

Notation	Meaning	Represents	Example
Big O (O)	Upper bound	Worst-case growth rate	$O(n^2)$ - Quadratic time
Omega ( $\Omega$ )	Lower bound	Best-case growth rate	$\Omega(n)$ - Linear time
Theta ( $\Theta$ )	Tight bound	Asymptotically tight growth rate	$\Theta(n^2)$ - Quadratic time

### Key points to note:

- Big O notation represents the maximum or worst-case growth rate of an algorithm.
- Omega notation represents the minimum or best-case growth rate of an algorithm.
- Theta notation represents the tight or asymptotically tight growth rate of an algorithm.
- Big O provides an upper bound, Omega provides a lower bound, and Theta provides both upper and lower bounds.
- Big O notation is commonly used to analyze and compare algorithms.
- Omega notation is less commonly used but can be helpful in understanding best-case scenarios.
- Theta notation is used when the upper and lower bounds of an algorithm match, providing a precise estimate of its complexity.