Practice: Course Infrastructure

Introduction to data science (DSC 105) Fall 2022

README

- Practice instructions for the course infrastructure
- Emacs + ESS + Org-mode and R must be installed
- **Make sure you sit at the same PC in every session**
- Upload the completed file as a class assignment

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TODO **Identify yourself**

- Update the `#+AUTHOR:` information in the header with your own name
- Add this on a line to the header of this file : `#+STARTUP: overview hideblocks indent`
- With the cursor on theline, activate the header line with `C-c C-c`.
- Put your cursor on the headline of this section, and type `S <LEFT>` until you see `DONE` instead of `TODO` next to the title.
- Perform this last step each time you complete a section.

TODO **Find the GitHub repos**

1. Open any Web browser
2. Go to the URL https://github.com/birkenkrahe
3. Go to the `org` repository
4. Check out the file `FAQ.org`
5. Find your course
6. Check out the sub-directories `org` and `pdf`

TODO **Open the command line terminal**

1. On Windows, go to the search field and type `CMD`
2. Pin the app to the Windows taskbar
3. On MacOS, find the `Terminal` app
4. Open the app

TODO Open/close R from the terminal

1. In the terminal, after the prompt `>`, enter the command `R`
2. On the R shell, enter the command `plot(rnorm(1000))`
3. A graph will appear in a separate window
4. On the R shell, enter the command `head(mtcars)`
5. The first six lines of a data frame appear in the shell
6. Enter `q()` and confirm with `n` to leave the R shell
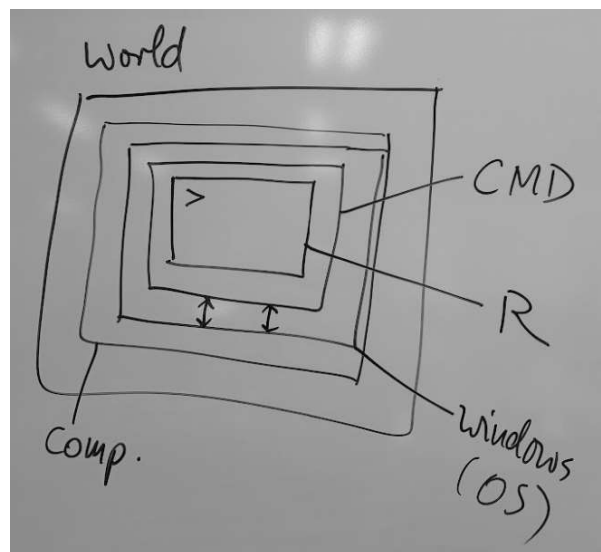
TODO Open terminal Emacs

1. In the terminal, after the prompt, enter the command `emacs -nw`
2. The GNU Emacs editor opens inside the terminal
3. Any time you're stuck in Emacs, type `C-g` to quit the command
4. Type `ALT-X emacs-version <ENTER>` to get the Emacs version number
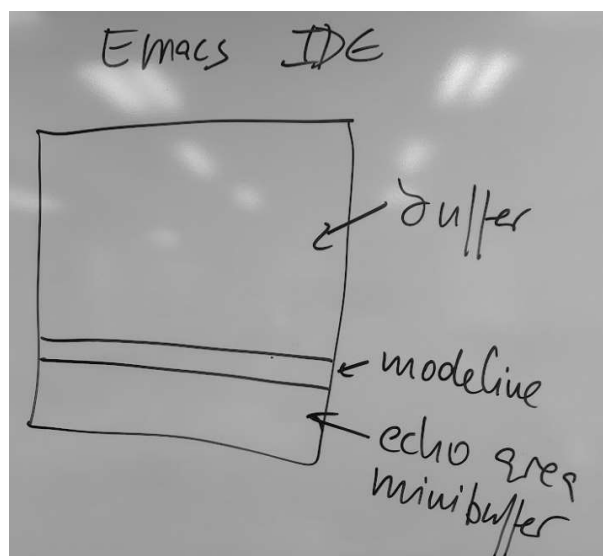
TODO **Find and open the Emacs tutorial**

