

Introducing surveydown

An open-source platform
for programmable,
markdown-based surveys

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posit::conf(2025)





I try to figure out what people want





jhelvy.shinyapps.io

 **Welcome to the Ultimate Superhero Survey!** 

Thank you for participating in our research on superhero preferences and powers! This survey will help us understand what makes superheroes appealing to different people.

This survey should take about 3-5 minutes to complete.

Do you have a favorite super hero?

*

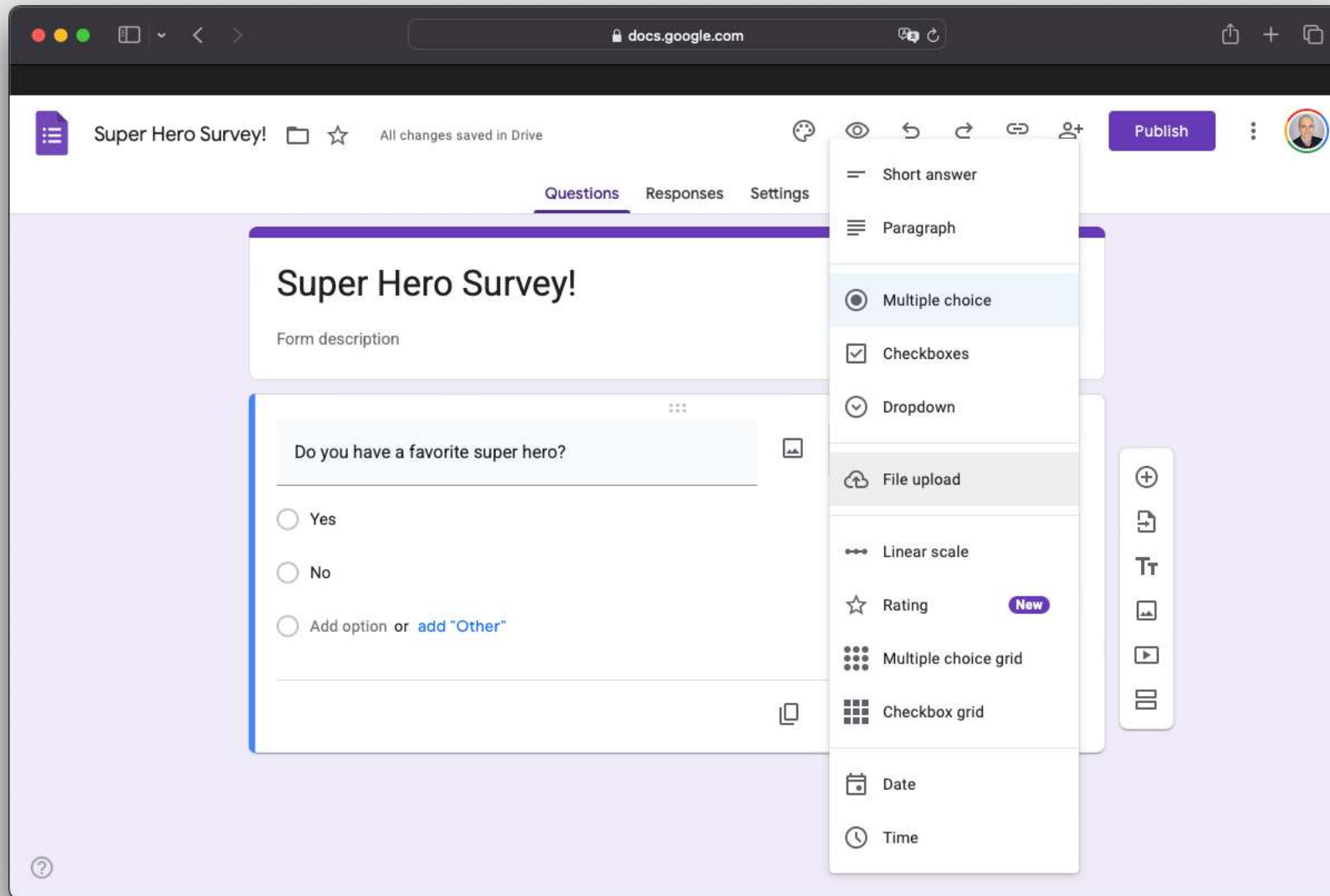
☐ Yes

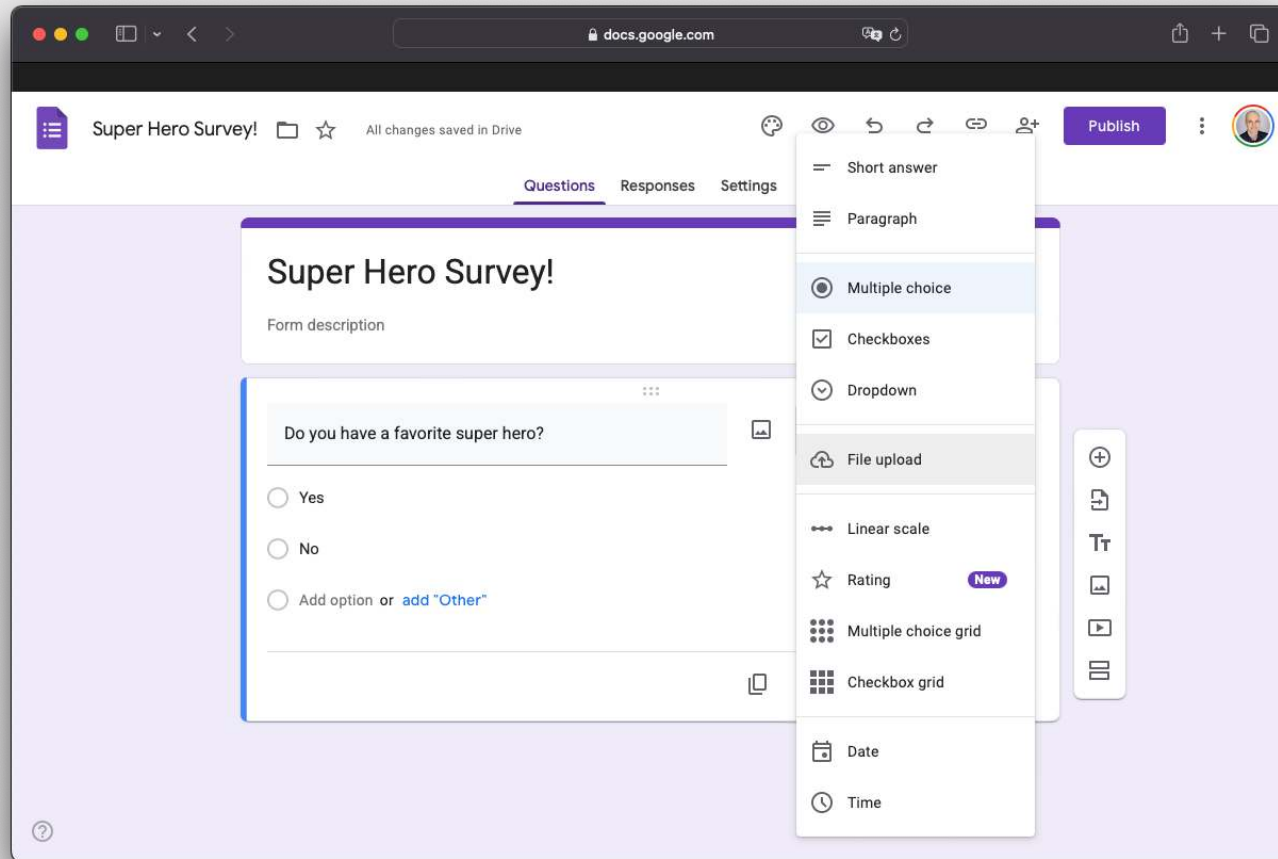
☒ No

Next

4 / 68

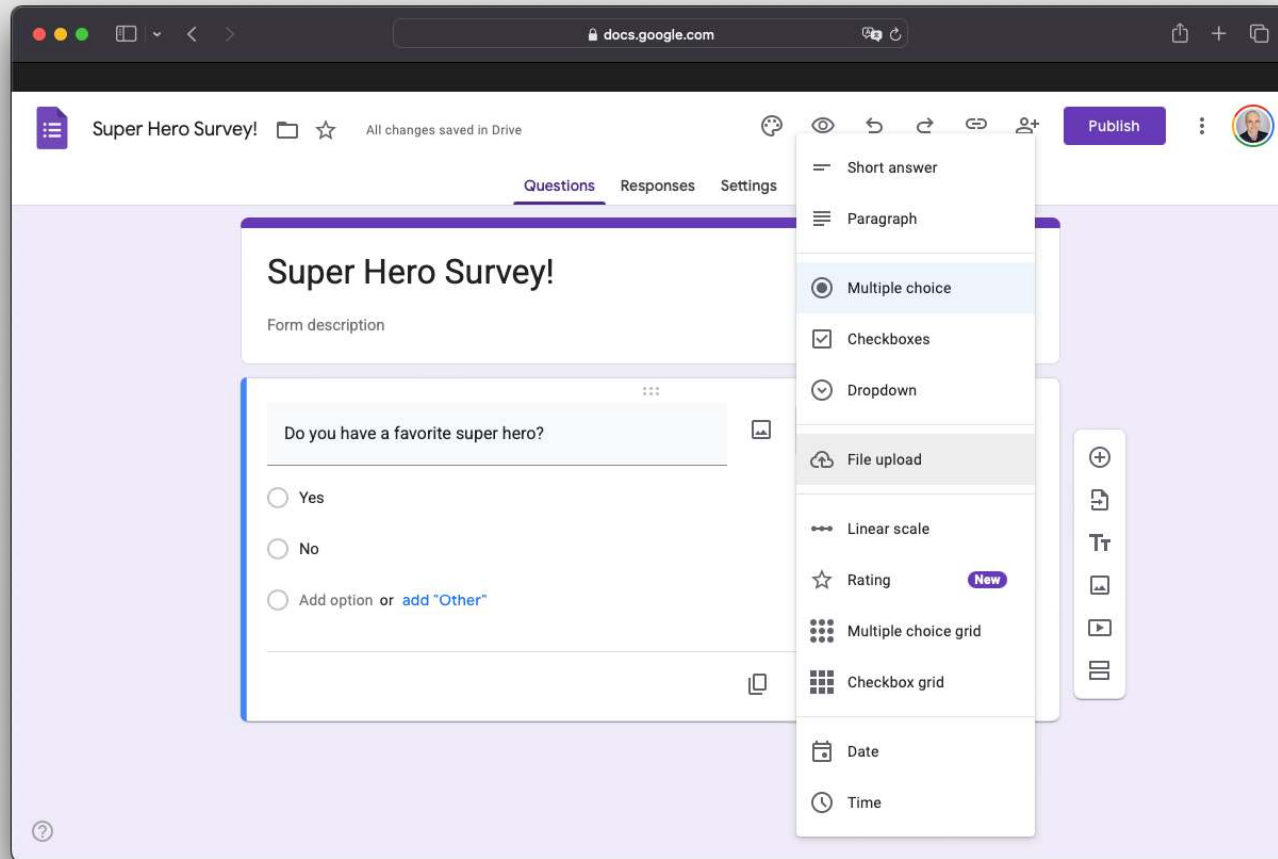
WYSIWYG Interface





