Syntax:
local
  val a = …
  fun f z = …
  val k = …
in
  fun foo n m = f (a+k * (m-n))
end;

foo 3 4;

Lists:
Given list L,
  hd L returns first element in the list
  tl L return list containing everything but the first element

Merge Sort:
fun merge p ([], ys) = ys
| merge p (xs,[]) = xs
| merge p (x::xs,y::ys) = 
  if x::(merge p (xs,y::ys))
  then y::(merge p (x::xs,ys))
  else x::y::(merge p (xs,ys))

fun split [] = ([],[])
| split [x]=(x,[])
| split (x::y::L) = 
  let
    val (L1,L2) = split L
  in
    (x::L1,y::L2)
  end

fun sort p [] = []
| sort p [x] = [x]
| sort p L = 
  let
    val (L1,L2) = split L
  in
    merge p (sort p L1, sort p L2)
  end