Big O  
  
<https://www.youtube.com/watch?v=ZO6GjoXEwYQ&list=PLTd6ceoshprfdzLWovxULl8Lt7RAFKTe5&index=6&t=0s>

* Big O describes how the time taken, or memory used by a program scales with the amount of data it has to work on.
* Big O describes the ‘complexity’ of a program.
* Common sense tells us that a program takes longer when there is more data to work on… But not necessary

Linear Search

* Sometimes referred to as a sequential search.
* An unordered list is searched for a particular value.
* Each value in the list is compared with the target value. (A brute force approach).
* Usually implemented with a single loop.
* If the target value is at the end of the list (worst case scenario), then increasing the size of the list will increase the size of the search time. The search time is directly proportional to the amount of data.

For I = 0 TO n-1

If ArrayToSearch(i) = Target THEN

bFound = True

EXIT FOR

END IF

NEXT i

Linear Search Complexity

* For n data items, the time taken is equal to some constant multiplied by n.
* The Big O time complexity is Linear. O(n)

Stack