B1- Unix and C Lab Seminar

B-CPE-100

Day 01

Unix Environments

v3.0

{EPITECH.}

Task 00

Multiple intelligence and grit

Before doing anything, we would like you to answer as honestly as possible to the following forms:

- For everyone: The Grit
- If you speak french, you should do this one too: Multiple intelligence

It will help you better understand your cognitive functioning and help us better understand the students in global.

First things first

Intranet and social network

Using the intranet, register for all of the week's activities.
Then, join our Yammer network and join your graduating class group: **Promo #PROM**.
Then, join your city's group (**#CITY #PROM**), your referent will personally approve your registration.
And finally the offical group of this pool: C Pool 2024

You must register with your **firstname.lastname@epitech.eu** email address.

Yammer is a profesionnal network! It's not facebook. Please post your messages in the corresponding group and keep it clean!

Now take a moment to read to document given alongside this one, "the manifesto", to understand our values.

Linux

Discovering your environment

First, take some time to discover your working environment (keywords, commands,...)
Then learn how to lock your workstation, it might prove very useful.

Task 01

Create a Delivery Directory

Create a directory named `delivery` in your home directory's root.
Within that directory, create another one named `task01`, which will contain:

- an empty file named `test01` with the default permissions,
- a file named `test02` containing **"I still believe in heroes."**. Everyone must have the rights to read and execute this file, but only you can write in it,
- a symbolic link (**symlink**) named `test03`, which is a reference to `test02`.

Read the **ln** manual carefully!

Task 02

Z

Create a file, `~/delivery/task02/z`, which displays the character **'Z'** followed by a carriage return (**\n**) when the binary `cat` is used to read it:

```
Terminal
~/B-CPE-100> cat z
Z
~/B-CPE-100>
```

Task 03

midLS

Write in `~/delivery/task03/midLS`, a command that lists the current repository's files and repositories (without hidden files, ellipses, or files starting with a dot) sorted alphabetically.
Files and directories should be separated by commas and directories must end with a slash.

> Add execution permission to everyone

Setup the repository

Git and BLIH

In order to be authenticated to your repositories you will need a ssh key.
Create a ssh key named "**id_rsa**".
This key will allow you to access them remotely without password.

A ssh key with a length of 2048 bits is usually considered sufficiently secure.

Then, upload your public key previously created with **BLIH**.
There is a simple way to verify if your upload has been successful: You should be able to have a remote access to our servers. Example:

Terminal

```
~/B-CPE-100> ssh git@git.epitech.eu
PTY allocation request failed on channel 0

Hi firstname.name@epitech.eu!  You've successfully authenticated,
but I do not provide interactive shell access.

Connection to git.epitech.eu closed.
```

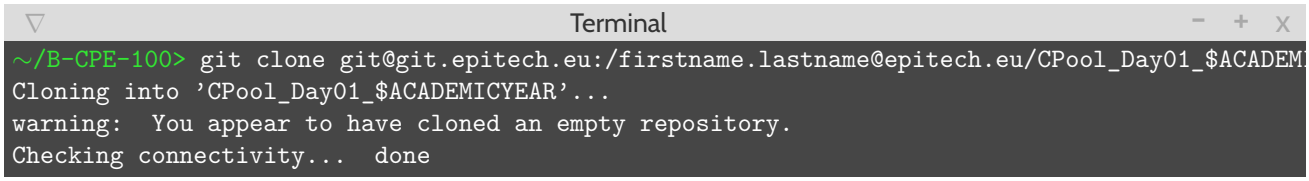
Finally, create a repository named **CPool_Day01_$ACADEMICYEAR** and add enough rights to the user *ramassage-tek* for your repository to be collected.

For more information, see the document "How to turn-in" on the intranet (here).

Do a delivery

Clone a repository and push your work

Now, it is the time to check if the previous exercice really works. To do so, We are going to clone the repository.
The repository is available by following this address :
git@git.epitech.eu:/firstname.lastname@epitech.eu/CPool_Day01_$ACADEMICYEAR.
If it worked, you should have a result similar to:



Now, You have to move all task directories (previously created) into the repository of the day (CPool_Day01_$ACADEMICYEAR).
Then, you have to inform "**git**" of your wish to add these files.
After that, you have to create a new local revision which contains all these modifications. Finally, you have to push this revision to the remote server.
From now on, commit and push at the end of each exercice.

Make sure that the file permissions have not been altered during the copy / move.

Have you read the document on the intranet already?

Task 04

mr_clean

Write a file named **mr_clean** - stored at the root of the repository of the day - a command to find and delete every file from the current directory and all subdirectories which end by ~ or which start and end by #.
Give execution rights to the owner of the file.

