Howework 2, STAT 5361

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Step1

- (1) Use "git clone" to download the source file from "https://github.com/hadley/adv-r.git".

- (2) Upgrade RStudio. Install R devtools(a lot packages were added in this process) by install.packages("devtools"). Then Package dependencies using `devtools::install_github("hadley/sloop")` and `devtools::install_github("hadley/emo")`.

- (3) Download R Bookdown by `devtools::install_github("rstudio/bookdown")`. Use `bookdown::render_book("index.Rmd", output_format = "bookdown::pdf_book")` to compile the book.

Step2

During the building process, I've met several problems, most of them are package missing. The followings are the errors I've met and how I solved them.

(1) Warning in installing devtools and bookdown

- Example: Wrong: package 'cli' was installed before R 4.0.0: please re-install it
- Solve: install.packages("cli") Similar cases happen with package "assertthat" "crayon" "fansi" "glue" "digest" "R6" ... I tried updated all packages via Tools menu, after which I still have to upgrade these packages manually. Then there is another warning message that I have to download Rtools from `https://cran.r-project.org/bin/windows/Rtools/`. to finish step1-1 . At installing bookdown I have to add "xfun" package, for which I even need to download a source to local disk, then install the package. At executing `bookdown::render_book("index.Rmd", output_format = "bookdown::pdf_book")`, similar problems happened for package "dplyr" "pkgconfig" "lobstr" "gtable" "munsell" "colorspace" "utf8" "farver" "labeling" "viridisLite" "DBI" "RSQLite" "zeallot" "dbplyr" "RColorBrewer" "profvis" "bench" "ggbeeswarm"

Note: some of the package problems are because the version is before R-4.0.0. I have to renew manually.

(2) Warnings in

`bookdown::render_book("index.Rmd", output_format = "bookdown::pdf_book")` ·

1) Error in cat:

This error is encountered:

```
Quitting from lines 223-235 (Introduction.Rmd)
Error in cat(paste0(contributors$desc, collapse = ", ")) :
  '<86>,<4e>A (\@kfeng123), Karl Forner (\@kforner), Kirill Sevastyanenko (\@kirillseva), Brian Knaus (\
Calls: local ... withCallingHandlers -> withVisible -> eval -> eval -> cat
```

Solve: After checking Google, someone indicate that we can change the encoding to UTF-8. Open introduction.rmd and change line 224 to `contributors <- read.csv("contributors.csv", stringsAsFactors = FALSE, encoding = "UTF-8")`

2) Warning message: In system(cmd) : 'make' not found

This problem occured:

```
Warning message:
In system(cmd) : 'make' not found
Quitting from lines 77-84 (Rcpp.Rmd)
Error in sourceCpp(code = code, env = env, rebuild = rebuild, cacheDir = cacheDir,  :
  Error 1 occurred building shared library.
Calls: local ... withVisible -> eval -> eval -> cppFunction -> sourceCpp

Error in Rscript_render(f, render_args, render_meta, add1, add2) :
  Failed to compile Rcpp.Rmd
```

```
Solve: There is a hint from the homework done by previous student.
But I didn't find where to get access to the page of the photo. Therefore I searched Google. I know thi
```

I tried `Sys.setenv(PATH = paste("D:\\Rtools40/bin", Sys.getenv("PATH"), sep=";"))` and `Sys.setenv(BINPREF = "D:\\rtools40/mingw64/bin/")`, then setting environmental variable in windows directly like previous student, and even set R_HOME / R_USER as variables when RStudio can not recognize stat.dll in Original R library. I even tried content on https://cran.r-project.org/bin/windows/Rtools/ . Finally I succeeded. It might be either the windows setting or the final method or a combination of both that are working.

3 ! LaTeX Error: Environment sidebar undefined. (NOT SOLVED)

Note: Problem "“xelatex” not Found" is solved along with installation of packages in MiKTeX.

This problem emerged when I finished fixing previous problem:

```
output file: References.knit.md
```

```
"D:/RStudio/bin/pandoc/pandoc" +RTS -K512m -RTS _main.utf8.md --to latex --from markdown+autolink_bare_u
! LaTeX Error: Environment sidebar undefined.
```

Error: LaTeX failed to compile _main.tex. See https://yihui.org/tinytex/r/#debugging for debugging tips. See _main.log for more info.

Trial on amendment: - I tried `install.packages("pandocfilters")` or install the latest version of Pandoc in Windows, but failed. Then I install MiKTex and renew/install a lot packages in MiKTeX (especially the ones mentioned in _main.md), but still failed. I remember

- I tried adding

```
\newenvironment{sidebar}{%
  \begin{textblock}{3.6}(1.5, 4.33)
  \begin{flushright}
  \obeycr
}{%
  \restorecr
  \end{flushright}
  \end{textblock}
}
```

to _main.md under the sentence of `\renewenvironment{Shaded}{\begin{kframe}}{\end{kframe}}`. Failed.

- Other trials, like restarting computer, restart softwares, reinstall every software in a ceteris paribus manner. Also I discuss this with one classmate. But I can still not solve it. I think the most reasonable cause is the upgrade of certain software (say, pandoc or LaTeX). It generates some unpredicted problem in package environment definition. However, since I am far from familiarity to TeX system, I have no idea where or which documents to fix.

Finalized Version 09/22/2020

I have to say thanks to advice from Boyi Zhang that the CRAN is not enough to support rmarkdown He gave me a code `devtools::install_github('rstudio/rmarkdown')` so that I can install all part of RMarkdown. After choosing installing all in the options, I successfully compiled the pdf version.