COMMUNICATING WITH DATA IN THE TIDYVERSE

Advanced YAML settings

Timo Grossenbacher
Data Journalist

YAML

```
---
receipt:     Oz-Ware Purchase Invoice
date:        2012-08-06
customer:
    first_name:   Dorothy
    family_name:  Gale
---
```

[1] Taken from Wikipedia (https://en.wikipedia.org/wiki/YAML#Example)

YAML headers in RMarkdown documents

```
---
title: "The reduction in weekly working hours in Europe"
subtitle: "Looking at the development between 1996 and 2006"
author: "Timo Grossenbacher"
output: html_document
---
```

```
---
title: "The reduction in weekly working hours in Europe"
subtitle: "Looking at the development between 1996 and 2006"
author: "Timo Grossenbacher"
output:
    html_document:
        theme: paper
        highlight: tango

    pdf_document:
        ...
---
```

Many more configuration options in this RMarkdown reference!

COMMUNICATING WITH DATA IN THE TIDYVERSE

Let's customize your report!

COMMUNICATING WITH DATA IN THE TIDYVERSE

Custom stylesheets

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Cascading Style Sheets (CSS): Basic selectors

```
<h2>Summary</h2>

<p>The <strong>International
Labour Organization (ILO)</strong>
has many
<a href="http://test.htm">data sets
</a> on working conditions.
```

```
h2 {
  font-family: "Bookman", serif;
}
```

```
body, h1, h2 {
  font-family: "Bookman", serif;
}

strong {
    color: "red";
}

a {
    color: #0000FF;
    font-weight: bold;
}
```

Cascading Style Sheets (CSS): Class selectors

```
<h2>Strong elements</h2>

Here are two <strong class = "red">
bold</strong>
<strong>elements</strong>.
```

```
strong {
  color: "blue";
}

strong.red {
  color: "red";
}
```

Cascading Style Sheets (CSS): Combinators

```
<div>

  <p>
    This is a
    <strong>bold element</strong>
    inside a paragraph
  </p>

  This is another
  <strong>bold element</strong>
  outside a paragraph.

</div>
```

```
div strong {
  color: "green";
}

div > strong {
  color: "red";
}
```

Find many more selectors and a full CSS reference on the Mozilla Developer Network.

COMMUNICATING WITH DATA IN THE TIDYVERSE

Let's practice!

COMMUNICATING WITH DATA IN THE TIDYVERSE

Beautiful tables

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Data Journalist

```
# Some summary statistics
ilo_data %>%
  group_by(year) %>%
  summarise(mean_hourly_compensation = mean(hourly_compensation),
            mean_working_hours = mean(working_hours))
```

```
## # A tibble: 27 x 3
##       year mean_hourly_compensation mean_working_hours
##     <fctr>                    <dbl>              <dbl>
##  1   1980                 9.267500           33.98103
##  2   1981                 8.692500           33.61923
##  3   1982                 8.355000           33.47409
##  4   1983                 7.809091           33.86589
##  5   1984                 7.543636           33.71051
##  6   1985                 7.786364           33.73358
##  7   1986                 9.700000           33.97494
##  8   1987                12.146923           33.58138
##  9   1988                13.199231           33.66441
## 10   1989                13.136154           33.53312
## # ... with 17 more rows
```

As can be seen from the above table, the average weekly working hours of European countries have been descreasing since 1980.

```
# Some summary statistics
ilo_data %>%
  group_by(year) %>%
  summarise(mean_hourly_compensation = mean(hourly_compensation),
            mean_working_hours = mean(working_hours))
```

```
## # A tibble: 27 x 3
##       year mean_hourly_compensation mean_working_hours
##     <fctr>                    <dbl>              <dbl>
##  1   1980                 9.267500           33.98103
##  2   1981                 8.692500           33.61923
##  3   1982                 8.355000           33.47409
##  4   1983                 7.809091           33.86589
##  5   1984                 7.543636           33.71051
##  6   1985                 7.786364           33.73358
##  7   1986                 9.700000           33.97494
##  8   1987                12.146923           33.58138
##  9   1988                13.199231           33.66441
## 10   1989                13.136154           33.53312
## # ... with 17 more rows
```

