* Asymptotic notations :-

→ For representing the rate of growth in terms of the highest degree terms, we use the following notations :-

- → Best case – Ω (Denotes how good an algo performs for specific test cases)
- → Avg case – Θ (Denotes how an algo performed on an avg for diff variety of inputs)
- → Worst case – O (Denotes how bad can a algo perform)

* Big O :-

→ We generally check how badly the algo can perform.

→ Big O gives tight upper-bound of the given function.

Eg :- $f(n) = 2n^2 + 3$

→ Big O of $f(n)$ means, there is some $g(n)$ such that,

$\forall\ n > n_0$ (threshold), $0 \leq f(n) \leq c \times g(n)$ where c = constant

→ This means that in the worst possible case, $f(n)$ will perform as bad as $g(n)$, not beyond that.

Complexity of $(2n^2+3) = O(n^2)$ which means $f(n)$ can perform as bad as $cg(n)$ which is n^2 & not beyond that. C is constant so we removed it.