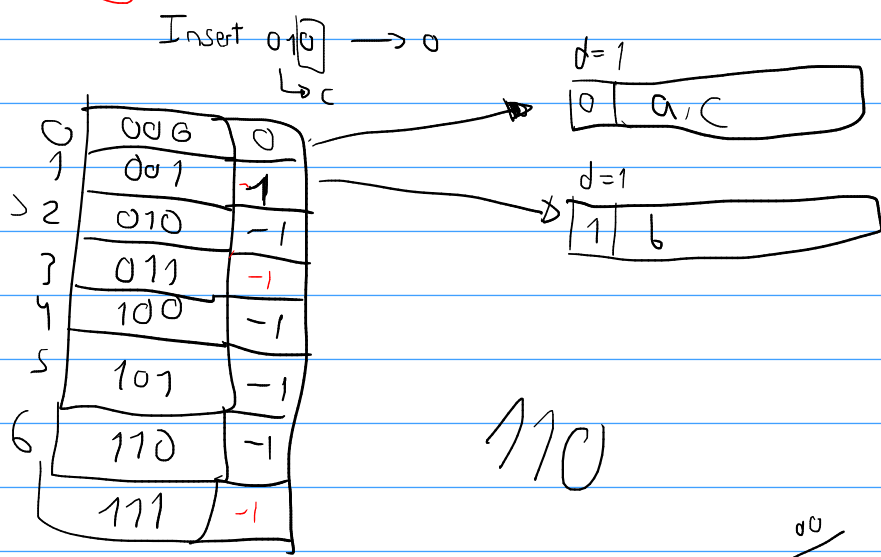
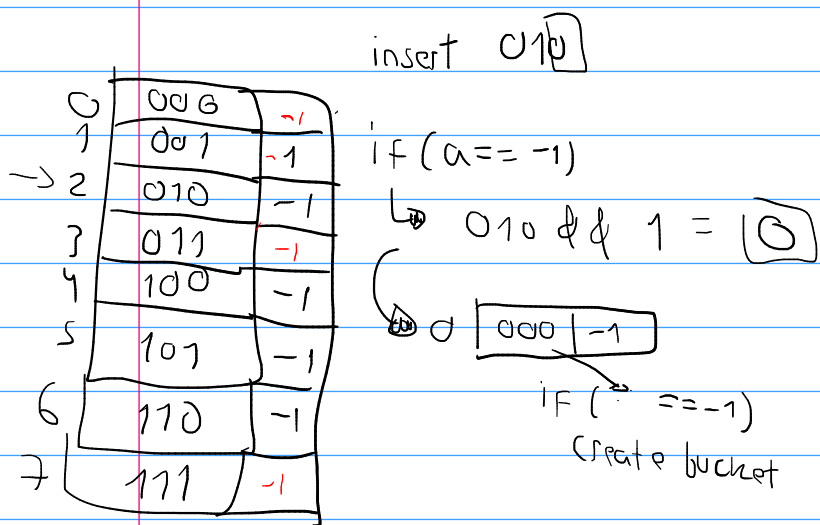
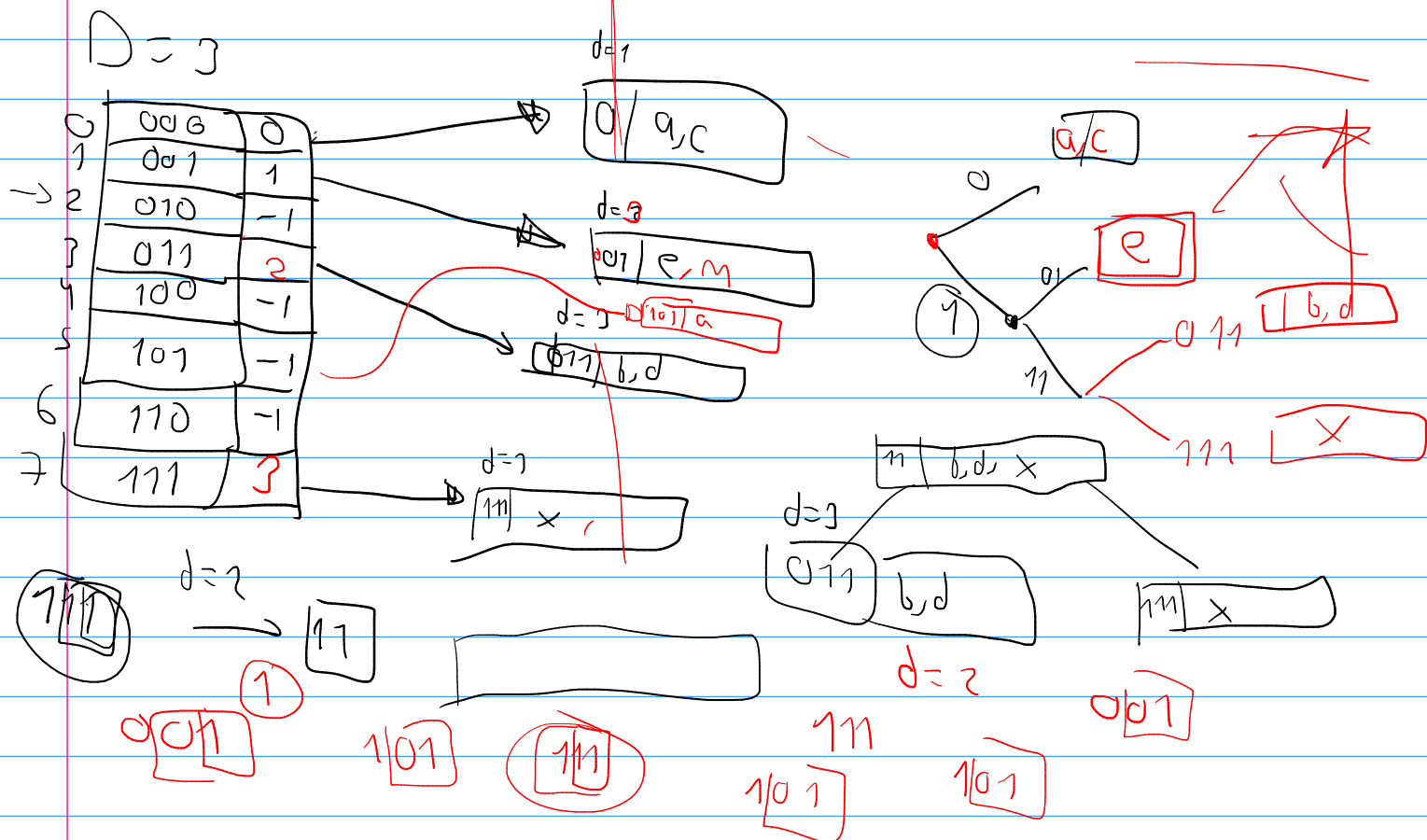