Limitations

✗ Reproducibility

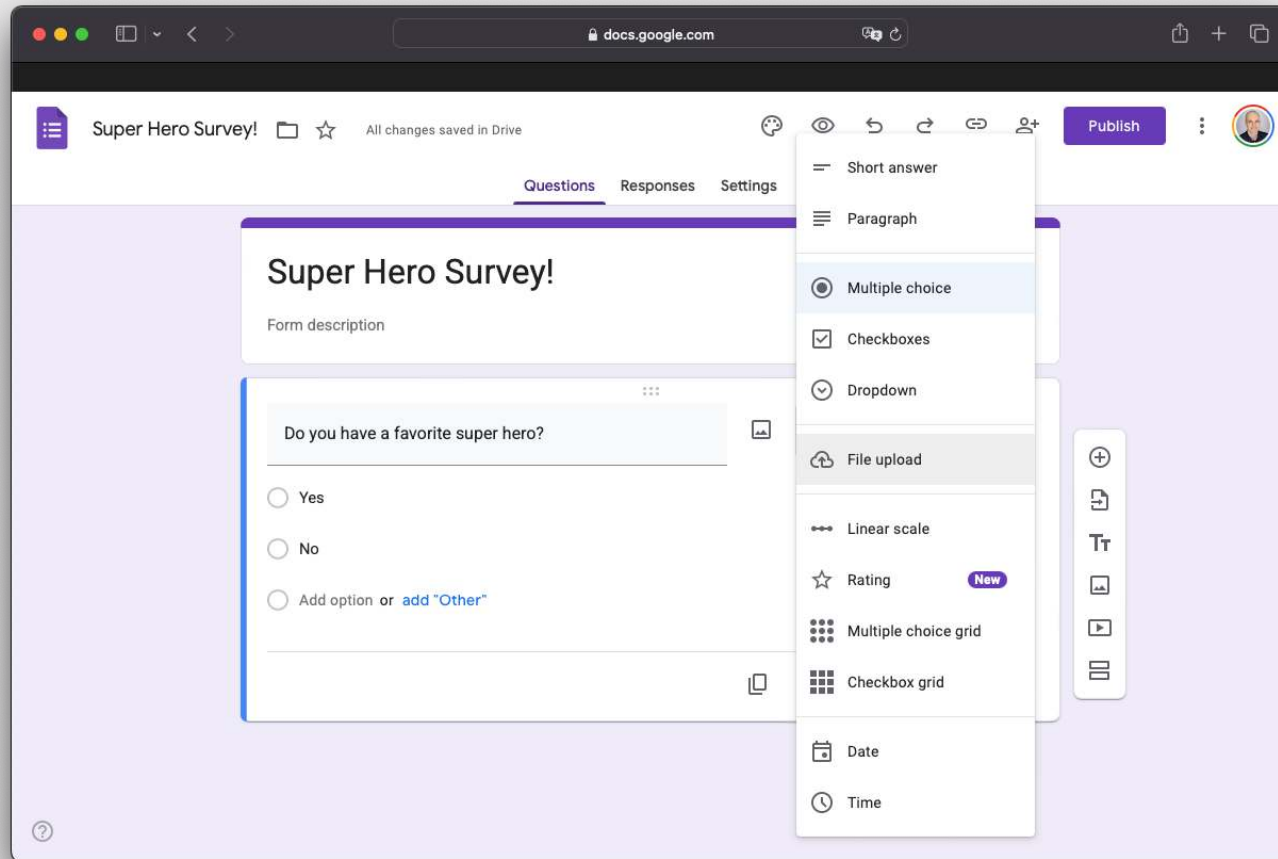


Limitations

- ✗ Reproducibility
- ✗ Version control

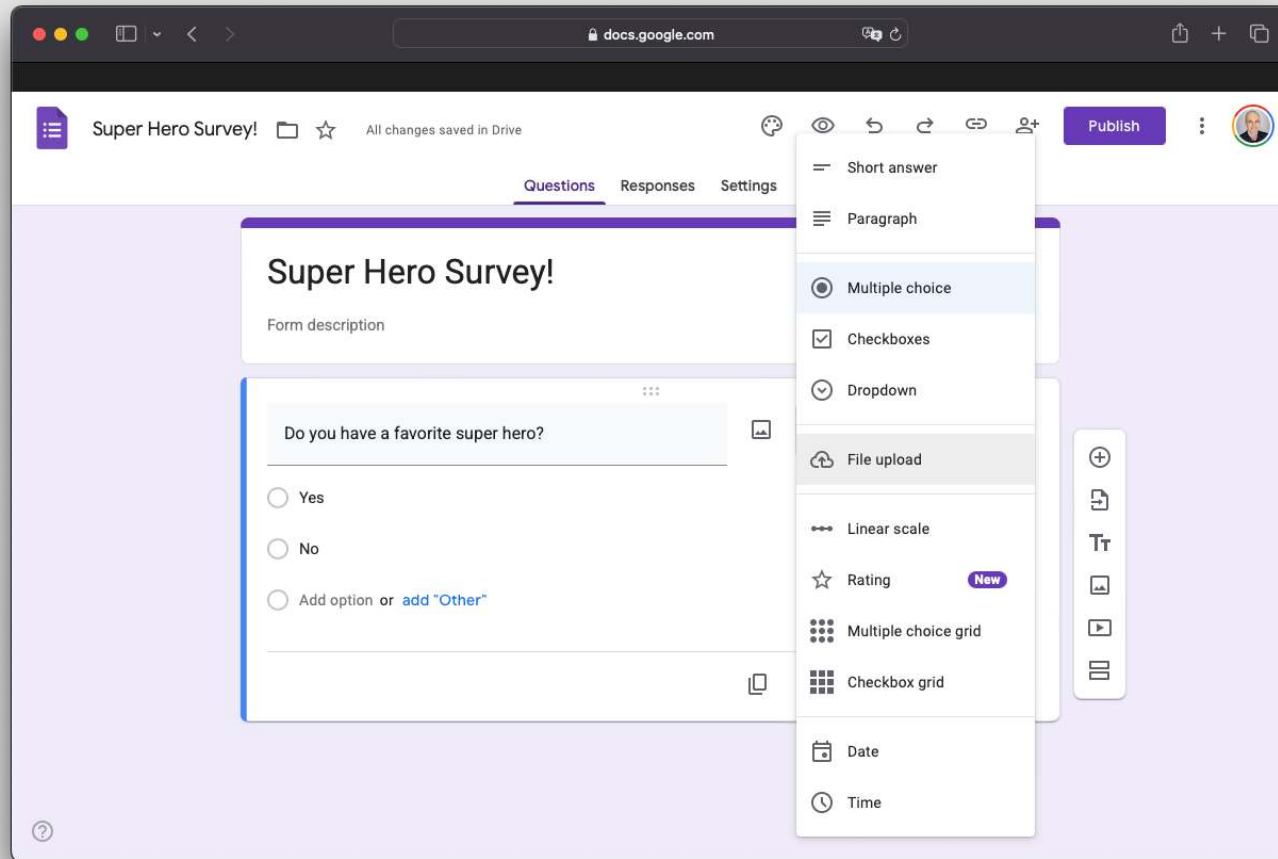
Untitled 138.docx
Untitled 241.doc
Untitled 138 copy.docx
Untitled 138 copy 2.docx
Untitled 139.docx
Untitled 40 MOM ADDRESS.jpg
Untitled 242.doc
Untitled 243.doc
Untitled 243 IMPORTANT.doc
Untitled 41.jpg





Limitations

- ✗ Reproducibility
- Version control
- ✗ Limited features



Limitations

- ✗ Reproducibility
- Version control
- Limited features
- ✗ Open source



~~Limitations~~ Features

- ✓ Reproducibility
- Version control
- Lots of Features
- ✓ Open source

Wouldn't it be nice if there was a
"Quarto" for surveys?

surveydown to the rescue!



