# Reproducible Workflow

**Loading and eye-balling a dataset**

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## Set-up

```
knitr::opts_chunk$set(eval = T, # evaluate = T for REPRODUCIBLE analyses
                      echo = T, # 'print code chunk?'
                      message = F, # print messages?
                      error = T, # render even if errors encountered?
                      warning = F) # print warnings?
```

```
library(beepr) # beeps when code runs or fails
library(rbbt) # zotero plugin
```

```r
## play sound if error encountered
### from: https://sejohnston.com/2015/02/24/make-r-beep-when-r-markdown-finishes-or-when-i
options(error = function(){    # Beep on error
  beepr::beep(sound = "wilhelm")
  Sys.sleep(2) #
  }
 )
## and when knitting is complete
.Last <- function() {          # Beep on exiting session
  beepr::beep(sound = "ping")
  Sys.sleep(6) # allow to play for 6 seconds
  }
```

```r
# Create references.json file based on the citations in this script:
# 1. make sure you have 'bibliography: references/references.json' in the YAML
# 2. create a new folder called 'references'
# 3. run:
rbbt::bbt_update_bib("_workflow.qmd")
```

## Workflow bare minimum

- self-contained project
  - everything available in one folder
  - e.g., RProjects
- README file
  - a markdown (.md) file
  - describing the folder/analysis structure

Winter (2019)

## RProjects

- a folder containing
  - an `.RProj` file (which opens RStudio)
  - all folders/files required for a project
- `File > New Project > New Directory > New Project > New Project > Create Project`

### README

- to create an `.md` file: `File > New File > Markdown File`
- create informative heading
  - describe project purpose
  - describe folders/scripts as they currently are
- save/Preview as `README.md` in the project folder

### `here`

- `here` package
  - will always access the project folder
  - try running `here()` from within a project; what's the output?

### Project folder structure

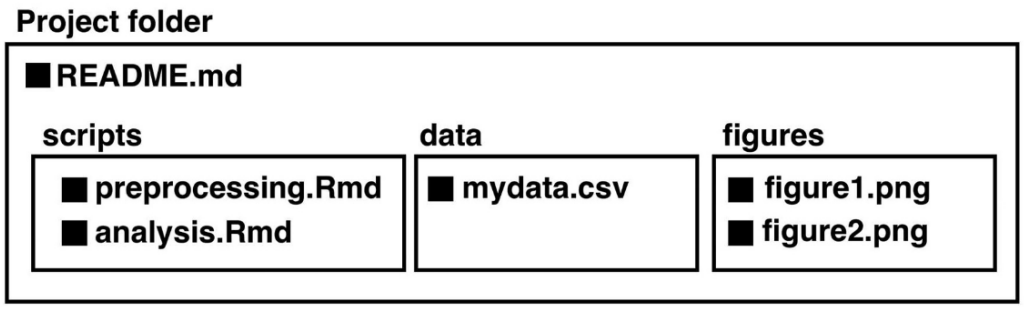


*Figure 2.4.* Folder structure for a data analysis project; black squares represent data files

Figure 1: Image source: Winter (2019)

## Reproducible code

- is located within a project
  - which also contains all relevant data/files
- runs linearly (from top to bottom)
  - loads all required packages at the top

  - uses file paths relative to its project
  - is created/edited after running `Session > Restart R`

- at the very least, ends with a section (e.g., `# Session Info`) containing `sessionInfo()`
  - but other options: `renv` package, `targets` package, `docker` for environment containers

## Checklist

**RProject** + `.RProj` + `README.md` + `data/` + `notes/` (a folder for your qmd files)

**Scripts** (`.qmd`/`.Rmd`) + load libraries at beginning + `sessionInfo()` at the end + chunks run linearly (top-to-bottom)

## Session Info

```
sessionInfo()
```

```
R version 4.2.3 (2023-03-15)
Platform: aarch64-apple-darwin20 (64-bit)
Running under: macOS Ventura 13.2.1

Matrix products: default
BLAS:   /Library/Frameworks/R.framework/Versions/4.2-arm64/Resources/lib/libRblas.0.dylib
LAPACK: /Library/Frameworks/R.framework/Versions/4.2-arm64/Resources/lib/libRlapack.dylib

locale:
[1] en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8

attached base packages:
[1] stats     graphics  grDevices utils     datasets  methods   base

other attached packages:
[1] magick_2.7.4    rbbt_0.0.0.9000 beepr_1.3

loaded via a namespace (and not attached):
 [1] Rcpp_1.0.10     rstudioapi_0.14 knitr_1.42      magrittr_2.0.3
 [5] hms_1.1.3       here_1.0.1      R6_2.5.1        rlang_1.1.0
 [9] fastmap_1.1.1   fansi_1.0.4     httr_1.4.5      stringr_1.5.0
```

```
[13] tools_4.2.3     xfun_0.38       audio_0.1-10    utf8_1.2.3
[17] cli_3.6.1       htmltools_0.5.5 rprojroot_2.0.3 yaml_2.3.7
[21] digest_0.6.31   tibble_3.2.1    lifecycle_1.0.3 tzdb_0.3.0
[25] readr_2.1.4     fs_1.6.1        vctrs_0.6.1     curl_5.0.0
[29] glue_1.6.2      evaluate_0.20   rmarkdown_2.21  stringi_1.7.12
[33] compiler_4.2.3  pillar_1.9.0    jsonlite_1.8.4  pkgconfig_2.0.3
```

## References

Winter, B. (2019). *Statistics for Linguists: An Introduction Using R*. Routledge. https://doi.org/10.4324/9781315165547