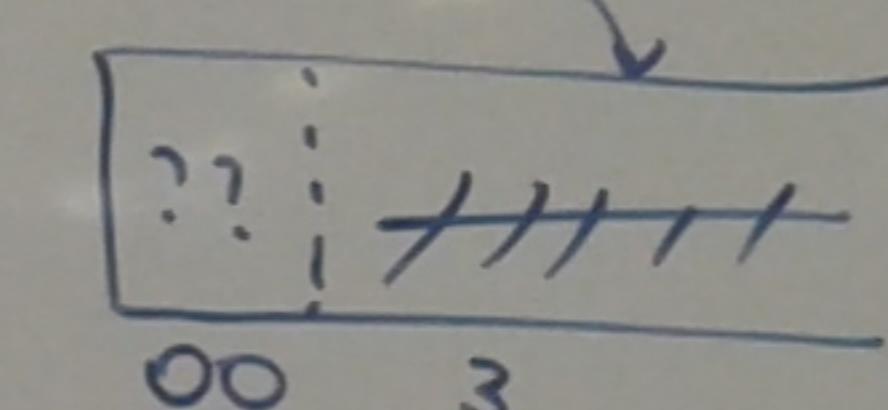
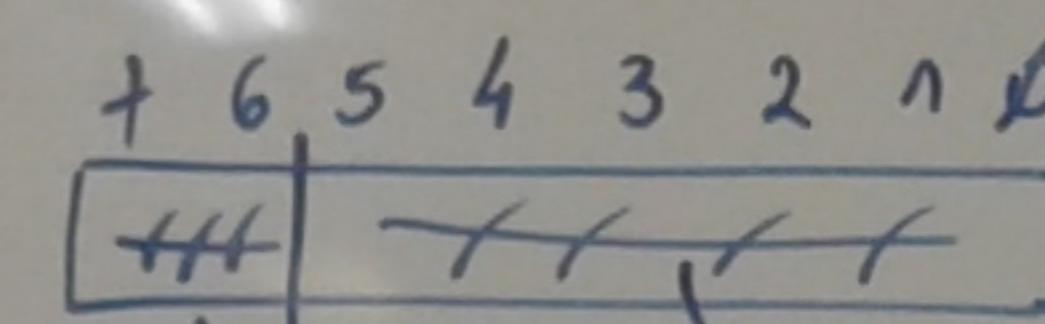
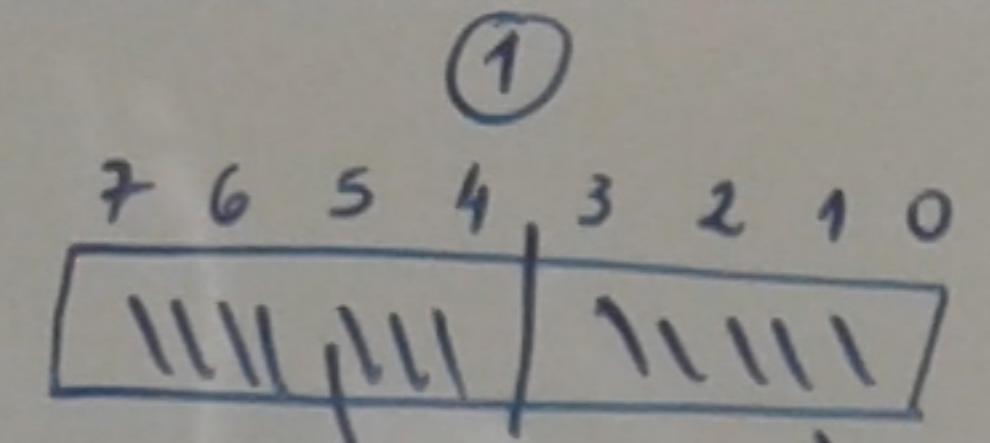