In this talk,
you'll learn:

- What is **surveydown**?
- How does it work?
- What can I do with it?
- What's next?

What is surveydown?



R package that renders Quarto files into surveys





```
---  
format: html  
echo: false  
warning: false  
---  
  
```${r}  
library(surveydown)
```${r}  
  
::: {.sd_page id=welcome}  
  
# Welcome to our survey!  
  
```${r}  
sd_question(
 type = "mc",
 id = "has_fav_hero",
 label = "Do you have a favorite super hero?",
 option = c("Yes" = "yes", "No" = "no")
)

sd_next()
```${r}  
  
:::
```

survey.qmd → Rendered survey

127.0.0.1

Welcome to our survey!

Do you have a favorite super hero?

☐ Yes

☐ No

Next

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

```
```${r}  
library(surveydown)
```
```

```
::: {.sd_page id=welcome}
```

```
# Welcome to our survey!
```

```
```${r}  
sd_question(
 type = "mc",
 id = "has_fav_hero",
 label = "Do you have a favorite super hero?",
 option = c("Yes" = "yes", "No" = "no")
)
```

```
sd_next()
```
```

```
:::
```

Standard YAML header
w/options for "clean" output

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

```
```${r}  
library(surveydown)
```
```

```
::: {.sd_page id=welcome}
```

```
# Welcome to our survey!
```

```
```${r}  
sd_question(
 type = "mc",
 id = "has_fav_hero",
 label = "Do you have a favorite super hero?",
 option = c("Yes" = "yes", "No" = "no")
)
```

```
sd_next()
```
```

```
:::
```

Load the **surveydown** package

```
---  
format: html  
echo: false  
warning: false  
---  
  
```${r}  
library(surveydown)
```${r}  
  
::: {.sd_page id=welcome}  
  
# Welcome to our survey!  
  
```${r}  
sd_question(
 type = "mc",
 id = "has_fav_hero",
 label = "Do you have a favorite super hero?",
 option = c("Yes" = "yes", "No" = "no")
)

sd_next()
```${r}
```

...

Use Quarto fences (`:::`)
to define survey pages

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

```{r}
library(surveydown)
```

::: {.sd_page id=welcome}
```

```
# Welcome to our survey!

```{r}
sd_question(
 type = "mc",
 id = "has_fav_hero",
 label = "Do you have a favorite super hero?",
 option = c("Yes" = "yes", "No" = "no")
)

sd_next()
```
```

```
:::
```

Page content

- Markdown for page content (text, images, etc.)
- `sd_question()` for survey questions
- `sd_next()` for next button



```
---  
format: html  
echo: false  
warning: false  
---  
  
```${r}  
library(surveydown)
```${r}  
  
::: {.sd_page id=welcome}
```

```
# Welcome to our survey!  
  
```${r}  
sd_question(
 type = "mc",
 id = "has_fav_hero",
 label = "Do you have a favorite super hero?",
 option = c("Yes" = "yes", "No" = "no")
)

sd_next()
```${r}
```

```
:::
```

survey.qmd → Rendered survey

127.0.0.1

Welcome to our survey!

Do you have a favorite super hero?

☐ Yes

☐ No

Next



```
---  
format: html  
echo: false  
warning: false  
---  
  
```${r}  
library(surveydown)
```${r}  
  
::: {.sd_page id=welcome}  
  
# Welcome to our survey!  
  
```${r}  
sd_question(
 type = "mc",
 id = "has_fav_hero",
 label = "Do you have a favorite super hero?",
 option = c("Yes" = "yes", "No" = "no")
)

sd_next()
```${r}  
  
:::
```

survey.qmd → Rendered survey

127.0.0.1

Welcome to our survey!

Do you have a favorite super hero?

☐ Yes

☐ No

Next

has_fav_hero	
yes	
no	
no	
yes	

Wait a minute...
Quarto renders to *static* html pages, right?



Shiny to the rescue!

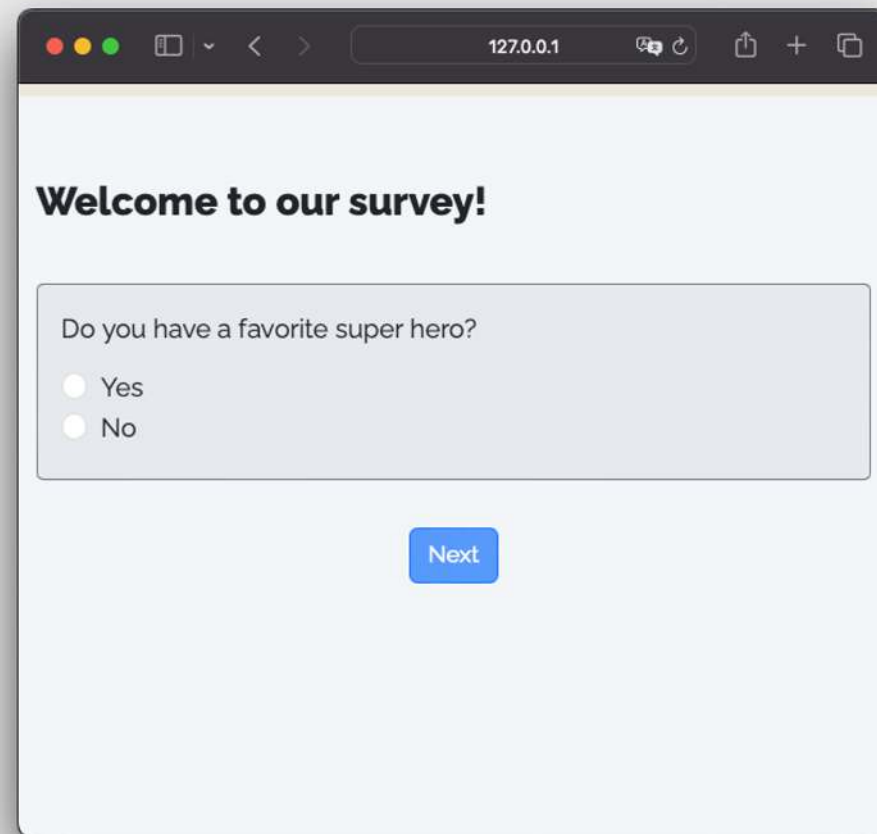




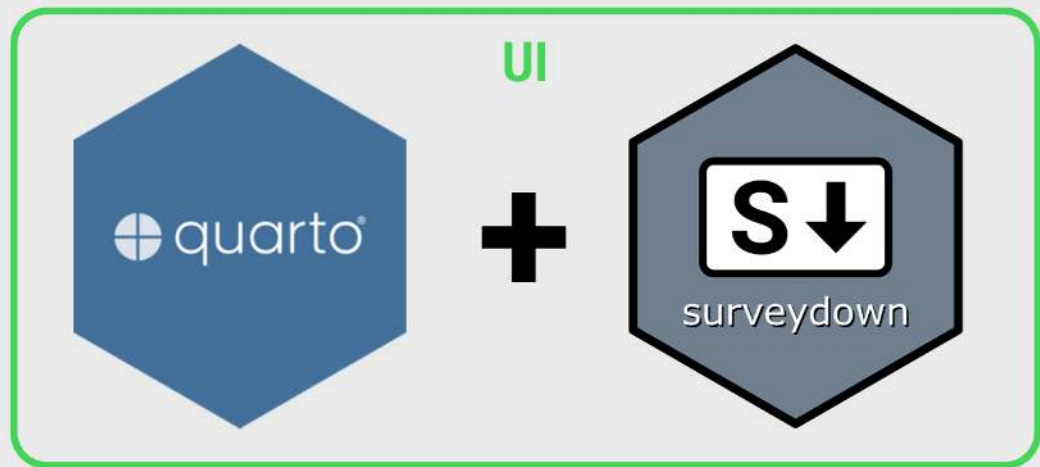
+



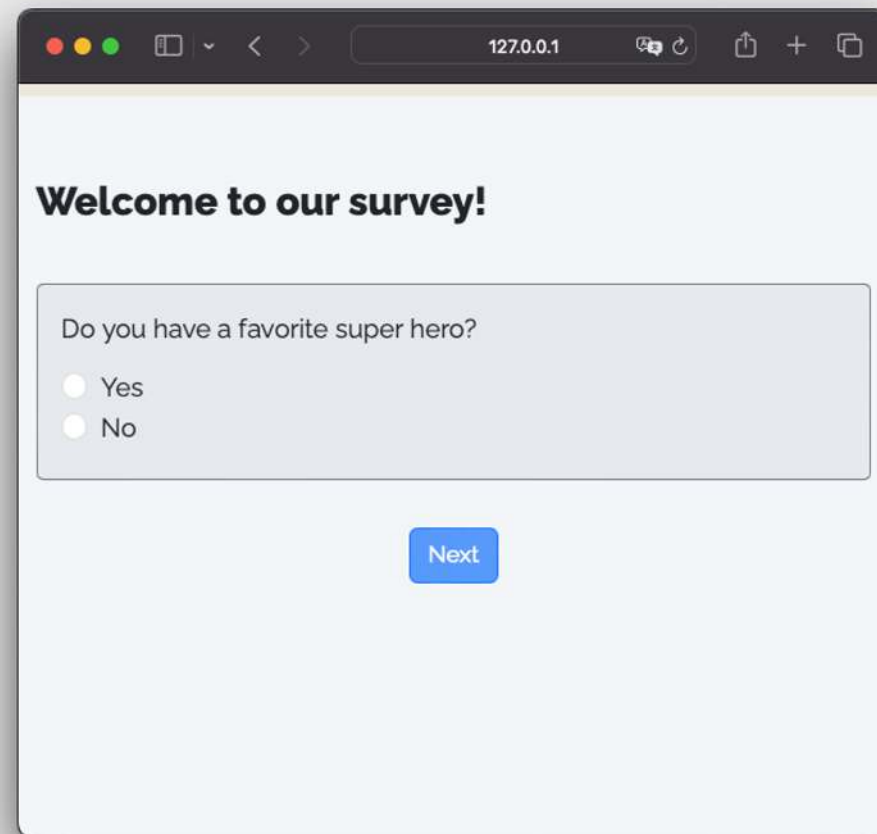
=



Shiny App



=



Shiny App

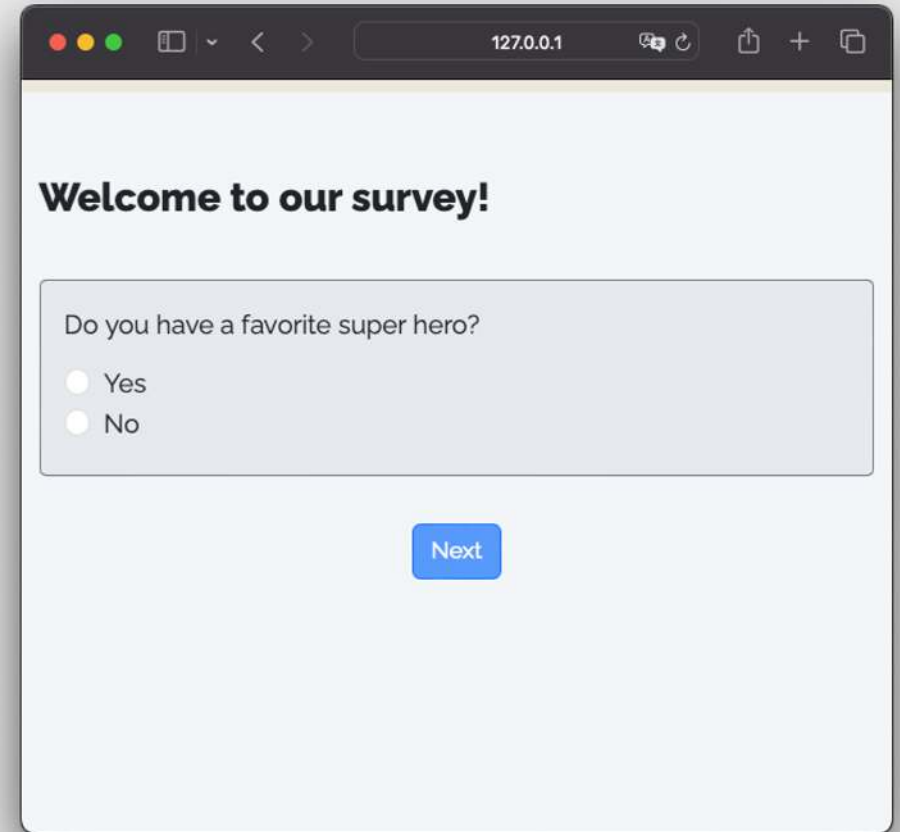
UI



Server



=



A complete `surveydown` survey

`survey.qmd`

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

`app.R`

An **R script** defining the survey Shiny app.

Don't panic!



Typical `app.R` file

