



Creating slides with Quarto

Workshop for VVSOR, 2024 feb 21

Martine Jansen



Intro

Preparations



- Have RStudio version v2022.07.1 or more recent

Content of workshop

It is about:

- Presentation types, but mostly Reveal JS
- Get the content in place
- Make it look better
- Fun things to add in pres

But not so much about:

- Design choices
- What works best in pres



Start & Basic Content 1/2



How to start a new presentation:

File > New File > Quarto Presentation ... >



Have a look at Habits.qmd, and render it

```
---  
title: "Habits"           # yaml  
format: beamer            # yaml presentation type  
---
```

```
# In the morning
```

```
## Getting up
```

- Turn off alarm
- Get out of bed

Start & Basic Content 2/2



- | | |
|-----------------|---|
| # Title section | starts new section with title “Title section” |
| ## Slide title | starts new slide with title “Slide title” |
| - item | “item” is in a bullet list |

Presentation types

See how output changes, by changing the format by (un)commenting code in Habits.qmd

- Beamer
- PowerPoint
- Reveal JS



<p>Habits</p> <p>Example from https://quarto.org/docs/presentations/</p> <p>beamer</p>	<p>Habits</p> <p>Example from https://quarto.org/docs/presentations/</p> <p>pptx</p>	<p>Habits</p> <p>Example from https://quarto.org/docs/presentations/</p> <p>revealjs</p>
--	--	--

Get the content in place

Lists



You type:

- item
- another item
 - subitem

1. an item

1. another item
some text

1. and an item

It renders as:

- item
- another item
 - subitem

1. an item

2. another item
some text

3. and an item

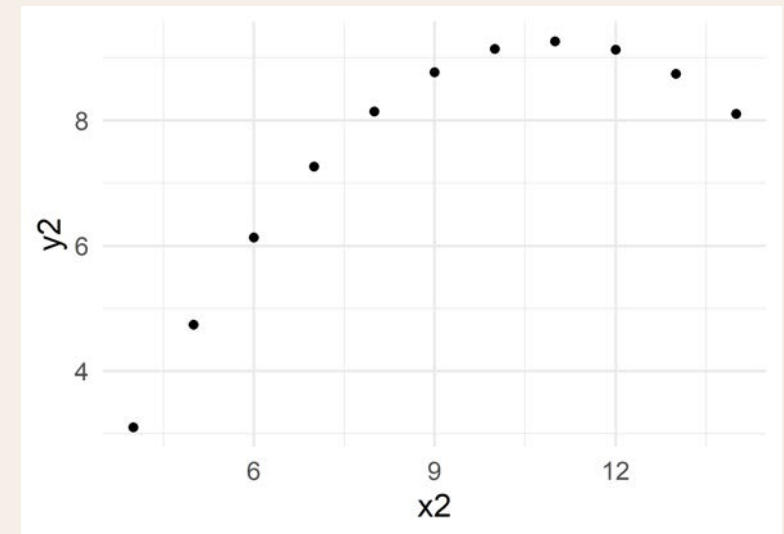
Use R in a slide



You type:

```
1  ```{r}
2  anscombe |>
3    ggplot(aes(x = x2,
4               y = y2)) +
5    geom_point(size = 4) +
6    theme_minimal(
7      base_size = 20)
8  ```
```

It renders as:



```
`r mean(mtcars$wt)`
```

3.21725

Add an URL

- Just type `<text between>`: <https://osf.io/>
- Or have [some text link to it](https://osf.io/)

`[some text link to it](https://osf.io/)`

- or combine the two: <https://osf.io/>

`https://osf.io/`

- and add a tooltip: <https://osf.io/>

`[https://osf.io/](https://osf.io/ "link to
https://osf.io/")`

Print handouts



- Via presentation menu left bottom, tools, PDF export mode
<https://quarto.org/docs/presentations/revealjs/presenting.html>
to-pdf
- `pagedown::chrome_print("yourdocument.html")`

Now you, Round 1

See `PalmerPenguins.txt`

Make the pres described in Round 1



Make it look better

Columns 1/2

Divide the width of the page into two columns:

```
:::: columns
```

```
::: {.column width="30%"}
```

This column is of 30% width, a smaller column

```
:::
```

```
::: {.column width="70%"}
```

This column is of 70% width, not very small

```
:::
```

```
::::
```

Columns 2/2

Divide the width of the page into three columns:

This column is of 30% width, a smaller column This column is of 70% width, not very small

See <https://quarto.org/docs/presentations/revealjs/#multiple-columns>

Call-outs 1/3



Note

There are five types of callouts: `note`, `warning`, `important`, `tip`, and `caution`.

```
::: {.callout-note}
There are five types of callouts:
`note`, `warning`, `important`, `tip`, and `caution`.
:::
```

 This is an important warning with no specific content

```
::: {.callout-warning}
## This is an important warning with no specific content
:::
```

Call-outs 2/3

```
::: {.callout-tip}
## Pay attention
Using callouts is an effective way to highlight content.
:::
```

Pay attention

Using callouts is an effective way to highlight content.

```
::: {.callout-tip appearance="simple"}
## Pay attention
Using callouts is an effective way to highlight content.
:::
```

Pay attention

Using callouts is an effective way to highlight content.

Call-outs 3/3



```
::: {.callout-tip icon=false}
## Pay attention
Using callouts is an effective way to highlight content.
:::
```

Pay attention

Using callouts is an effective way to highlight content.

```
::: {.callout-tip appearance="minimal"}
## Pay attention
Using callouts is an effective way to highlight content.
:::
```

Pay attention

Using callouts is an effective way to highlight content.

Callouts read more

- works in all three formats
- looks best in revealjs
- read more at

<https://quarto.org/docs/authoring/callouts.html>

From now on, format reveals

Revealjs



- `reveal.js` is an open source HTML presentation framework
- Project started and maintained by Hakim El Hattab, with help of a lot of contributors
- <https://revealjs.com/>

Slide numbers & Footer

Add to YAML:

```
slide-number: true
```

```
footer: This is my useful footer text
```

For slide specific footer:

```
::: {.footer}
```

```
Have yourself a slide specific footer
```

```
:::
```

Logo



- Add to YAML: `logo: path_to_your_logo.png`
- According to <https://quarto.org/docs/presentations/revealjs/#footer-logo> it should be

```
format:
  revealjs:
    logo: path_to_your_logo.png
```

but the simple one works as well

- default right bottom and a bit small,
- can add scss to relocate and scale
- try to avoid clashes with slide numbers



Incremental display of lists

- To have all lists incremental, add to YAML:
`incremental: true`
- Have a list nonincremental
- by wrapping it in an `.nonincremental` div

```
::: {.nonincremental}
- Have a list nonincremental
- by wrapping it in an .nonincremental div
:::
```


Have a pause

Adding of

. . .

will add a pause

Some pause text

Fragments, fading in and out

You can have a fragment fade out

```
::: {.fragment .fade-out}
```

You can have a fragment fade out

```
:::
```

You can have a fragment fade in

```
::: {.fragment}
```

You can have a fragment fade in

```
:::
```

Fragments, more fading

```
::: {.fragment .fade-in-then-out}
```

A fragment can fade in, and then fade out

```
:::
```

A fragment can also slide up

```
::: {.fragment .fade-up}
```

A fragment can also slide up

```
:::
```

Fragments, highlighting & nesting

Something already there

can be highlighted

```
 ::: {.fragment .highlight-red}  
can be highlighted  
 :::
```

Fragments can be nested, for multiple effects on same text

Fade down > Turn blue > Semi fade out

```
 ::: {.fragment .fade-down}  
 ::: {.fragment .highlight-blue}  
 ::: {.fragment .semi-fade-out}  
Fade down > Turn blue > Semi fade out  
 :::  
 :::  
 :::
```

Fragments appearing in order

Then this appears third

This fragment appears first

This fragment is second

```
::: {.fragment fragment-index=3}
```

Then this appears third

```
:::
```

```
::: {.fragment fragment-index=1}
```

This fragment appears first

```
:::
```

```
::: {.fragment fragment-index=2}
```

This fragment is second

```
:::
```

Fragments, inline use

You can also have fragments of inline text appear.

You can also have `[fragments of inline text]{.fragment}` appear.

