04-PDF

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Preliminarities

Install the PDF engine

To compile PDF files (presentations or documents), you need an installation of LaTeX

Easy mode

TinyTex
It's convenient because it is easy to use, but it does not offer all the functionalities of LaTeX

Pro mode

MikTex
It's a pain in the neck but it's convenient in the long run

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For this course, we can use TinyTex

Basics commands of LaTeXmight work in quarto as well (when compiled in PDF)

Quarto allows for using LaTeXwithout knowing how it works (i.e., by using the same tags used for html files)

PDFs do not offer interactivity, but they do look professional

Importantly, PDFs are stable

YAML & Basics

```
---
title: "I can use LaTeX"
author: "Jane Doe"
format: beamer
---

## New Slide

- First element
- Second element

## Another slide

Some text in my slide! Yay!
```

```
---
[...]
format:
  beamer:
    slide-level: 2
---

# This create a section page

## This create a slide

- First element
- Second element

# New section
```

Beamer

Themes

```
[...]
format:
  beamer:
    slide-level: 3
    theme: Montpellier
    colortheme: dove
```

Gallery of beamer themes & colortheme

header-includes:

Further customization through pure LaTeX:

```
[...]
header-includes:
   - \usepackage{graphicx}
   - \usepackage[english]{babel}
   - \usepackage{xcolor}
   - \AtBeginDocument{\author[Ottavia M. Epifania]{Ottavia M. Epifania \\ Univ
   - \AtBeginDocument{\institute[]{ARCA Summer School} }
   - \setbeamertemplate{logo}{\includegraphics[width=0.7cm]{img/freepalestine.
```

Layout & font

Columns

The same code seen so far:

```
:::: {.columns}

::: {.column width="40%"}
contents...
:::

::: {.column width="60%"}
contents...
:::

::::
```

Text size

\Large Large

\large large

\normalsize normal

\small small

\footnotesize footnotesize

\scriptsize script

\tiny very tiny

Large

large

normal

small

footnotesize

script

very tiny

Code

Code Chunk

same as before! Of course it cannot be interactive.

```{r}
#| eval: true
3*2
```

```
[1] 6
```

Code annotation

```
library(tidyverse)
mtcars %>%                                                    (1)
  ggplot( aes(mpg, hp, size = gear)) +                        (2)
  geom_point() +                                              (3)
  geom_smooth(method = "lm")                                  (4)
```

(1) Do something
(2) Do something else
(3) And else
(4) Whatever

In the code: `# <1>`, `# <2>` etc

In the YAML

```
[...]
code-annotations: below
```

Tables

Table 1 is a table

Table 1: This is a table!

	mpg	cyl	disp
Mazda RX4	21.0	6	160
Mazda RX4 Wag	21.0	6	160
Datsun 710	22.8	4	108

`@tbl-mtcars1 is a table`

Table 2: This is a table!

```
1  ```{r}
2  #| eval: false
3  #| label: tbl-mtcars1
4  #| tbl-cap: "This is a table!"
5  #| code-line-numbers: "|3|4|"
6
7  library(kableExtra)
8  kable(mtcars[1:3,1:3], booktabs = TRUE)   %>%
9    kable_styling(latex_options = "hold_position")
10 ```
```

Figures

External Figures

There's a peacock in Figure 1

```
```{r}
#| out-width: 70%
#| fig-align: center
#| fig-cap: "A peacock"
#| label: fig-pea

knitr::include_graphics("img/peacock.png")
```
```

There's a peacock in @fig-pea1

```{r}
#| eval: false
#| out-width: 70%
#| fig-align: center
#| fig-cap: "A peacock"
#| label: fig-pea1

knitr::include_graphics("img/peacock.png")
```

Plots

A kickass plot in Figure 2

```
```{r}
#| out-width: 70%
#| fig-align: center
#| fig-cap: "What a plot"
#| label: fig-plot
#|
ggplot(mtcars, aes(hp, mpg, color = factor(am))) +
  geom_point() +
  geom_smooth(formula = y ~ x, method = "loess") +
  theme(legend.position = 'bottom')
```
```

A kickass plot in @fig-plot1

````
```{r}
#| eval: false
#| out-width: 70%
#| fig-align: center
#| fig-cap: "What a plot"
#| label: fig-plot1
#|
ggplot(mtcars, aes(hp, mpg, color = factor(am))) +
  geom_point() +
  geom_smooth(formula = y ~ x, method = "loess") +
  theme(legend.position = 'bottom')
```
````