

## COMP 301

### Lab Session #2

Consider the data type of *stacks* of values, with an interface consisting of the procedures **empty-stack**, **push**, **pop**, **top** and **empty-stack?**. Implement these operations using a procedural representation.

```
(define empty-stack-error
  (lambda ()
    (eopl:error "Popping failed: empty stack")))

(define empty-stack
  (lambda ()
    (lambda (op)
      (if (= op 0)
          'empty
          (empty-stack-error)))))

(define push
  (lambda (stack value)
    (lambda (op)
      (if (= op 0) value stack))))

(define pop
  (lambda (stack)
    (stack 1)))

(define top
  (lambda (stack)
    (stack 0)))

(define empty-stack?
  (lambda (stack)
    (eqv? (stack 0) 'empty)))
```