Or **highlight some text**, but not all

Or `[highlight some text]{.fragment .highlight-red}`, but not all

Nesting **is also possible, sort of**

Nesting `[[is also possible, sort of]{.fragment}]{.fragment .highlight-blue}`

Fragments in columns

- • • does not work within columns, `.fragment` does

This first

This comes third

That second

```
:::: columns
::: {.column width="50%"}
This first
```

```
:::: {.fragment}
That second
:::
```

```
::::
::: {.column .fragment width="50%"}
This comes third
:::
```

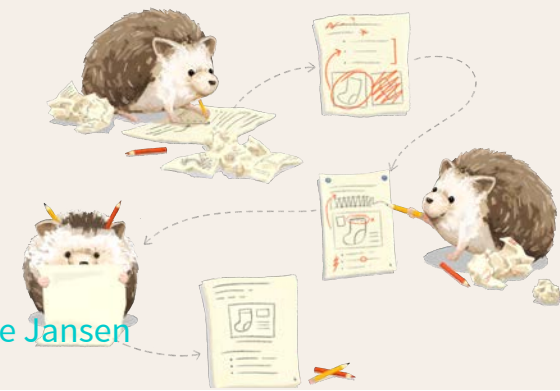
Adding images to a slide

- In a slide with ``



- ``
`{height="200"}`
- Illustrations by Alison Hill and Allison Horst, for RStudio
- You can also use the visual editor, and then insert

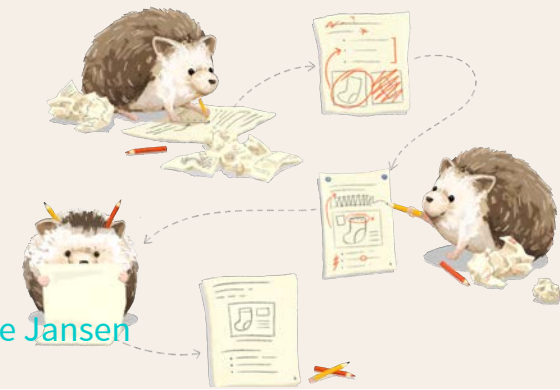
An image on a specific place



An image on a specific place



```
![]
(resources_main/hedgehog0.png)
{.absolute top=100 left=0
width="350"}
![]
(resources_main/hedgehog3.png)
{.absolute top=200 left=50
width="450"}
![]
(resources_main/hedgehog4.png)
{.absolute bottom=0 right=50
width="300"}
```



Slide background, color

- This slide has a background in “lightgreen”
- `## Slide background, color {background-color="lightgreen"}`
- All CSS colors are possible, also hex codes
- For colors, see
https://www.w3schools.com/cssref/css_colors.php

Slide background, image

- `background-image="..."`
- `background-size="100px"`
- `background-repeat="repeat"`
- `background-opacity=0.5`
- resulting in this slide header: `## Slide background, image {background-image="resources_main/hedgehog0.png" background-size="100px" background-repeat="repeat" background-opacity=0.2}`

Slide background, gif

A bit distracting, isn't it?

```
## Slide background, gif {background-  
image="resources_main/giphyyes.gif"}
```


No slide title is needed

```
## {background-  
image="resources_main/
```



Background picture in title slide

Add to yaml:

```
title-slide-attributes:  
  data-background-image: "path_to_picture"
```

If you want the picture to be less opaque:

```
title-slide-attributes:  
  data-background-image: "path_to_picture"  
  data-background-opacity: "0.1"
```

All Slide background options are available,
but prepend with **data-**

Now you, Round 2

See `PalmerPenguins.txt`

Make the pres described in Round 2



And even better

Stretch



Attention

```
::: {.r-fit-text}  
Attention  
:::
```

Slide size

- Default size slide is 1050 by 700
- Reveal will automatically scale presentations uniformly
- Adjust in the YAML:
 - width, (default 1050)
 - height, (default to 700)
 - margin, part of display size empty around content (default 0.1)

Slide transition

- Animation of slide transition is possible
- Use it wisely
- Read more:

<https://quarto.org/docs/presentations/revealjs/advanced.html#transitions>

```
## Slide transition {transition="slide-in slide-out"  
transition-speed="slow"}
```

Emoji

- You can have emoji 🧐
- Just add to the YAML:

```
from: markdown+emoji
```

- Add a 💜 emoji with `:purple_heart:`
- See <https://gist.github.com/rxaviers/7360908> for a list of emoji codes
- 😄

Theming



- 11 built-in themes for revealjs presentations
- The default theme is default (😊)
- You can make your own

Playing with themes



- In YAML, change

```
format: revealjs
```

into (mind the gap)

```
format:
  revealjs:
    theme: default
```

- Try some of the themes at

<https://quarto.org/docs/presentations/revealjs/themes.html>

What makes a theme, technically

- In revealjs, themes are a `scss` file
- `SCSS`:
 - Sassy Cascading Style Sheet
 - extends `CSS` with new features: variables, functions, ...
 - gets compiled to `CSS` before use in browser, so it can describe how HTML elements should appear on the web page