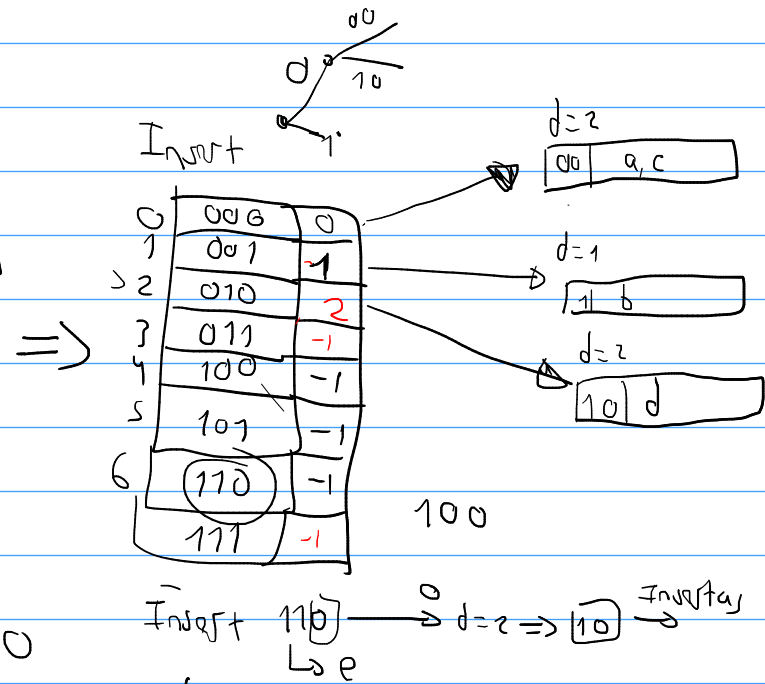
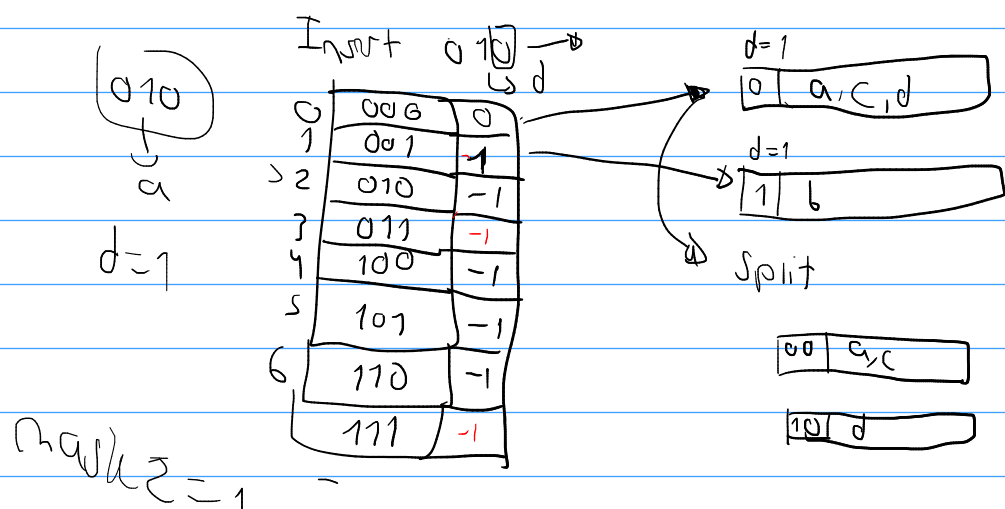
010 → a    000 → x  
 011 → b    111 → d    101 → e



