SILVESTRI LUCA 502524

Es 1

~~Gamma code~~

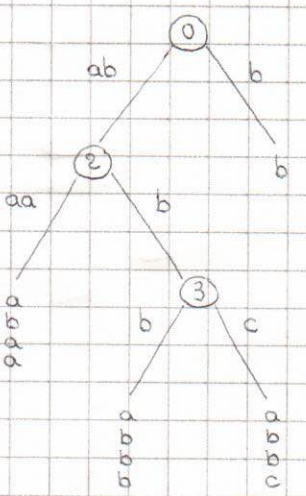
$\gamma(11) = 0001011$
$\gamma(14) = 0001110$
$\gamma(16) = 0000 10000$
$\gamma(20) = 0000 10100$
$\gamma(21) = 0000 10101$
$\gamma(22) = 0000 10110$

Applico preventivamente gap encoding sulla sequenza ottenendo (11, 3, 2, 4, 1, 1)

Gamma code: 0001011 | 011 | 010 | 00100 | 1 | 1

PForDelta: base = 1 => (10, 2, 1, 3, 0, 0), escape = 11 => 11 | 10 | 01 | 11 | 00 | 00 || 10, 3

Es 2



Heaplike notation: 1 2 3 4 5 6 7
1 1 1 1 1 0 0 0 0 1 1 0 0 0 0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

LOUDS: 10 110 110 0 0 110 0 0

Operazioni su Heap-like:

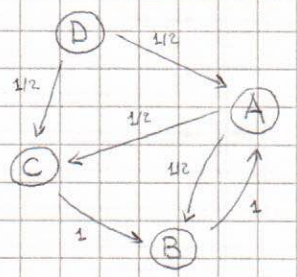
~~figlio_destro(x) = if B[2x] = 0 then Rank$_0$(2x) else None~~

figlio_sinistro(x): if B[2x] ≠ 0 then Rank$_1$(2x) else None
figlio_destro(x): if B[2x+1] ≠ 0 then Rank$_1$(2x+1) else None
parent(x): z = Select$_1$(x); p = ⌊z/2⌋; return Rank$_1$(p)

Operazioni su LOUDS

first_child(k): y = Select$_0$(k) + 1; if B[y] ≠ 0 then Rank$_1$(y) else None
first_sibling(k): y = Select$_1$(k) + 1; if B[y] ≠ 0 then k+1 else None

Es 3



$p_0 = (1/4, 1/4, 1/4, 1/4)$

$p_1(A) = 1/2 \cdot (1 \cdot 1/4 + 1/2 \cdot 1/4) + 1/2 \cdot 1/4 = 5/16$
$p_1(B) = 1/2 \cdot (1/2 \cdot 1/4 + 1 \cdot 1/4) + 1/2 \cdot 1/4 = 5/16$
$p_1(C) = 1/2 \cdot (1/2 \cdot 1/4 + 1/2 \cdot 1/4) + 1/2 \cdot 1/4 = 4/16$
$p_1(D) = 1/2 \cdot 0 + 1/2 \cdot 1/4 = 2/16$

authority of A = hubness of B + hubness of D
hubness of A = authority of B + authority of C

Sia r_j il PPR rispetto al nodo j, allora $r_j[i]$ è una stima della similarità tra i e j
Osserviamo che, partendo da una distribuzione centrata sul nodo j nel calcolare il PPR, alla K-esima iterazione solo i nodi a distanza $\leq K$ da j presenteranno $r_j[i] \neq 0$

$p_3(A) = 1/2 \cdot (1 \cdot 1 + 1/2 \cdot 0) + 0 = 1/2$
$p_3(B) = 1/2 \cdot (1/2 \cdot 0 + 1 \cdot 0) + 1/2 \cdot 1 = 1/2$
$p_3(C) = 0$
$p_3(D) = 0$