Only one command is allowed (no ";", neither "**&&**" or anything...)

Read carefully the manual of find

Task 05

prepare_my_repo.sh

To help you prepare future repositories, write a shell script (using bash as shell) named `prepare_my_repo.sh` at the root of your repository, which, as its name suggests, does the following:

- create the repository with the name given as an argument,
- add checkout permission,
- display the proprer repository's ACL.

```
Terminal
~/B-CPE-100> ./prepare_my_repo.sh Corewar
Repository Corewar created
ACL correctly applied
ramassage-tek:r
```

Having trouble figuring out how to retrieve parameters? **man bash**

When you're writing a script don't forget the **shebang**!

For all shell scripts, be sure to give the execution right!

The automated test is almighty and its copy of **blih** wouldn't dare to ask it to enter a password

Task 06

push_that.sh

Write a script, named `push_that.sh`, that adds all of the current folder's files and push them to the repository.

The script must take a commit message as parameter and should be able to handle simple problems and still push your files.

Don't use this script if you share this repository with other people

Task 07

Tree

Reproduce the folders structure displayed below.

Terminal

```
~/B-CPE-100> tree -FQ task07 | head -n 32
"task07"
|- "1910s"/
|   |- "1911" -> "../Solvay Conferences on Physics/The theory of radiation and quanta"/
|   `- "1913" -> "../Solvay Conferences on Physics/The structure of matter"/
|- "1920s"/
|   |- "1921" -> "../Solvay Conferences on Physics/Atoms and electrons"/
|   |- "1924" -> "../Solvay Conferences on Physics/Electric conductivity of metals and
related problems"/
|   `- "1927" -> "../Solvay Conferences on Physics/Electrons and photons"/
|- "1930s"/
|   |- "1930" -> "../Solvay Conferences on Physics/Magnetism"/
|   |- "1931" -> "../Solvay Conferences on Chemistry/Constitution and Configuration of
Organic Molecules"/
|   |- "1934" -> "../Solvay Conferences on Chemistry/Oxygen, and its chemical and biological
reactions"/
|   `- "1937" -> "../Solvay Conferences on Chemistry/Vitamins and Hormones"/
|- "1940s"/
|   `- "1947" -> "../Solvay Conferences on Chemistry/Isotopes"/
|- "1950s"/
|- "Professors"/
|   |- "Frederic Swarts"
|   |- "Hendrik Lorentz"
|   |- "Paul Karrer"
|   |- "Paul Langevin"
|   `- "William Jackson Pope"
|- "Solvay Conferences on Chemistry"/
|   |- "Constitution and Configuration of Organic Molecules"/
|   |   `- "chair" -> "../../Professors/William Jackson Pope"
|   |- "Isotopes"/
|   |   |- "chair" -> "../../Professors/Paul Karrer"
|   |   `- "participants"/
|   |- "Oxygen, and its chemical and biological reactions"/
|   |   `- "chair" -> "../../Professors/William Jackson Pope"
|   `- "Vitamins and Hormones"/
|       `- "chair" -> "../../Professors/Frederic Swarts"
```

```
Terminal
~/B-CPE-100> tree -FQ task07 | tail -n 24
‘- "Solvay Conferences on Physics"/
?   |- "Atoms and electrons"/
?   |   ‘- "chair" -> "../../Professors/Hendrik Lorentz"
?   |- "Electric conductivity of metals and related problems"/
?   |   ‘- "chair" -> "../../Professors/Hendrik Lorentz"
?   |- "Electrons and photons"/
?   |   |- "chair" -> "../../Professors/Hendrik Lorentz"
?   |   ‘- "participants"/
?   |       |- "A. Einstein"
?   |       |- "E. Schrodinger"
?   |       |- "H.A. Lorentz"
?   |       |- "M. Planck"
?   |       |- "M. Sklodowska-Curie"
?   |       |- "N. Bohr"
?   |       |- "W. Heisenberg"
?   |       ‘- "W.L. Bragg"
?   |- "Magnetism"/
?   |   ‘- "chair" -> "../../Professors/Paul Langevin"
?   |- "The structure of matter"/
?   |   ‘- "chair" -> "../../Professors/Hendrik Lorentz"
?   ‘- "The theory of radiation and quanta"/
?       ‘- "chair" -> "../../Professors/Hendrik Lorentz"

30 directories, 23 files
```

(Please do not take in consideration the character "?", it is currently used to keep the alignment on the subject)

Git handles empty directories differently.

Task 08

Tar

Create a compressed (with Gzip) tarball of the content of the previous task's directory.
Delivery: CPool_Day01_$ACADEMICYEAR/task08/task07.tgz

man tar