**The notation Big-Oh**

**Student:** Esteban Rodriguez Gonzalez

**Code:** 1804330

The notation Big-Oh is the way how we can evaluate the algorithm’s efficiency, in programming it´s used to evaluate the programming code´s efficiency, through the number of operations the code needs to do for analyzing the data that the user enter, and the data same code must prosses.

The way to apply the notation Big-Oh in programming, it´s making an analysis about how the code grows in function of number of data, versus how the code grows in function of the number of operations, and it´s analyze on the next way; if the number of data is greater than the number of operations that the code do, it means the code´s level of efficiency is good (constant complexity). If the number of operations and the number of data are proportional between them, the code has a half level of efficiency (line complexity). But, if the number of operations is greater than the number of data the code can analyze, it means the code has a worst level of efficiency (quadratic complexity).

If we use a graph where the vertical axis is the number of operations, and the horizontal axis is the number of data entered and processed, if we see it from a mathematical point of view, if we have a constant complexity code, it is efficient, if the code´s complexity is linear, it has a half efficiency, and if we have a code with quadratic complexity, it is insufficient.

Therefore, by this way of an evaluation, having the notation Big-Oh like an account, we can do a change on our programming code, to achieve that has a satisfactory level of efficiency. Of course, in the notation Big-Oh, we can evaluate the level of efficiency from a programing code, we can use it to evaluate the level of efficiency of a project or a company. For example, we want to evaluate the level of efficiency of a project, we put the number of operations to do on the horizontal axis, and the time to do each operation on the vertical axis.