

Creating slides with Quarto

Workshop VVSOR 2024, feb 21

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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>
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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
```

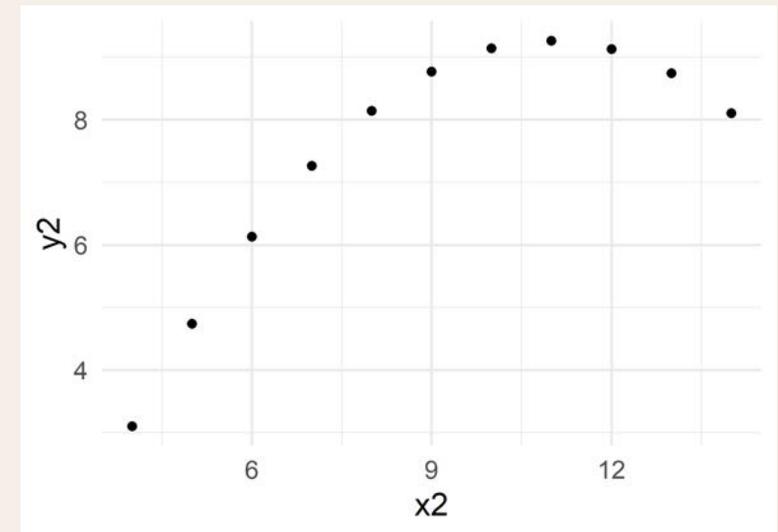
```
3. and an item
```

Use R in a slide

You type:

```
anscombe %>%  
  ggplot(aes(x = x2,  
             y = y2)) +  
  geom_point(size = 4) +  
  theme_minimal(  
    base_size = 20)
```

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/](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 revealjs

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 & nest VVSOR

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 ``



- `!(resources_main/hedgehog.png)`
`{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



VVSOR

