# Exercises

**Exercise 1**. Create a new directory called `course` under `/tmp`.
**Exercise 2**. Look up the `touch` program. The `man` program is your friend.
**Exercise 3**. Use `touch` to create a new file called `fse` in `course`.
**Exercise 4**. Write the following into that file, using terminal:

```
#!/bin/sh
curl --head --silent https://mail.ru/
```

The first line might be tricky to get working. It's helpful to know that `#` starts a comment in Bash, and `!` has a special meaning even within double-quoted (`"`) strings. Bash treats single-quoted strings (`'`) differently: they will do the trick in this case. See the Bash quoting manual page for more information.

**Exercise 5**. Try to execute the file, i.e. type the path to the script (`./fse`) into your shell and press enter. Understand why it doesn't work by consulting the output of `ls` (hint: look at the permission bits of the file).

**Exercise 6**. Run the command by explicitly starting the `bash` interpreter, and giving it the file `fse` as the first argument, i.e. `bash fse`. Why does this work, while `./fse` didn't?

**Exercise 7**. Look up the `chmod` program (e.g. use `man chmod`).

**Exercise 8**. Use `chmod` to make it possible to run the command `./fse` rather than having to type `bash fse`. How does your shell know that the file is supposed to be interpreted using `bash`? See this page on the shebang line for more information.

**Exercise 9**. Use `|` and `>` to write the "last modified" date output by `fse` into a file called `last-modified.txt` in your home directory.

Examples with dataset
Firstly, download an archive to the machine and untar it.

```
wget
https://github.com/adasegroup/FSE2020_lectures/raw/master/W2.
2.Fri%20Unix%20on%20Local%20Machine/practical4_data_for_scien
ce.tar.xz
tar -xf practical4_data_for_science.tar.xz
```

**Exercise 10**
Create a *student* user in your terminal then change ownership of [0-9].txt files to *student*.
Calculate the sum of the sizes of all files belonging to the *student* user