40% 8

010

010



10

mask 2 = 11

mask 2 = 11

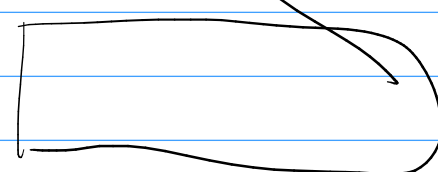
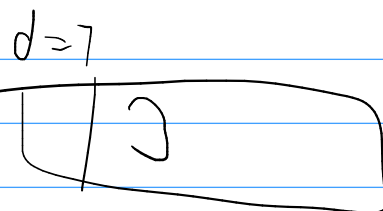
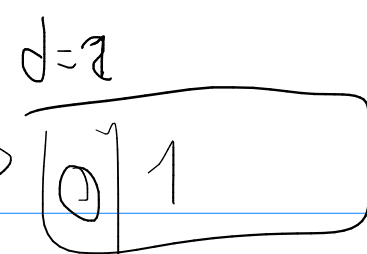
110 & 11 = 10

2

$D=4$

00	29
01	0
10	-7
11	-7

0



10

0      10

For ( Buckets )

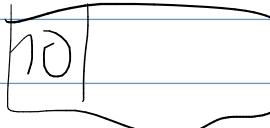
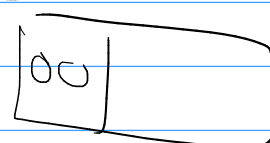
a      b      c  
00      10      10

