

## Linear search

**Description** In this assignment you are requested to linear search algorithm for finding an item in an array:

**Require:**  $a$ : array of elements, of type  $T$

**Require:**  $a_s$ : element to find, of type  $T$

```
1:  $N \leftarrow \text{length}(a)$ 
2: for  $i \leftarrow 1$  to  $N$  do
3:   if  $a_i = a_s$  then
4:     return  $i$ 
5:   end if
6: end for
7: return -1
```

**Input structure** The sequences and the element to search are integers (i.e. you can safely store them into `int` variables). Each case starts with a number which is the number of integers in the sequence. The following number is the element to search. Then the elements of the sequence follow, one per line.

**Output structure** Algorithm must return  $-1$  if  $a_s$  is not in the sequence, or its position (i.e. array index) if it is contained. You can assume that all the numbers in the sequence are distinct.