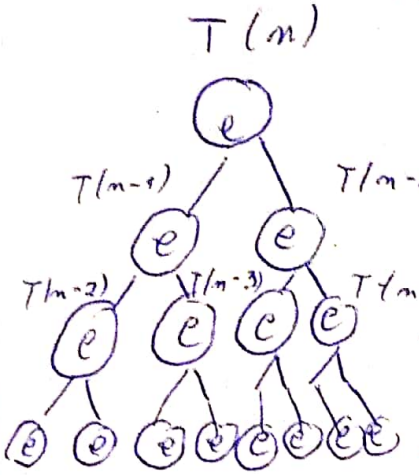
(5) Pentru $n=0$: $T(0) = c$

$n=1$: $T(1) = d$

$n>1$: $T(n) = T(n-2) + T(n-1) + \Theta(1)$

$T(n) = T(n-2) + T(n-1) + e$



$e = 2^0 \cdot e$

$2e = 2^1 \cdot e$

$4e = 2^2 \cdot e$

$8e = 2^3 \cdot e$

$= 2^{h-1} \cdot e$

$= e(2^0 + 2^1 + \dots + 2^{h-1}) = e \frac{2^{h+0} - 1}{2-1} =$

$= e(2^{h+0} - 1) = e \cdot (2^h - 1)$

Dar $h_1 = n$ $\quad h_2 = \frac{n}{2}$

$\Rightarrow T_1 = e(2^n - 1)$ și $T_2 = e(2^{\frac{n}{2}} - 1)$

$(2^{\frac{n}{2}} - 1)e < T(n) < e(2^n - 1) \Leftrightarrow$

$\Leftrightarrow e\sqrt{2} \cdot 2^n - e < T(n) < e \cdot 2^n - e$

$\Theta(2^n)$

$\Rightarrow T(n) \in \Theta(2^n)$