

①

$$\begin{array}{r} 5 \rightarrow 0101 \\ 10 \rightarrow 1010 \\ \hline 1111 = 15 \end{array}$$

Key ← 5 ← ~~Publickey~~

ms ← friend

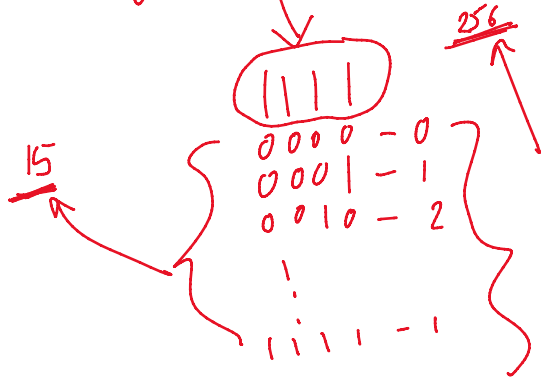
encoding

$$\begin{array}{r} 10 \\ \wedge \downarrow \\ 5 \end{array} \quad \begin{array}{c} 1 \\ \boxed{5} \end{array}$$

$$\frac{1111}{1111} = 15$$

Decoding

$$\begin{array}{r} 1111 \leftarrow 15 \\ \wedge 0101 \leftarrow 5 \\ \hline 1010 = \boxed{10} \end{array}$$



Bit

$$2^{32} \rightarrow \boxed{}$$

$$2^{64} \rightarrow \boxed{\dots}$$

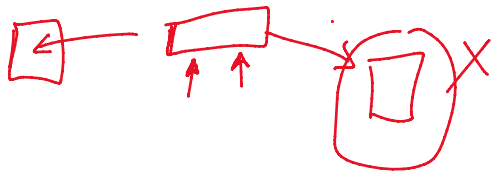
$$2^4 = 16$$

$$\boxed{256} = ?$$

DP

Bitcoin Mining





web 3.0
↓

XOR

1, 2, 3, 4, 5, 6, 7, 0, 9, 10

1-0001
2-0010

3-0011
4-0100

5-0101
6-0110

7-0111
8-1000

9-1001
10-1010

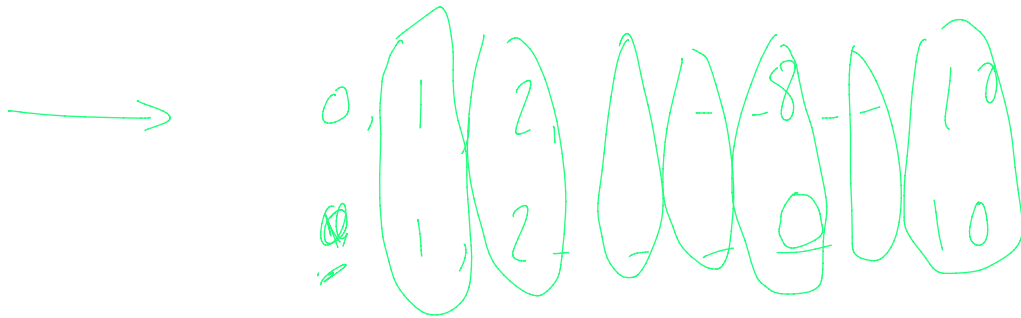
11-1011
12-1100
13-1101
14-1110
15-1111

16-0000
17-1000
18-1001
19-1010
20-1011

21-1100
22-1101
23-1110
24-1111

$$\begin{array}{r}
 10-1010 \\
 \hline
 0011 \\
 \hline
 \boxed{=3}
 \end{array}
 \quad
 \begin{array}{r}
 10-1010 \\
 \hline
 1011 \\
 \hline
 \boxed{11}
 \end{array}$$

$$\begin{array}{r}
 1011 \\
 0011 \\
 \hline
 1006 = 8 \text{ Ans}
 \end{array}$$



5

2	1	3	4	0
1	2	3	4	5
3	3	0	0	5
3	3	0	0	5

$$\begin{array}{r}
 01 \\
 10 \\
 \hline
 11
 \end{array}$$

1-n

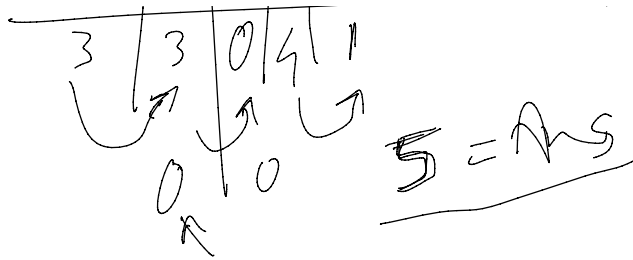
$$ans = 3 \wedge (arr[i-1] \wedge i)$$

↑

→ 5

2	1	3	0	4
1	2	3	4	5
3	3	0	4	1

$$\begin{array}{r}
 101 \\
 100 \\
 \hline
 001 \\
 100 \\
 \hline
 101
 \end{array}$$