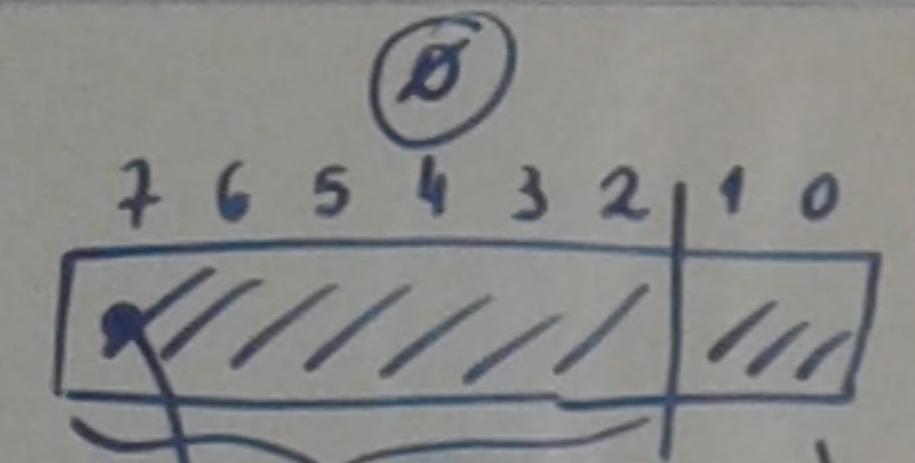
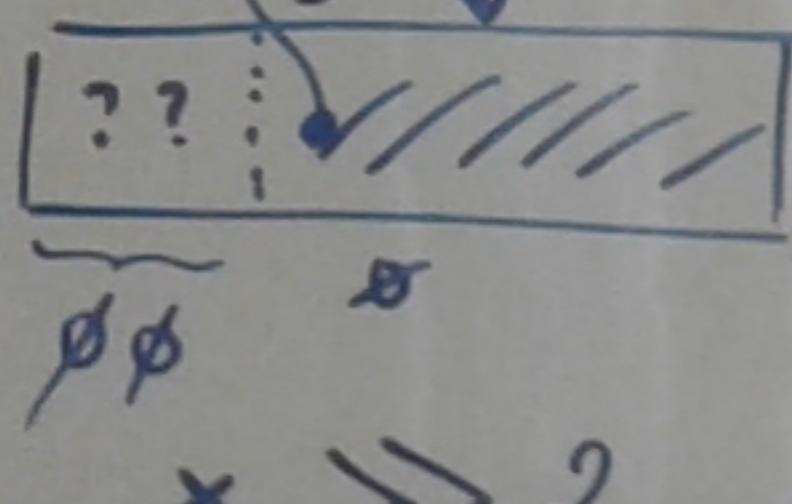


