Cogs 502 Fall 2018
Symbols and Programming Assignment 11 due Dec 19

Q 1

Define a recursive function that splits a list into two “halves”. If the length is odd, let one of the halves be one item longer than the other. You can use length, if you like. For instance, `(split '(a b c d e f g h i j k l))` should give `((A B C D E F) (G H I J K L))`.

Q 2

Define a version of the previous function without using `LENGTH` – here we go again!

Q 3

Define a recursive function `SUMMARIZE`, that takes a list and returns a list of pairs whose car is an element in the list and cadr is the number of times the element occurs in the list; `(summarize '(a b r a c a d a b r a))` should give `((a 5) (b 2) (r 2) (c 1) (d 1))`.

Q 4

Implement bubble sort.

Q 5

Define a function `PERMUTE` that gives the permutation of a sequence – all the sequences with the same elements in different orders. Assume all the elements in the sequence will be distinct.