101

$$5 \wedge 5 = 0$$

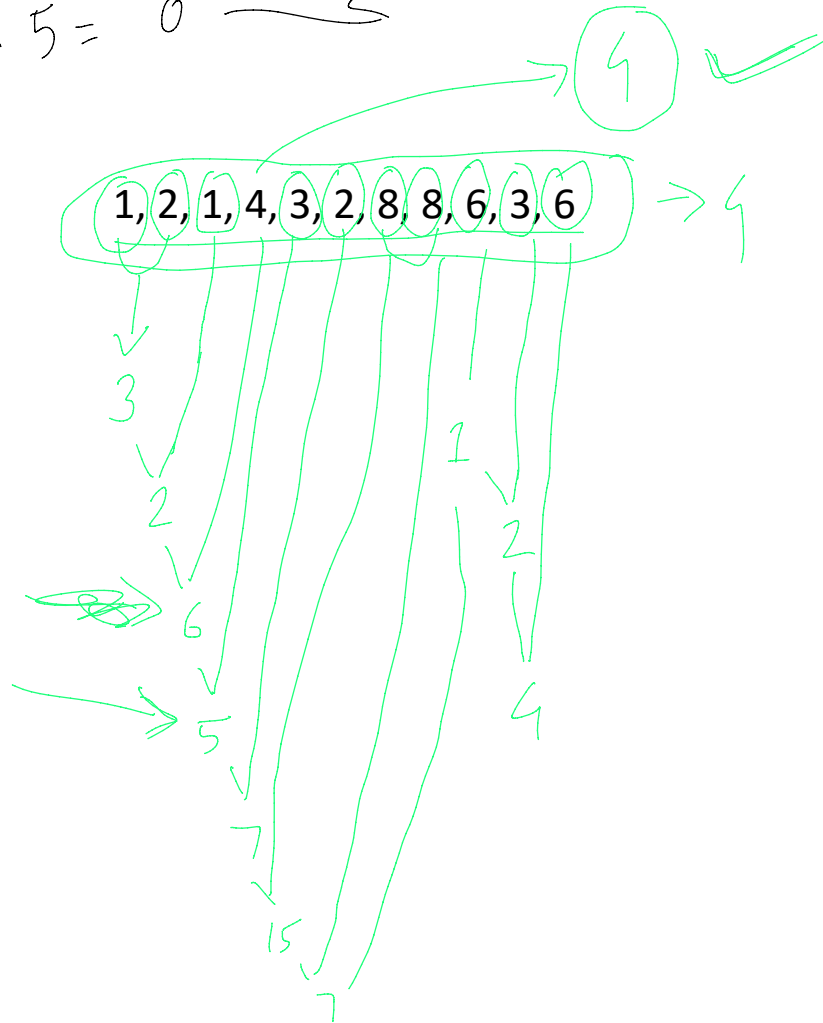
1	1	1
1	1	0
0	0	1

←

2 4 6 8

↪ ↪ ↪ ↪

0



100
010
110
011
101
010
111
1000
111
1060
0111
0110
001
011
010
110
100

$$\begin{array}{cc} a & b \\ 3 & 2 \\ \uparrow & \uparrow \end{array}$$

$$\frac{3 \wedge 2 = 1}{8}$$

$$\begin{array}{l} x = a \wedge b \\ y = a + b \end{array}$$

INPUT: $x = 1$, $y = 5$
 $8 \checkmark 0$
 $0 \checkmark 8$

$if (x \neq 0, y \neq 0)$

$$a + b = 0$$

$$a = x \wedge y \gg 1$$

$$8 \wedge 0 \gg 1$$

$$= 4$$

$$\underline{\underline{-4, 4}}$$

$$\begin{array}{r} \wedge 1000 \\ 0001 \\ \hline 0000 \\ 0001 \\ \wedge 0101 \\ \hline 0100 \gg 1 \end{array}$$

$$\begin{array}{r} 001 \\ 10 \\ \hline 100 = 4 \end{array}$$

$$100 \gg 1 = 010 = 2$$

$$y - 4$$

$$0$$

$$-4 \checkmark$$

$$5 - 2 = 3$$

$$x \wedge y$$

$$\downarrow$$

$$8 \rightarrow$$

$$100 \rightarrow \underline{\underline{-1}}$$

$$\wedge \begin{array}{ccc} 1 & 1 & 1 \\ 0 & 1 & 1 \end{array}$$

$$\begin{array}{lcl} 3 & \rightarrow & 0011 \uparrow \\ 2 & \rightarrow & 0010 \uparrow \\ 4 & \rightarrow & 0100 \uparrow \end{array}$$

$$\begin{array}{lcl} 3 & - & 0011 \\ 2 & - & 0010 \\ 4 & - & 0100 \end{array}$$

4 → 0100 ↑

6 → 0110 ↑

0000000111 ✓

4 - 0100
8 - 1000

1111
15