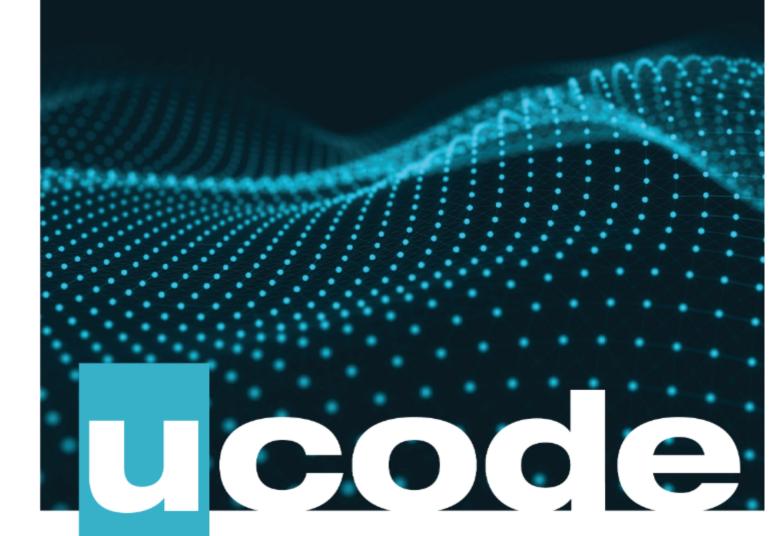
Sprint 00 Marathon C

April 9, 2020



Contents

| Engage | • • • | ٠ | | ٠ | | | | ٠ | 2 |
|--|-------|---|--|---|--|--|--|---|----|
| Investigate | | | | | | | | | |
| Act: Task 00 > Man | | | | | | | | | 5 |
| Act: Task 01 > Glt | | | | | | | | | |
| Act: Task 02 > Set me on file | | | | | | | | | |
| Act: Task 03 > Remove | | | | | | | | | |
| Act: Task 04 > Knock knock | | | | | | | | | |
| Act: Task 05 > Kerberos | | | | | | | | | 10 |
| Act: Task 06 > Find Neo | | | | | | | | | 11 |
| Act: Task 07 > Commit history | | | | | | | | | 12 |
| Act: Task 08 > Ignore them all | | | | | | | | | 13 |
| Act: Task 09 > List directory contents | | | | | | | | | 14 |
| Act: Task 10 > File difference | | | | | | | | | 15 |
| Act: Task 11 > Download | | | | | | | | | |
| Act: Task 12 > Pipe | | | | | | | | | 17 |
| Act: Task 13 > Tar me | | | | | | | | | 18 |
| Act: Task 14 > Alias | | | | | | | | | 19 |
| Share | | | | | | | | | 20 |



Engage

DESCRIPTION

Hey there!

You code world, and it's time to prove it. During this month, you will overcome challenges every day. With each challenge you overcome, you will gain skills that will be useful to you in life in any situation and under any circumstances.

During the Marathon C, you will get a strong knowledge base of computer science. It will be a hard month, but it will be worth it. After completing this Marathon, you'll be ready to proceed to the following challenges, technologies and programming languages.

Well then, no time to waste, let's get started.

And remember, education is not preparation for life. Education is a part of life.

BIG IDEA

Find your way to success.

ESSENTIAL QUESTION

How to effectively use all the components of the educational system to get as much experience as possible?

CHALLENGE

Start learning programming.



Investigate

GUIDING QUESTIONS

We invite you to find answers to the following questions. By researching and answering them, you will gain the knowledge necessary to complete the challenge. To find answers, ask the students in the Slack and search the internet. We encourage you to ask as many questions as possible. Note down your findings and discuss them with your peers.