Split ( bucket, <sup>mark</sup>~~index~~, t )

t=2  
11

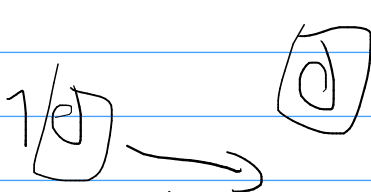
bucket

a, b, c



mark = 0

t=1



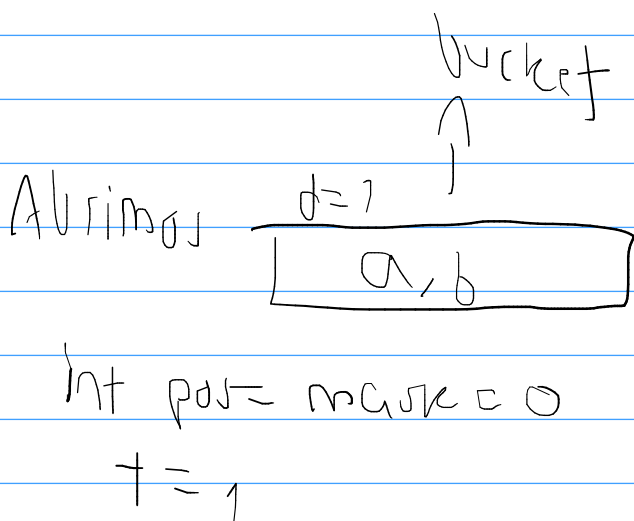
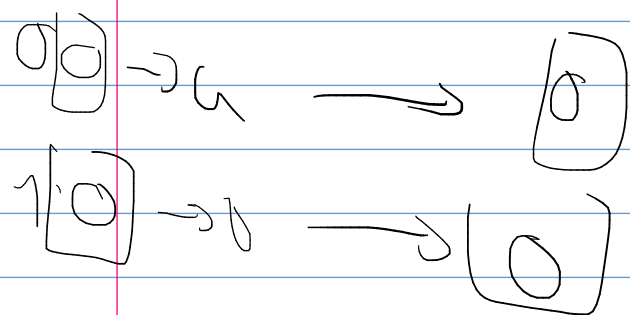
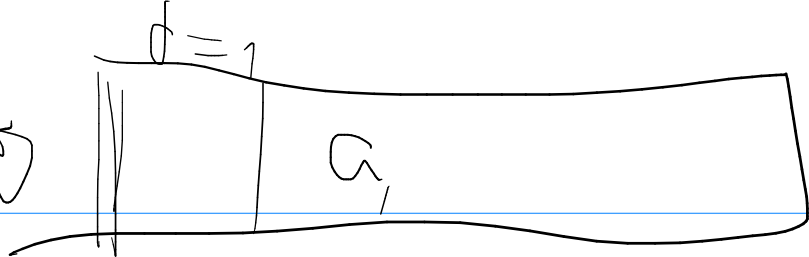
d=1  
t=1

00  
10

00

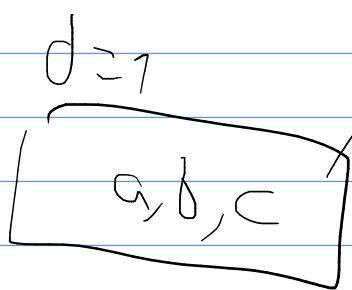
mark

00	0
01	-1
10	-1
11	-1



key = b  
Index = b  
mark = 0

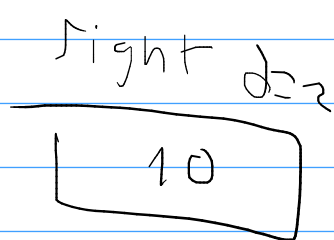
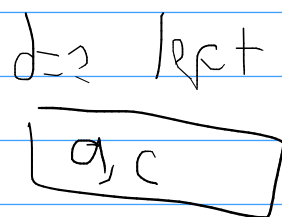
00	0
01	-1
10	-1
11	-1