(3)  
Input

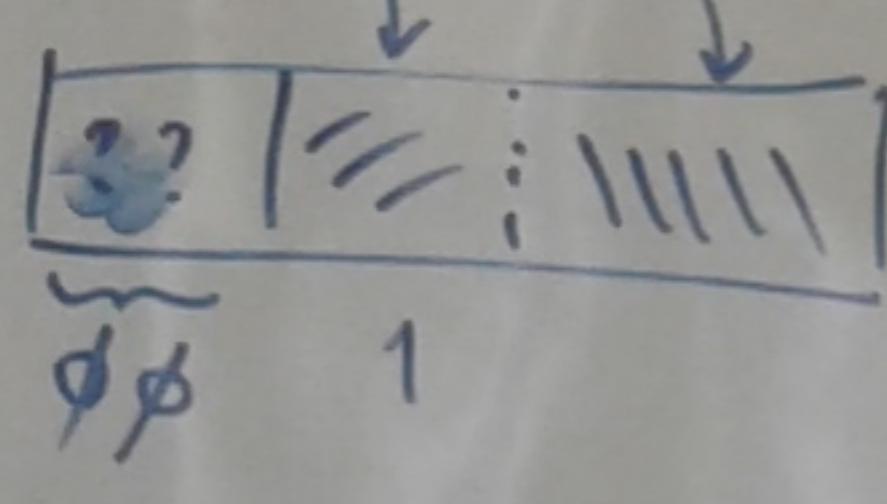


Index

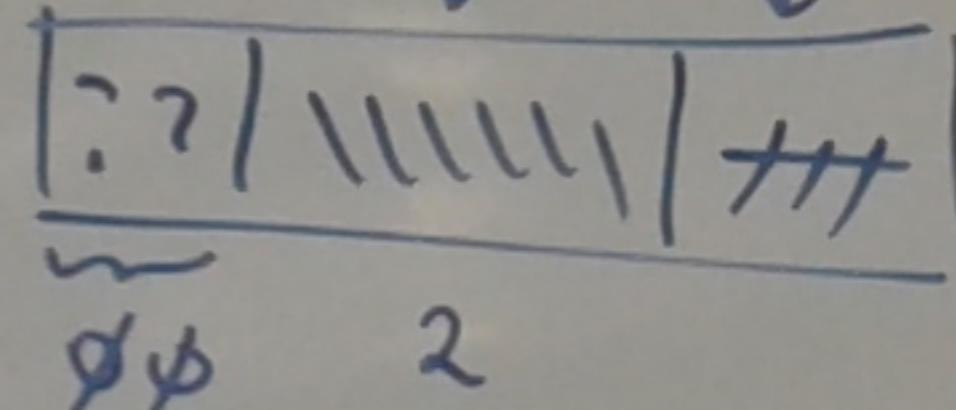


$$\begin{array}{c} \textcircled{0} \\ \textcircled{0} \end{array} \quad \begin{array}{c} \textcircled{5} \\ \textcircled{0} \end{array}$$
$$x \gg 2$$

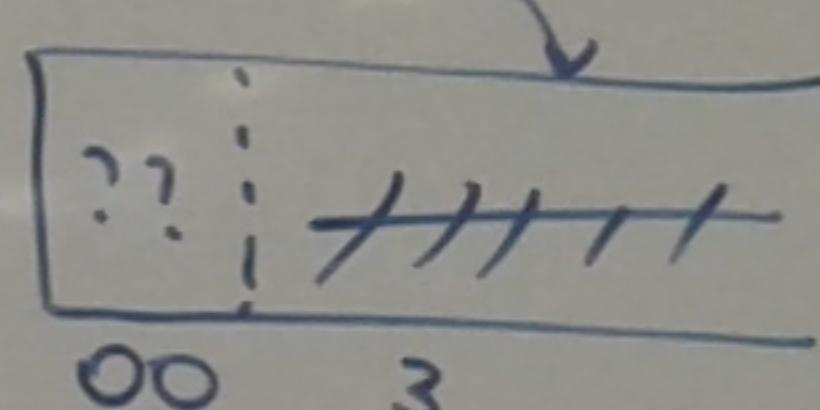
$$\begin{array}{c} \textcircled{0} \\ \textcircled{0} \end{array} \quad \begin{array}{c} \textcircled{1} \\ \textcircled{1} \end{array} \quad \begin{array}{c} \textcircled{1} \\ \textcircled{1} \end{array}$$
$$3 \neq$$



$$\begin{array}{c} \textcircled{0} \\ \textcircled{0} \end{array} \quad \begin{array}{c} \textcircled{4} \\ \textcircled{0} \end{array} \quad \begin{array}{c} \textcircled{1} \\ \textcircled{1} \end{array} \quad \begin{array}{c} \textcircled{1} \\ \textcircled{1} \end{array}$$



$$\begin{array}{c} \textcircled{0} \\ \textcircled{0} \end{array} \quad \begin{array}{c} \textcircled{3} \\ \textcircled{0} \end{array} \quad \begin{array}{c} \textcircled{1} \\ \textcircled{1} \end{array} \quad \begin{array}{c} \textcircled{1} \\ \textcircled{1} \end{array}$$



$$\begin{array}{c} \textcircled{0} \\ \textcircled{0} \end{array} \quad \begin{array}{c} \textcircled{2} \\ \textcircled{0} \end{array} \quad \begin{array}{c} \textcircled{1} \\ \textcircled{1} \end{array} \quad \begin{array}{c} \textcircled{1} \\ \textcircled{1} \end{array}$$

64 =  $2^6$

6 bits  
8 bits

```
#include <BASE64.h>
#include <string.h>
```

```
byte input[3];
```

```
byte index[4];
```

```
char output[4];
```

```
index[0] = (input[0] >> 2) & 0x3F;
```

