rbtl - Research Beyond the Lab

Reference management with Zotero

Lars Schöbitz

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Today

1. Homework Assignment 2
2. Reference Management - Zotero
3. Open Source - Licenses
4. Reproducible Research
5. Homework Assignment 3

Homework Assignment 2

```
dat_in_sum_day <- dat_in %>%
  filter(value <= 1000) %>%
  mutate(date = as_date(date_time)) %>%
  group_by(date, location, indicator) %>%
  summarise(min = min(value),
            median = median(value),
            mean = mean(value),
            sd = sd(value),
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- Objects that store dataframes: `dat_in` and `dat_in_sum_day`
- Functions: `filter()`, `mutate()`,`as_date()`, `group_by()`, `summarise()`, etc.

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- Objects that store dataframes: `dat_in` and `dat_in_sum_day`
- Functions: `filter()`, `mutate()`,`as_date()`, `group_by()`, `summarise()`, etc.
- Assignment operator: `<-`

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- Objects that store dataframes: `dat_in` and `dat_in_sum_day`
- Functions: `filter()`, `mutate()`,`as_date()`, `group_by()`, `summarise()`, etc.
- Assignment operator: `<-`
- Pipe operators: `%>%`

Homework Assignment 2 - Imported raw data

```
dat_link <- "https://raw.githubusercontent.com/Global-Health-Engineering/manuscri

dat_in <- read_csv(dat_link)

dat_in
```

```
# A tibble: 203,806 × 6
  date_time           id    location indicator value unit
  <dttm>              <chr> <chr>    <chr>     <dbl> <chr>
1 2019-10-08 13:59:01 hos1  guardian pm2.5      19.4 uq_m3
2 2019-10-08 13:59:01 hos1  guardian pm10       27   uq_m3
3 2019-10-08 14:04:41 hos1  guardian pm2.5      44.9 uq_m3
4 2019-10-08 14:04:41 hos1  guardian pm10       56.7 uq_m3
5 2019-10-08 14:10:21 hos1  guardian pm2.5     202.  uq_m3
6 2019-10-08 14:10:21 hos1  guardian pm10      240.  uq_m3
# … with 203,800 more rows
```

Summarised derived data

```
dat_in_sum_day <- dat_in %>%
  filter(value <= 1000) %>%
  mutate(date = as_date(date_time)) %>
  group_by(date, location, indicator)
  summarise(min = min(value),
            median = median(value),
            mean = mean(value),
            sd = sd(value),
            max = max(value))
```

