

computer?

calculator -> computer

computer -> 1 and 0

32 -> computer?

how?

convert 32 -> 10

convert decimal -> binary

- 0 -> 0
- 1 -> 1
- 2 -> 10
- 3 -> 11
- 4 -> 100
- 5 -> 101
- 6 -> 110
- 7 -> 111

B

99 -> 000099

give -> size of page

1 GB -> 1024 MByte
1 MB -> 1024 KByte
1 KB -> 1024 Byte
1 Byte -> 8 bits

8ms

4ms

1ms

6-77

100 101 102

101 102 103
+77

1 byte -> 1/0 7

32

7

byte ->

8 bits

6-77
6-77

7 6 5 4 3 2 1 0

Dec \rightarrow Bin

$$\begin{array}{r} 2 \overline{) 7} \\ 2 \overline{) 3} \quad -1 \uparrow \\ \underline{1} \rightarrow 1 \end{array}$$

Dec \rightarrow Bin

$$\begin{array}{r} 2 \overline{) 21} \\ 2 \overline{) 10} \quad -1 \uparrow \\ 2 \overline{) 5} \quad -0 \\ 2 \overline{) 2} \rightarrow 1 \\ \underline{1} \rightarrow 0 \end{array}$$

Dec \rightarrow Bin

$$\begin{array}{r} 16 \quad 8 \quad 4 \quad 2 \quad 1 \\ 1 \quad 0 \quad 1 \quad 0 \quad 1 \end{array}$$

(21)

Dec \rightarrow Bin

Dec \leftarrow

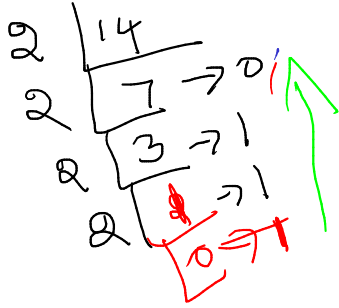
Dec \rightarrow Bin

$$\begin{array}{ccccc} 1 & 0 & 1 & 0 & 1 \\ 2^4 & 2^3 & 2^2 & 2^1 & 2^0 \end{array}$$

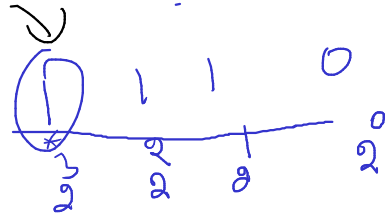
$$(2^4 * 1) + (2^3 * 0) + (2^2 * 1) + (2^1 * 0) + (2^0 * 1)$$

$$16 + 0 + 4 + 0 + 1 = 21$$

14

Dec \rightarrow Binary14 \rightarrow 1110

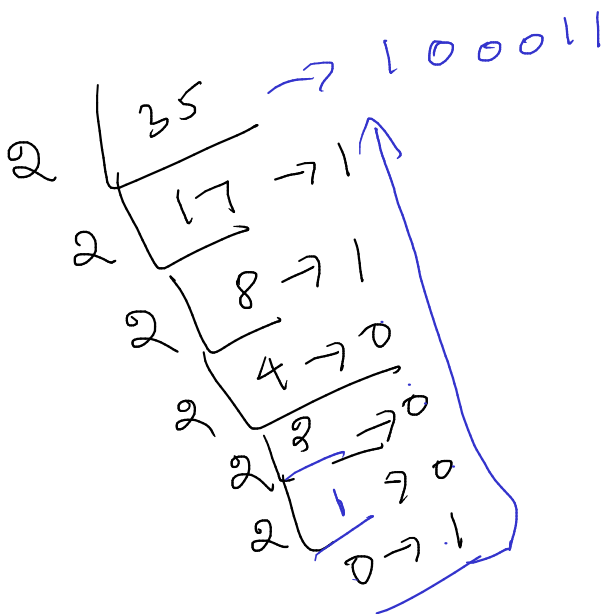
1110

Binary \rightarrow Dec

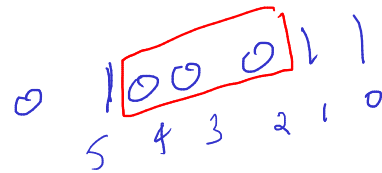
$$= (2^3 \times 1) + (2^2 \times 1) + (2^1 \times 1) + (2^0 \times 0)$$

