61A-125 Spring 2016
Discussion Quiz 08

1. A Scheme Primer

Please answer the following questions about Scheme.

(a) What is Scheme? A functional programming language with symbolic expression syntax.

(b) Do you enjoy counting parentheses? Circle one: Yes

(c) In Scheme, how would I define the value of `a` to be 5? `(define a 5)`

(d) Define a Scheme procedure, `remainder`, that takes in two integers `m` and `n` and returns the remainder of `m` divided by `n`. Assume that both `m` and `n` are positive.

```
(define (remainder m n)
  (if (> n m) m (remainder (- m n) n)))
```

2. WWSP?

```
(+ (and 0 (or #f 1)) 2)
3

(cons 5 6)
(5 . 6)

(define x (+))
(define y +)
(x 3 4)
Error:  Cannot call 0

(y 3 4)
7

(define (mystery lst)
  (cond ((null? lst) nil)
    ((= (modulo (car lst) 2) 1) (cons (car lst) (mystery (cdr lst))))
    (else (mystery (cdr lst)))))
(mystery (list 1 2 3 4))
(1 3)
```
