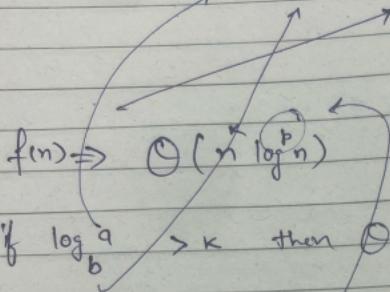


22/05
Master theorem: all divide & conquer problems algorithm divide further problems into sub-problems.

$$T(n) = 2T(n/2) + O(n)$$

$$T(n) = aT(n/b) + f(n)$$



Case 1: if $\log_b a > k$ then $\Theta(n^{\log_b a})$

Case 2: if $\log_b a = k$
∴ if $p > -1$ $\Theta(n^k \log^{p+1} n)$
∴ if $p = -1$ $\Theta(n^k \log \log n)$

∴ if $p < -1$ $\Theta(n^k)$

Case 3: if $\log_b a < k$
∴ if $p \geq 0$ $\Theta(n^k \log^p n)$
∴ if $p < 0$ $\Theta(n^k)$

↗
Big O