

Marathon C

Race 05

June 17, 2019



ucode



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Challenge Based Learning



1. Race has to be carried out by an entire team.
2. Each team member must understand the challenge and realization, and to be able to reproduce it individually.
3. It is your responsibility to assemble the whole team. Phone calls, SMS, messengers are good ways to stay in touch.
4. Be attentive to all statements of the story. Examine the given examples carefully. They may contain details that are not mentioned in the task.
5. Perform only those tasks that are given in the story.
6. You should submit only the specified files in the required directory and nothing else. In case you are allowed to submit any files to complete the task you should submit only useful files. Garbage shall not pass.
7. You should compile C files with clang compiler and use these flags:
`-std=c11 -Wall -Wextra -Werror -Wpedantic`.
8. Your program must manage memory allocations correctly. Memory which is no longer needed must be released otherwise the task is considered as incomplete.
9. You should use only functions which allowed in a certain task.
10. Usage of forbidden functions is considered as cheat and your challenge will be failed.
11. You must complete tasks according to the rules specified in `the Auditor`.
12. Your exercises will be checked and graded by students. The same as you.
`Peer-to-Peer (P2P) learning`.
13. Also, your exercises will pass automatic evaluation which is called `Oracle`.
14. Got a question or you do not understand something? Ask the students or just Google that.
15. Use your brain and follow the white rabbit to prove that you are the Chosen one!!!

MAIN



NAME

Matrix rain

DIRECTORY

```
./
```

SUBMIT

```
Makefile, inc/*.h, src/*.c]
```

ALLOWED FUNCTIONS

write, malloc, free, exit, rand, srand, usleep, time, setlocale, all the functions defined in the ncurses library

LEGEND

Matrix code, also known as Matrix digital rain or sometimes green rain, is the computer code related to the Matrix. The falling green code is a way of representing the activity of the virtual reality environment of the Matrix on screen.

"You get used to it, I don't even see the code. All I see is a blond, brunette, redhead."
- Cypher

DESCRIPTION

Welcome to `ncurses` introduction.

Create a program that will simulate the screensaver from `The Matrix`. The program must show text running from top to the bottom of the `terminal`. It must scroll through all the lines with the same speed. The illusion of `falling` columns with different heights filled with random characters along the width of your terminal should be created. `The first` (lowest) character of each column should be `white` and changing continuously, and the remaining characters of the column should be `green` by default. Background of terminal must be `black` by default.

The program:

- should use all printable `ASCII` characters;
- must exit by pressing on `q` on the keyboard;
- should not handle `window resize`;
- must display usage in case of invalid flags (if there are any);
- binary must be called `race05`.



FOLLOW THE WHITE RABBIT

See `resources/main.gif`

ADVANCED



DESCRIPTION

Just a few ideas of features which you can add to the program.

- Use Japanese or any other multibyte characters instead of `ASCII`.
- Handle `-s` flag to run the program in the screensaver mode.
- The speed animation can be changed during runtime or program startup.
- The color of the characters or the background can be changed during runtime or program startup.
- Print messages from the Neo's terminal like in example `resources/advanced.gif`.
- Do not stop at this point. Try to develop more cool stuff. Be creative and use your imagination, Neo.

Publishing



PUBLISHING

The final important and integral stage of your work is its publishing. This allows you to share your challenges, solutions, and reflections with a local and global audience.

During this stage, you will find how to get a global assessment. You will get representative feedback. As a result, you get the maximum experience from the work you have done.

What you can create to disseminate information

- Text post, summary from reflection.
- Charts, infographics or any other ways to visualize your information.
- Video of your work, reflection video.
- Audio podcast. You can record a story with your experience.
- Photos from Ucode with small post.

Example techniques

- [Canva](#) - a good way to visualize your data.
- QuickTime - easy way to record your screen, capture video, or record audio.

Example ways to share your experience

- [Facebook](#) - create a post that will inspire your friends.
- [YouTube](#) - upload a video.
- [GitHub](#) - share your solution.
- [Telegraph](#) - create a post. This is a good way to share information in a Telegram.
- [Instagram](#) - share a photos and stories from Ucode. Don't forget to tag us :)

Share what you learned with your local community and the world. Use [#Ucode](#) and [#CBLWorld](#) on social media.