```
library(surveydown)

ui <- sd_ui()

server <- function(input, output, session) {
  sd_server()
}

shiny::shinyApp(ui = ui, server = server)
```

Typical `app.R` file

```
library(surveydown)

ui <- sd_ui()

server <- function(input, output, session) {
  sd_server()
}

shiny::shinyApp(ui = ui, server = server)
```

Render the `survey.qmd` file

Run the surveydown server

Wait a minute...
How do you store the response data?



PostgreSQL to the rescue!



Typical `app.R` file

```
library(surveydown)

# sd_db_config()
db <- sd_db_connect()

ui <- sd_ui()

server <- function(input, output, session) {
  sd_server(db)
}

shiny::shinyApp(ui = ui, server = server)
```

Store credentials
Connect to the database

Pass connection to
`sd_server()`

supabase.com

Demo Free / surveydown / main Production Connect Feedback ? [Icons] [Profile]

Table Editor

schema public

+ New table

Search tables...

- coders
- data
- demo
- demo2
- evRangeSurvey
- leaf_miles
- my_test_table
- mydata
- mytable1
- newtable
- responses
- slider_test
- slider_test2
- slider_test3
- speedtest
- superheros**
- temp

Filter Sort Insert

Add RLS policy Role postgres Realtime off API Docs

<input type="checkbox"/>	session_id text	has_fav_hero text	fav_hero_name text	hero_universe text
<input type="checkbox"/>	064585d4b3ce857a4a24e9dea4a657da	no	NULL	NULL
<input type="checkbox"/>	14d82544a547922107f492e6ee9a67dc	no	NULL	NULL
<input type="checkbox"/>	1eb83f38450cc4fa5b3bc8540d161f38	yes	Superman	dc
<input type="checkbox"/>	4ef1e74ae94737c502edb08db8e27f77	yes	NULL	marvel
<input type="checkbox"/>	5cf0f43d847425de2d015e1145ac3199	yes	Spiderman	all
<input type="checkbox"/>	676ae2ebd611f7fe70586c23af5b53c	NULL	NULL	NULL
<input type="checkbox"/>	68fe326c20852efae79bca9b0b089815	no	NULL	NULL
<input type="checkbox"/>	6f436b4a64f15432ad6c4c883e99002	yes	Monkey King	marvel
<input type="checkbox"/>	8352cbbaad349838729c489c43f08c4f	yes	Spiderman	dc
<input type="checkbox"/>	86e11fbaa660bc1d94b686fd0206b55d	yes	Superman	all
<input type="checkbox"/>	a426816365182d50dc133ee0c6255b3d	yes	NULL	NULL
<input type="checkbox"/>	a754b629d48ad2c53049c6741e9d4645	no	NULL	NULL
<input type="checkbox"/>	bb7021e8ad7e35be6d75831a2f5c51cd	yes	Spiderman	all
<input type="checkbox"/>	bbe8c56090359bb4eb37e58b95b31316	yes	Spider Man	marvel

Page 1 of 1 100 rows 20 records Refresh Data Definition

demo - main - RStudio

survey.qmd × app.R × analysis.R ×

Source on Save Run Source

```
1 library(surveydown)
2 library(dplyr)
3
4 db <- sd_db_connect()
5
6 data <- sd_get_data(db = db)
7
8 glimpse(data)
9
```

Console Terminal Background Jobs

R 4.4.1 · ~/gh/slides/2025-posit-conf-surveydown/demo/