YAML header to the rescue!

```
---
title: "The reduction in weekly working hours in Europe"
subtitle: "Looking at the development between 1996 and 2006"
author: "Timo Grossenbacher"
output:
  html_document:
    theme: cosmo
    highlight: monochrome
    toc: true
    toc_float: false
    toc_depth: 4
    code_folding: hide
    css: styles.css

    df_print: kable
---
```

```
   df_print: paged
---
```

The second option

```
# Some summary statistics
ilo_data %>%
  filter(country == "Switzerland" & year > 2000) %>%

  knitr::kable()
```

country	year	hourly_compensation	working_hours
Switzerland	1980	10.960000	34.70385
Switzerland	1981	10.010000	34.33462
Switzerland	1982	10.310000	34.12308
Switzerland	1983	10.330000	33.84231
Switzerland	1984	9.520001	33.47885

Styling tables

```
<table>
  <thead>
    ...
  </thead>
  <tbody>
    ...
  </tbody>
</table>
```

Styling tables

```
<table>
  <thead>
   <tr>
     ...
   </tr>
  </thead>
  <tbody>
   <tr>
     ...
   </tr>
   <tr>
     ...
   </tr>
  </tbody>
</table>
```

Styling tables

```
<table>
  <thead>
   <tr>
     <th>Column 1</th>
     <th>Column 2</th>
   </tr>
  </thead>
  <tbody>
   <tr>
     <td>Cell 1</td>
     <td>Cell 2</td>
   </tr>
   <tr>
     ...
   </tr>
  </tbody>
</table>
```

COMMUNICATING WITH DATA IN THE TIDYVERSE

Let's practice!

COMMUNICATING WITH DATA IN THE TIDYVERSE

Summary

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Data Journalist

Code

The reduction in weekly working hours in Europe

Looking at the development between 1996 and 2006

Timo Grossenbacher

- Summary
- Preparations
- Analysis
  - Data
  - Preprocessing
  - Results
    - An interesting correlation

Summary

The **International Labour Organization (ILO)** has many data sets on working conditions. For example, one can look at how weekly working hours have been decreasing in many countries of the world, while monetary compensation has risen. In this report, *the reduction in weekly working hours* in European countries is analysed, and a comparison between 1996 and 2006 is made. All analysed countries have seen a decrease in weekly working hours since 1996 some more than others.