- · What is your name? How old are you? What do you do in life?
- · How did you find out about ucode?
- · Why did you apply?
- Why are you interested in learning programming?
- · What is your background in programming?
- · What are you going to do after you complete the ucode?
- · What do you know about programming?
- · What ideas can be implemented using programming?
- · What skills do you want to get?
- · What product would you like to create using acquired skills?
- · What do you need to start learning?
- · Are you ready to start?

CUIDING ACTIVITIES

Complete the following activities. Don't forget that you have a limited time to overcome the challenge. Use it wisely. Distribute tasks correctly.

- Get to know and understand the operating system (OS), add the languages you need.
- Read the book ftp://ftp.oeaw.ac.at/pc/e-books/linux/learn_unix.pdf .
- Connect to ucode iMac.
- Open the Terminal or the iTerm utility. Type vim. The Vim text editor should open. Learn how to exit the editor without closing the Terminal and try opening Vim again. If you don't know how to do this google how to exit Vim. And now type emacs. Understand how to do the same actions with this text editor.
- You can find out that Vim and Emacs are directly in the Terminal. Just type man vim and later repeat with man emacs. Press Q to quit from man.
- Clone your git repository that is issued on the challenge page in the LMS.
 Use git clone for this.
- · Proceed to the next tasks.
- · Communicate with students and share information.



ANALYSIS

Analyze your findings. What conclusions have you made after completing guiding questions and activities? In addition to your thoughts and conclusions, here are some more analysis results.

- Be attentive to all statements of the story. Examine the given examples carefully. They may contain details that are not mentioned in the task.
- · Analyze all information you have collected during the preparation stages.
- · Perform only those tasks that are given in this document.
- Submit your files using the layout described in the story. Only useful files allowed, garbage shall not pass!
- · Execute tasks in the Terminal or iTerm with zsh.
- Pay attention to what is allowed. Use of forbidden stuff is considered a cheat and your challenge will be failed.
- The solution will be checked and graded by students like you. Peer-to-Peer learning.
- · Also, the challenge will pass automatic evaluation which is called Oracle.
- If you have any questions or don't understand something, ask other students or just Google it.
- Use your brain and follow the white rabbit to prove that you are the Chosen one!





Man

DIRECTORY

±00/

CHRMIT

man.sh

DESCRIPTION

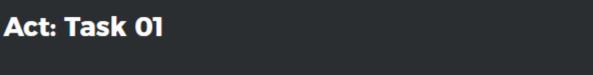
```
Create a script that displays \frac{man}{m} manual. Push the script to \frac{t00}{m} directory of your git repository.
```

Use vim or emacs.

FOLLOW THE WHITE PARRIT

man mkdir man touch man emacs man vim





Git

SUBMIT

push_me.txt

DESCRIPTION

Create a txt file that contains three git commands that you will use to commit and push task solutions to your repository:

- · add changes staged for the next commit
- · commit changes with a descriptive commit message
- · push committed changes to a remote repository

Each git command must be followed by a newline.

CONSOLE OUTPUT

```
>cat -e push_me.txt
git commandi$
git command3$
```

```
man git-add
```

SEE ALSO





Set me on file

DIRECTORY

t02/

SURMIT

set_me_on_file.sh

DESCRIPTION

Create a script that:

- · creates a file called fire
- ullet sets permissions and last-modified date for the created fire file, exactly like in the CONSOLE OUTPUT section

CONSOLE OUTPUT

```
>zsh set_me_on_file.sh

>ls -laT

total 8

drwxr-xr-x   4 xlogin   users   128 Jan   3 13:42:37 2019 .

drwxr-xr-x   19 xlogin   users   608 Jan   3 13:42:02 2019 .

-r-----   1 xlogin   users   0 Aug   24 00:00:00 1991 fire

-rw-r--r-   1 xlogin   users   31 Jan   3 13:42:37 2019 set_me_on_file.sh
```

FOLLOW THE WHITE RABBIT

man chmod man 1s





NAME

Remove

DIRECTORY

t03/

SUBMIT

remove me.sh

DESCRIPTION

Create a script that removes specified directories and/or files.

