

Forritunarmál Isort

brj46

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HÁSKÓLI ÍSLANDS

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;;; Notkun: y = sort(x);
;;; Fyrir: x er listi talna.
;;; Eftir: y er listi sem inniheldur somu gildi
;;;        og x en i vaxandi rod.
;;;
;;; Use:    y = sort(x);
;;; Pre:    x is a list of numbers.
;;; Post:    y is a list that contains the same
;;;          values as x in ascending order.
rec fun sort(x)
{
  ;;; Notkun: y = insert(x,v);
  ;;; Fyrir: x er listi talna, v er tala.
  ;;;        x er i vaxandi rod.
  ;;; Eftir: y er listi i vaxandi rod sem
  ;;;        inniheldur oll gildin i x auk
  ;;;        gildisins v.
  ;;;
  ;;; Use:    y = insert(x,v);
  ;;; Pre:    x is a list of numbers, v is a
  ;;;        number.
  ;;; Post:    y is a list in ascending order
  ;;;          that contains all the values in
  ;;;          x and also the value v.
  rec fun insert(x,v)
  {
    if (x == [] || v <= head(x)) {
      return v : x;
    } else {
      return head(x) : insert(tail(x), v);
    }
  };

  if (x == []) {
    return [];
  } else {
    return insert(sort(tail(x)), head(x));
  }
};

;;; Skrifid einnig profun fyrir sort fallid.
;;; Also write a test for the sort function.

;;; Profun a sort fallinu
val unsorted = [3, 1, 4, 1, 5, 9, 2, 6];
val sorted = sort(unsorted);
writeln("oradadur listi: ");
writeln(unsorted);
writeln("Radadur listi: ");
writeln(sorted);
oradadur listi:
[3,1,4,1,5,9,2,6]
Radadur listi:
[1,1,2,3,4,5,6,9]

```