Algorithm: BinarySearch

Input: A list A and an integer x

Output: True if x $\in$ A and false if not

```
1  Procedure BinarySearch(A, x)
2      low ← 0
3      high ← |A| − 1
4      while low ≤ high do
5          i ← ⌊(low+high)/2⌋
6          if A[i] = x then
7              return true
8          else if A[i] > x then
9              high ← i − 1
10         else
11             low ← i + 1
12     end
13     return false
```