```
# A tibble: 890 × 8
# Groups:   date, location [445]
  date       location indicator   min
  <date>     <chr>    <chr>     <dbl>
1 2019-10-01 Lhouse   pm10       22.8
2 2019-10-01 Lhouse   pm2.5      12.2
3 2019-10-02 Lhouse   pm10       24.9
4 2019-10-02 Lhouse   pm2.5      12.8
5 2019-10-02 Lions    pm10        7.5
6 2019-10-02 Lions    pm2.5       4.6
# … with 884 more rows
```

Reference Management

Why?

- You will read a lot
- You want to stay organized
- You don't want to waste your time on formatting

Which tool?

- Mendeley
- EndNote
- Zotero
- many, many more

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- EndNote
- **Zotero**
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Why Zotero?

Rest easy.

Zotero is open source and developed by an independent, nonprofit organization that has no financial interest in your private information. With Zotero, you always stay in control of your own data.

Screenshot taken from zotero.org on 2022-03-03

Zotero is Open Source - Why is that good?

- Free Software
- Transparent about access to your own data
- The source code that Zotero is developed in is public
- Commitment to support open software and open standards
- Zotero developers helped create the open Citation Style Langauge (CSL)

Open Source - Licenses

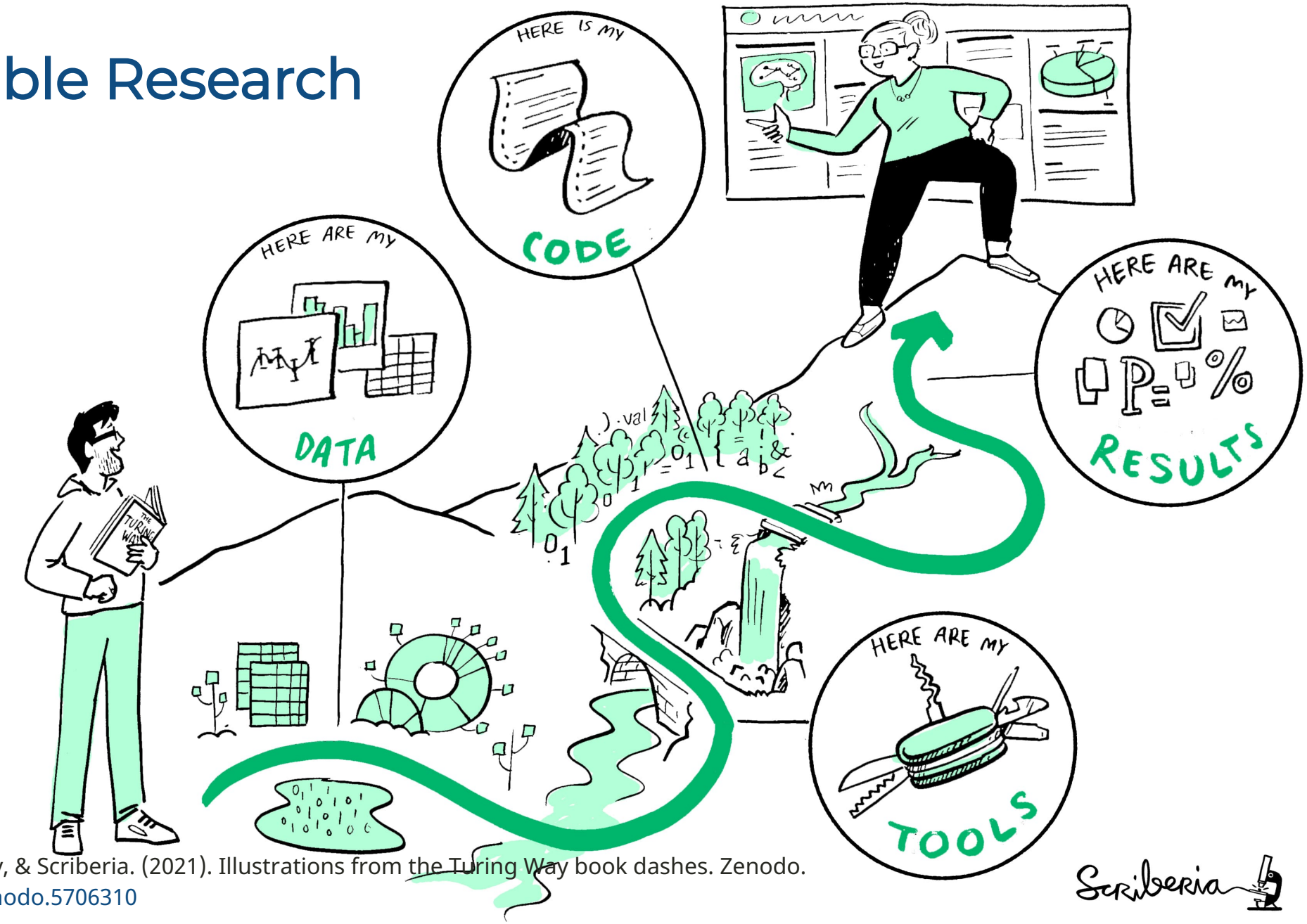
- Open Source isn't just code on the internet
- Use permissive licenses to allow others to reuse, remix and build upon (also for commercial purposes)
- Recommended licenses
  - **Text, slides, images**: Creative Commons (CC0, CC-BY, CC-BY-SA)
  - **Software**: MIT License, Hippocratic License, Unlicense for software
- https://tldrlegal.com/ - plain english explanations of licences in bullet form.
- https://kbroman.org/steps2rr/pages/licenses.html - Read Karl Broman

Open Source != Open Access

Open Source != Open Data

Open Source (Code) + Open Data =
Reproducible Research

Reproducible Research



The Turing Way Community, & Scriberia. (2021). Illustrations from the Turing Way book dashes. Zenodo. https://doi.org/10.5281/zenodo.5706310

Scriberia

Homework Assignment

Homework Assignment 3 - Learning Objectives

These learning objectives are related to the assignment for this week.

- Learners are able to import references to a Zotero group library
- Learners can use an exported library from Zotero in Better BibTex Format to generate an automated reference list in an R Markdown file
- Learners can edit a file in the Citation File Format (.cff) to add their name to the author list

Homework Assignment 3 - Due Date

- Complete Assignment 2 before you complete Assignment 3
- Assignment 3, due on 15th March
- Readings on Reproducible Research

Thanks! 🌻

Slides created via the R packages:

xaringan
gadenbuie/xaringanthemer

The chakra comes from remark.js, **knitr**, and R Markdown.

Access slides as PDF on GitHub