CSE 303, Autumn 2008, Assignment 1B
Due: Monday, October 6 at 11 pm

Correction to problem #1 and turnin instructions on 30 Sept. 08.
Total line on single file output for problem 3 reclassified as extra credit 1 Oct. 08.

In this assignment you'll gain expreience writing very short scripts.

General hint: It can be helpful to experiment with commands interactively in a shell window before you embed them in a script.

1. (An alias) Create a bash alias `private` such that when you run `private foo`, the entire subtree of the file-system starting at `foo` (so just `foo` if it is a file, but `foo` and all its files and subdirectories recursively if it is a directory) has its permissions changed as follows:

   - The user's permissions are unchanged.
   - The group read and execute permissions remain unchanged, but group write permission is turned off.
   - The world permissions are set to no access of any sort.

   Put your alias in a file `problem1` such that running `source ./problem1` would make `private` available in the shell.

2. (Script) Create a `bash` script `combine` that takes 2 or more arguments, call them $f1$, $f2$, ..., fn. Script `combine` should work as follows:

   - All arguments are treated as filenames.
   - If fewer than two arguments are given, print a suitable error message on `stderr` and exit.
   - If a file or directory $f1$ already exists, print "Error: first file exists" on `stderr` and exit.
   - Otherwise concatenate the contents of $f2$, ..., fn and copy them to `stdout`. Do not print any error messages from this (for example if some file does not exist or is a directory). Instead, any such error messages should be written to $f1$.

   Hint: Put filenames in double-quotes in case they contain "funny characters" (such as spaces). Your script should work with any file names, no matter what they contain.

   Hints: `shift`, `$@`, `-lt`, `-a`.

3. (Script) Create a bash script called `datedlinecount` that works as follows:

   - If it is given fewer than two arguments, it prints an appropriate error and exits.
   - Assume all the arguments are filenames for text files; you do not need to check for this.
   - Append to the file indicated by the first argument the following information:
     - The time and date
     - One line for each of the second-through-last arguments, containing the number of lines in the file and then the name of the file
     - One line with the total number of lines in all the files and then the word "total"

   For example, executing: `./datedlinecount log foo bar; ./datedlinecount log foo*; cat log` might produce something like:

```
Mon Mar 26 20:42:16 PDT 2007
  4 foo
 17 bar
 21 total
```

```
Mon Mar 26 20:42:17 PDT 2007
 4 foo
 3 food
 7 total
```

Hints: shift, date, wc, `$@`.

Extra credit (changed 1 Oct. 08): The output should include a total line even if only a single file appears in the list.

Assessment: Your solutions should be:

- Correct scripts, etc. that run on `attu.cs.washington.edu`
- In good style, including indentation and line breaks
- Of reasonable size

Identifying information including your name, CSE303 Homework 1b, the problem number, and the date should appear as comments in each of your files.

Turn-in Instructions Use the turnin dropbox linked on the course web page to submit your files. If you wish, you can combine your files into an archive (see the `tar` command) and turn that in as a single file instead of turning in the files individually. The choice is yours — do whatever is most convenient.