A look at `dark.scss`



```
/*-- scss:defaults --*/
```

```
$body-bg: #191919 !default;
```

```
$body-color: #fff !default;
```

```
$link-color: #42affa !default;
```

```
$input-panel-bg: rgba(233, 236, 239, 0.2) !default;
```



- `!default` assigns value only if variable was undefined
- `!important` overrides previously declared styles
- Variables start with `$`
- A list of all the scss variables, see <https://quarto.org/docs/presentations/revealjs/themes.html#sass-variables>
- More on scss(sass), see <https://sass-lang.com/guide/#variables>

Have your own theme & SCSS

- To add your own theme, add to YAML:

```
format:  
  revealjs:  
    theme: [default, myown.scss]
```

- And have of course a `myown.scss` file 😊
- <https://quarto.org/docs/presentations/revealjs/themes.html#crthemes>

Now you, Round 3

See `PalmerPenguins.txt`

Make the pres described in Round 2



Animation on your slides



Animating content

Animation on your slides



Animating content

Animation on your slides



Animating content

The code



```
## Animation on your slides {auto-animate=true}
```

```
::: {style="margin-top: 100px;"}  
Animating content  
:::
```

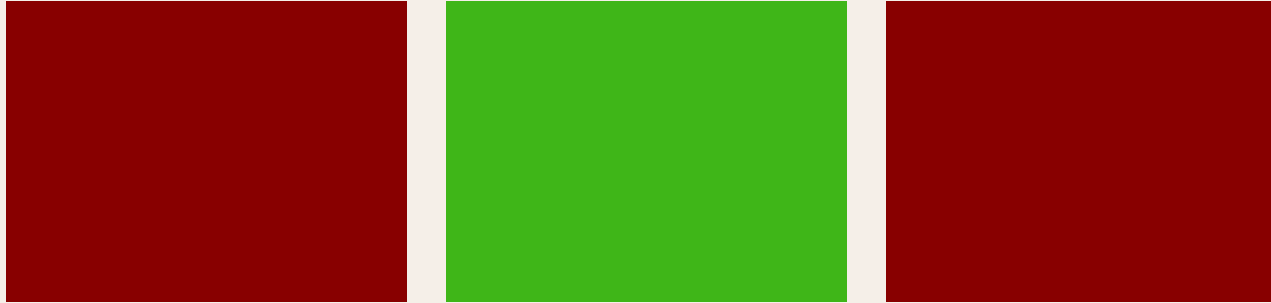
```
## Animation on your slides {auto-animate=true}
```

```
::: {style="margin-top: 200px; font-size: 3em; color: #880000;"}  
Animating content  
:::
```

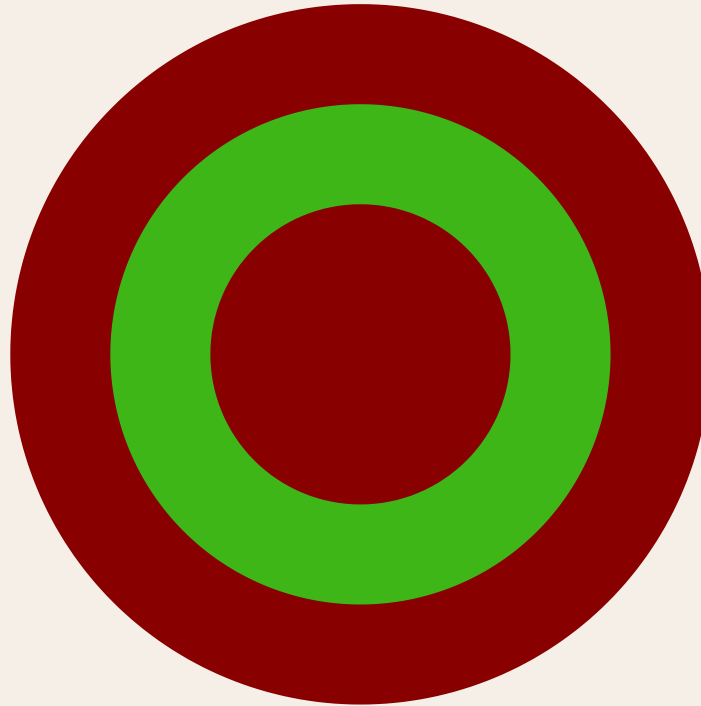
```
## Animation on your slides {auto-animate=true}
```

```
::: {style="margin-top: 300px; font-size: 3.2em; color: #003333;"}  
Animating content  
:::
```

