COMP41680 Lab 3

Writing Python Scripts

Complete the 4 tasks below by writing Python scripts in a text editor of your choice and running the scripts from the terminal/command line. The required input files are available in *lab03-data.zip* on the module Brightspace page.

Task 1:

Write a new Python script *overlap.py* which reads in two text files containing numbers (one number per line), and finds the numbers which are overlapping (i.e. the intersection of the numbers present in both files). The two input files should be specified as command line arguments.

Example usage:

```
> python overlap.py numbers1.txt numbers2.txt
Overlap is {2, 4, 5, 6, 9, 15, 16, 19, 26}
```

Task 2:

Write a Python script *select.py* which reads in a text file, line by line, and only displays the specified lines. The input filename and one or more line numbers should be specified as command line arguments.

Example usage:

```
> python select.py names.txt 1 3 12
Michael
Kaylee
Emily

> python select.py names.txt 6 14
Zoe
Lucas
```

Task 3:

Modify the script *select.py* to add exception handling for the cases where: (1) the specified text file does not exist, (2) an invalid number is specified.

Example usage:

```
> python select.py missing.txt 1 3 10 14
Unable to read from file: [Errno 2] No such file or directory:
'missing.txt'

> python select.py names.txt 4 9 a
Invalid line number specified: invalid literal for int() with
base 10: 'a'
```

Task 4:

Write a Python script *sample.py* which reads in a text file, line by line, and displays a random sample of *N* of those lines, where *N* is a user specified command line argument. Your script should handle the cases where: (1) the specified file does not exist, (2) an invalid number *N* is specified.

Example usage:

```
> python sample.py names.txt 3
Ethan
Lucas
Caden

> python sample.py names.txt 4
Emily
Madelaine
Stefan
Lily

> python sample.py missing.txt 4
Unable to read from file: [Errno 2] No such file or directory:
'missing.txt'

> python sample.py names.txt 25
Sample size greater is than number of lines in the file: 25 > 17
```