Module: R0: The Missing Semester
Section: Data Wrangling **Task:** 03

To do in-place substitution it is quite tempting to do something like sed
s/REGEX/SUBSTITUTION/ input.txt > input.txt. However, this is a bad idea.

Explain why is it a bad idea? Is this particular to sed? Use man sed to find out how to
accomplish this.

Explanation:

Using **sed s/REGEX/SUBSTITUTION/ input.txt > input.txt** is a bad approach for in-place
substitution because it can lead to data loss. In this command, the shell first opens a new file
input.txt with the zero-length and then runs the command of substitution of 'sed', reads the data
from the empty file, and then writes the modified content to the empty input.txt as well. This way
the original content of the file may lost.

To do in-place substitution, we can use the '-i' flag of the 'sed' command. It allows to modify the
file directly without the need for file redirection.

```
-i[SUFFIX], --in-place[=SUFFIX]

        edit files in place (makes backup if SUFFIX supplied)
```

Now using the sed command to do in-place substitution in the shell,

```
shabir@shabir-VirtualBox: ~/missing_semester

shabir@shabir-VirtualBox:~$ ls
Desktop    Downloads          last-modified.txt  missing_semester  Pictures  shair  ssh.l
og    test
Documents  example_file.xml  mcd.sh             Music             Public    snap   Templ
ates  Videos
shabir@shabir-VirtualBox:~$ man sed
shabir@shabir-VirtualBox:~$ cd missing_semester/
shabir@shabir-VirtualBox:~/missing_semester$ echo "REGEX" > input.txt
shabir@shabir-VirtualBox:~/missing_semester$ cat input.txt
REGEX
shabir@shabir-VirtualBox:~/missing_semester$ sed -i 's/REGEX/SUBSTITUTION' input.txt
sed: -e expression #1, char 20: unterminated `s' command
shabir@shabir-VirtualBox:~/missing_semester$ sed -i 's/REGEX/SUBSTITUTION/' input.txt
shabir@shabir-VirtualBox:~/missing_semester$ cat input.txt
SUBSTITUTION
shabir@shabir-VirtualBox:~/missing_semester$ []
```

To get the backup file of the original content before the modification, use suffex of the extension with '-i' flag.

```
shabir@shabir-VirtualBox:~/missing_semester$ echo "REGEX" > input.txt
shabir@shabir-VirtualBox:~/missing_semester$ cat input.txt
REGEX
shabir@shabir-VirtualBox:~/missing_semester$ sed -i.backup 's/REGEX/SUBSTITUTION/' input.txt
shabir@shabir-VirtualBox:~/missing_semester$ cat input.txt.backup
REGEX
shabir@shabir-VirtualBox:~/missing_semester$ cat input.txt
SUBSTITUTION
shabir@shabir-VirtualBox:~/missing_semester$
```