```
> db <- sd_db_connect()
✓ Successfully connected to the database.
>
> data <- sd_get_data(db = db)
>
> glimpse(data)
Rows: 20
Columns: 50
$ session_id           <chr> "5cf0f43d847425...
$ time_start           <chr> "2025-08-15 15:...
$ time_end             <chr> "2025-08-15 15:...
$ completion_code      <chr> "37081685", "60...
$ browser              <chr> "Safari v26, i0...
$ ip_address           <chr> "140.248.0.0", ...
$ has_fav_hero         <chr> "yes", "yes", "...
$ fav_hero_name        <chr> "Spiderman", "S...
$ hero_universe        <chr> "all", "dc", "a...
$ hero_qualities       <chr> "strength, flyi...
$ dream_power          <chr> "telepathy", "t...
$ responsibility_scale <chr> "10", "8.1", "1...
$ villain_encounter    <chr> "help_backup", ...
$ superhero_rating     <chr> NA, NA, NA, NA,...
$ superhero_rating_spiderman <chr> "love", "love",...
$ superhero_rating_batman <chr> "love", NA, "li...
$ superhero_rating_wonder_woman <chr> "love", NA, "li...
```

9:1 (Top Level) Copilot: Completion response received. R Script

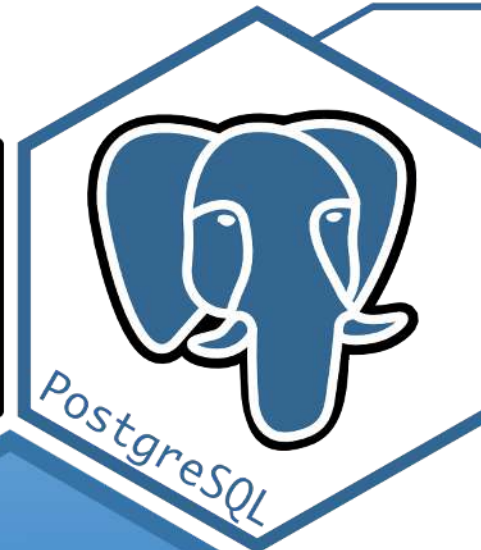
Environment History Connections Git Tutorial Files Plots Packages Help Viewer Presentation

What is surveydown?



Control Logic

Data Storage

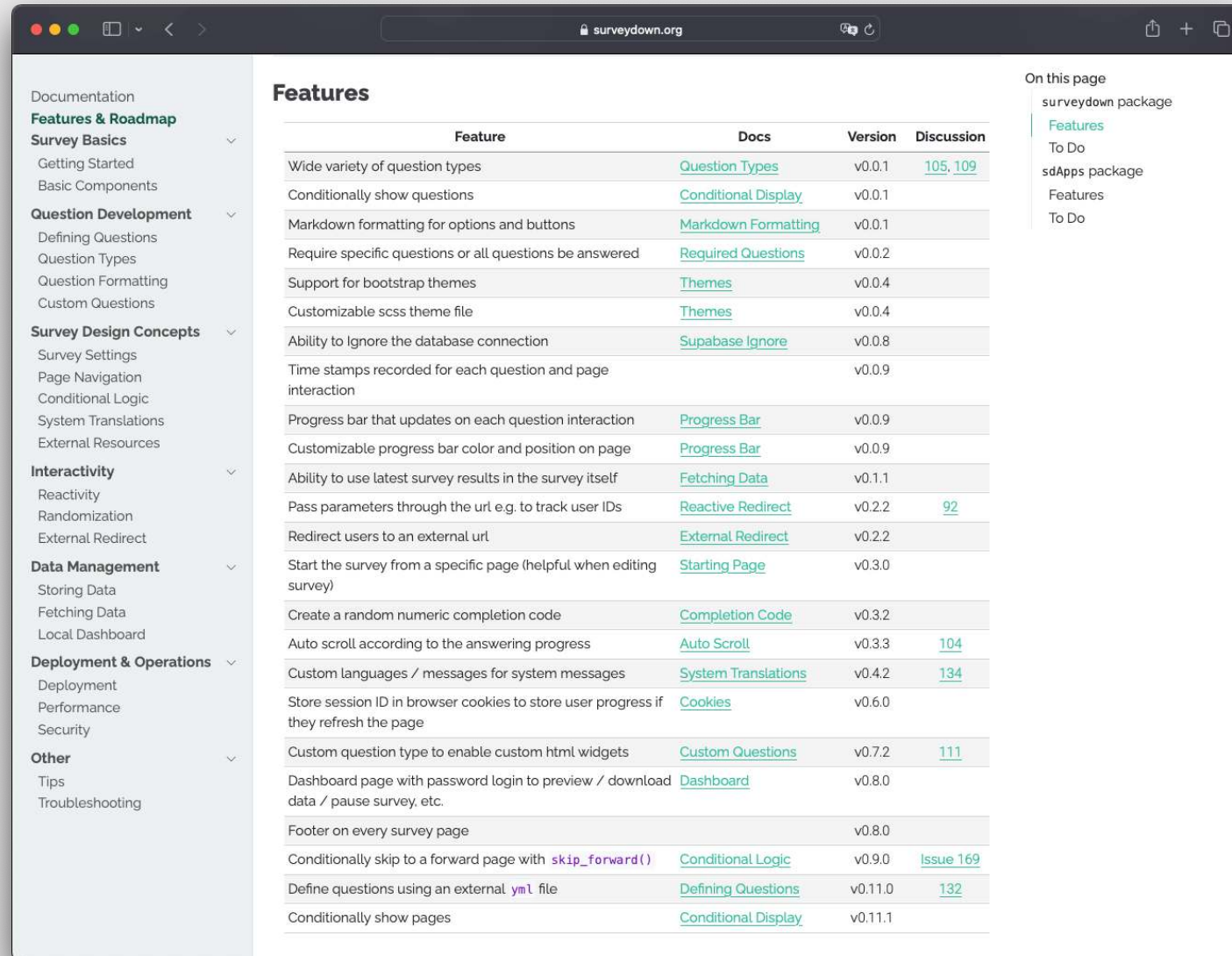


Survey Design

Web Framework

What can surveydown do?

Surveydown is feature packed!



The screenshot shows the Surveydown website with a sidebar navigation menu on the left, a main content area titled 'Features' in the center, and a 'On this page' sidebar on the right. The 'Features' section contains a table with columns for Feature, Docs, Version, and Discussion. The table lists various features such as 'Wide variety of question types', 'Conditionally show questions', 'Markdown formatting for options and buttons', 'Require specific questions or all questions be answered', 'Support for bootstrap themes', 'Customizable scss theme file', 'Ability to Ignore the database connection', 'Time stamps recorded for each question and page interaction', 'Progress bar that updates on each question interaction', 'Customizable progress bar color and position on page', 'Ability to use latest survey results in the survey itself', 'Pass parameters through the url e.g. to track user IDs', 'Redirect users to an external url', 'Start the survey from a specific page (helpful when editing survey)', 'Create a random numeric completion code', 'Auto scroll according to the answering progress', 'Custom languages / messages for system messages', 'Store session ID in browser cookies to store user progress if they refresh the page', 'Custom question type to enable custom html widgets', 'Dashboard page with password login to preview / download data / pause survey, etc.', 'Footer on every survey page', 'Conditionally skip to a forward page with skip_forward()', 'Define questions using an external yml file', and 'Conditionally show pages'. The 'On this page' sidebar lists links to 'surveydown package', 'Features', 'To Do', 'sdApps package', 'Features', and 'To Do'.

Documentation
Features & Roadmap
Survey Basics
Getting Started
Basic Components
Question Development
Defining Questions
Question Types
Question Formatting
Custom Questions
Survey Design Concepts
Survey Settings
Page Navigation
Conditional Logic
System Translations
External Resources
Interactivity
Reactivity
Randomization
External Redirect
Data Management
Storing Data
Fetching Data
Local Dashboard
Deployment & Operations
Deployment
Performance
Security
Other
Tips
Troubleshooting

Features

Feature	Docs	Version	Discussion
Wide variety of question types	Question Types	v0.0.1	105, 109
Conditionally show questions	Conditional Display	v0.0.1	
Markdown formatting for options and buttons	Markdown Formatting	v0.0.1	
Require specific questions or all questions be answered	Required Questions	v0.0.2	
Support for bootstrap themes	Themes	v0.0.4	
Customizable scss theme file	Themes	v0.0.4	
Ability to Ignore the database connection	Supabase Ignore	v0.0.8	
Time stamps recorded for each question and page interaction		v0.0.9	
Progress bar that updates on each question interaction	Progress Bar	v0.0.9	
Customizable progress bar color and position on page	Progress Bar	v0.0.9	
Ability to use latest survey results in the survey itself	Fetching Data	v0.1.1	
Pass parameters through the url e.g. to track user IDs	Reactive Redirect	v0.2.2	92
Redirect users to an external url	External Redirect	v0.2.2	
Start the survey from a specific page (helpful when editing survey)	Starting Page	v0.3.0	
Create a random numeric completion code	Completion Code	v0.3.2	
Auto scroll according to the answering progress	Auto Scroll	v0.3.3	104
Custom languages / messages for system messages	System Translations	v0.4.2	134
Store session ID in browser cookies to store user progress if they refresh the page	Cookies	v0.6.0	
Custom question type to enable custom html widgets	Custom Questions	v0.7.2	111
Dashboard page with password login to preview / download data / pause survey, etc.	Dashboard	v0.8.0	
Footer on every survey page		v0.8.0	
Conditionally skip to a forward page with <code>skip_forward()</code>	Conditional Logic	v0.9.0	Issue 169
Define questions using an external <code>yml</code> file	Defining Questions	v0.11.0	132
Conditionally show pages	Conditional Display	v0.11.1	

On this page
surveydown package
[Features](#)
[To Do](#)
sdApps package
[Features](#)
[To Do](#)

- Question types
- Conditionally display content
- Conditionally skip forward

- Question types
- Conditionally display content
- Conditionally skip forward

Question types

- text
- textarea
- numeric
- mc
- mc_multiple
- mc_buttons
- mc_multiple_buttons
- select
- slider
- slider_numeric
- date
- daterange
- matrix

Question types: text

```
sd_question(  
    type = "text",  
    id    = "fav_hero_name",  
    label = "Who is your favorite super  
hero?"  
)
```

Who is your favorite super hero?

Question types: mc

```
sd_question(  
  type = "mc",  
  id    = "hero_universe",  
  label = "Which superhero universe do you  
prefer?",  
  option = c(  
    "Marvel" = "marvel",  
    "DC Comics" = "dc",  
    "Independent/Other" = "other",  
    "I like them all equally" = "all"  
  )  
)
```

Which superhero universe do you prefer? *

- ☐ Marvel (Spider-Man, Iron Man, etc.)
- ☐ DC Comics (Batman, Superman, etc.)
- ☐ Independent/Other
- ☐ I like them all equally

Question types: `mc_multiple`