mark = 0  
pos = 0  
t = 1  
mark2 = 1

len = 0  
new\_index = 0 | 10  
= 10

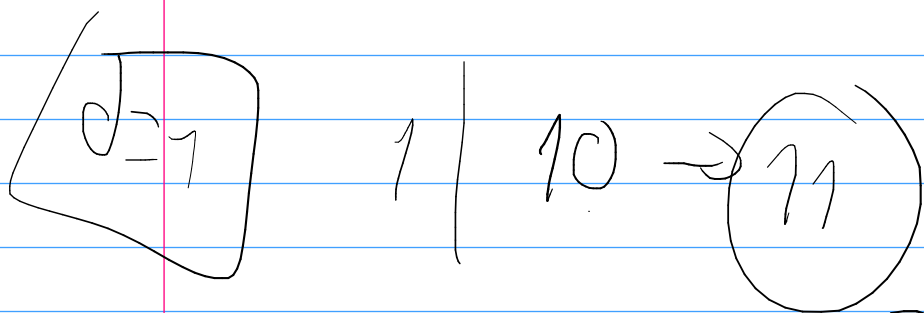
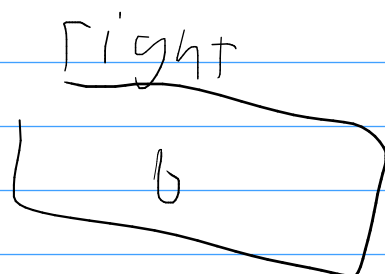
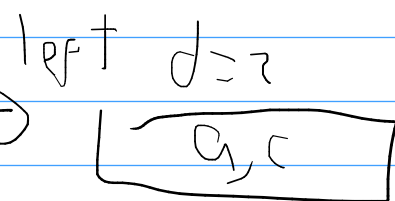
New\_mask = 1 | 10 = 11



value  
a → 00 → 00  
b → 10 → 10  
c → 00 → 00

⇒

00	0
01	-1
10	-1
11	-1



000

d = 2

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

$d=2$

$a, c$

Insert 100

$d^c$

$d=2$

$10$

index = 100

mask = 0

$t=1$

$d=2$

pos = 0

mask = 1

while ( )

1<sup>st</sup> Iteration

mask = 11

mask = 100 & 11

mask = 00

pos = 0

$d=2$

$t=2$

scale del bump

$a, c, d$

Split

new\_index = 00 | 100 = 100

new\_mask = 111

left  $d=3$

$a, c$

Right  $d=3$

$d$

left  $d=3$

$a, c$

$d=2$

$b$

$d=3$

$d$

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

$d$   
000  
 $a=110$   
 $b=010$   
 $c=010$

$a, b, c$

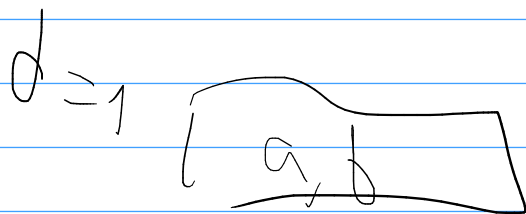
010 →

$d=2$

010  
010

010 / 100 = 110  
2

new\_index = 010 / 100 = 110



101

$d=2$

$a \rightarrow 1 \rightarrow 001$

$b \rightarrow 5 \rightarrow 101$

$c \rightarrow 7 \rightarrow 001$

00	-1
01	0
10	-1
11	-1
<del>100</del>	

101 | a, b, c

101

001

01

(011)  $\rightarrow$  )

split

bucket

index = 001

$t=2$

pos = 0

new\_index = 01 | 100

$\rightarrow$  (101)

new\_max =  $2^{t+1} - 1$

= 7 = (111)

