Section 8.13

8.13.3 *Adapting mergesort to remove duplicates*

a. *Change mergesort so that the algorithm removes duplicate items in the list as well as sort the remaining items. For example, on input (15,2,21,5,15,2,15), the output should be (2,5,15,21).*

```
MergeSort( X, F=true )
If ( F )
  For i := 1 to n
    For j := i to n
      If (X_i = X_j)
        remove(X_j)
        n := n-1
      End-if
    End-for
  End-for
End-if

If ( size(X) = 1 ), Return(X)

L := createEmptyQueue()
R := createEmptyQueue()

n := size(X)
m := ceil(n/2)

For i := 1 to m
  x := remove(X)
  add(L, x)
End-for

For i := 1 to (n-m)
  x := remove(X)
  add(R, x)
End-for

A := MergeSort(L, F=false)
B: = MergeSort(R, F=false)

C := Merge(A, B)

Return(C)
```