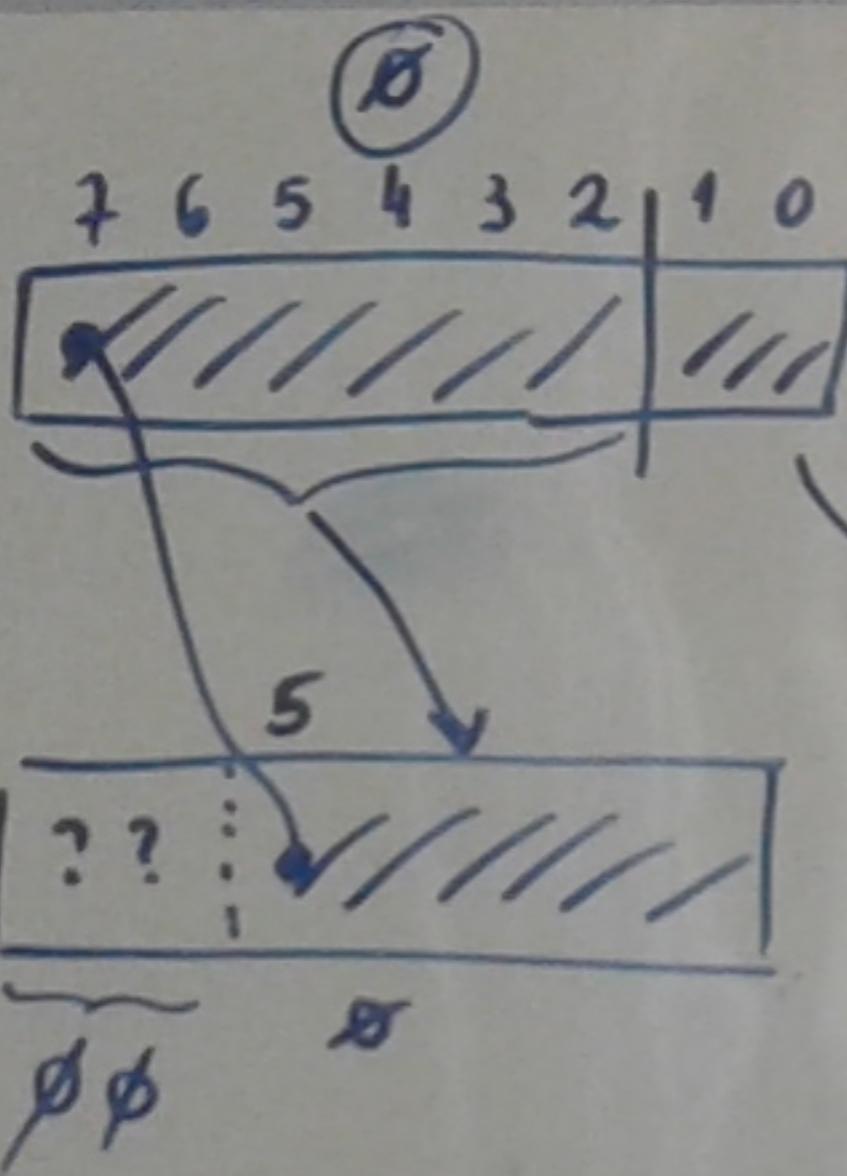
```
output[0] = BASE64[(index[0])];
```

Comprimento → cXVpdApleGlD/Cg==

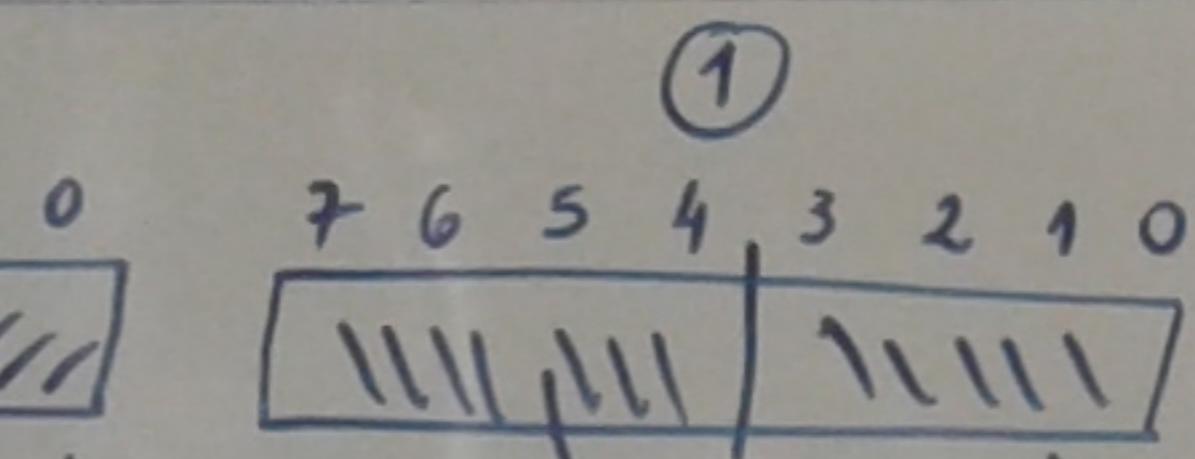
EEL27Φ

P2 - 07/05

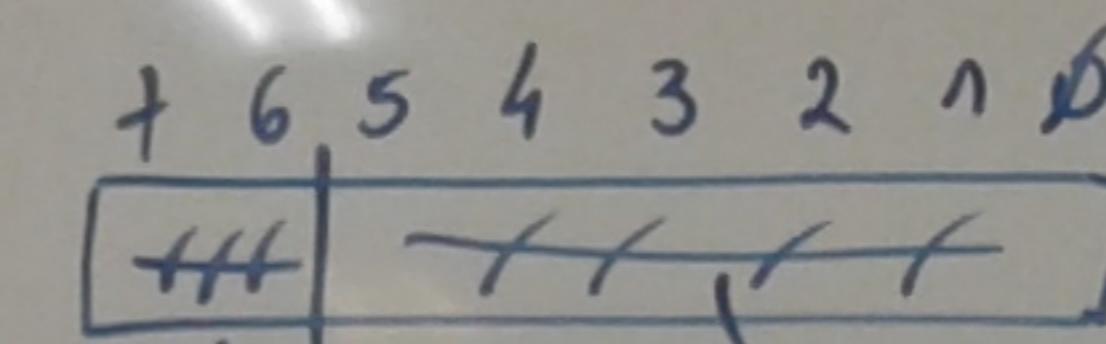
(3)  
Input



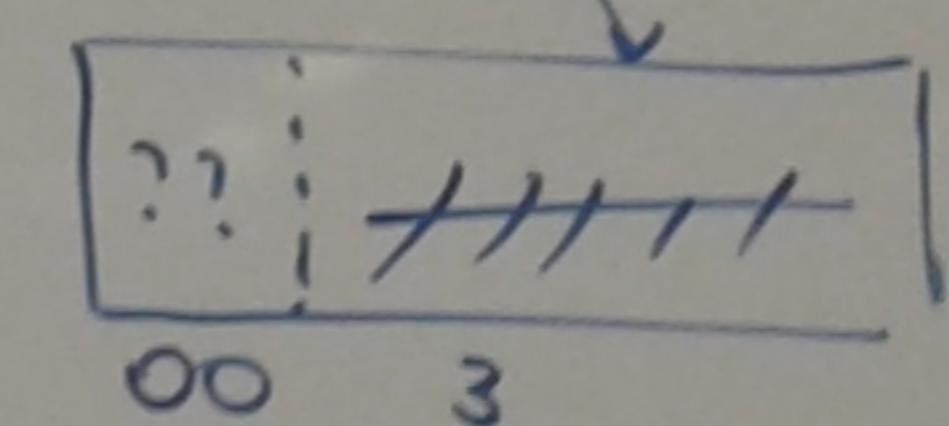
$$x_0 >> 2 \text{ AND } \underbrace{0011111}_{0x3F}$$



$$\text{OR} \left\{ \begin{array}{l} x_0 << 4 \text{ AND } \underbrace{00110000}_{0x30} \\ x_1 >> 4 \text{ AND } \underbrace{00001111}_{0xF} \end{array} \right.$$



$$\text{OR} \left\{ \begin{array}{l} x_1 << 2 \text{ AND } \underbrace{0011100}_{0x3C} \\ x_2 >> 6 \text{ AND } \underbrace{00000011}_{0x03} \end{array} \right.$$



$$x_2 \text{ AND } \underbrace{0011111}_{0x3F}$$

(6)

$$64 = 2^6$$

6 bits  
8 bits

type BASE64 "ABCD...za-y0-9+/"

byte input[3];

byte index[4];

char output[4];

index[0] = (input[0] >> 2) & 0x3F;

output[0] = BASE64[(index[0])];

A B C D E F G H I J K L M N O P Q

(16)

