

LCS-LENGTH( $X, Y, m, n$ )

```
1  let  $b[1:m, 1:n]$  and  $c[0:m, 0:n]$  be new tables
2  for  $i = 1$  to  $m$ 
3       $c[i, 0] = 0$ 
4  for  $j = 0$  to  $n$ 
5       $c[0, j] = 0$ 
6  for  $i = 1$  to  $m$            // compute table entries in row-major order
7      for  $j = 1$  to  $n$ 
8          if  $x_i == y_j$ 
9               $c[i, j] = c[i - 1, j - 1] + 1$ 
10              $b[i, j] = \text{"↖"}$ 
11         elseif  $c[i - 1, j] \geq c[i, j - 1]$ 
12              $c[i, j] = c[i - 1, j]$ 
13              $b[i, j] = \text{"↑"}$ 
14         else  $c[i, j] = c[i, j - 1]$ 
15              $b[i, j] = \text{"←"}$ 
16  return  $c$  and  $b$ 
```

PRINT-LCS( $b, X, i, j$ )

```
1  if  $i == 0$  or  $j == 0$ 
2      return           // the LCS has length 0
3  if  $b[i, j] == \text{"↖"}$ 
4      PRINT-LCS( $b, X, i - 1, j - 1$ )
5      print  $x_i$        // same as  $y_j$ 
6  elseif  $b[i, j] == \text{"↑"}$ 
7      PRINT-LCS( $b, X, i - 1, j$ )
8  else PRINT-LCS( $b, X, i, j - 1$ )
```