Another animation



Another animation



Part of the code

```
## Another animation {auto-animate="true" auto-animate-easing="ease-in-out"}
```

```
::: r-hstack  
::: {data-id="box1" auto-animate-delay="0" style="background:  
#880000; width: 200px; height: 150px; margin: 10px;"}  
:::
```

```
::: {data-id="box2" auto-animate-delay="0.1"  
style="background: #3fb618; width: 200px; height: 150px;
```

Auto-animate



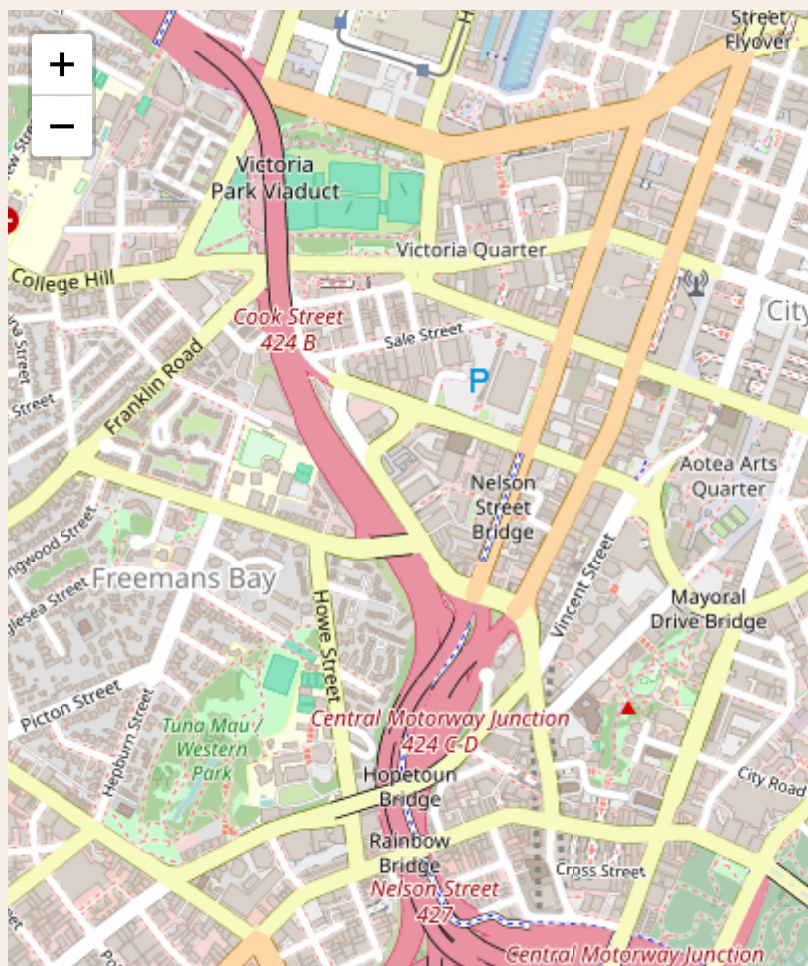
- Automatically animate matching elements across slides with Auto Animate
- <https://quarto.org/docs/presentations/revealjs/advanced.html#animate>

Interactivity

Writing on slides

- Sometimes you wish to **stress** something while speaking
- If you know that upfront, you can program it
- As in the first line
- What can you do if you feel the need to write on your slides?
- Type **c**, or click the pen at the bottom
- Typing **b** or the blackboard at the bottom
- Only works if added to YAML: **chalkboard: true**
- <https://quarto.org/docs/presentations/revealjs/presenting.html>

A map



```
1  `` `{r}
2  library(leaflet)
3  leaflet() |>
4    # Add default OpenStre
5    # map tiles
6    addTiles() |>
7    addMarkers(
8      lng=174.768,
9      lat=-36.852,
10     popup="The birthplac
11  ```
```

<https://quarto.org/docs/interactive/wid>

R in your browser, what?



