Recitation 16b, April 18

Higher Order Procedure Fold-Right Problems

Write the following procedures in terms of fold-right.

1. map

   (define (map op seq)
      (fold-right
       (lambda (elt rtn)
        (cons (op elt) rtn))
       ()
       seq))

2. append

   (define (append seq1 seq2)
      (fold-right cons
       seq2 seq1))

3. length

   (define (length seq)
      (fold-right
       (lambda (elt rtn)
        (+ 1 rtn))
       0
       seq))

4. reverse

   (define (reverse seq)
      (fold-right (lambda (elt rtn)
                   (append rtn (list elt)))
                  ()
                  seq))