CSC151.02 2013F, Class 29: Testing Your Procedures

Overview

- Preliminaries.
  - Admin.
  - Quiz.
- The primary testing operations.
- Lab.

Admin

- Continue partners from Monday
- I think I have working disk images to allow you to run Gimp + DrRacket + Mediascheme in a simulated machine on your own computer.
- I screwed up the links for today’s reading, so you’ve probably seen an old reading. The general concepts are the same, but the particular instructions you write are different. We’ll do a quick runthrough.
- NO WRITEUP FOR TODAY’S LAB. But you should at least read through the lab to understand what steps you might have gone through. (And maybe you’ll want to do it on your own. Unfortunately, the flash drives won’t work for that.)
- We’ll look at some issues from Wednesday’s lab.
- Upcoming EC opportunities
  - Football, 1 pm, Saturday
  - Men’s soccer, 1:30 pm, Saturday
  - Football, 1pm, Saturday + Week
  - ...

Quiz

- Questions: What’s on the quiz: Recursion
- Do you care about what format we use to answer a question?
  - If we care, we’ll tell you
- Is husk and kernel one procedure?
  - Now: No. Kernel is one unsafe procedure, husk checks preconditions and calls kernel
  - After break: How to hide the kernel within the husk so that it cannot be called

Traditional testing

- Type some inputs
- Look at the outputs
- You’re done
BAD
  - Not a formal proof - But formal proof is likely to be impossible
  - Formal proof is hard because changing the code requires changing the proof
  - Humans are bad at reading output
  - Not fun
Solution:
  - Write out all the tests, along with expected outputs (can sometimes automate large numbers of inputs and outputs)
  - Make the computer do the work
  - If you focus on individual procedures, called "unit testing"

The primary testing operations

(require rackunit)
(require rackunit/text-ui)

(check-equal? exp expected "comment")

(test-case "note"
  (check-equal? ...)
  (check-equal? ...)
  (check-equal? ...))

(define mytests
  (test-suite "Note"
    (test-case ...)
    (test-case ...)
    (test-case ...)))

(run-tests mytests)

Samuel A. Rebelsky, rebelsky@grinnell.edu

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