



Einführung in die Informatik 2

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Nützliche Prozeduren

```
fun map f nil      = nil
  | map f (x::xr) = (f x) :: (map f xr)

map : ('a → 'b) → 'a list → 'b list

fun filter f nil    = nil
  | filter f (x::xr) = if f x then x :: filter f xr
  else filter f xr

filter : ('a → bool) → 'a list → 'a list

fun exists f nil    = false
  | exists f (x::xr) = f x orelse exists f xr

exists : ('a → bool) → 'a list → bool

fun all f nil      = true
  | all f (x::xr) = f x andalso all f xr

all : ('a → bool) → 'a list → bool

fun foldl f s nil    = s
  | foldl f s (x::xr) = foldl f (f(x,s)) xr

foldl : ('a * 'b → 'b) → 'b → 'a list → 'b

fun foldr f s nil    = s
  | foldr f s (x::xr) = f(x, foldr f s xr)

foldr : ('a * 'b → 'b) → 'b → 'a list → 'b

fun length nil      = 0
  | length (x::xr) = 1 + length xr

length : 'a list → int

explode : string → char list

implode : char list → string
```