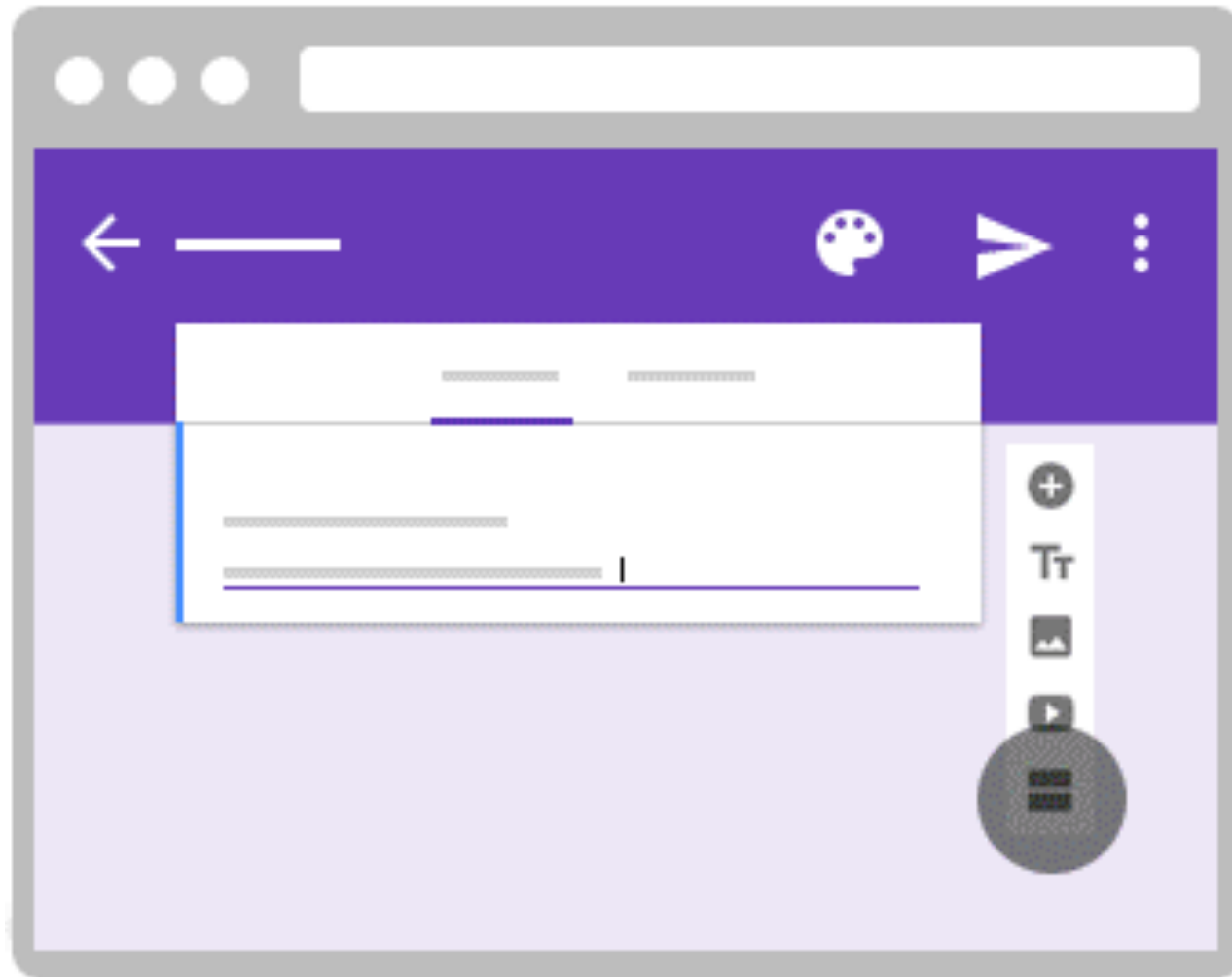


surveydown: An Open-Source, Markdown-Based Platform for Interactive and Reproducible Surveys

