```
if b < a then return NIL, exit
                                            (list empty)
00
01
      \ell := a, u := b (initializing lower and upper limits of current range)
      while \ell < u
02
          p := \lfloor (\ell + u)/2 \rfloor
03
                                 (pivot)
          if x \leq A[p] then u := p
04
05
               else \ell := p + 1
      \mathbf{end}(\mathbf{while})
06
      if x = A[\ell] then return \ell, exit (item found)
07
08
      return NIL, exit
                           (item not found)
```