

Algorithm 1: BinarySearch

Input: Input

Output: Output

```
1 Procedure BinarySearch( $A, x$ )
2    $low \leftarrow 0$ 
3    $high \leftarrow |A| - 1$ 
4   while  $low \leq high$  do
5      $i \leftarrow \lfloor \frac{low+high}{2} \rfloor$ 
6     if  $A[i] = x$  then
7       return true
8     else if  $A[i] > x$  then
9        $high \leftarrow i - 1$ 
10    else
11       $low \leftarrow i + 1$ 
12  end
13  return false
```