max planck institut
informatik

Universität
des
Saarlandes
FR Informatik

Uwe Waldmann

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Tutorials for “Unix for Advanced Users”
Exercise sheet 12

Exercise 12.1:
Each line in a file contains a list of comma-separated items. Write a Perl script that converts this into semicolon-separated items, taking the following into account:

– A comma that is part of a double-quoted string or escaped by a backslash should not be replaced.

– A double quote may be escaped by a backslash.

– A backslash may itself be escaped by a backslash.

Exercise 12.2:
Write a Perl command that expands environment variables in a string. For instance, if `USER` and `HOME` are environment variables (with values `maier` and `/home/usr/maier`) but `HMOE` and `USERS` are not, then

```
$USER’s home directory is $HOME.
```

should be replaced by

```
maier’s home directory is /home/usr/maier.
```

but

```
$USERS home directory is $HMOE.
```

should be left unchanged. (Hint: `man perlvar`.)

Exercise 12.3:
The Perl command

```
s/((\\.|[^,])*),/$1;/;
```

should perform a simple task, but it may produce unexpected results under certain circumstances. What should it do? When (and how) can it fail? Which two changes are necessary to fix it?

Exercise 12.4:
You have a file in which each line contains data about a politician in the form

```
Gordon Brown, Prime Minister, United Kingdom
George W. Bush, President, USA
Angela Merkel, Chancellor, Germany
Nicolas Sarkozy, President, France
```

Use a macro in your preferred editor to convert this file into the form

```
Gordon Brown                 Prime Minister     United Kingdom
George W. Bush               President          USA
Angela Merkel                Chancellor         Germany
Nicolas Sarkozy              President          France
```