CS214 CONTEST

Introduction

Now that we have secured a lab, we will use the opportunity and have a *shell-scripting contest*! There are 5 problems to solve, which gives you about 10 minutes for each. The person (or team) who solves the most number of problems by the end of class is the winner. If there is a tie, the person with the fewest total number of characters in her/his scripts wins. This encourages you write compact code.

This is a great chance to familiarize yourself with the bash shell, and explore commands that we have been discussing for the past week and a half. Feel free to use `man` or surf online to learn more about this or that command. The lecture notes are also a helpful resource.

Please don't hesitate to ask questions during the contest. Good luck, and above all, have fun!

Set-up

Log in to the computer using your Cornell NetID. I have written an automatic submission system, but you'll need to download and configure a client. To do this, open up a terminal and type (ignore the initial $)

```
$ wget -q http://www.cs.cornell.edu/courses/cs214/submit.sh
$ chmod +x submit.sh
$ echo "# team66 123456" > USER
```

Replace the team number and identification number with the information on the piece of paper I will hand out.

When you're ready, use your favorite editor to write up a solution (say `order.sh`). Then submit the file by typing

```
$ ./submit.sh order.sh
```

The correctness of your submission will be verified automatically, and the scoreboard on the projector should be updated within a few seconds.

Problem 1

Write a program that prints "Y" if first argument is a valid directory, "N" otherwise. The program should be called 'dir.sh'.

Example: `./valid.sh /` should print Y, whereas `./valid.sh nosuchdir` should output N.

Problem 2

Write a program 'order.sh' that prints its arguments in sorted order alphabetically (ignoring case), one per line.

Example: `./order.sh FOXTROT alpha Charlie` should print

```
alpha
Charlie
FOXTROT
```

Problem 3

Write a script 'cnt.sh' that counts the number of digits that appear on the standard input.

Example: Typing `echo "yeah333 z0rglub a1a2a3a4a5" | ./cnt.sh` should print 9.

Problem 4

Simulate the BOOM drinking game. In the game, players take turns and start counting out loud starting from 1. If the number is a multiple of 7 or contains the digit 7, the player must say "**BOOM**" instead of shouting the actual number. Those who mess up have to drink.

Ideally, the game should go

1, 2, 3, 4, 5, 6, **BOOM**, 8, 9, 10, 11, 12, 13, **BOOM**, 15, 16, **BOOM**, 18, etc.

but that does not always work out. Write a script 'boom.sh' that prints the entire sequence of the game with one number (or BOOM) on each line.

Problem 5

Write a translator 'latin.sh' from English to Pig Latin. We will relax the translation rules a little bit. In Pig Latin, technically '*what is up*' should translate to '*atwhay isway upway*', but we will just consider consonants to be single characters, so the translation will be '*hatway isway upway*'. The rules are as follows.

1. For any word that starts with a consonant, move the starting consonant to the end of the word, then append *ay*.
2. For any word that starts with a vowel, append *way*
3. The input consists of lower-case characters only, one word per line from the standard input.

Also, we will consider *y* to be a consonant.

Example: The command

```
(printf "wolfgang\namadeus\nmozart\n") |./latin
```

should print

```
olfgangway
amadeusway
ozartmay
```