```
sd_question(  
  type = "mc_multiple",  
  id    = "hero_qualities",  
  label = "What qualities do you find most  
appealing? (Select all that apply)",  
  option = c(  
    "Super strength" = "strength",  
    "Ability to fly" = "flying",  
    "Intelligence/Strategy" =  
"intelligence",  
    "Humor/Wit" = "humor",  
    "Moral compass" = "morals"  
  )  
)
```

What qualities do you find most appealing in superheroes?







(Select all that apply)

- ☐ Super strength
- ☐ Ability to fly
- ☐ Intelligence/Strategy
- ☐ Humor/Wit
- ☐ Moral compass
- ☐ Cool gadgets/technology
- ☐ Magical powers
- ☐ Relatability/Human flaws

Question types: mc_buttons

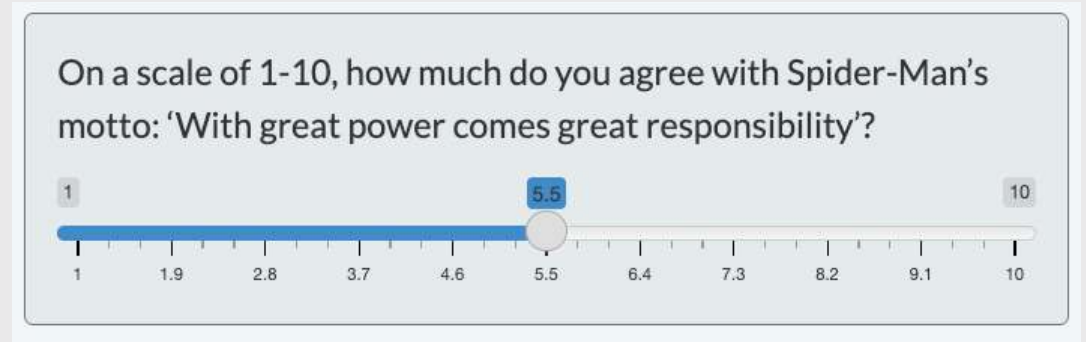
```
sd_question(  
  type = "mc_buttons",  
  id    = "dream_power",  
  label = "If you could have ONE  
superpower?",  
  option = c(  
    "🕸 Web-slinging" = "webslinging",  
    "🛡 Super Strength" = "strength",  
    "✈ Flight" = "flight",  
    "🧠 Telepathy" = "telepathy",  
    "⚡ Super Speed" = "speed"  
  ),  
  direction = "vertical"  
)
```

If you could have ONE superpower, which would you choose? *

 Web-slinging Swing through cities
 Super Strength Lift anything
 Flight Soar through the skies
 Telepathy Read minds
 Super Speed Faster than lightning
 Magic Cast spells

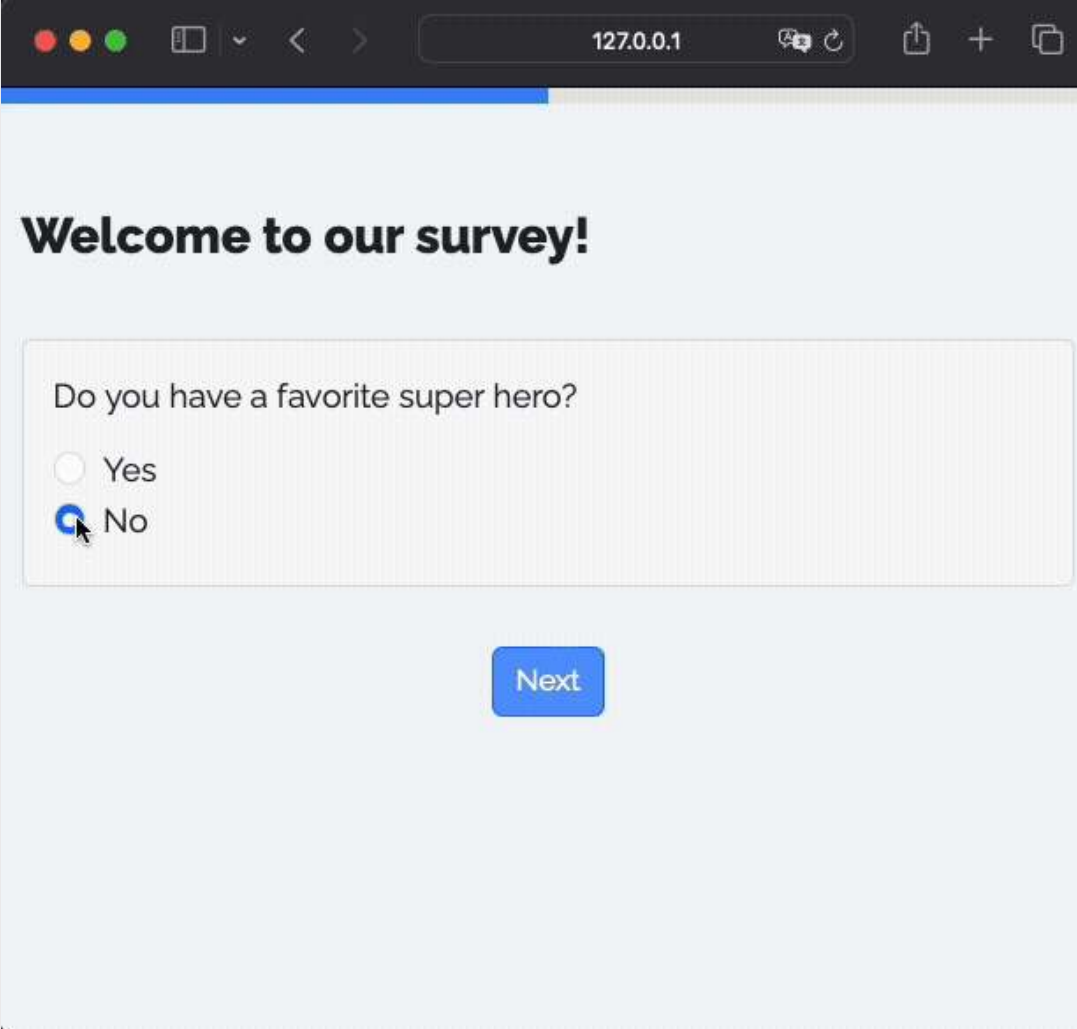
Question types: `slider_numeric`

```
sd_question(  
  type = "slider_numeric",  
  id    = "responsibility_scale",  
  label = "How much do you agree with  
'With great power comes great  
responsibility'?",  
  option = 1:10  
)
```



- Question types
- Conditionally display content
- Conditionally skip forward

Conditionally display content



A screenshot of a web browser window displaying a survey. The browser's address bar shows the URL 127.0.0.1. The survey content is on a light blue background. It starts with the heading "Welcome to our survey!". Below this is a question "Do you have a favorite super hero?" inside a light yellow box. There are two radio button options: "Yes" (unselected) and "No" (selected, indicated by a blue dot and a mouse cursor). At the bottom of the form is a blue "Next" button.

127.0.0.1

Welcome to our survey!

Do you have a favorite super hero?

☐ Yes

☒ No

Next

Conditionally display content

survey.qmd

```
sd_question(  
  type = "mc",  
  id    = "has_fav_hero",  
  label = "Do you have a favorite hero?",  
  option = c("Yes" = "yes", "No" = "no")  
)  
  
sd_question(  
  type = "text",  
  id    = "fav_hero",  
  label = "Who is your favorite super  
hero?"  
)
```

app.R

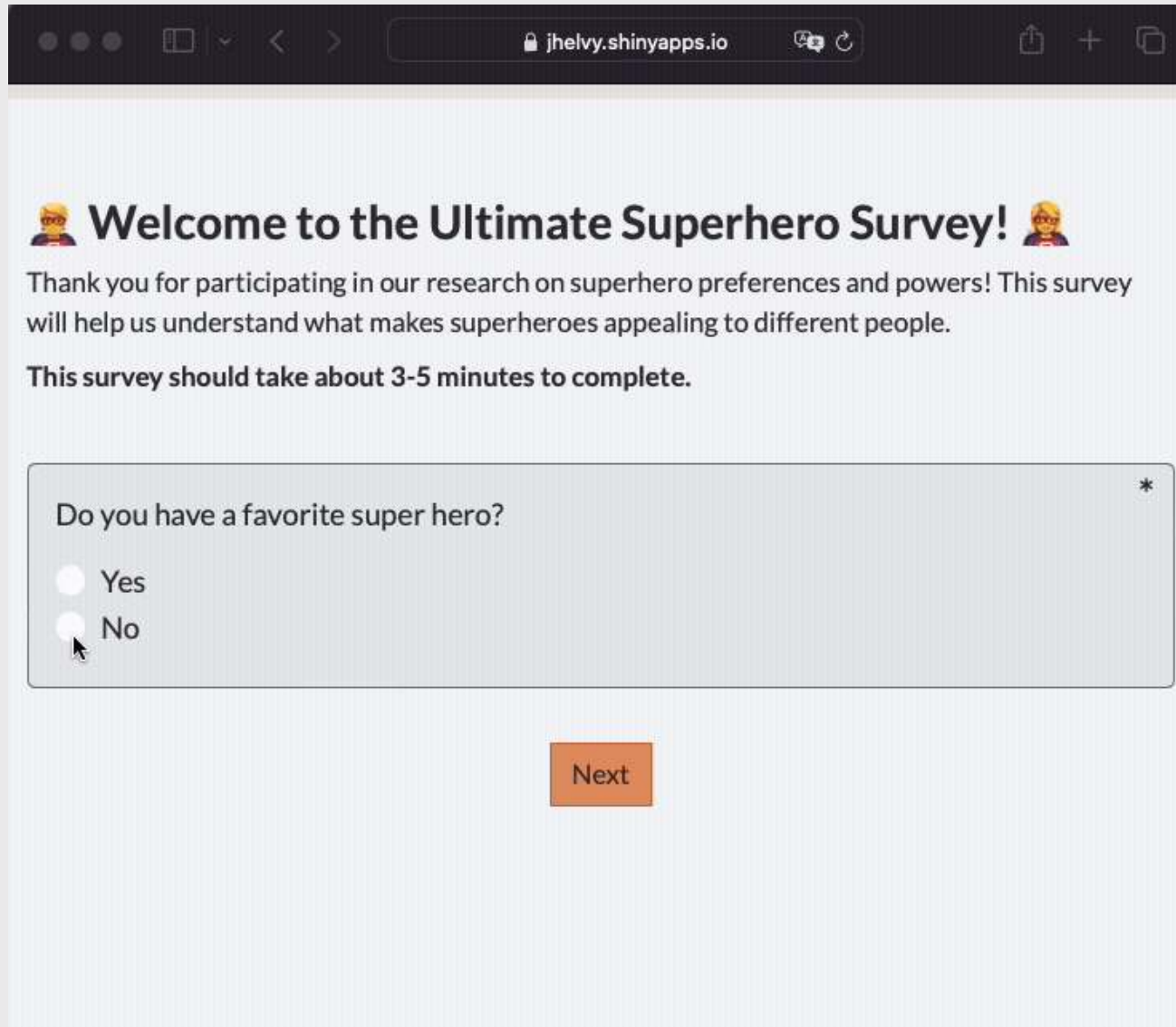
```
sd_show_if(  
  input$has_fav_hero == "yes" ~ "fav_hero"  
)
```

Condition ~ Target

"If {condition}, then show {target}"

- Question types
- Conditionally display content
- Conditionally skip forward

Conditionally skip forward



The screenshot shows a web browser window with the address bar displaying 'jhelvy.shinyapps.io'. The page content includes a title 'Welcome to the Ultimate Superhero Survey!' flanked by superhero emojis, a thank-you message, and a survey question 'Do you have a favorite super hero?' with radio button options 'Yes' and 'No'. A 'Next' button is located below the question. The 'No' option is selected, and a mouse cursor is visible over it.

Welcome to the Ultimate Superhero Survey!

Thank you for participating in our research on superhero preferences and powers! This survey will help us understand what makes superheroes appealing to different people.

This survey should take about 3-5 minutes to complete.

Do you have a favorite super hero?

☐ Yes

☒ No

Next

Conditionally skip forward

survey.qmd

