CS 61A Summer 2010 Week 1A Lab
Monday 6/21 Afternoon

Try to get as much done as possible, but don't panic if you don't finish everything.

1. (10 minutes.) Start the Emacs editor, either by typing `emacs` in your main window or by selecting it from the alt-middle mouse menu. (Your TA will show you how to do this.) From the `Help` menu, select the Emacs tutorial. You need not complete the entire tutorial at the first session, but you should do so eventually.

(Parts 2–4: 15 minutes.)

2. Use Emacs to create a file called `pigl.scm` in your directory containing the Pig Latin program shown below:

```
(define (pigl wd)
  (if (pl-done? wd)
      (word wd 'ay)
      (pigl (word (bf wd) (first wd)))))

(define (pl-done? wd)
  (vowel? (first wd)))

(define (vowel? letter)
  (member? letter '(a e i o u)))
```

Make sure you are editing a file whose name ends in `.scm`, so that Emacs will know to indent your code correctly!

3. Now run Scheme by typing meta-S ("meta" is the key with a diamond) in your Emacs window. You are going to create a transcript of a session using the file you just created, like this:

```
(transcript-on "lab1")      ; This starts the transcript file.
(load "pigl.scm")           ; This reads in the file you created earlier.
(pigl 'scheme)              ; Try out your program.
                            ; Feel free to try more test cases here!
(trace pigl)                ; This is a debugging aid. Watch what happens
(pigl 'scheme)              ; when you run a traced procedure.
(transcript-off)
(exit)
```

4. Use `lpr` to print your transcript file. For example, typing `lpr pigl.scm` on the UNIX shell will print the `pigl.scm` file.

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Week 1 lab continued:

5. (15 minutes.) In the shell, type the command

```
cp ~cs61a/lib/plural.scm .
```

(Note the period at the end of the line!) This will copy a file from the class library to your own directory. Then, using emacs to edit the file, modify the procedure so that it correctly handles cases like `(plural 'boy)`.

6. (20 minutes.) Define a procedure that takes three numbers as arguments and returns the sum of the squares of the two larger numbers.