

ALGORITHM CLASSES

COMMONLY USED RATES OF GROWTH

<i>Function Name</i>	<i>Name used for algorithm analysis</i>	<i>Remarks</i>
c	<i>Constant Algorithm</i>	<i>These algorithms are independent of the input.</i>
$\log \log N$	<i>Log log function</i>	<i>Logarithmic algorithms are preferred, as their growth is always low.</i>
$\log N$	<i>logarithmic</i>	<i>These are very optimal algorithms.</i>
$\log^2 N$	<i>Log – squared</i>	<i>These are optimal algorithms.</i>
N	<i>Linear algorithm</i>	<i>Linear algorithms are preferred, e.g., summing of an array.</i>
$N \log N$	$N - \log - N$	<i>Many popular algorithms like merge sort have this type of growth.</i>
N^2	<i>Quadratic</i>	<i>Sorting algorithms are preferred, e.g., bubble sort, selection sort.</i>
N^3	<i>Cubic</i>	<i>Matrix multiplication is preferred.</i>
N^k	<i>Polynomial</i>	<i>Polynomial algorithms of lesser order k are preferred.</i>
a^n	<i>Exponential</i>	<i>Here a is constant, and intractable algorithms are exponential.</i>
$N!$	<i>Factorial</i>	<i>These algorithms are intractable.</i>