Csc 301 Lab 6
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Problems

Implement the bubble sort in ML using pattern matching and local function definitions and show that it works with a few simple examples.
A nice description of the bubble sort can be found on Wikipedia.

A helpful function for the bubble sort is:
fun issorted [] = true
  | issorted [x] = true
  | issorted (x::y::t) = x <= y andalso issorted(y::t);

```
1  fun issorted [] = true | issorted [x] = true | issorted (x::y::t) = x <= y
       andalso issorted(y::t);
2
3  fun swap [] = [] | swap [x] = [x] | swap (x::y::t) = if (x>y) then y::(swap (x
       ::t))
4
5  else x::(swap (y::t));
6
7  fun bubblesort [] = [] | bubblesort i = if (issorted i) then i else bubblesort
       (swap i);
8
9  val ex1 = bubblesort [4,5,1,3,2] = [1,2,3,4,5]
10 val ex2 = bubblesort [4,5,1] = [1,4,5]
```

```
- val sumto = fn : int -> int
val listfrom = fn : int -> int list
val strcopy = fn : string * int -> string
val power = fn : int * int -> int
val listcopy = fn : 'a * int -> 'a list
val sumEvens = fn : int -> int
val listOdds = fn : int -> int list
val nat = fn : int -> string
val listto = fn : int -> int list
-
```