CONSOLE OUTPUT

```
diri dir2 dir3 filei file2 remove_me.sh
./d1r1:
./d1r2:
./d1r3:
>zsh remove_me.sh diri filei
dir2 dir3 file2 remove me.sh
>zsh remove_me.sh dir2
d1r3 f1le2 remove_me.sh
>zsh remove_me.sh d1r2
d1r3 f1le2 remove_me.sh
>zsh remove_me.sh dir3
rm: d1r3: D1rectory not empty
>cd d1r3
>zsh ../remove_me.sh file3
>zsh remove_me.sh dir3
file2 remove_me.sh
```

FOLLOW THE WHITE PARRIT

man rm

SEE ALSO

How to Remove Files and Directories how to pass all parameters



NAME Knock knock . . . DIRECTORY t04/ SUBMIT wake_up.sh

DESCRIPTION

Create a script that:

- creates a file instructions.txt
- writes Follow the white rabbit. followed by a newline to instructions.txt

```
>zsh wake_up.sh
>cat -e instructions.txt
Follow the white rabbit.$
>
```





Kerberos

DIRECTORY

±05/

SURMIT

kerberos.txt

DESCRIPTION

Create a file kerberos.txt that contains three commands:

- display the current tickets in the credential cache
- authenticate yourself to the Kerberos server as principal on any computer
- remove all credential caches

Each command must be followed by a newline.

FOLLOW THE WHITE DARRIT

man kerberos man kdestroy man klist man kinit

SEE ALSO

Kerberos





NAME

Find Neo

DIRECTORY

t06/

SUBMIT

find chosen.sh

DESCRIPTION

Create a script that:

- takes a file as an argument. The file contains Matrix characters formatted as in the CONSOLE OUTPUT section
- shows only redpill entities from file

```
>cat -e characters
Agent #0 strength:8 power:5$
Agent #1 strength:5 power:5$
Redpill Anderson strength:6 power:8$
Agent #2 strength:3 power:6$
redpill Dozer strength:2 power:4$
>zsh find_chosen.sh characters | cat -e
Redpill Anderson strength:6 power:8$
redpill Dozer strength:2 power:4$
>
```





NAME

Commit history

DIRECTORY

t07/

SURMIT

git log.sh

DESCRIPTION

Create a script that:

• shows abbreviated commit hash and subject separated by a space of three last commits Create more than three commits in sprint00 repository so that the assessor will be able to check the script correctness during the defence. Every commit must be followed by a newline.

CONSOLE OUTPUT

```
>zsh git_log.sh > git_history.txt
>cat -e git_history.txt
f61fde9 t05 find chosen$
50ab5e5 t04 kerberos$
dcf793c t03 wake up$
>
```

FOLLOW THE WHITE RABBIT

man git-log man git





Ignore them all

DIRECTORY

±08/

CHRMIT

.gitignore

DESCRIPTION

Create a .gitignore for next files:

- .DS_Store
- ._.DS_Store
- *.0
- *.out

Hint: use it in your challenge repository.

```
>touch .DS_Store && touch kek.o
>g1t ls-files --ignored --exclude-standard --others | cat -e
.DS_Store$
kek.o$
>
```





List directory contents

DIRECTORY

t09/

SURMIT

ls.sh

DESCRIPTION

Create a script that:

- takes a file/directory as an argument
- shows all files/directories inside a given directory except for ... and ...
- · displays their sizes separated by a single space
- sorts by file/directory name

```
>zsh ls.sh . | cat -e
ls.sh 5iB$
>zsh ls.sh /bin | cat -e
bash 604K$
cat 23K$
chmod 33K$
cp 28K$
csh 371K$
date 28K$
...
zsh 596K$
>
```





File difference

DIRECTORY

t:10/

SURMIT

diff.sh

DESCRIPTION

Create a script that:

