

# Writing a 'Virus' in Python

## CE235 Assignment 1

### Specification

The aim of the assignment is to write a Python 3 program, which will modify another program. Specifically, it will do the following:

- ☐ Open a file called 'sfs.py' in the current directory (folder)
- ☐ Go to line 52 and add '`; print( "Virus" )`' to that line
- ☐ Save the file under its original name.

We provide a sample file sfs.py. It can be run from the command line like this:

```
python sfs.py
```

This program computes the number of lines in a file and the number of characters. For simplicity in the assignment, it always uses the file 'file.txt' when called from the command line as above. The output of sfs when run is:

```
Number of lines: 2
Number of characters: 41
```

Your program should be called something like cs\_registrationnumber.py (see below). Your program should run from the command line like this:

```
python cs_registrationnumber.py
```

You do not specify the file to be infected because it should always be sfs.py. The result of running your program as above will be that line 52 is modified in sfs.py. **Once your program has modified the file, the modified sfs.py should still work and it will produce different output as bellow:**

```
Virus
Virus
Number of lines: 2
Number of characters: 41
```

**Note that your program should not change the number of lines in sfs.py.**

### Hint

- ☐ Open the file for reading
- ☐ Read the lines in the file into a list;
- ☐ Close the file;
- ☐ Open the same file for writing;
- ☐ Go through the list of lines and write lines 1 to 51 to the new file;
- ☐ Remove the newline from the end of line 52, and add '`; print( "Virus" )`' to the end of it, add a newline, and finally, write it to the new file;
- ☐ Write line 53 to the end to the new file.
- ☐ Close the file.

The above points are suggestions. You can use any method to solve the problem as long as everything is written in Python 3. Please do not use Python 2.7 or any other programming language.

**NOTE:**

The number of lines in the modified/infected sfs.py should not change after your program is run.

**NOTE:**

To make your program run from the command line as specified, see the code at the bottom of sfs.py. In fact, most of the code you need can be found in sfs.py.

**NOTE:**

The code should be written in Python 3. Please do not use Python 2.7 or any other programming language.

**NOTE:**

The code should run from the command line in any computer for marking purposes, not only your computer in lab.

## How to submit

Submit one .py file to Faser called:

cs\_registrationnumber.py

So, if your registration number is 1234567, your filename will be: cs\_1234567.py

Note that the filename is a .py file. The file name is all lower case.

## Submission in Week 18.

## Marking Scheme

There is 5% of the overall module for this assignment. We will test your program, running it from the command line. If it works exactly as above, you will get 5%. If it modifies the file but not correctly, you will get some partial marks, depending on how close the modification is to the specification. If it does not work from the command line, you will not get the mark.

## Plagiarism

You should work individually on this project. Anything you submit is assumed to be entirely your own work. The usual Essex policy on plagiarism applies: <http://www.essex.ac.uk/plagiarism/>.