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