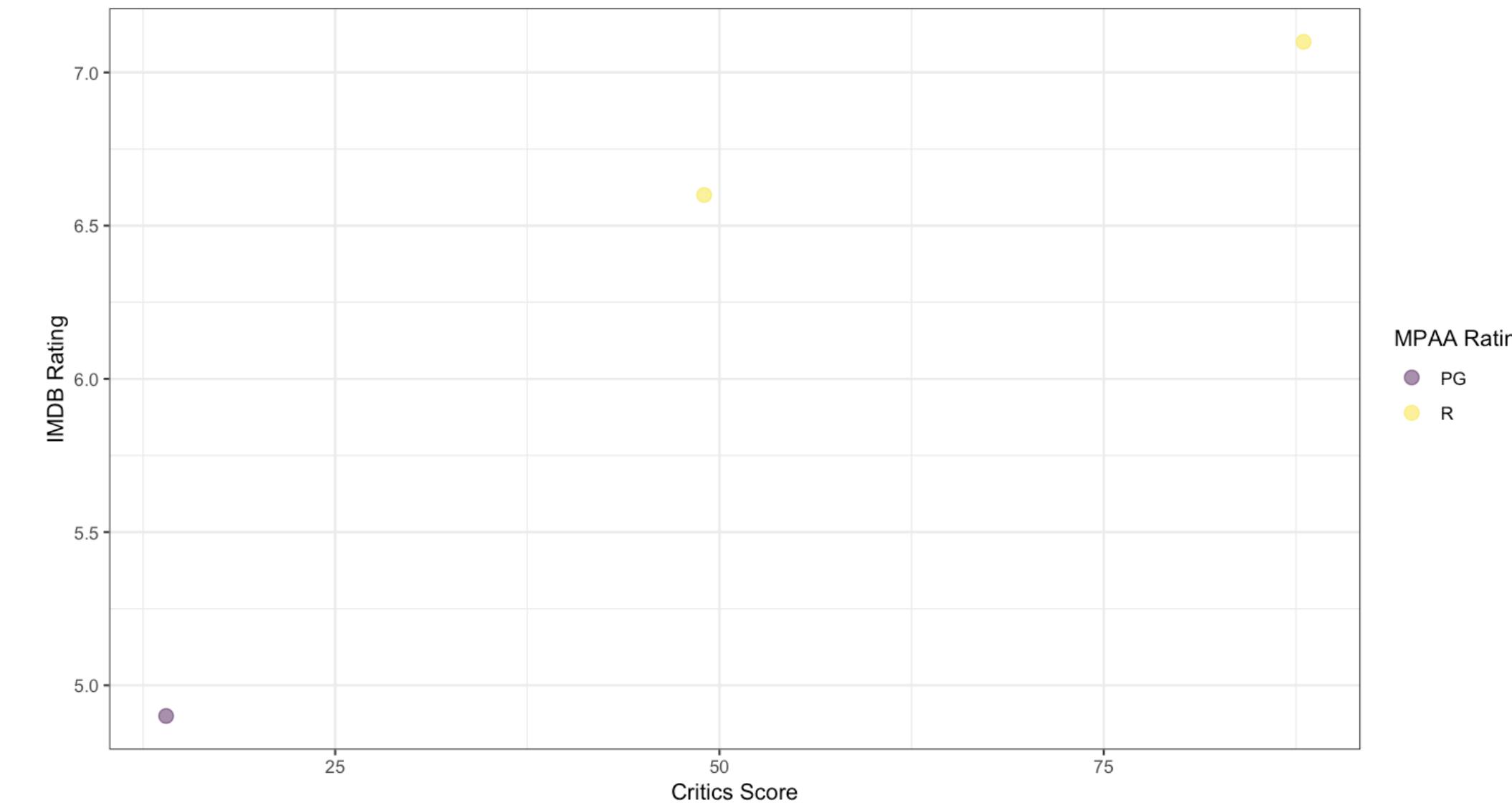


Movie browser

Sample
Enter a sample size between 1 and 651:

