Forritunarmál Einstaklingsverkefni

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Skrifum endurkvæmt Scheme fall.

Fyrir heiltölur x og y þannig að $x, y > 0$ gildir að (remainder x y) skilar afgangnum þegar x er deilt með y, og (quotient x y) skilar útkomunni úr heiltöludeilingu á x með y.

Hér er eftirfarandi Scheme Fall:

```
;;Notkun:   (RealPowerRecursive x y)
;;Fyrir:    x er rauntala(fleytitala) > 0,
;;          y er heiltala \geq 0.
;;Gildi:    skilar x í veldinu y þ.e.a.s. x^y
(define (RealPowRecursive x y)
    (if (= y 0)
        1.0
        (if (= (remainder y 2) 0)
            (* 1.0 (RealPowRecursive (* 1.0 x x) (quotient y 2)))
            (* 1.0 x (RealPowRecursive (* 1.0 x x) (quotient (- y 1) 2)))
        )
    )
)
```

Hér er keyrsla af fallinu:

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Eftirfarandi er Scheme fall sem var unnið eftir lýsingu:

```
;; Notkun: (transpose-list z)
;; Fyrir: z er listi jafnlangra lista,
;; z=((x11 x12 ... x1N)
;; (x21 x22 ... x2N)
;; (x31 x32 ... x3N)
;; .
;; .
;; .
;; (xM1 xM2 ... xMN)
;; )
;; Gildi: Listinn sem er byltingin
;; (transpose) af z, þ.e.
;; ((x11 x21 ... xM1)
;; (x12 x22 ... xM2)
;; (x13 x23 ... xM3)
;; .
;; .
;; .
;; (x1N x2N ... xMN))

(define (transpose-list z)

  (if (or (null? z) (null? (car z)))
      '()
      (cons (map car z)
            (transpose-list (map cdr z))
       )
   )
)
```

Hér eru keyrslur af fallinu:

```
30 ;; .
31 ;; .
32 ;; .
33 ;; (x1N x2N ... xMN))
34
35 (define (transpose-list z)
36   (if (or (null? z) (null? (car z)))
37       '()
38       (cons (map car z)
39             (transpose-list (map cdr z))
40        )
41    )
42 )
43
44
```

```
Welcome to DrRacket, version 8.14 [cs].
Language: R5RS; memory limit: 128 MB.
> (transpose-list '())
()
> (transpose-list '((1 2 3) (4 5 6) (7 8 9)))
((1 4 7) (2 5 8) (3 6 9))
>
```