```
 ::: {.sd_page id=welcome}
 ````{r}
 sd_question(
 type = "mc",
 id = "has_fav_hero",
 label = "Do you have a favorite hero?",
 option = c("Yes" = "yes", "No" = "no")
)
 ````

 :::

 ::: {.sd_page id=screenout}

 # Thank you for your interest

 :::
```

app.R

```
sd_skip_forward(
  input$has_fav_hero == "no" ~ "screenout"
)
```

Condition ~ Target

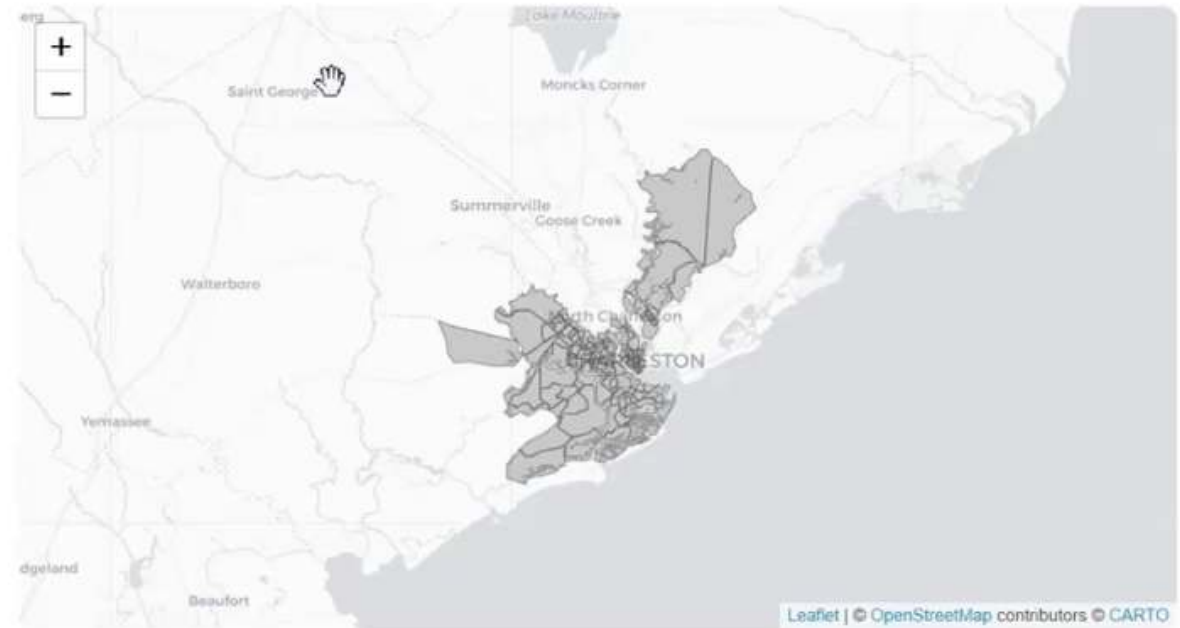
"If {condition}, then skip to {target}"

If it works in Shiny,
it works in surveydown

Embedding an interactive map with {leaflet}

Question 1: Social Vulnerability is how likely people are to face greater harm or impact on their lives after disruptive hazard events like flooding based on social or economic conditions like income or transportation access.

Please review the map of the City of Charleston, South Carolina, and select the areas you believe are more socially vulnerable to the impacts of hazardous events.

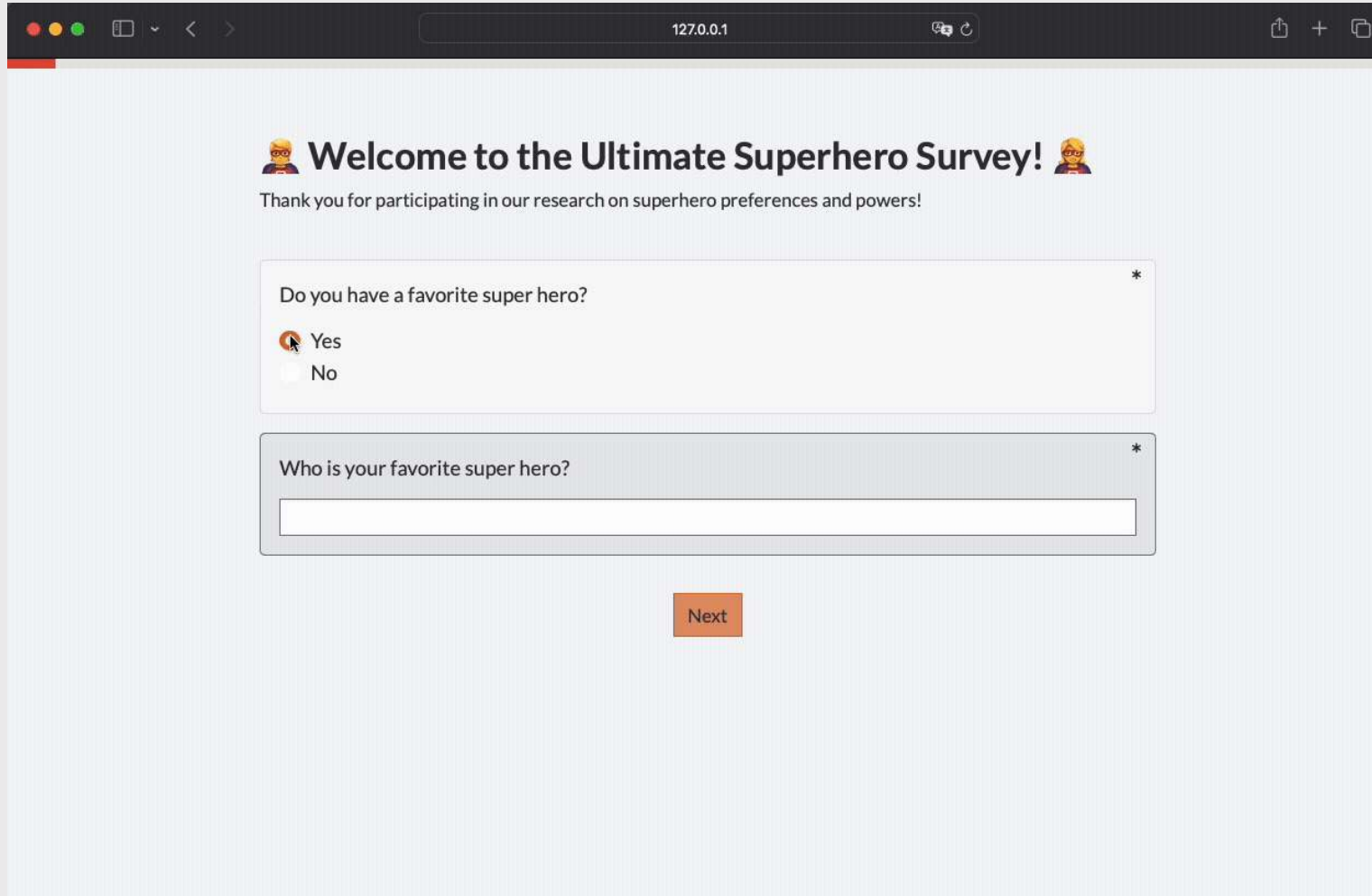


Next Question

0:00 / 0:56



Live polling: Show the response data inside the survey



The screenshot shows a web browser window with the address bar displaying '127.0.0.1'. The survey page has a light blue background and a white header area. The header contains a title 'Welcome to the Ultimate Superhero Survey!' flanked by two superhero icons, and a subtitle 'Thank you for participating in our research on superhero preferences and powers!'. Below the header, there are two survey questions. The first question, 'Do you have a favorite super hero?', is in a white box with a red border and has two radio button options: 'Yes' (selected) and 'No'. The second question, 'Who is your favorite super hero?', is in a light blue box with a red border and has a text input field. A red 'Next' button is centered below the second question.

127.0.0.1

Welcome to the Ultimate Superhero Survey!

Thank you for participating in our research on superhero preferences and powers!

Do you have a favorite super hero?

☒ Yes

☐ No

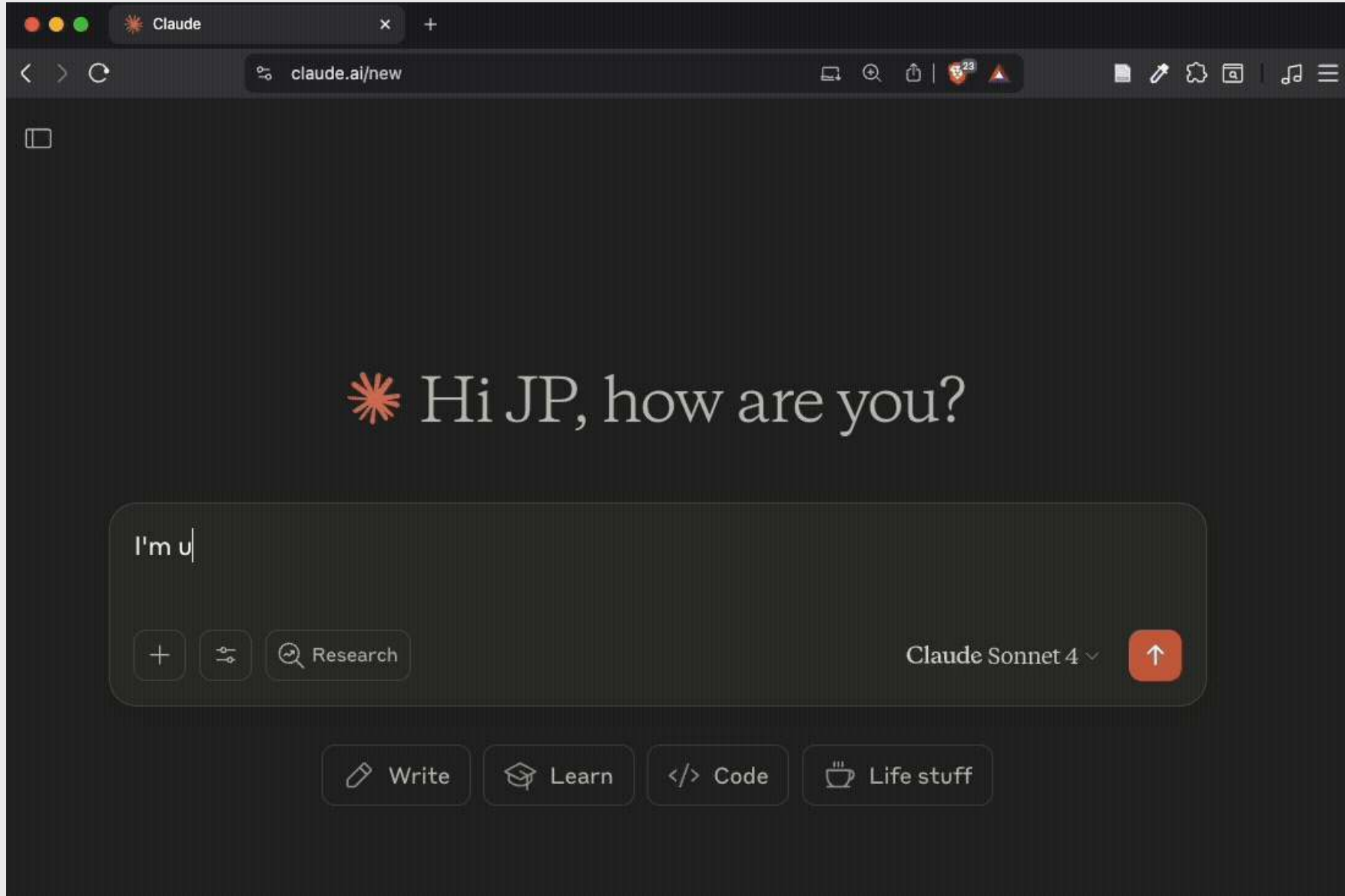
Who is your favorite super hero?

Next



surveydown + LLMs
is pretty cool

Generate surveys with LLMs!



What's next?

Try out the surveydown `sdstudio` package

