#lang racket

(display "\nAssigment 2\nQuestion 1\n\n")

;;A cons pair of two numbers

(cons 1 2)

;; A list of 3 numbers, using only the cons function.

(cons 2 (cons 4 (cons 7 empty)))

;;A list containing a string, a number and a nested list of three numbers, using only the

;;cons function.

(cons "This is a string!"

(cons 5

(cons (cons 1 (cons 2 (cons 3 empty))) empty)

)

)

;;A list containing a string, a number and a nested list of three numbers, using only the

;;list function

(list "This is a string!" 5 (list 1 2 3))

;;A list containing a string, a number and a nested list of three numbers, using only the

;;append function.

(append '("This is a string!") '(5) '((1 2 3)))

A screenshot of a computer

Description automatically generated

Question 2

Part A

A group of letters on a white background

Description automatically generated

Part B

//COUNTING ITEM

(define my-list '(1 2 3 2 4 2 5))

(define item-to-count 2)

(display (count\_instances item-to-count my-list))

A close-up of a computer code

Description automatically generated

> (define my-list '(1 2 3 2 4 2 5))

(define item-to-count 2)

(display (tail\_count\_instances\_helper item-to-count my-list))

A close-up of a white screen

Description automatically generated

A screenshot of a computer code

Description automatically generated

> (define my-list '(1 (2 (1 3)) 4 (1 (5 (1 6))) 7))

(define item-to-count 1)

(display (count\_instances\_deep item-to-count my-list))

4

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