

Bil334: Formal Languages and Automata

Homework 1

Assigned: 28/1/2014

Due: 31/1/2014 and 3/2/2014, 24:00

Questions

1. In this question, you will develop Perl scripts for two real-life problems. Use Perl's regular expression find-replace capabilities to develop the following programs.¹

(a) (10pts) (Due 31/1/2014)

Write a perl script named `format_dates.pl` that will change the format of the dates in a given input text file. If the input file's base name is XYZ (i.e., the file name is `XYZ.txt`), the program should be run as `format_dates.pl XYZ.txt` and produce the output file `XYZ-modified.txt`. The program should read the input file line by line. Each line may contain dates formatted as MM/DD/YY. The program will simply change the format of these dates to DD-MM-20YY and write the line to the output text file.

Sample input (`dates.txt`):

```
Today is12/23/02 and ... 03/35/55 ...  
This is a fraction 1/2 or something else 3/234/12 ...
```

Sample output (`dates-modified.txt`):

```
Today is23-12-2002 and ... 35-03-2055 ...  
This is a fraction 1/2 or something else 3/234/12 ...
```

(b) (10pts) (Due 3/2/2014)

Write a perl script named `convert_dir.pl` that will change the names of files and subdirectories in the current working directory of a Unix system. The program will be piped with the `ls` command (it should be run as `ls -F | convert_dir.pl`). The conversion to be done is as follows: Directory names should be completely capitalized. File names should be in lowercase except for the first character, which should be capital. Moreover, both in directory and file names, blanks should be replaced with underscores. For instance, let the following be the result of the command `ls -F` in the current directory:

```
Aleksandr  Pushkin/  
all poems of Pushkin 2  
Anna Karanina  
criMe and pUnishment  
fyodor d0sToyevesky/  
Lev tolsToy/  
the brothers karamazov  
war and Peace
```

The same command should return the following after the conversion:

¹If you want, you can use Python instead of Perl.

ALEKSANDR__PUSHKIN/
All_poems_of_pushkin_2
Anna_karanina
Crime_and_punishment
FYODOR_DOSTOYEVSKY/
LEV_TOLSTOY/
The_brothers_karamazov
War_and_peace