The approach was first presented by Jon Bentley, Dorothea Haken, and James B. Saxe in 1980

$$T(n) = a\,T\left(\frac{n}{b}\right) + \theta(n^k \log^p n)$$

$a \geq 1, b > 1$ and $k \geq 0$ and $'p'$ is any real number

Case 1: If $a > b^k$, $\quad T(n) = \theta(n^{\log_b a})$

Case 2: If $a = b^k$

(a) If $p > -1 \quad \theta(n^{\log_b a} \log^{p+1} n)$

(b) If $p = -1 \quad \theta(n^{\log_b a} \log_2 \log_2 n)$

(c) If $p < -1 \quad \theta(n^{\log_b a})$

Case 3: If $a < b^k$

(a)If $p \geq 0 \quad \theta(n^k \log^p n)$

(b) If $p < 0 \quad \mathrm{O}(n^k)$