Plot
Y-axis: IMDB rating
X-axis: Critics Score
Color by: MPAA Rating
Alpha: 0.5

Data
 Show data table

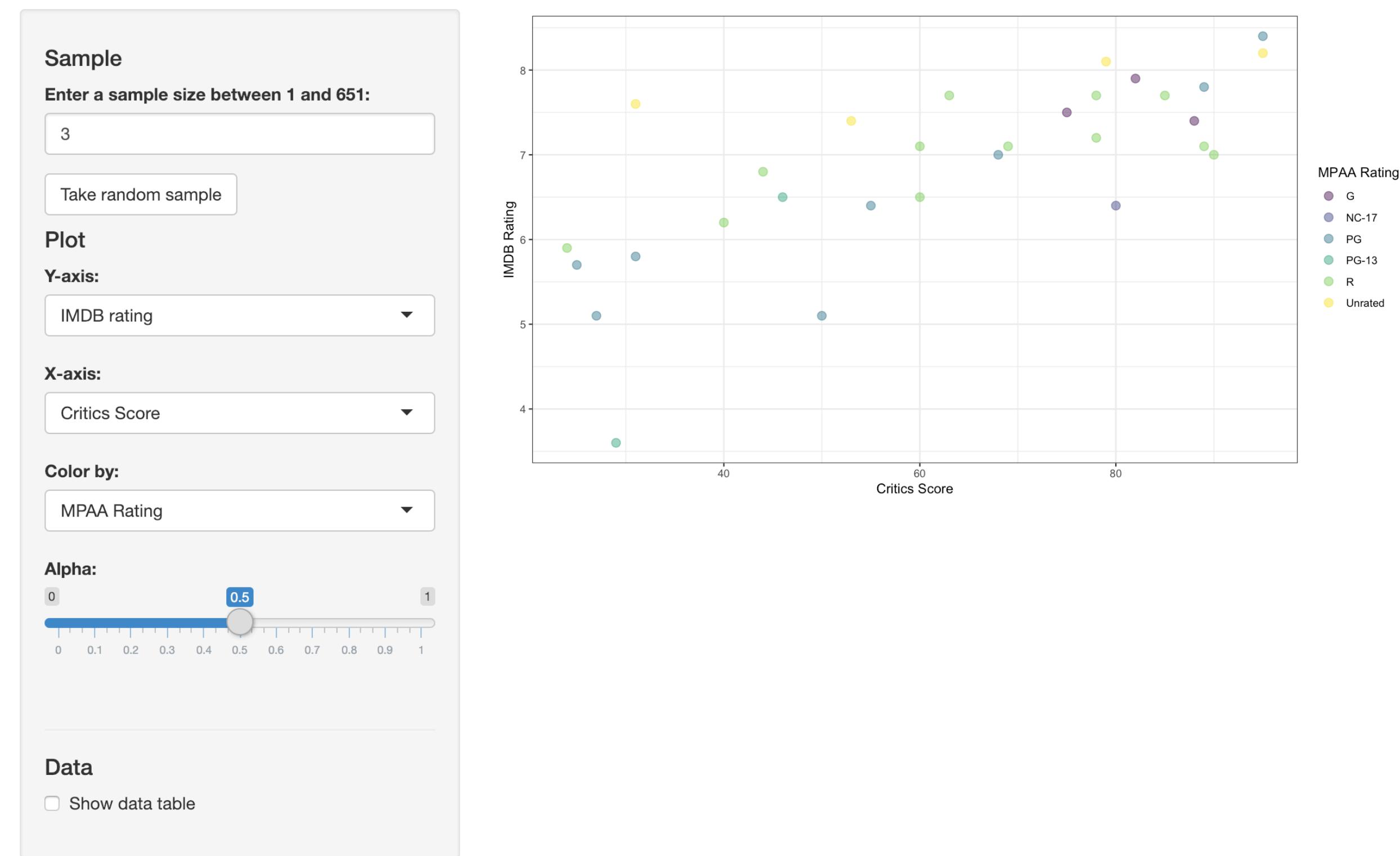


Students will encounter lots of new challenges along the way — let that happen, and then provide a solution



A better approach uses actionButton() and eventReactive()

Movie browser



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.