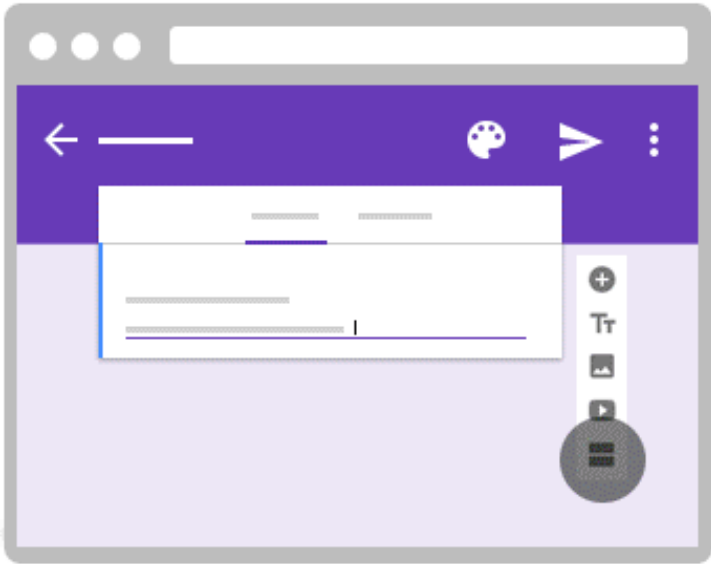
Pingfan Hu, Bogdan Bunea, John Paul Helveston



