# COURSE OVERVIEW

CSC 100 - Introduction to programming - Spring 2024

Marcus Birkenkrahe

January 7, 2024

## Contents

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

(You can find a PDF of this exercise on GitHub.)

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 `gcc --version`

3. Open `https://github.com/birkenrahe/org/` in a browser

4. Navigate to the repository `emacs` in GitHub

5. Click on the file name `.emacs` to open it

6. Open the `Raw` version of this file (there's a button)

7. Right click to `Save as` and save file as `emacs.txt` in `/Downloads`

8. Open a terminal by entering `CMD` in the Windows search bar

9. Pin the terminal to your taskbar to open it quickly next time!

10. At the prompt, enter `DIR emacs.txt` - you should see the file

11. At the prompt, enter `emacs --version`

12. Enter `emacs -nw -l emacs.txt`

13. Inside Emacs, enter `CTRL + x CTRL + f` to enter a new file.

14. At the prompt at the bottom of the screen, enter `first.org`

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

```
#+title: First C program
#+author: Marcus Birkenkrahe (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
```

16. '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.

17. Save the file with `CTRL + x CTRL + s`

18. 'Tangle' the code with `CTRL + c CTRL + v t` (or `M-x org-babel-tangle`): Emacs reports `"Tangled 1 code block from first.org"`.
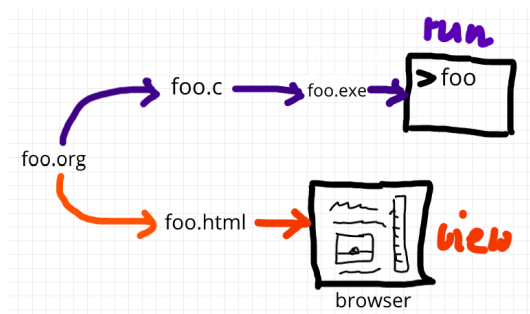


Figure 1: What happens when you tangle or weave a literate program

19. Open a shell inside Emacs by entering `ALT-x eshell`

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

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

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

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

24. Exit and close Emacs with `CTRL-x CTRL-c`

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

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

    (a) Open a browser to the assignment in Canvas (Canvas is at lyon.instructure.com).

    (b)