Forritunarmál Einstaklingsverkefni 6

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1

```
(*
Notkun: lengd x
Fyrir: x er listi gilda af hvaða tagi sem er, x=[x1;...;xn]
Gildi: Fjöldi staka í listanum
*)
let lengd x =
    list_it (fun _ y -> 1+y) x 0
;;
```

```
  3 let
  2   result = lengd [1;2;2;3;4;65;1;2]
  1 in
 70   Printf.printf "Lengd: %d\n" result;;

:!opam exec -- dune exec test
Entering directory '/home/ragnar/school/forritun/v6/test'
Leaving directory '/home/ragnar/school/forritun/v6/test'
Lengd: 8
```

```
  3 let
  2   result = lengd []
  1 in
 69   Printf.printf "Lengd: %d\n" result;;

:!opam exec -- dune exec test
Entering directory '/home/ragnar/school/forritun/v6/test'
Leaving directory '/home/ragnar/school/forritun/v6/test'
Lengd: 0
```

2

```
(*
Notkun: powerList x
Fyrir: x er listi, x=[x1;x2;...;xn]
Gildi: Listi allra mögulegra lista sem eru undirlistar
       listans x. Fjöldi staka er þá 2^n
*)
let rec powerList x =
    match x with
      [] ->
        [[]]
    |
      x::xs ->
        let rest = powerList xs
        in
          rest @ List.map (fun l -> x::l) rest
;;
```

Og hér eru prent-hjálparföllin

```
(*
Notkun: print_list l
Fyrir: l er listi af heiltölum, l=[l1;l2;...;ln]
Gildi: Ekkert skilagildi en prentar "[l1; l2; ...; ln; ]"
*)
let print_list l =
  print_string "[";
  List.iter (fun x -> print_int x; print_string "; ") l;
  print_string "]"
;;

(*
Notkun: print_power_list pl
Fyrir: pl er listi af listum af heiltölum,
       [[pl11;pl12;...;pl1n];[pl21;...;pl2n];...;[plm1;...;plmn]]
Gildi: Ekkert skilagildi en prentar
       "[[pl11; ...; pl1n; ]; ...; [plm1; ...; plmn; ]; ]" og nýja línu
*)
let print_power_list pl =
  print_string "[";
  List.iter (fun l -> print_list l; print_string "; ") pl;
  print_string "]\n"
;;
```

```
 11 Printf.printf "PowerList: "
 10 let () =
  9   let print_list l =
  8     print_string "[";
  7     List.iter (fun x → print_int x; print_string "; ") l;
  6     print_string "]"
  5   in
  4     let print_power_list pl =
  3       print_string "[";
  2       List.iter (fun l → print_list l; print_string "; ") pl;
  1       print_string "]\n"
 78     in
  1       print_power_list (powerList [1;2])
  2 ;;
  3
```

```
:!opam exec -- dune exec test
Entering directory '/home/ragnar/school/forritun/v6/test'
Leaving directory '/home/ragnar/school/forritun/v6/test'
PowerList: [[]; [2; ]; [1; ]; [1; 2; ]; ]
```

```
 13 Printf.printf "PowerList: "
 12 let () =
 11   let print_list l =
 10     print_string "[";
  9     List.iter (fun x → print_int x; print_string "; ") l;
  8     print_string "]"
  7   in
  6     let print_power_list pl =
  5       print_string "[";
  4       List.iter (fun l → print_list l; print_string "; ") pl;
  3       print_string "]\n"
  2     in
  1       print_power_list (powerList [])
 80  ;;
  1
```

```
:!opam exec -- dune exec test
Entering directory '/home/ragnar/school/forritun/v6/test'
Leaving directory '/home/ragnar/school/forritun/v6/test'
PowerList: [[]; ]
```