Ejercicio códigos de Huffman

Tinoco Videgaray Sergio

3BV1

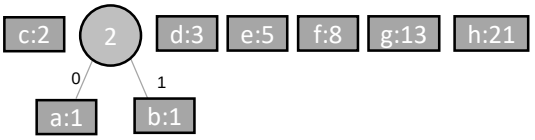
Análisis y diseño de algoritmos

15/10/21

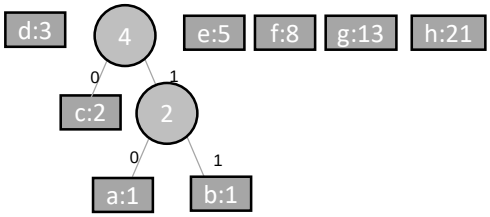
a)


a:1
b:1
c:2
d:3
e:5
f:8
g:13
h:21

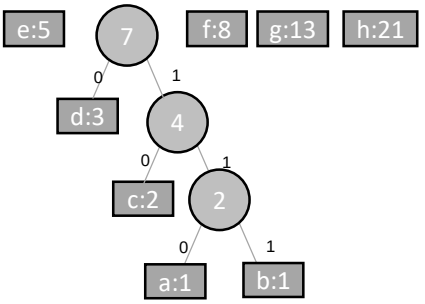
b)


c:2
2
d:3
e:5
f:8
g:13
h:21
0
1
a:1
b:1

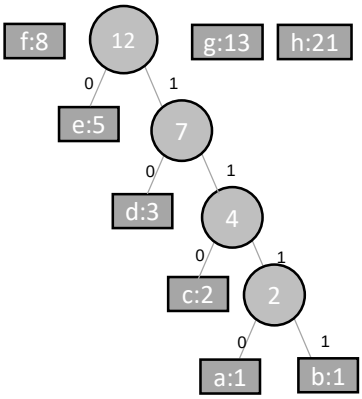
c)


d:3
4
e:5
f:8
g:13
h:21
0
1
c:2
2
0
1
a:1
b:1

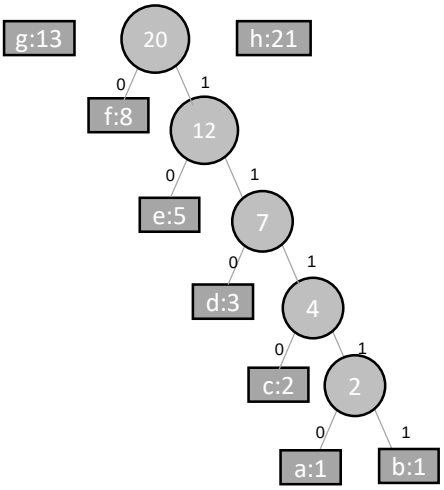
d)


e:5
7
f:8
g:13
h:21
0
1
d:3
4
0
1
c:2
2
0
1
a:1
b:1

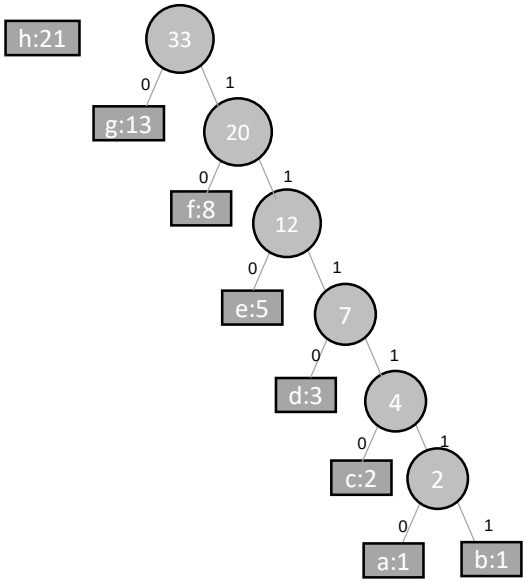
e)


f:8
12
g:13
h:21
0
1
e:5
7
0
1
d:3
4
0
1
c:2
2
0
1
a:1
b:1

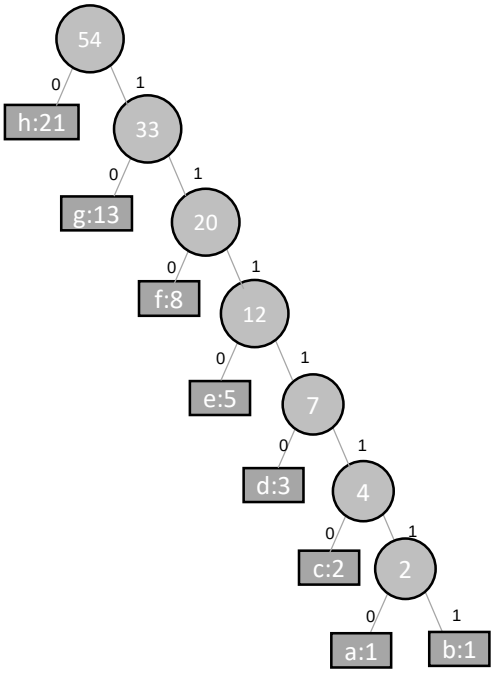
f)


g:13
20
h:21
0
1
f:8
12
0
1
e:5
7
0
1
d:3
4
0
1
c:2
2
0
1
a:1
b:1

g)


h:21
33
0
1
g:13
20
0
1
f:8
12
0
1
e:5
7
0
1
d:3
4
0
1
c:2
2
0
1
a:1
b:1

h)


54
0
1
h:21
33
0
1
g:13
20
0
1
f:8
12
0
1
e:5
7
0
1
d:3
4
0
1
c:2
2
0
1
a:1
b:1

A	B	C	D	E	F	G	h
1	1	2	3	5	8	13	21

A	B	C	D	E	F	G	H
1111110	1111111	111110	11110	1110	110	10	0

$$B(T) = \sum_{c \in C} c.freq \cdot d_T(c)$$

54 caracteres* 8 bits= 432 bits sin compresión.

Costo total del árbol optimo de Huffman
1*7+1*7+2*6+3*5+5*4+8*3+13*2+21*1=132 bits.
132 bits con código de Huffman.