

00
01
10
11

0000
0001
0100
0101
1000
1001
1100
1101

n bits
represent
 2^n items

$$\begin{array}{r}
 10^2 \quad 10^1 \quad 10^0 \\
 536
 \end{array}$$

$$\begin{array}{r}
 5 \times 10^2 \\
 3 \times 10^1 \\
 + 6 \times 10^0 \\
 \hline
 536
 \end{array}$$

Base	Digits
10	0..9
2	0, 1
8	0..7
16	0..9, A..F

bin	dec
0	0
10	1
11	2
100	3
	4

Binary

$$\begin{array}{ccccccc} 2^6 & 2^5 & 2^4 & 2^3 & 2^2 & 2^1 & \checkmark 2^0 \\ 1 & 0 & 1 & 1 & 0 & 1 & 1 \end{array}$$

$$\begin{array}{r} 1 \times 2^0 = 1 \\ 1 \times 2^1 = 2 \\ 0 \times 2^2 = 0 \\ 1 \times 2^3 = 8 \\ 1 \times 2^4 = 16 \\ 0 \times 2^5 = 0 \\ 1 \times 2^6 = 64 \\ \hline 91 \end{array}$$

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

Dec 19

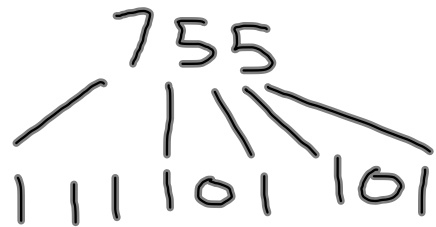


$2\frac{6}{2}$	
Q	R
$1\frac{3}{2}$	0
$\frac{6}{2}$	1
$\frac{3}{2}$	0
$\frac{1}{2}$	1
0	1

$\begin{matrix} 4 & 3 & 2 & 1 & 0 \\ 1 & 1 & 0 & 1 & 0 \end{matrix}$

Octal

0	000
1	001
2	010
3	011
4	100
5	101
6	110
7	111

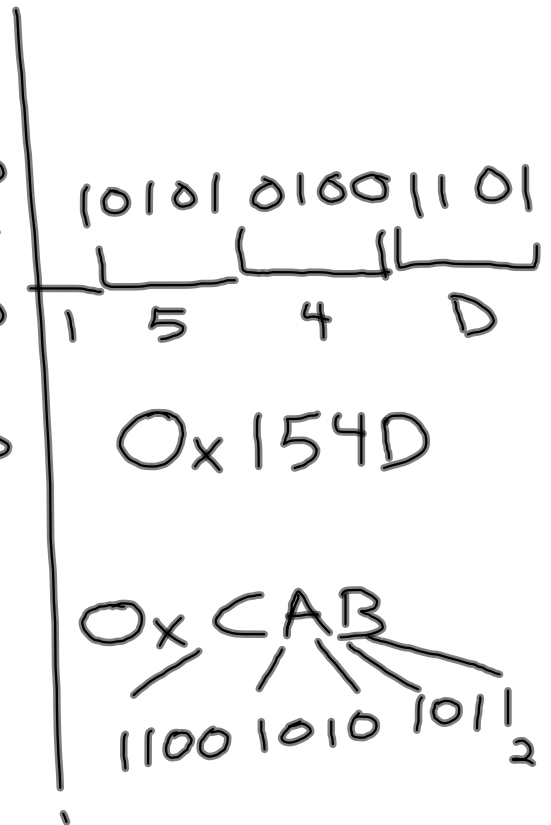


100 010 111
4 2 7

0427

Hexadecimal

0	0000	8	1000
1	0001	9	1001
2	0010	A	1010
3	0011	B	1011
4	0100	C	1100
5	0101	D	1101
6	0110	E	1110
7	0111	F	1111



256

007

overflow

$$\begin{array}{r} 200 \\ + 964 \\ \hline \cancel{X} 164 \end{array}$$

$$\begin{array}{r} 200 \\ - 300 \\ \hline \end{array}$$

underflow

$\frac{2}{3}$

chmod perm file

↳ u + w

a + x

a - w

public dir

rwxr -xr -x

$\begin{array}{|c|c|c|c|c|c|c|} \hline 1 & 1 & 1 & 0 & 1 & 1 & 0 & 1 \\ \hline \end{array}$
7 5 5

chmod 755 dir

public file

$\begin{array}{|c|c|c|c|c|c|c|} \hline r & w & - & r & - & r & - \\ \hline \end{array}$
6 4 4

bool - 0 false
else true

~~y = x = 3~~