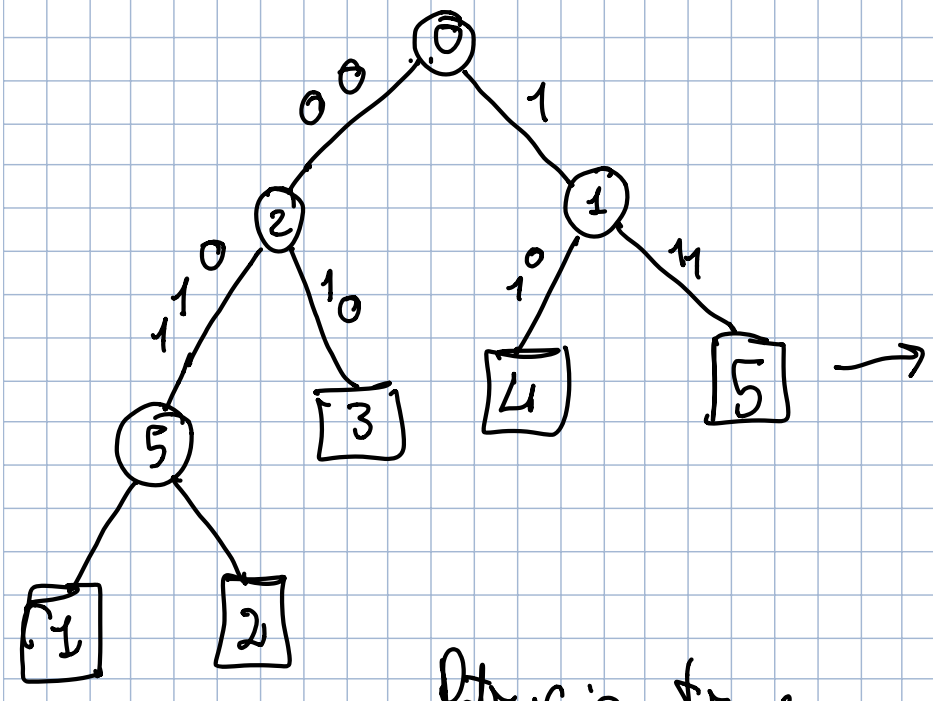
ESERCIZIO 1

$S = \{00001100, 00001110, 0010, 101, 111\}$

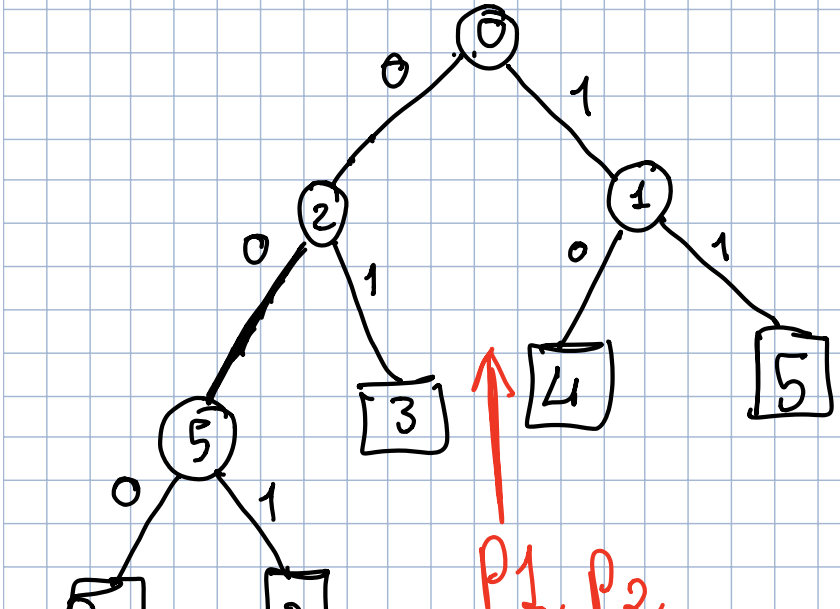
Creare il patricia true

→ Si crea prima il compacted true e poi si passa al patricia true:



Trasformo in Patricia true

Patricia true



[1] [2]

Cerco $P_1 = 0\,\boxed{1}\,0\,0\,0\,0$ → Vedo già fino a [1] e trovo il numero in 2° posizione.

$P_2 = 0\,1\,0\,1$

Salgo fino a che $|S[u]| < 2 < |S[v]|$

$1 > 0$ e quindi è tra i due numeri.