left

right

10

11

a, c

b

00 | a, b, c

$a \rightarrow 000$

$b \rightarrow 100$

$c \rightarrow$

000 = 0

010 = 2

110 = 4

100  $\rightarrow$  1

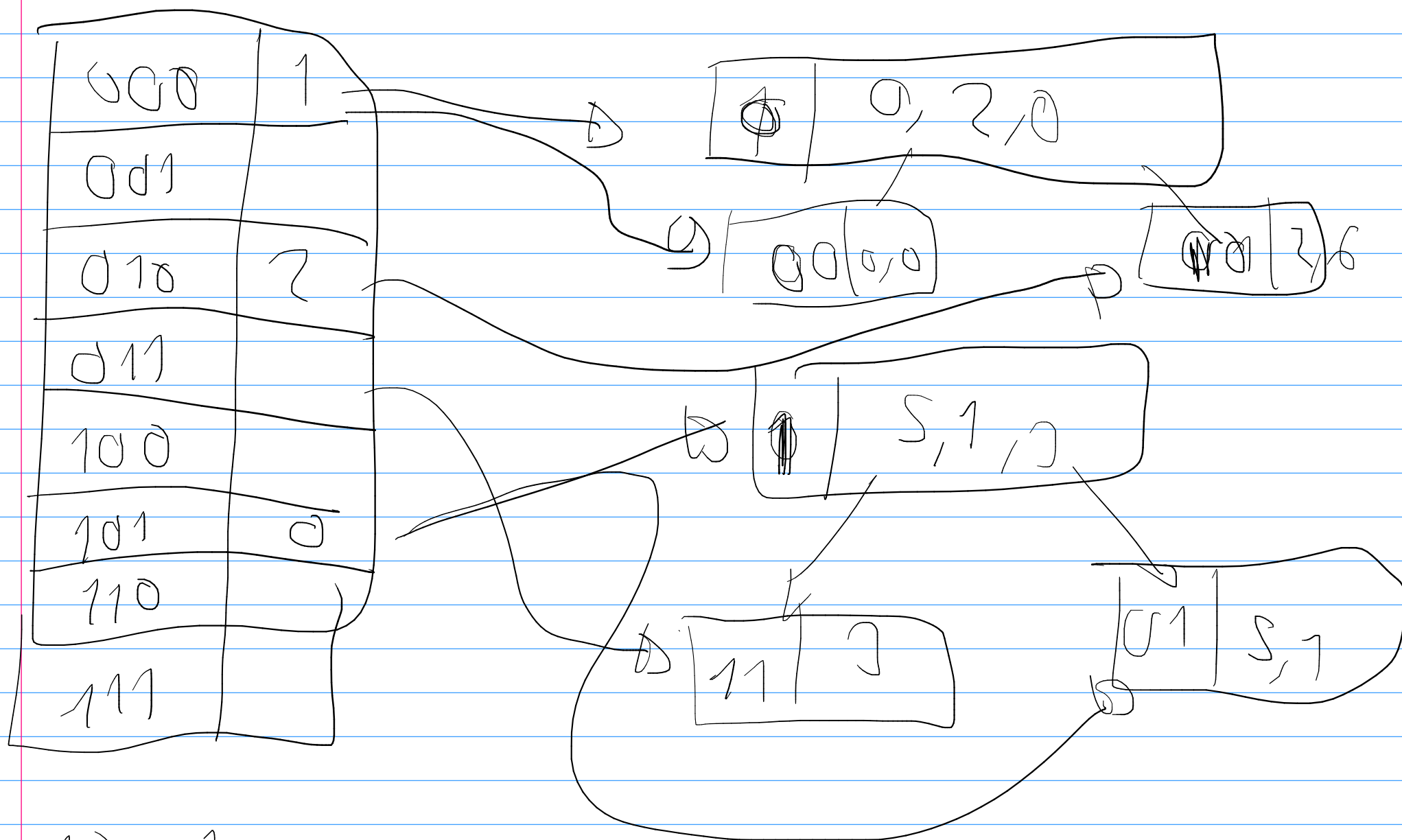
110  $\rightarrow$  6

100  $\rightarrow$

100  $\rightarrow$  4

000  $\rightarrow$  0

010  $\rightarrow$  2



010 - 2

101 1

001

110



000	0
001	
010	1
011	
100	
101	
110	
111	

$d=2$   
 $\boxed{100 | a, b, d}$

$d=2$   
 $\boxed{10 | c}$

$\Rightarrow$

9

000	0
001	
010	1
011	
100	2
101	
110	
111	

$d=2$   
 $\boxed{000 | a, b}$

$d=2$   
 $\boxed{10 | c}$

$d=3$   
 $\boxed{100 | d}$

eliminating  $q_i$

000	0
001	
010	1
011	
100	2
101	
110	
111	

$d=2$   
 $\boxed{000 | \text{X}}$

$d=2$   
 $\boxed{10 | c}$

$d=3$   
 $\boxed{100 | d}$