Asymptotic Notation

Asymptotic Notation simply illustrates the speed of a given code or program. But what is more important the speed is measured for a big amount of inputs, because, for instance, for 1 or 2 inputs two differently written codes could work equally fast, however, for 100 or 100000 inputs there could be a huge difference. There was an example of food products that were sorted in the first case alphabetically, and in the second case randomly. The example showed what is written above.

As for any CPU and simply for any computer the speed of completing a single function is different, the asymptotic notation is measured in steps and has several notations. The notations are: Big O, Theta, and Omega.

* Big O: In other words this is the upper bound of a function. As we bound the function from the upper side only. For example, if the function is n we can use (n^2) as the Big O or as the upper bound.
* Theta: In other words it’s the bound from both sides of the function. For instance, the function 3n is always within n and 5n.
* Omega: In other words this is the lower bound of a function. In this case, logarithm is used to measure, as for any n log(n) is lower in comparison to that n.