## Big O Notation

Big O is defined as asymptotic upper limit of a function

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| **Growth Rate** | **Name** | **Code** | **Description** |
| 1 | Constant | a=b+1; | One line of code |
| n | Linear | For(i=0;i<n;i++){ a+=1;} | Loop |
| log(n) | Logarithmic | While(n>1) { n =n/2;} | Divide in half (Binary search) |
| n \* log(n) | Linearithmic | Merger sort, Quick Sort etc | Effective sorting algorithms |
| n^2 | Quadratic | For(i=0;i<n;i++){  For(c=0;c<n;c++){  a+=a+1;  }  } | Double loop |
| n^3 | Cubic |  | Triple loop |
| 2^n | Exponential | Password generation for all possible combination | Exhaustive search |
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