

```

1  -----
2  --- Selection Sort
3
4  delete y [] = []
5  delete y l = [x|x<-l,x /= y]
6
7  minimo [x] = x
8  minimo (x:y:t) = if x < y then minimo (x:t)
9                    else minimo (y:t)
10
11  ssort [] = []
12  ssort [x] = [x]
13  ssort l = m:ssort l'
14              where
15                  m = minimo l
16                  l' = delete m l
17  -----
18  --- Insertion Sort
19
20  insert x [] = [x]
21  insert x (y:t) = if x < y then (x:y:t)
22                   else y:insert x t
23
24  isort [] = []
25  isort [x] = [x]
26  isort (x:t) = insert x (isort t)
27
28  -----
29  --- Quick Sort
30
31  qsort [] = []
32  qsort [x] = [x]
33  qsort (x:t) = qsort menores ++ [x] ++ qsort mayores
34                  where
35                      menores = [j | j<-t, j < x]
36                      mayores = [j | j<-t, j >= x]
37  --- Version 2
38  qsort2 [] = []
39  qsort2 [x] = [x]
40  qsort2 (x:t) = let
41                  menores = [j | j<-t, j < x]
42                  mayores = [j | j<-t, j >= x]
43                  in
44                      qsort2 menores ++ [x] ++ qsort2 mayores
45
46  -----
47  --- Merge Sort
48
49  split [] = ([],[])
50  split [a] = ([a], [])
51  split (a:b:t) = let
52                      (m,n) = split t
53                      in
54                          (a:m, b:n)
55  -----
56  split2 [] = ([],[])
57  split2 [a] = ([a], [])
58  split2 (a:b:t) = (a:m, b:n)
59                      where
60                          (m,n) = split2 t
61  -----
62
63  merge [] [] = []
64  merge a [] = a
65  merge [] b = b
66  merge (x:xs) (y:ys) =
67                      if x < y then x:merge xs (y:ys)
68                      else y:merge (x:xs) ys
69  -----
70
71  msort [] = []
72  msort [x] = [x]
73  msort lista =

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74         let
75             (i,j) = split lista;
76             i' = msort i;
77             j' = msort j
78         in
79             merge i' j'
80 -----
81 --- Previamente ver el funcionamiento de
82 --- La funcion de orden superior "foldr"
83
84 --- Observar que fold necesita una funcion de dos variables
85 --- ej.: suma x y = x+y
86 ----foldr suma 0 [2,3,6,8,67] ..2+(3+(6+(8+(67+0))))
87
88 isort2 [] = []
89 isort2 [x] = [x]
90 isort2 (l) = foldr insert [] l
91
92 -----
93 msort2 [] = []
94 msort2 [x] = [x]
95 msort2 l = foldr merge [] [(x)|x<-l]
96
97

```