- takes three files as arguments
- · finds a difference between two files
- · writes their difference to the third file

```
>zsh diff.sh ti0_1.txt ti0_2.txt difference.txt
>cat -e difference.txt
6c6$
< <string>YES</string>$
---$
> <string>NO</string>$
18c18$
< <string>59</string>$
---$
> <string>69</string>$
28c28$
< <string>44</string>$
---$
> <string>44</string>$
---$
> <string>44</string>$
---$
> <string>46</string>$
> <string>46</st
```



NAME

DIRECTORY

t11/

SUBMIT

download.sh

DESCRIPTION

url

filename

CONSOLE OUTPUT

FOLLOW THE WHITE RABBIT

man curl
man open



NAME

Pipe

DIRECTORY

t12/

SUBMIT

pipe.sh

DESCRIPTION

Create a script that:

- takes a file as an argument. File contains Matrix characters formatted as in the CONSOLE OUTPUT section
- shows only redpill entities from the file changed into bluepill
- · contains only one-line instruction

CONSOLE OUTPUT

```
>cat -e characters
Agent #0 strength:8 power:5$
Agent #1 strength:5 power:5$
Redpill Anderson strength:6 power:8$
Agent #2 strength:3 power:6$
redpill Dozer strength:2 power:4$
>zsh pipe.sh characters | cat -e
bluepill Anderson strength:6 power:8$
bluepill Dozer strength:2 power:4$
>
```

SEE ALSO

Pipelines





Tar me

DIRECTORY

±13/

SUBMIT

tar.sh

DESCRIPTION

Create a script that:

- creates a new archive with the given archive name and file/directory set tar.sh [-c] [name.tar] [file ...]
- extracts files from the given archive tar.sh [-e] [name.tar]

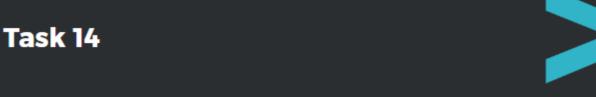
CONSOLE OUTPUT

```
>ls
diri dir2 file1 file2 tar.sh
>zsh tar.sh -c arch.tar diri dir2 file1 file2
>ls
arch.tar diri dir2 file1 file2 tar.sh
>rm -df diri dir2 filei file2
>ls
arch.tar tar.sh
>zsh tar.sh -e arch.tar
>ls
arch.tar diri dir2 file1 file2 tar.sh
>
```

FOLLOW THE WHITE PARRIT

man tar





Alias

t14/

alias.sh

Create a script alias.sh that takes a filename as a command-line argument and writes in this file the aliases listed below:

```
· ga for git add command
```

- gcmsg for git commit -m command
- · gp for git push command

CONSOLE OUTPUT

```
alias.sh
zsh: command not found: ga
>zsh alias.sh source_me
alias.sh source_me
>source_me
Nothing specified, nothing added.
Maybe you wanted to say 'git add .'?
error: switch 'm' requires a value
```

SEE ALSO



Share

PUBLISHING

Last but not least, the final stage of your work is to publish it. This allows you to share your challenges, solutions, and reflections with local and global audiences. During this stage, you will discover ways of getting external evaluation and feedback on your work. As a result, you will get the most out of the challenge, and get a better understanding of both your achievements and missteps.

To share your work, you can create:

- a text post, as a summary of your reflection
- · charts, infographics or other ways to visualize your information
- · a video, either of your work, or a reflection video
- an audio podcast. Record a story about your experience
- · a photo report with a small post

Helpful tools:

- Canva a good way to visualize your data
- QuickTime an easy way to capture your screen, record video or audio

Examples of ways to share your experience:

- Facebook create and share a post that will inspire your friends
- YouTube upload an exciting video
- GitHub share and describe your solution
- Telegraph create a post that you can easily share on Telegram
- Instagram share photos and stories from ucode. Don't forget to tag us :)

Share what you've learned and accomplished with your local community and the world. Use #ucode and #CBLWorld on social media.

