Practice: first "literate" C program! (30 min)

Let's set Emacs up, write and run a first "literate" c program! it is very important that you enter everything **exactly as shown**. if you get something wrong just go back one step. Contact me if you need me after checking with your neighbor if he or she can help.

1. Open the command line terminal with `cmd` in the search field

2. At the prompt, type: `where gcc`

3. At the prompt, type: `where emacs`

4. Enter: `emacs -nw` (if Emacs was installed)

5. Navigate to the Emacs home directory: type `CTRL-x d` and then enter `~`

6. Enter `ALT + x eww` to open a browser inside Emacs.

7. At the prompt, enter `tinyurl.com/EmacsLyon`

8. Save the downloaded file with `CTRL + x CTRL + w` as `.emacs`

9. Inside Emacs, enter `CTRL + x CTRL + f` to enter a new file: Emacs will show `C-x C-f` in the minibuffer at the bottom.

10. After the prompt at the bottom of the screen, enter `first.org`

11. Enter the following text (replace `yourname` with your own name):

12.

```
#+title: First C program
#+author: yourname (pledged)
* My first C program
This C program runs inside an Emacs Org-mode code block.
#+begin_src C :results output :tangle first.c
    #include <stdio.h>
    int main ()
            {
        printf("Hello, world!\n");
            return 0;
    }
#+end_src
```

13. 'Run' the program by putting the cursor anywhere on the code block and typing `CTRL-c CTRL-c`. You should see the result on the screen.

14. This is your first C program! Save the file with `CTRL + x CTRL + s` (in the minibuffer, you will see `C-x C-s`).

15. 'Tangle' the code with `CTRL + c CTRL + v t` (or, alternatively, with `ALT + x org-babel-tangle RET`): Emacs reports "`Tangled 1 code block from first.org`".
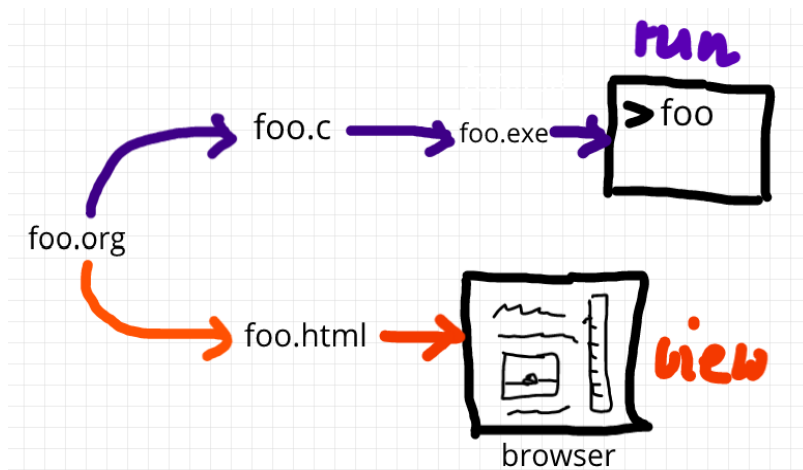
Figure: What happens when you tangle or weave a literate program

16. Open a (Linux) shell inside Emacs by entering: `ALT-x eshell`

17. At the `$` prompt, enter `ls -l first*` - you should see `first.c` listed.

18. Display `first.c` by entering `cat first.c`

19. Enter: `gcc first.c -o hello` to compile the C program into an executable

20. Enter `hello` to run the executable. You should see the output.

21. Exit and close Emacs with `CTRL-x CTRL-c` (displayed in Emacs as `C-x C-c`)

22. Exit and close the shell by entering `exit` after the prompt.

23. Save your file to a directory on your Google Drive (you can do this from GDrive in a browser, with File Explorer, or directly in Emacs with the following commands (you don't have to worry about spaces etc. because you can auto complete using the <TAB> key):

```
C-x C-w                      ;; write file
w:/My Drive/                 ;; target directory
C-x d w:/My Drive/           ;; open target directory
s                            ;; sort to see recent files at top
```

You can also do it in the Emacs eshell that you used earlier to compile and run the file on the shell (auto-complete with <TAB>):

```
cp first.org w:/My\ Drive/      # copy file to target directory
cat w:/My\ Drive/first.org      # view copy of file at target location
```

24. Upload `first.org` as your first in-class assignment:

    1. Open a browser to Google Drive and upload the file

    2. Open the [assignment in Canvas](#) at lyon.instructure.com

    3. Upload the file from Google Drive (click on "`More`")

    4. When you see it attached, click on `Submit Assignment`.