```
sdstudio::launch()
```

127.0.0.1
🔍
📄
+
🔗

surveydown Studio
Build
Preview
Responses

🔄
Structure
🔗

☰
Page: welcome
+T
+Q
|
🔗
🗑️
▼

T
🦹 Welcome to the...
🔗
🗑️

Q
has_fav_hero | mc
Do you have a favorite super hero?
🔗
🗑️

Q
fav_hero_name | text
Who is your favorite super hero?
🔗
🗑️

☰
Page: hero_details
+T
+Q
|
🔗
🗑️
▼

T
Tell us about your...
🔗
🗑️

Q
hero_universe | mc
Which superhero universe do you prefer?
🔗
🗑️

Q
hero_qualities | mc_multiple
What qualities do you find most appealing in superheroes? (Select all that apply)
🔗
🗑️

☰
Page: powers
+T
+Q
|
🔗
🗑️
▼

T
If you could have...
🔗
🗑️

Code

survey.qmd
app.R

```

1 - ---
2   format: html
3   echo: false
4   warning: false
5   theme: [superhero, custom.scss]
6   barcolor: "#e74c3c"
7 - ---
8
9 - ```{r}
10 library(surveydown)
11 - ```
12
13 ::: {.sd_page id=welcome}
14
15 # 🦹 Welcome to the Ultimate Superhero Survey! 🦹♀️
16
17 Thank you for participating in our research on superhero preferences and
18 powers! This survey will help us understand what makes superheroes
19 appealing to different people.
20
21 **This survey should take about 3-5 minutes to complete.**
22
23 - ```{r}
24 sd_question(
25   type = "mc",
26   id = "has_fav_hero",
27   label = "Do you have a favorite super hero?",
28   option = c("Yes" = "yes", "No" = "no")
29 - )

```

127.0.0.1

surveydown Studio

Build

Preview

Responses

Welcome to the Ultimate Superhero Survey!

Thank you for participating in our research on superhero preferences and powers! This survey will help us understand what makes superheroes appealing to different people.

This survey should take about 3-5 minutes to complete.

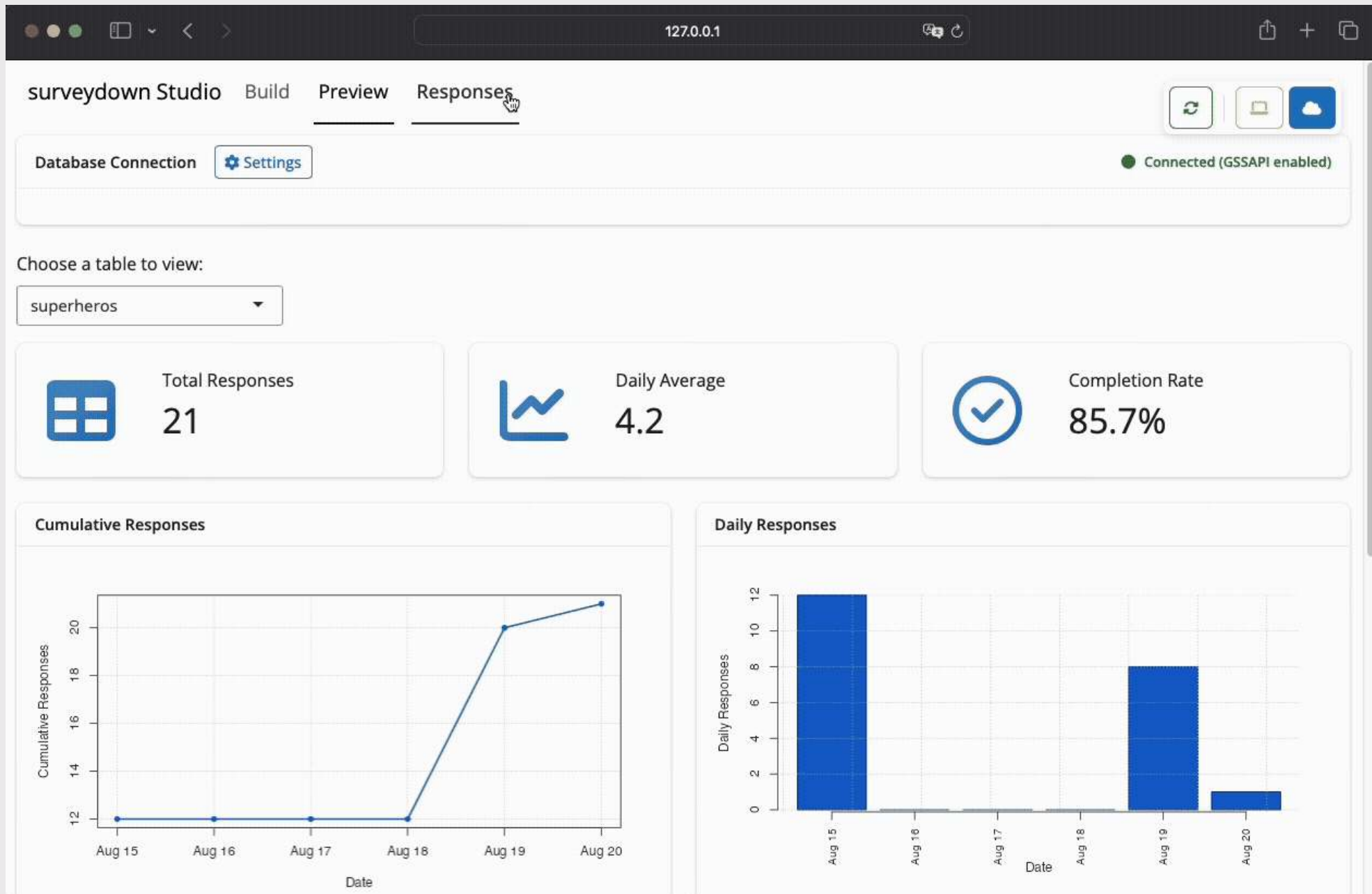
Do you have a favorite super hero?

☒ Yes

☐ No

Who is your favorite super hero?


Next



With great power
comes great responsibility

Ways to help:

<https://github.com/surveydown-dev/surveydown/>

- Try it out!
- Give it a 
- Post an issue
- Join the GitHub discussion
- Contribute a template

Thanks!



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<https://surveydown.org/>



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