

**Lab 1**  
**SYSC 3101A**  
**L3E**  
**Nathan MacDiarmid**  
**101098993**

#lang racket

**; EXERCISE 1**

```
(define (sum-coins pennies nickels dimes quarters)
  (+ (* pennies 1) (* nickels 5)
    (* dimes 10) (* quarters 25))
)
```

**; EXERCISE 2**

```
(define (interest balance)
  (cond
    [(or (< balance 1000) (= balance 1000)) (exact-floor (* balance 0.04))]
    [(or (< balance 5000) (= balance 5000)) (exact-floor (* balance 0.045))]
    [(exact-floor (* balance 0.05))])
)
```

**; EXERCISE 3**

```
(define (balance bank-balance)
  (cond
    [(or (< bank-balance 1000) (= bank-balance 1000)) (+ (exact-floor (* bank-balance 0.04)) bank-balance)]
    [(or (< bank-balance 5000) (= bank-balance 5000)) (+ (exact-floor (* bank-balance 0.045)) bank-balance)]
    [(+ (exact-floor (* bank-balance 0.05)) bank-balance)])
)
```

**; EXERCISE 4**

```
(define (variable_Interest balance)
  (cond
    [(> balance 5000) (exact-floor (+ (* (- balance 5000) 0.05) (* 4000 0.045) (* 1000 0.04)))]
    [(> balance 1000) (exact-floor (+ (* (- balance 1000) 0.045) (* 1000 0.04)))]
    [(exact-floor (* balance 0.04))]
  )
)
```