$$= 14 (8 + 4 + 2 + 0)$$

$$= 14$$



35



$$(2^5 \times 1) + (2^4 \times 0) + (2^3 \times 0) + (2^2 \times 0) + (2^1 \times 1) + (2^0 \times 1)$$

$$32 + 2 + 1$$

35

7 6 5 4 3 2 1 0
 2⁷ 2⁶ 2⁵ 2⁴ 2³ 2² 2¹ 2⁰

$$\begin{aligned}
 & (2^5 * 1) + (2^4 * 0) + (2^3 * 0) + (2^2 * 0) + \\
 & \quad \quad \quad 32 + \quad \quad \quad 0 + \quad \quad \quad 0 + \quad \quad \quad 0 + \\
 & (2^1 * 1) + (2^0 * 1) \\
 & \quad \quad \quad 2 + 1 \\
 & = 35
 \end{aligned}$$

2 | 11
 2 | 5 → 1
 2 | 2 → 1
 2 | 1 → 0
 2 | 0 → 1

4 3 2 1 0
 11 → 1 0 1 1
 2⁴ 2³ 2² 2¹ 2⁰

2 → 6

$$\begin{aligned}
 & - (2^3 * 1) + (2^2 * 0) + (2^1 * 1) + (2^0 * 1) \\
 & = 8 + 0 + 2 + 1 = 11
 \end{aligned}$$

8 | 11
 8 | 1 → 3
 0 → 1

11 → 13

Binary → 61

octo → 0 1 2 3 4 5 6 7

8 10 2¹ 2⁰

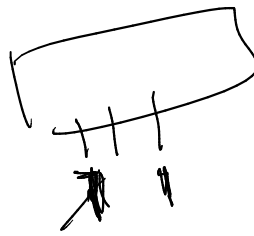
3 → 11
 14 2 1 1 0

41
 1 1 1 1 1

1 0
 (8 * 1) 8 * 0

67

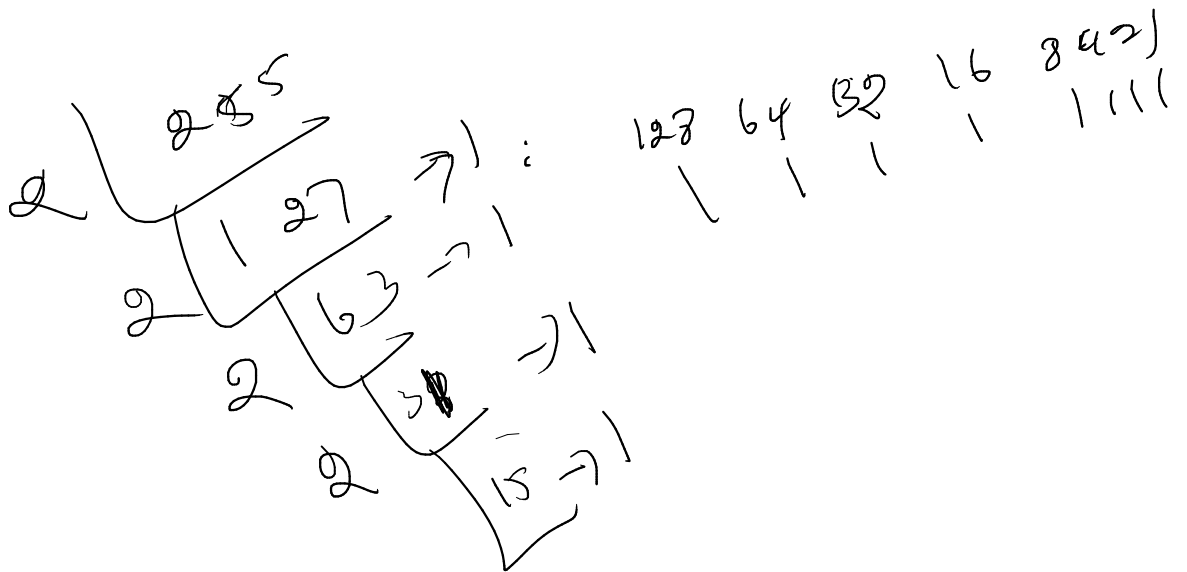
1010
ASCII



ASCII

67

can you give me 32?



A (char to binary)

1. get ascii value(decimal) of A
2. convert this decimal to binary
3. store

32 (Decimal to binary)

divide by 2

C A N
1000011 11000001 100110

