Complexity	
The complexity of an algorithm is a function describing the efficiency of the algorithm in terms of the amount of data the algorithm must process.	
Time Complexity	**Space Complexity**
Time complexity is a function describing the amount of time an algorithm takes in terms of the amount of input to the algorithm.	Space complexity is a function describing the amount of memory (space) an algorithm takes in terms of the amount of input to the algorithm.
Developing a formula for predicting how fast an algorithm is, based on the size of the input.	Developing a formula for predicting how much memory an algorithm requires, based on the size of the input.
	Memory Leaks: The amount of memory required larger than the memory available on a given system.

Common Time Complexities	
$O(1)$	Constant Time
$O(log\ n)$	Log Time
$O(n)$	Linear Time
$O(n\ log\ n)$	Log linear Time
$O(n^2)$	Quadratic Time
$O(n^3)$	Cubic Time
$O(n^k)$	Polynomial Time
$O(2^n)$	Exponential Time

Time Complexity in Array			
Operations		**Average Case**	**Worst Case**
Traverse		$O(1)$	$O(1)$
First Insert		$O(n)$	
Last Insert	Unsorted Array	$O(1)$	
	Sorted Array	$O(n)$	
Before Insert		$O(n)$	$O(n)$
After Insert		$O(n)$	$O(n)$
First Delete		$O(n)$	$O(n)$
Last Delete	Unsorted Array	$O(1)$	
	Sorted Array	$O(n)$	
Particular Delete		$O(n)$	$O(n)$
Before Delete		$O(n)$	$O(n)$
After Delete		$O(n)$	$O(n)$