```
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 ((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
```