ESERCIZIO 2

$S = 1, 5, 10, 13, 15, 20$ $\quad \Delta S = 1, 4, 5, 3, 2, 5$

Codeword:

$\underbrace{1}_{1}\,\underbrace{00100}_{4}\,\underbrace{00101}_{5}\,\underbrace{011}_{3}\,\underbrace{010}_{2}\,\underbrace{00101}_{5}$

Ricodifica con $k = 3$

$1 \rightarrow q = 0 \quad r = 1 - 0 - 1 = 0 \rightarrow 1000$

$4 \rightarrow q = \frac{3}{8} \quad r = 4 - 0 - 1 = 3 \rightarrow 1011$

$5 \rightarrow q = \frac{4}{8} \quad r = 5 - 0 - 1 = 4 \rightarrow 1100$

$3 \rightarrow q = \frac{2}{8} \quad r = 3 - 1 = 2 \rightarrow 1010$

$2 \rightarrow q = \frac{1}{8} \quad r = 2 - 1 = 1 \rightarrow 1001$

$5 \rightarrow q = \frac{4}{8}$ $\quad r = 5 - 1 = 2 \rightarrow$ 1100

PforDelta base = 3 $\quad b = 3$

Elias Fano

1 5 10 13 15 20

$U = 32$ $\qquad l = \log_2 \frac{U}{n} = \log \frac{32}{6} = 2$

$n = 6$ $\qquad w = 5 - 2 = 3$

	16 8 4	2 1
1	000	01
5	001	01
10	010	10
13	011	01
15	011	11
20	101	00

low: 010110011100

000	001	010	011	100	101	110	111
1	1	1	2	0	1	0	0

10 10 10 110 0 10 0 0

ESERCIZIO

T = ANANAS$

LCP & Suffix array

ANANAS$ 7
NANAS$ 4
ANAS$ 2 →
NAS$ 5
AS$ 3
S$ 6
$ 1

$	1	7	0
ANANAS$	2	1	3
ANAS$	3	3	1
AS$	4	5	0
NANAS$	5	2	2
NAS$	6	4	0
S$	7	6	/

i=1 h=0
q=2 k=7

i=2 h=0
q=5 k=5

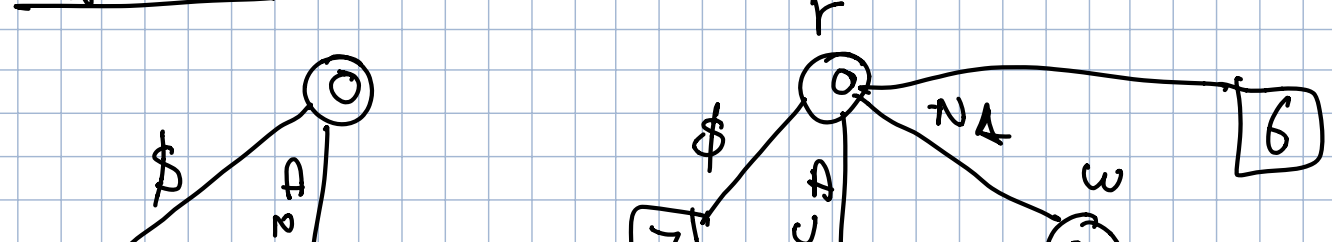
i=3 h=0
q=3 k=1

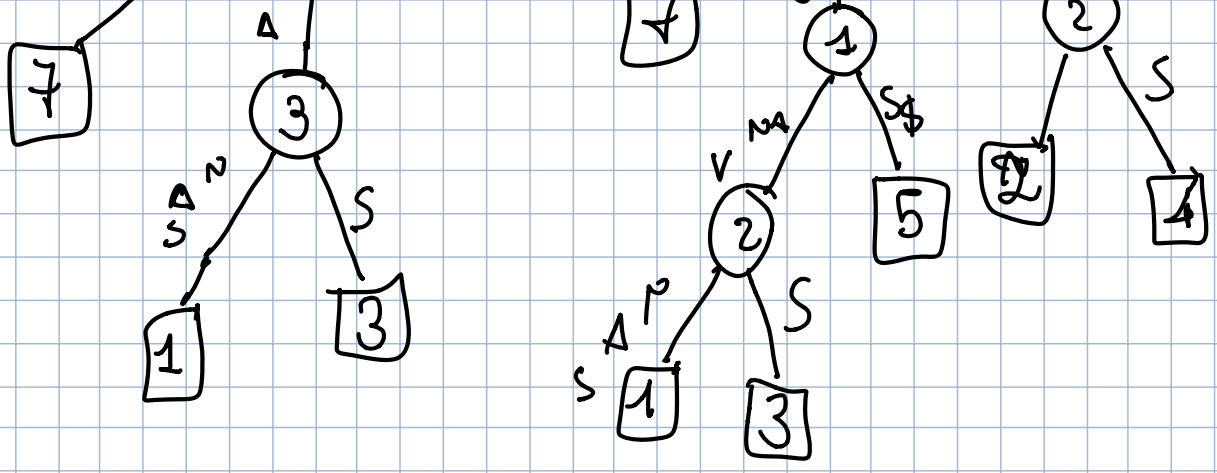
i=4 h=2
q=6 k=2

i=5 h=1
q=4 k=3

i=6 h=0
q=7 k=4

Suffix tree:





ET: | r 7 r) u v | 1 | v 3 v | 1 5 | 1 | r w 2 | w 4 w | r 6 r (

D: 0 1 0 | 1 2 | 3 | 2 3 2 | 1 2 | 1 0 1 | 2 | 1 2 | 1 0 1 0

LCA (1, 5) → bucket size = 3

H = 0 | 1 | 2 | 1 | 0 | 1 | 0