

CSC 311 DATA STRUCTURES Sp '13

February 5, 2014

Selected rates of growth of running time $T(n)$ and corresponding rates of growth of max input's size $Max(t)$ and its derivative $Max'(t)$

$T(n) \in \Theta(\log \log n) \dots Max(t) \in \Theta(a^{b^t}); Max'(t) \in \Theta(a^{b^t} b^t);$ for some $a, b > 1$

$T(n) \in \Theta(\log n) \dots Max(t) \in \Theta(a^t); Max'(t) \in \Theta(a^t);$ for some $a > 1$

$T(n) \in \Theta(n) \dots Max(t) \in \Theta(t); Max'(t) \in \Theta(1)$

$T(n) \in \Theta(n \log n) \dots Max(t) \in \Theta(\frac{t}{\log t}); Max'(t) \in \Theta(\frac{1}{\log t})$

$T(n) \in \Theta(n^2) \dots Max(t) \in \Theta(\sqrt{t}); Max'(t) \in \Theta(\frac{1}{\sqrt{t}})$

$T(n) \in \Theta(a^n) \dots Max(t) \in \Theta(\log t); Max'(t) \in \Theta(\frac{1}{t});$ for all $a > 1$