```
 1:  function BINARY-SEARCH(A, n, v)
 2:          ▷ Initialize the search range
 3:          l ← 1
 4:          r ← n
 5:
 6:          while l ≤ r do
 7:                  mid ← floor ($\frac{l+r}{2}$)
 8:                  if A[mid] < v then
 9:                          l ← m + 1
10:                  else if A[mid] > v then
11:                          r ← m − 1
12:                  else
13:                          return m
14:          return null
```