

Exercise 6: Mauritius National Flag Problem

Given a list of dotted pairs where a pair has its **car** as initials of the Mauritius National Flag colors (Red, Blue, Yellow, Green), and its **cdr** as whole numbers:

```
( (R . 3) (G . 6) (Y . 1) (B . 2) (Y . 7) (G . 3) (R . 1) (B . 8) )
```

Create a procedure to sort the list of pairs according to the order of the colors of the flag and the numbers in ascending order.

Example:

```
pairList => ( (R . 3) (G . 6) (Y . 1) (B . 2) (Y . 7) (G . 3) (R . 1) (B . 8) )
```

```
Input: > ( MauritiusSort (pairList) )
```

```
Output: > ( (R . 1) (R . 3) (B . 2) (B . 8) (Y . 1) (Y . 7) (G . 3) (G . 6) )
```

Note(s):

- You are free to create as many sub-procedures as you want but two are required:
 - The procedure to sort the list of pairs by color, and
 - The procedure to sort each color list by number
- One of these two sub-procedures is required be done tail-recursively.
- In sorting the list by numbers, any sorting algorithm may be used.

Bonus:

If both the required sub-procedures are tail-recursive. (+2/10)