Installing package ...

```
1  set.seed(123)
2  x <- rnorm(100, mean = 500, sd = 10)
3
4  c(summary(x), sd = sd(x))
```

R in your browser, also ggplot



Installing package ...

```
1 chickwts |>
2   ggplot(aes(x = weight,
3             y = feed)) +
4   geom_jitter(width = 0, height = 0.1)
```

R in your browser, how?



- Add to the YAML:

```
webr:  
  packages: ['ggplot2'] # Install R packages on document open  
filter:  
  - webr
```

- Add the webr extension via the terminal:
`quarto add coatless/quarto-webr`
- Use webr-r chunks: `webr-r`
- For use in revealjs: have quarto 1.4
- Read more on webr at <https://docs.r-wasm.org/webr/latest/>
- Helpful example: <https://github.com/coatless/quarto-webr/blob/cd9a862badc14e5593b3d833861ae70688f35de0/examples/revealjs/index.qmd>

Extensions

- Extend the behaviour of Quarto
- Add to project via **Terminal**, for instance:
`quarto add coatless/quarto-webr`
`quarto add produnis/quarto-timer`
`quarto add quarto-ext/pointer`
- Quarto extensions may execute code when documents are rendered. Therefore, if you do not trust the author of an extension, do not install or use the extension.
- <https://quarto.org/docs/extensions/listing-revealjs.html>
- <https://quarto.org/docs/extensions/managing.html>

Closing part

We did not talk about

- Speakernotes
- Multiplex
- Zooming in on slide: `alt-click`
- Overview on slides: `o`
- **Shiny in the browser**
- Some beamer themes do have page numbers, see <https://stackoverflow.com/questions/74300235/frame-number-in-quarto-beamer-presentation>

We also did not talk about slide design

For instance have a look at:

- Storytelling with Data - Cole Nussbaumer Knaflc
4.4/5 ★ <https://www.goodreads.com/book/show/26535513-storytelling-with-data>
<https://www.storytellingwithdata.com/>
- Data Story - Nancy Duarte
4.0/5 ★ https://www.goodreads.com/book/show/50016865-datastory?ref=nav_sb_ss_1_23
<https://www.duarte.com/resources/books/datastory/>
- Beyond bullet points - Cliff Atkinson
3.9/5 ★ https://www.goodreads.com/book/show/39508803-beyond-bullet-points?ref=nav_sb_ss_2_20

Some presentations / collections to get inspired

- <https://quarto.org/docs/gallery/#presentations>
- <https://github.com/mcanouil/awesome-quarto#presentations>

References 1/3

- Danielle Navarro: Stormy seas (artwork title slide)
<https://art.djnavarro.net/gallery/water-colours/>
- Alison Hill and Allison Horst, for RStudio: Hedgehog illustrations
<https://allisonhorst.com/horst-hill-collaborations>
- Allison Horst: palmerpenguins package
<https://allisonhorst.github.io/palmerpenguins/>
- Quarto:
 - Demo revealjs presentation
<https://quarto.org/docs/presentations/revealjs/>
 - Reference revealjs presentation
<https://quarto.org/docs/reference/formats/presentations/revealjs.html>

References 2/3



- Meghan Hall
 - Making slides in Quarto with reveal.js
<https://meghan.rbind.io/blog/quarto-slides/>
- Emil Hvitfeldt
 - Slidecraft
<https://emilhvitfeldt.com/blog#category=slidecraft%20101>
- B. Philipp Kleeer
 - Using Quarto for presentations (alas not there anymore)
<https://bpkleer.de/public/quarto/my-1st-quarto.html#/title-slide>
- Thomas Mock
 - 05 - Presentations - Making Slides with Code
<https://rstudio-conf-2022.github.io/get-started-quarto/materials/05-presentations.html#/presentations>

References 3/3

- feather by Gordon Johnson
<https://pixabay.com/nl/vectors/vintage-veerkracht-schacht-1751222/>
- minions gif
<https://tenor.com/nl/view/despicable-me-minions-lets-get-started-happy-excited-gif-4767352>
- yes gif by Kelley Bren Burke
<https://giphy.com/stickers/yes-big-colorful-AAhngLcMTzF21zx9C4>

Thanks to creators and maintainers of used packages & extensions and the R people



- packages: `ggplot2`, `leaflet`
- extensions: `webr`, `pointer`, `timer`
- R people: R consortium, RStudio

Contact info



Martine Jansen



<https://www.linkedin.com/in/martine-jansen-4326108/>



<https://fosstodon.org/@MartineJansen>