



# *Reactivity*

Read the [chapter](#) in Mastering Shiny to understand reactivity in general

Read the [surveydown reactivity page](#) for reactivity in surveydown

# *Reactivity*

1. Reactivity basics
2. Reactive questions

# *Reactivity*

1. Reactivity basics
2. Reactive questions

Reactivity is about changing something based on respondent input

What's your name?

J

Hello J!

What's your name?

Jo

Hello Jo!

What's your name?

Joe

Hello Joe!

# Same example in surveydown

In `survey.qmd`:

```
```{r}
sd_question(
  type = "text",
  id   = "name",
  label = "What is your name?"
)

textOutput("greeting")
```
```

In `app.R`:

```
server <- function(input, output, session) {
  output$greeting <- renderText({
    paste0("Hello ", input$name, "!")
  })
  sd_server()
}
```

# Simplified with `sd_output()` to display question values

In `survey.qmd`:

```
```{r}
sd_question(
  type = "text",
  id   = "name",
  label = "What is your name?"
)
```

```

```
Hello, `r sd_output(id = "name", type = "value")`!
```

In `app.R`:

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

# Understanding sd\_output()

Question in `survey.qmd`:

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

```

Display a question *value*:

```
sd_output("penguins", type = "value")
```

Example: `chinstrap`

Display a question *label*:

```
sd_output("penguins", type =
  "label_option")
```

Example: `Chinstrap`

# Understanding sd\_output()

Question in `survey.qmd`:

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

```

Display a *question label*:

```
sd_output("penguins", type =
  "label_question")
```

Example:

What's your favorite penguin?

07 : 00

# Your turn

In your survey, display a question *value* somewhere with:

```
`r sd_output("id", type = "value")`
```

In your survey, display a question *option label* somewhere with:

```
`r sd_output("id", type = "label_option")`
```

# *Reactivity*

1. Reactivity basics
2. Reactive questions

# Change the question text based on respondent choices

In `survey.qmd`:

```
```{r}
sd_question(
  id      = "pet_type",
  type    = "mc",
  label   = "Which do you prefer, dogs or cats?",
  option  = c(
    "Dogs" = "dog",
    "Cats" = "cat"
  )
)```

```

Follow up question:

If `dog`:

Are you a **dog** owner?

If `cat`:

Are you a **cat** owner?

# Solution: Define the entire question in the server

```
library(glue)

server <- function(input, output, session) {
  observe({
    # Trigger with any change to input$pet_type
    pet_type <- input$pet_type

    # Make the question
    sd_question(
      type = "mc",
      id = "pet_owner",
      label = glue("Are you a {pet_type} owner?"),
      option = c("Yes" = "yes", "No" = "no")
    )
  })

  # Only show the pet_owner question if pet_type is answered
  sd_show_if(
    sd_is_answered("pet_type") ~ "pet_owner"
  )

  sd_server()
}
```

# Solution: Define the entire question in the server

```
library(glue)

server <- function(input, output, session) {
  observe({
    # Trigger with any change to input$pet_type
    pet_type <- input$pet_type

    # Make the question
    sd_question(
      type = "mc",
      id = "pet_owner",
      label = glue("Are you a {pet_type} owner?"),
      option = c("Yes" = "yes", "No" = "no")
    )
  })

  # Only show the pet_owner question if pet_type is answered
  sd_show_if(
    sd_is_answered("pet_type") ~ "pet_owner"
  )

  sd_server()
}
```

Use `observe` to detect any change to `pet_type` question

# Solution: Define the entire question in the server

```
library(glue)

server <- function(input, output, session) {
  observe({
    # Trigger with any change to input$pet_type
    pet_type <- input$pet_type

    # Make the question
    sd_question(
      type    = "mc",
      id     = "pet_owner",
      label  = glue("Are you a {pet_type} owner?"),
      option = c("Yes" = "yes", "No" = "no")
    )
  })

  # Only show the pet_owner question if pet_type is answered
  sd_show_if(
    sd_is_answered("pet_type") ~ "pet_owner"
  )

  sd_server()
}
```

Use `sd_question` to define the question

# Solution: Define the entire question in the server

```
library(glue)

server <- function(input, output, session) {
  observe({
    # Trigger with any change to input$pet_type
    pet_type <- input$pet_type

    # Make the question
    sd_question(
      type = "mc",
      id = "pet_owner",
      label = glue("Are you a {pet_type} owner?"),
      option = c("Yes" = "yes", "No" = "no")
    )
  })

  # Only show the pet_owner question if pet_type is answered
  sd_show_if(
    sd_is_answered("pet_type") ~ "pet_owner"
  )
}

sd_server()
```

Hide the `pet_owner` question until the `pet_type` is answered

# Use `sd_output()` to display the reactive question

In `survey.qmd`:

```
```{r}
sd_question(
  id      = "pet_type",
  type    = "mc",
  label   = "Which do you prefer, dogs or cats?",
  option = c(
    "Dogs" = "dog",
    "Cats" = "cat"
  )
)
sd_output("pet_owner", type = "question")
```
```

Follow up question:

If `dog`:

Are you a **dog** owner?

If `cat`:

Are you a **cat** owner?

10:00

# Your turn

Define a question inside your server (`app.R` file):

```
server <- function(input, output, session) {  
  observe({  
    sd_question(  
      type = "mc",  
      id   = "id",  
      ...  
    )  
  })  
  sd_server()  
}
```

OR:

Try out the final example:

`part-4-reactive-questions`

Display the question inside your survey (`survey.qmd` file):

```
sd_output("id", type = "question")
```