```
## {backg. img-  
image="resources_main/
```



Background picture in title slide



VWSOR

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

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, technical



VVSOR

- 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



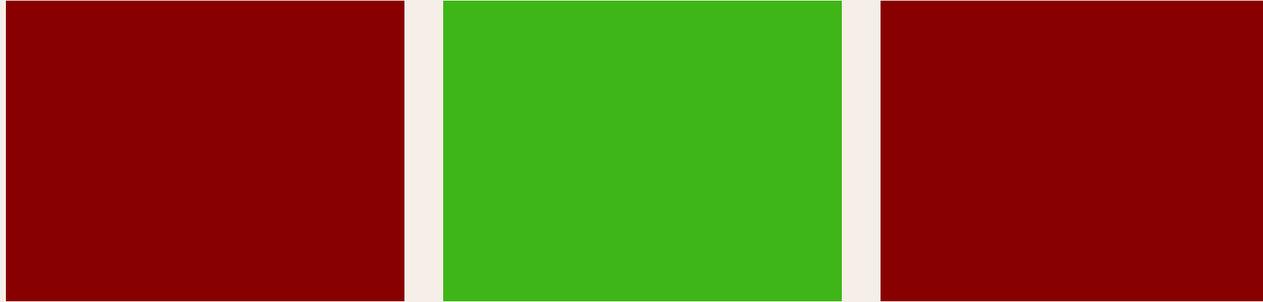
Animating content

Animation on your slides

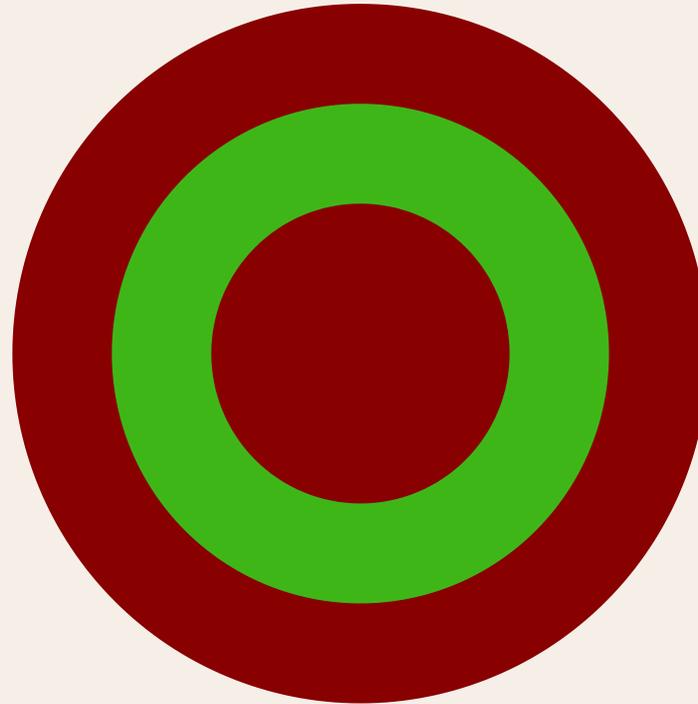


Animating content

Another animation



Another animation



Auto-animate

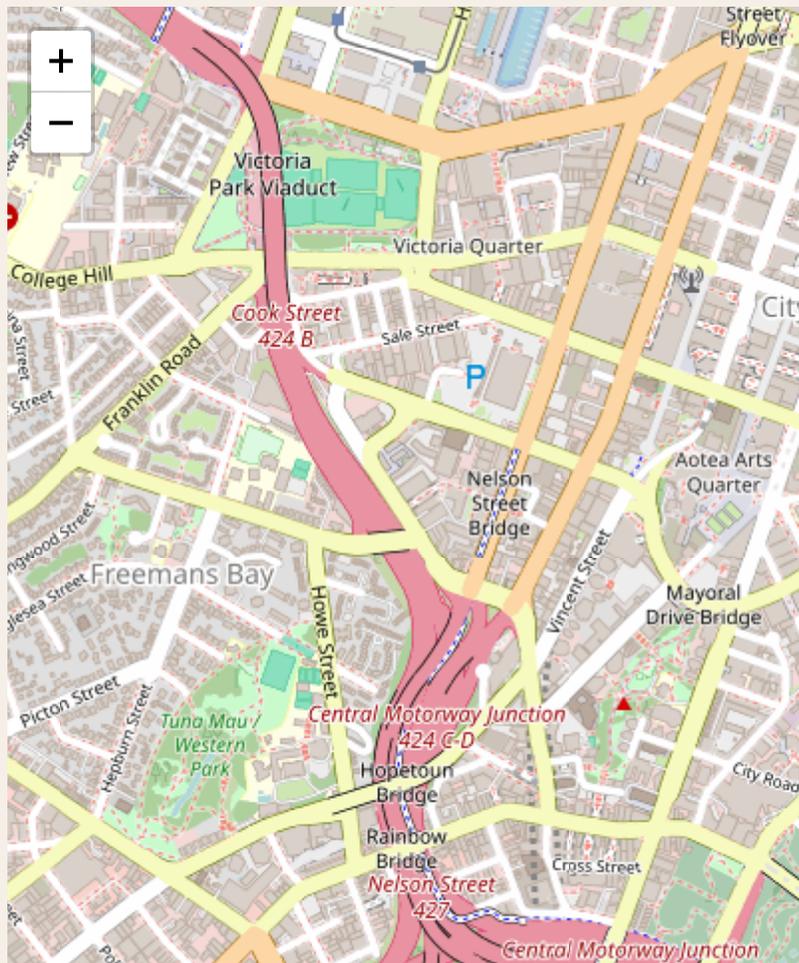
- Automatically animate matching elements across slides with Auto Animate
- <https://quarto.org/docs/presentations/revealjs/advanced.html#animate>

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** will get you a chalkboard
- Only works if added to YAML: `chalkboard: true`
- <https://quarto.org/docs/presentations/revealjs/presenting.html>

A map



```
1 ```{r, eval = FALSE}
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



VWSOR

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 Knaflic
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.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](https://www.goodreads.com/book/show/39508803-beyond-bullet-points?ref=nav_sb_ss_2_20)

Some presentations / collection 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 Klerer
 - Using Quarto for presentations (alas not there anymore)
<https://bpklerer.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>

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