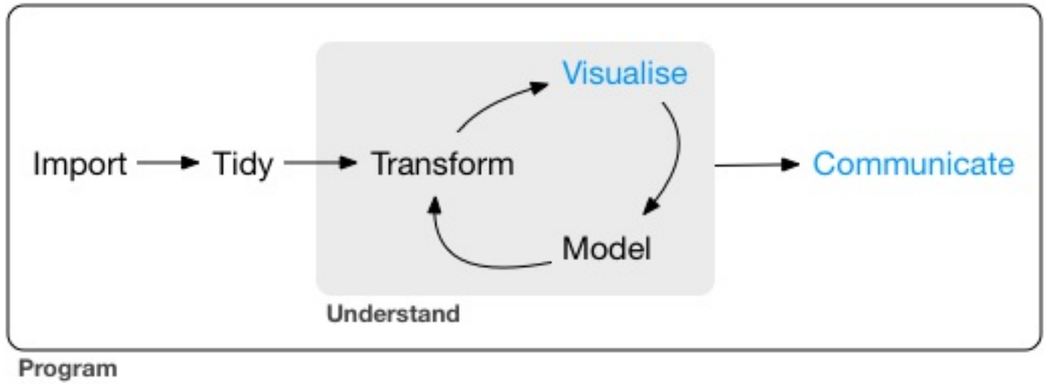
Preparations

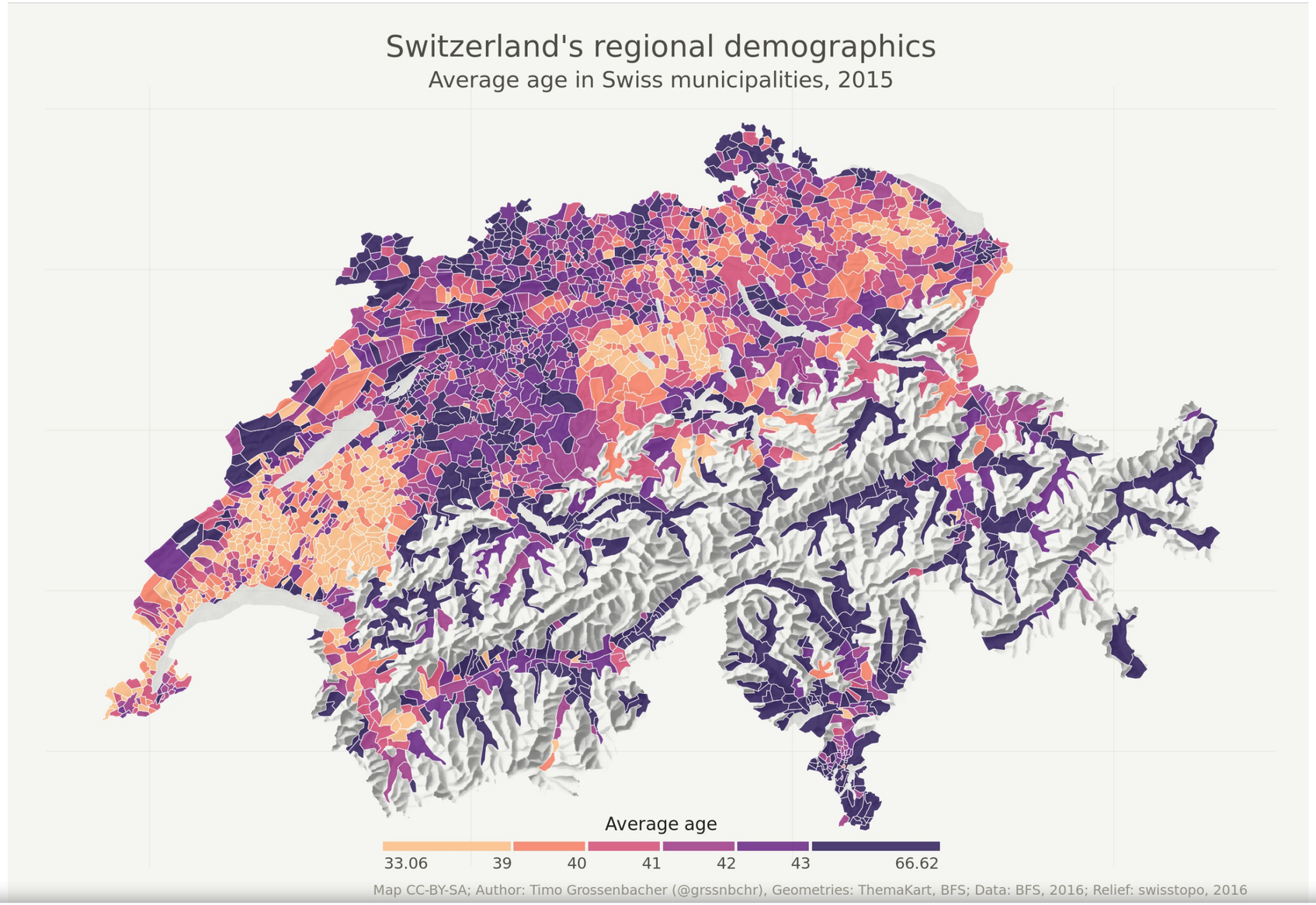
Hide

```
library(dplyr)
library(ggplot2)
library(forcats)
```

Analysis

The last step in the Tidyverse process





[1] timogrossenbacher.ch (https://timogrossenbacher.ch/2016/12/beautiful-thematic-maps-with-ggplot2-only/)

[1] Henrik Lindberg (https://gist.github.com/halhen/659780120accd82e043986c8b57deae0)

Next steps

Track: Data Visualization with R

COMMUNICATING WITH DATA IN THE TIDYVERSE

Congratulations!