

CS3200: Programming Languages

Homework 11

Required Problems

- Write a shell script to replace blanks with underscores in the names of all files in the current directory.
 - Write a shell script to rename all files in the current directory by prepending to its name a textual representation of its last modification date.
 - Write a shell script called `pidof` which takes a name as parameter and returns the PID(s) of processes with that name.
2. Write a script in a scripting language of your choice to create a simple *concordance*: a sorted list of significant words appearing in an input document (which you will prompt the user for). In addition, create an associative array (or dictionary) to store the number of times the word appears in the document with each word, so that (for example) the command `print numtimes['Homework']` will print 2 for this document. Exclude from your list all common articles, conjunctions, prepositions, and pronouns.
3. Consider the following regular expression in Perl:

```
/^(?:((?:ab)+)|a(?:ba)*))$/
```

Describe, in English, the set of strings it will match. Show a natural NFA for this set.

4. Imagine you are writing the code to manage a hash table that will be shared among several concurrent threads. Assume that operations on the table need to be atomic. You could use a single mutual exclusion lock to protect the entire table, or you could devise a scheme with one lock per hash-table bucket. Which approach is likely to work better, under what circumstances? Why?