

Homework 1: Emacs Exercises

When doing these exercises, use the Cursor Motion commands (not the arrows or the mouse, which require moving your hands out of typing position). The goal isn't just to accomplish the specified tasks, but rather to learn emacs, so do the tasks elegantly.

You may ask your peers and teachers for help with these exercises.

1. Download `baby_T_Test.R`.

- (a) Read `baby_T_Test.R` into emacs.
- (b) The code has several problems with parentheses. **Set the region to be the entire buffer**. The first indenting irregularity indicates a parentheses problem on the previous line. Fix it by adding a parenthesis. Repeat until the whole file is indented correctly. **M-x indent-region**
- (c) Save the file as `baby_t_test.R` (note “T_Test” changed to “t_test”). **C-c C-w**
- (d) Make these replacements in `baby_t_test.R`.
 - Inside the `baby.t.test()` function, replace each `r` for which `r` indicates the list being set up as a return value with `return.list`.
 - Replace each occurrence of two or more newlines with two newlines. Hint: We can't use **Enter** to type a newline in the minibuffer, as it ends the minibuffer's input. Use **C-q C-j** to type a literal newline into the minibuffer.
 - Replace each line of the form `stopifnot(A == B)` with `stopifnot(isTRUE(all.equal(A, B)))`. Hint: Use a regular expression. **stopifnot(\(.+\)==\(.+\)) -> stopifnot(isTRUE(all.equal(\1,\2)))**
- (e) Use the emacs R buffer to:
 - i. Run the region of code consisting of the `baby.t.test()` function definition. **C-c C-c**
 - ii. Run the “test case” code one line at a time. **C-c C-j**
 - iii. Run the entire buffer. **C-c C-b**
- (f) Kill the R buffer. Start it again. **C-x k** **M-x R**
 - i. Find `3 + 4` (just type it at the R command prompt).
 - ii. Run `source(baby_t_test.R)` (just type it at the R command prompt). **_ need to press twice**
- (g) Kill the R buffer again.

2. Download `gettysburg1.txt` and `gettysburg2.txt`.

- (a) Use Multiple Windows (in a single emacs session) to split emacs vertically (into halves) and vertically again (now you have one half and two quarters). **C-x 2**
- (b) Resize the windows so they all have the same size.
- (c) Open `gettysburg1.txt` in the first window and `gettysburg2.txt` in the second. Open (the new empty file) `gettysburg.txt` in the third window. **C-x o**
- (d) Use cut, copy, and paste commands to reassemble the Gettysburg Address from its segments in the first two windows into a whole in the third window. Handle each “paragraph” in the downloaded files separately. Save `gettysburg.txt` when you are done. Close its buffer. **C-Space -> M-w -> C-y**

- (e) Return to a single window. Open the Directory Editor.
 - i. Rename `gettysburg.txt` to `GettysburgAddress.txt`. **C-x C-w**
 - ii. Remove `gettysburg1.txt` and `gettysburg2.txt`. **C-x C-f Enter d x**
 - iii. Find (open) `GettysburgAddress.txt` again.
 - (f) Kill the rectangle consisting of the line numbers and spaces preceding each line of the address. Save `GettysburgAddress.txt` again. **C-Space C-x r k**
3. Open `roster.txt`. Save it as `password.txt`. Convert the latter file so that each line contains the last four digits of a student's ID number and each student's NetID, separated by a space. For example, the first row should become `6789 jbrown`.
- (a) Remove the rectangle consisting of the first 5 columns of digits. **C-Space C-x r k**
 - (b) Use a regular expression to remove the central column of names. **M-x query-replace-regexp**
 - (c) Save `password.txt` again. **Space -> None**
`\([0-9]+\)\^I\([a-zA-Z]+\),\([a-zA-Z]\)^I\([a-z]+\)\@wisc.edu -> \1 \4`
4. List all buffers.
- (a) Visit `baby_t_test.R` from the buffer list.
 - (b) Search for "mean or sd" (no quotes, and no "or"—use a regular expression). Search a second time for the same expression. **mean \ sd**
 - (c) Replace all `=`, where it is used for assignment (not for parameter passing), with `->`. Use the emacs R buffer to run `source(baby_t_test.R)` again.
 - (d) Kill the R buffer and the `baby_t_test.R` buffer.
5. Exit emacs.
6. Start emacs again. Open the (new empty) file `hw1.txt`.
- (a) Insert your `baby_t_test.R` file.
 - (b) Type two blank lines.
 - (c) Insert your `GettysburgAddress.txt` file. **C-x i**
 - (d) Type two blank lines.
 - (e) Insert your `password.txt` file.
 - (f) Type two blank lines.
 - (g) Search online to find something emacs can do. Summarize it briefly (no more than 100 words) for consideration by the class for a demonstration.
 - (h) Write a short emacs exercise (no more than 100 words) for consideration by the class for a quiz or homework.
 - (i) Save `hw1.txt`.
7. Exit emacs.