

Notation - Data

Asymptotic Notation?

Asymptotic Behavior?

Big O (Represented as O)

Big Omega (Represented as Ω)Big Theta (Represented as Θ)

Representation for the Asymptotic

Asymptotic Notation

Big O with an Scalar

Asymptotic

Image

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For example, let $f(n) = 2n + 5$.

In order to find the Big O of this function, we have to find another function $g(n)$ such that $f(n) \leq c \cdot g(n)$ for all $n \geq n'$ where c and n' are positive constants.

If we take $g(n) = 7n$ and put this in the above equation, we can see that $(2n+5) \leq (7n)$ for all $n > 0$ and $c = 7$. Hence, we can say that the function $f(n) = O(7n)$. But we write it as $f(n) = O(n)$ as we generally analyze an algorithm for a large input n and if n is large, n is approximately equal to $7n$.

The comparison of the function $f(n)$ and $g(n)$ can also be seen in the graph given below. The function $f(n) \leq g(n)$ for points where n



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