CSSSKL 143

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Complexity

- **Space Complexity**: Memory space an algorithm needs
- **Time Complexity:** Time required to run an algorithm

Time Complexity

- How to measure absolute time?
- Consider number of steps an algorithm takes to complete (start till end)
- It is machine independent

Big “O” Notation

- **Landau** notation
- Describes the limiting behavior of a function(**inputs/arguments —> infinity**)
- It classifies how algorithms respond to change in number of input size.

Different Big"O"

Big-O	Name
1	Constant
log(n)	Logarithmic
n	Linear
nlog(n)	Log Linear
n^2	Quadratic
n^3	Cubic
2^n	Exponential

Big “O” Array Operations

Operation	Big-O Efficiency
index []	O(1)
index assignment	O(1)
append	O(1)
pop()	O(1)
pop(i)	O(n)
insert(i,item)	O(n)
del operator	O(n)
iteration	O(n)
contains (in)	O(n)
get slice [x:y]	O(k)
del slice	O(n)
set slice	O(n+k)
reverse	O(n)

THE END

Don’t Forget to return your Laptops