Typical experience making a survey



Typical experience making a survey



✗ Reproducible

✗ Data Control

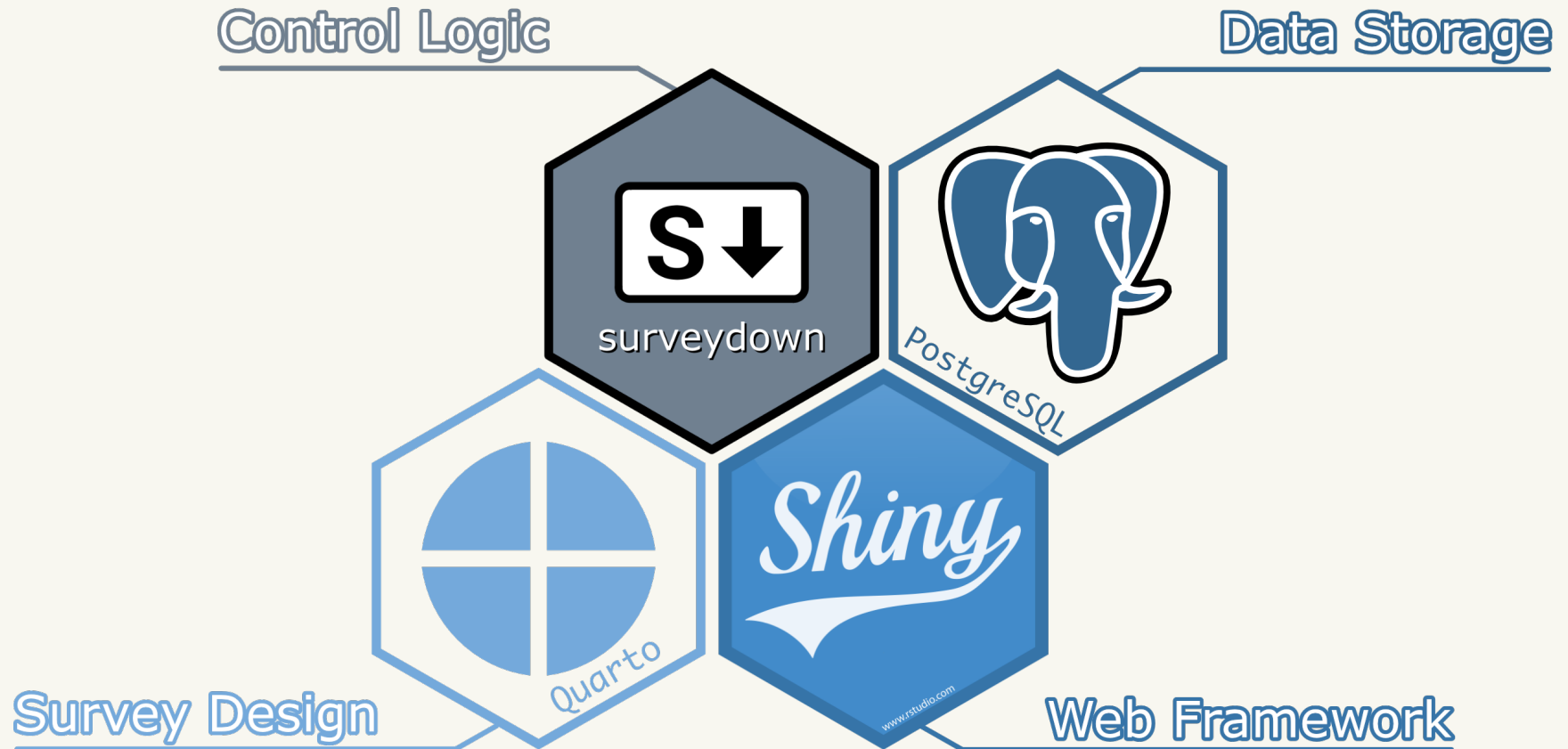
⚠ Free to Use

⚠ Open Source

⚠ Easy Collaboration

⚠ Feature Packed

Introducing surveydown



Components

`survey.qmd`

A **Quarto doc** defining the main survey content (pages, text, images, questions, etc).

`app.R`

An **R script** defining the survey Shiny app. It sets up the database and server, and launches the survey.

survey.qmd

```
---
format: html
echo: false
warning: false
---

```{r}
library(surveydown)

::: {#welcome .sd-page}

Welcome to our survey!

```{r}
sd_question(
  type = "mc",
  id = "penguins",
  label = "What's your favorite penguin?",
  option = c(
    "Adélie" = "adelie",
    "Chinstrap" = "chinstrap",
    "Gentoo" = "gentoo"
  )
)

sd_next()

:::

::: {#end .sd-page}

This is the last page of the survey.

```{r}
sd_close()
```

:::
```

survey.qmd

```
1 ---
2 format: html
3 echo: false
4 warning: false
5 ---
6
7 ```{r}
8 library(surveydown)
9 ```
10
11 ::: {#welcome .sd-page}
12
13 # Welcome to our survey!
14
15 ```{r}
16 sd_question(
17   type = "mc",
18   id   = "penguins",
19   label = "What's your favorite penguin?",
20   option = c(
21     "Adélie" = "adelie",
22     "Chinstrap" = "chinstrap",
23     "Gentoo" = "gentoo"
24   )
25 )
26
27 sd_next()
28 ```
29
30 :::
31
32 ::: {#end .sd-page}
33
34 This is the last page of the survey.
35
36 ```{r}
37 sd_close()
38 ```
39
40 :::
```

YAML Header

Load Package

survey.qmd

```
1 ---
2 format: html
3 echo: false
4 warning: false
5 ---
6
7 ```{r}
8 library(surveydown)
9 ```
10
11 ::: {#welcome .sd-page}
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16 sd_question(
17   type = "mc",
18   id    = "penguins",
19   label = "What's your favorite penguin?",
20   option = c(
21     "Adélie"    = "adelie",
22     "Chinstrap" = "chinstrap",
23     "Gentoo"    = "gentoo"
24   )
25 )
26
27 sd_next()
28 ```
29
30 :::
31
32 ::: {#end .sd-page}
33
34 This is the last page of the survey.
35
36 ```{r}
37 sd_close()
38 ```
39
40 :::
```

Define pages using “fences”:

```
::: {#id .sd-page}
:::
```

Page 1 (Welcome)

Page 2 (End)

survey.qmd

```
1 ---
2 format: html
3 echo: false
4 warning: false
5 ---
6
7 ```{r}
8 library(surveydown)
9 ```
10
11 ::: {#welcome .sd-page}
12
13 # Welcome to our survey!
14
15 ```{r}
16 sd_question(
17   type = "mc",
18   id    = "penguins",
19   label = "What's your favorite penguin?",
20   option = c(
21     "Adélie"      = "adelie",
22     "Chinstrap"   = "chinstrap",
23     "Gentoo"      = "gentoo"
24   )
25 )
26
27 sd_next()
28 ```
29
30 :::
31
32 ::: {#end .sd-page}
33
34 This is the last page of the survey.
35
36 ```{r}
37 sd_close()
38 ```
39
40 :::
```

Contents of Page 1

survey.qmd

```
1 ---
2 format: html
3 echo: false
4 warning: false
5 ---
6
7 ```{r}
8 library(surveydown)
9 ```
10
11 ::: {#welcome .sd-page}
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13 # Welcome to our survey!
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16 sd_question(
17   type = "mc",
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19   label = "What's your favorite penguin?",
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21     "Adélie"    = "adelie",
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27 sd_next()
28 ```
29
30 :::
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32 ::: {#end .sd-page}
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34 This is the last page of the survey.
35
36 ```{r}
37 sd_close()
38 ```
39
40 :::
```