Comprimento → Q29tcHV0YWNhbW==

C 43 → 0100 0011 >> 2 → ??01 0000  
S 6F → 0110 1111  
m 6D → 0110 1101

0011 1111  
??01 0000  
0001 0000  
16

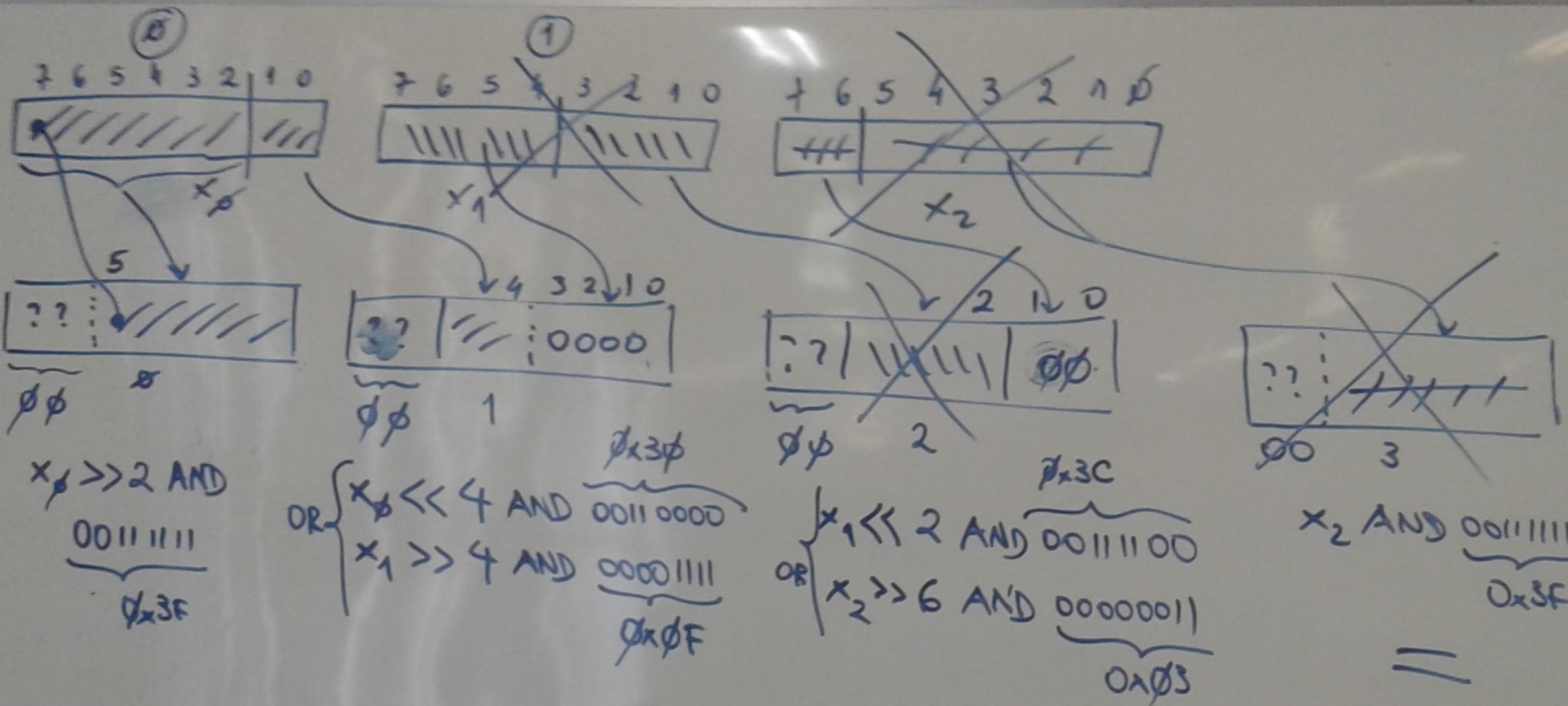
??11??11 → 0011 0000  
????0110 → 0000 0110

32  
16  
4  
2  
54

EEL270  
P2 - 07/05

(3)  
Input

Index



(6)  
 $64 = 2^6$

6 bits  
8 bits

#include <BASE64.h>  
"ABCD...za...y6..9+/"

byte input[3];

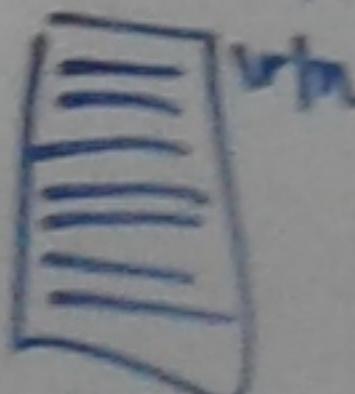
byte index[4];

char output[4];

index[0] = (input[0] >> 2) & 0x3F;

output[0] = BASE64[(index[0])];

→ ABCDEFGHIJKLMNOPQ



[comprimento] → Q29tcHV0YWNhbw==

EEL270  
P2 - 07/05

C 43 → 0100 0011 >> 2 → ??01 0000  
S 6F → 0110 1111  
M 6D → 0110 1101

padding

0011 1111  
??01 0000  
0001 0000

16

??11???? → 0011 0000  
????0110 → 0000 0110

32  
16  
4  
2  
54