



Practical Exercises 2

Scanning

Please submit solutions on Blackboard by Friday, 19.02.2021 14:00h

Notice: Please submit solutions on Blackboard in groups of two or three students.
The practical exercises will be graded and count as part of your final grade.

Please submit the source code for the first two questions below in separate files.

2.1 Build a Unix tool using the `lex` scanner generator (6 points)

The Unix tool `wc` (word count) outputs the following information about a given text file:

- Number of lines in the file
- Number of words in the file (words are separated by whitespace or punctuation)
- Number of characters in the file (including whitespace, punctuation characters, etc.)

Implement a version of `wc` using a `lex` scanner that outputs these three values for a given input.

Hint: You don't need to implement file handling, running your scanner from standard input like this:

```
$ mywc < textfile.txt  
is perfectly fine.
```

2.2 Count the strings (3 points)

Extend your `wc` tool to also count the number of strings (delimited by double quotes) in the file and output the average string length. You may assume that a string never extends beyond the end of a line.

2.3 Test your code! (1 point)

Run your code from question 2.2 against the example test cases provided on the course web site and submit your output in a text file `output.txt`.

Note: A skeleton `lex` source file, `makefile` and test cases are available in the file `compilers-PE2.tar.gz` on the course web site.