COMP 3220
Homework 7
Due: Thursday, November 20, 2014, 11:59PM
(Please submit using Canvas)

This assignment is worth 100 points.

(1–15pts) Write a **DrRacket** (formerly DrScheme) function that takes an expression as its argument and returns a non-nested list of all atoms found in the expression. Example, (squash '(a (a (a (a b))) (((a b) b) b) b)) returns (a a a a b a b b b b)).

(2–15pts) Write a DrRacket function that determines whether an integer is divisible by 3 (e.g., (divisible-by-three 6) returns #t).

(3–15pts) Write a DrRacket function that that can sort a list in ascending or descending order (by making the comparison operator a parameter). The sorting algorithm should be INSERTION SORT.

(4–25pts) Write a DrRacket function, palindrome, that tests its argument to see if it is a list that has the same sequence of symbols when read from right to left as when it is read from left to right.

(5–30pts) Write the Quicksort algorithm in DrRacket.

Please upload a single package that includes (1) the source-code, (2) a text file including the instructions for properly executing the functions (e.g., parameters, the functional prototype, and any constraints that the GTA should be aware of prior to running and testing functions), and (3) screen snapshots (pictures/snapshots embedded in a single WORD file) of the command line or GUI–based execution and output of each function on three test cases.