Question Definition

app.R

```
# Load Package
library(surveydown)

# Database Credentials
sd_db_config()

# Connect to Database
db <- sd_db_connect()

# Server Setup
server <- function(input, output, session) {

  # Skip logic
  sd_skip_forward(...)

  # Conditional display
  sd_show_if(...)

  # Server settings
  sd_server(
    db = db,
    ...
  )
}

# Launch Survey
shiny::shinyApp(ui = sd_ui(), server = server)
```

app.R

```
1 # Load Package
2 library(surveydown)
3
4 # Database Credentials
5 sd_db_config()
6
7 # Connect to Database
8 db <- sd_db_connect()
9
10 # Server Setup
11 server <- function(input, output, session) {
12
13   # Skip logic
14   sd_skip_forward(...)
15
16   # Conditional display
17   sd_show_if(...)
18
19   # Server settings
20   sd_server(
21     db = db,
22     ...
23   )
24 }
25
26 # Launch Survey
27 shiny::shinyApp(ui = sd_ui(), server = server)
```

Load Package

```
1 # Load Package
2 library(surveydown)
3
4 # Database Credentials
5 sd_db_config()
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7 # Connect to Database
8 db <- sd_db_connect()
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11 server <- function(input, output, session) {
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16   # Conditional display
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19   # Server settings
20   sd_server(
21     db = db,
22     ...
23   )
24 }
25
26 # Launch Survey
27 shiny::shinyApp(ui = sd_ui(), server = server)
```

Database Setup

We recommend using **Supabase** or any **PostgreSQL** database for the database setup.

app.R

```
1 # Load Package
2 library(surveydown)
3
4 # Database Credentials
5 sd_db_config()
6
7 # Connect to Database
8 db <- sd_db_connect()
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21     db = db,
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26 # Launch Survey
27 shiny::shinyApp(ui = sd_ui(), server = server)
```

Server Setup

app.R

```
1 # Load Package
2 library(surveydown)
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4 # Database Credentials
5 sd_db_config()
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20   sd_server(
21     db = db,
22     ...
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24 }
25
26 # Launch Survey
27 shiny::shinyApp(ui = sd_ui(), server = server)
```

Launch Survey

Locally running the survey

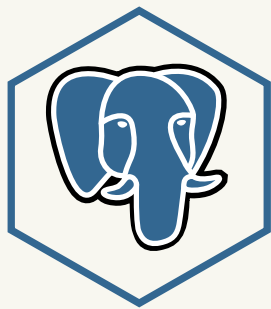


Data saved locally in csv for previewing purposes.

Online Deployment

Data Storage

- Any PostgreSQL database
- Recommend **Supabase** (Free)
- Use `sd_db_config()` to set up



PostgreSQL



Supabase

Deploy

- Recommend **shinyapps.io** (Free):

```
rsconnect::deployApp(appName = "my_survey")
```

- Other Platforms:
 - Posit Connect Cloud
 - Hugging Face
 - Heroku

Online Data Storage + Online Survey URL

Local Dashboard App



Templates and demos are provided on
surveydown.org for an easy start.

Summary of Features

Reactivity and randomization

Dashboard for survey data

Cookies for restoration

URL parameters for redirection

Ability to start from selected page

Custom interactive questions

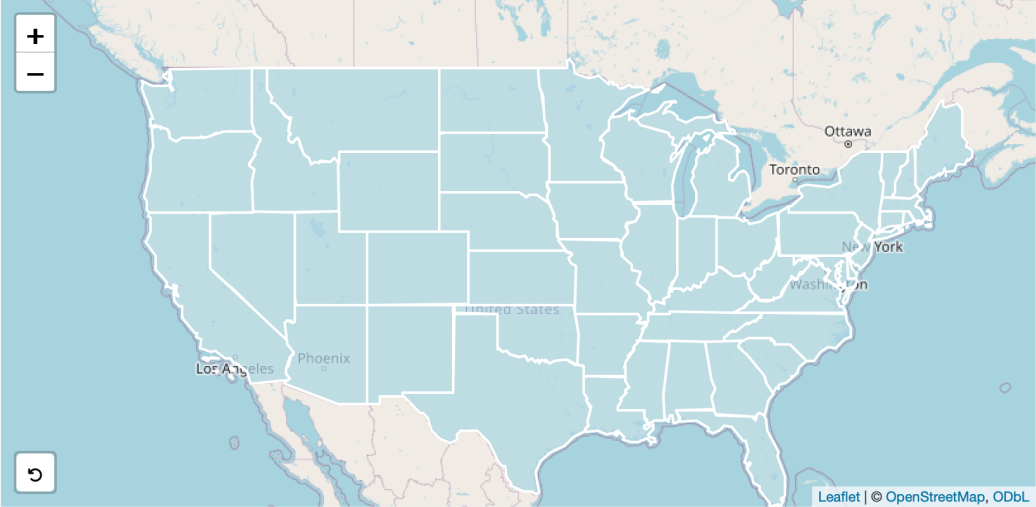
Example of custom interactive question

Demo - Custom Leaflet Map

Click on the state you live in:

+

-



↺

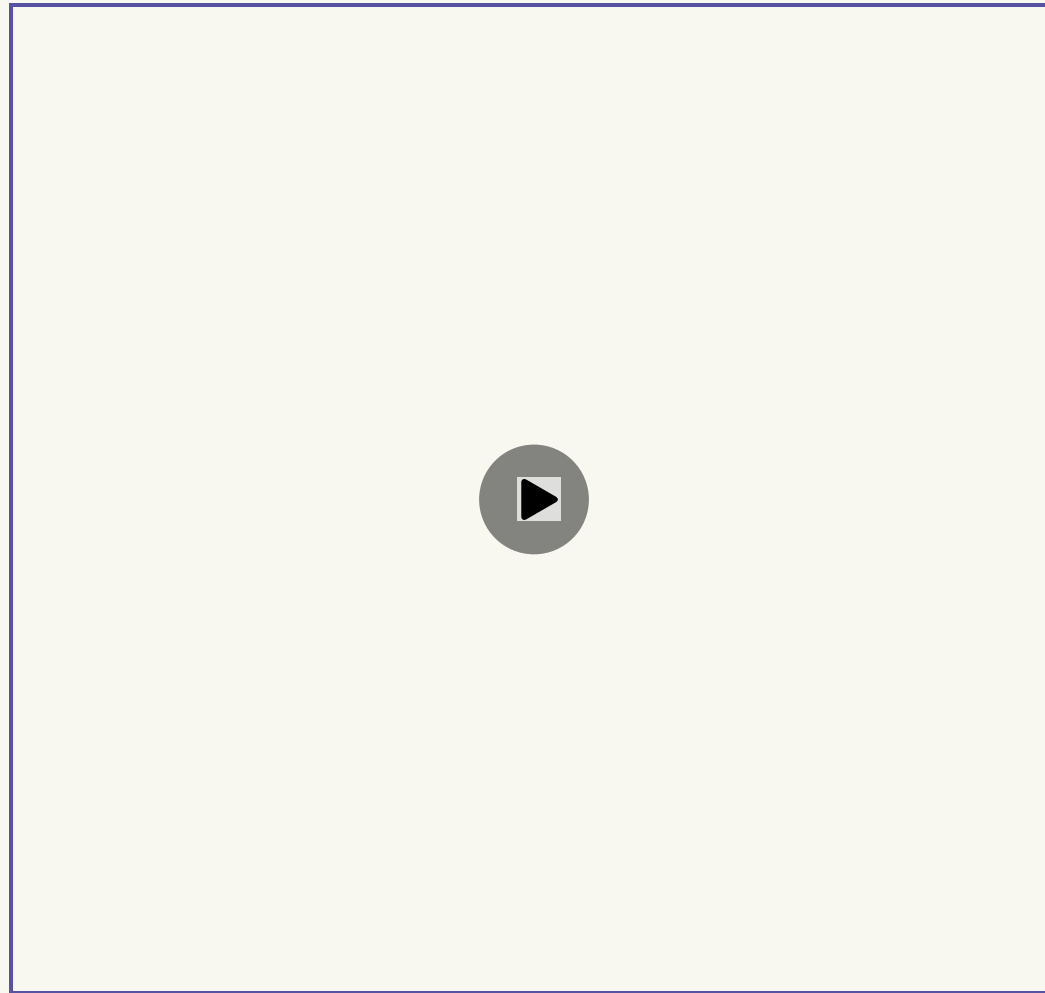
Leaflet | © OpenStreetMap, ODbL

You live in:

Next

Made with [surveydown](#)[Source Code](#)

Map Question Showcase



Source: Dr. Selena Hinojos, GWU

Future Work

GUI for defining surveys

More question types

...and more!

You can contribute!

Check out surveydown.org for more!