1. In Emacs, enter `C-h t` by pressing CTRL and h followed by t
2. The Emacs tutorial appears on the screen

TODO **@home: work through the Emacs tutorial**

1. Complete the tutorial by going through it line by line (ca. 60')

2. When done, insert these two lines at the top of the buffer:

```
STUDENT: YourName [PLEDGED]
Time-stamp: <>
```

3. While visiting the buffer, insert a time stamp with the command `M-x time-stamp`. Save the file with `C-x C-w` as a `.txt` file and submit it in Canvas.

TODO **Open/close R in GUI Emacs**

1. In the terminal Emacs, enter `M-x R`
2. When prompted `R starting project directory?`, press RET
3. After the `>` prompt in the R shell buffer, enter the command: `head(mtcars)`. You should see a table in the R shell buffer.
4. Now enter the command `plot(rnorm(1000))`. A separate window with a graph of 1000 random points should open.
5. Close the R session with `q()`. Confirm with `n`.
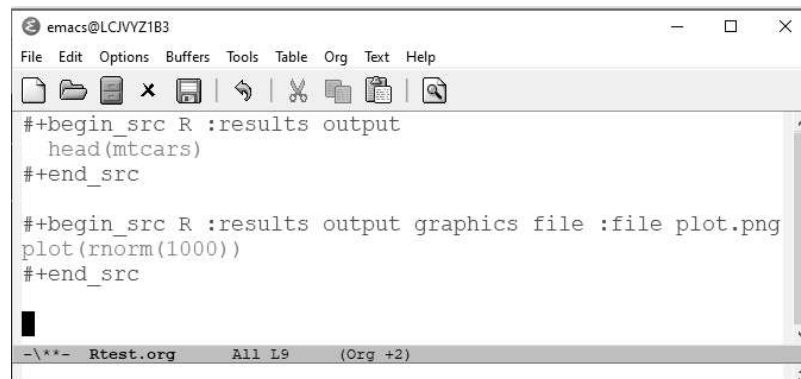
TODO **Run R in Org-mode file**

Get new .emacs file from GitHub

---**Note: download new `.emacs` file <u>from GitHub</u>**—

1. Get to <u>https://github.com/birkenkrahe/org</u>
2. In GitHub, open the repo emacs
3. In the repo emacs, open the file .emacs
4. Open the RAW .emacs file
5. Copy the file to clipboard (CTRL-A CTRL-C)
6. ON your PC open the GUI Emacs
7. In Emacs open a new file (C-x C-f) ~/.emacs
8. Copy the clipboard content into this file
9. Save the .emacs file
10. Restart Emacs

Exercise

1. Close the terminal Emacs with `C-x C-c`
2. When prompted if you want to kill active processes, reply `yes`
3. Open a Emacs GUI with the command: `emacs`
4. The start screen now shows an image at the top
5. Create a new Org-mode file `Rtest.org` with `C-x C-f`

6. In the file, enter the following two code blocks as shown:

7. Move your cursor over the first block and enter `C-c C-c` to execute it. Then move your cursor over the second block and execute it. Two `#+Results` appear:

8. To open the link and see the plot, move your cursor over the link and enter `C-c C-o`. The plot will open in a new buffer below.
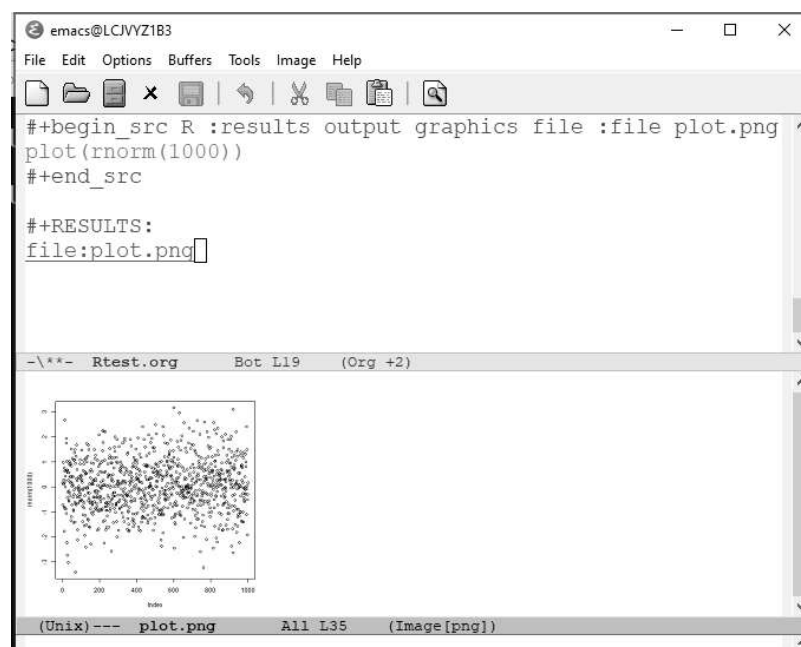
9. Move your cursor back to the `Rtest.org` buffer with `C-x o`, remove the other buffer with `C-x 1` and press `<F6>`. The graph will now be shown inline. Press `<F7>` to make it disappear.
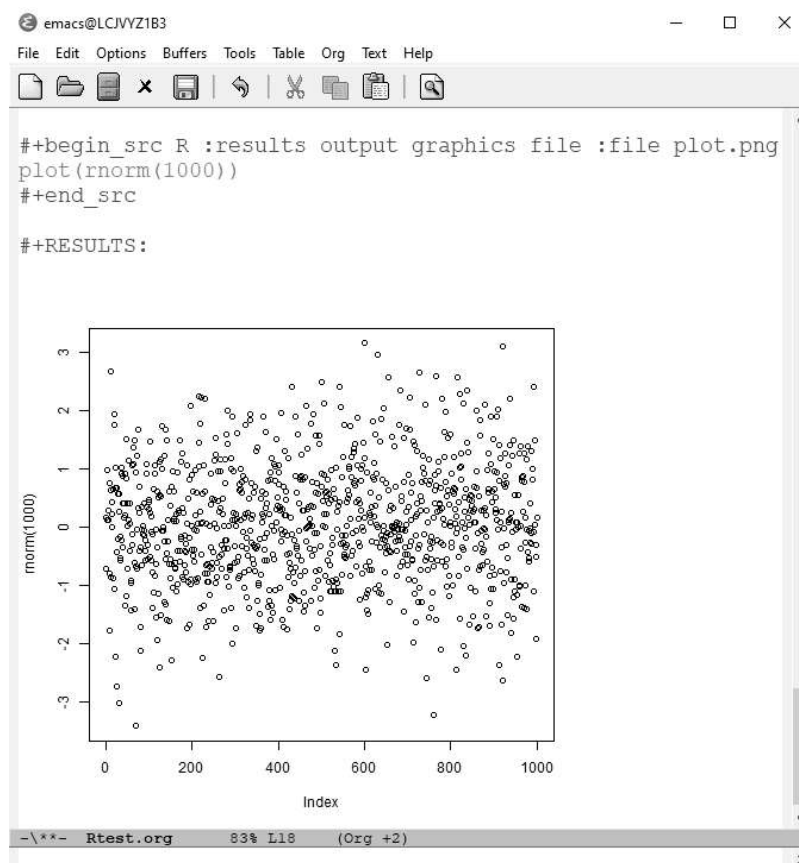
TODO **Close GUI Emacs**

1. Close the GUI Emacs with `C-x C-c`
2. When prompted if you want to save files, reply `y`
3. When prompted if you want to kill active processes, reply `yes`

Author: [your name here]
Created: 2022-08-27 Sat 13:37