

# Binary Number (1A)

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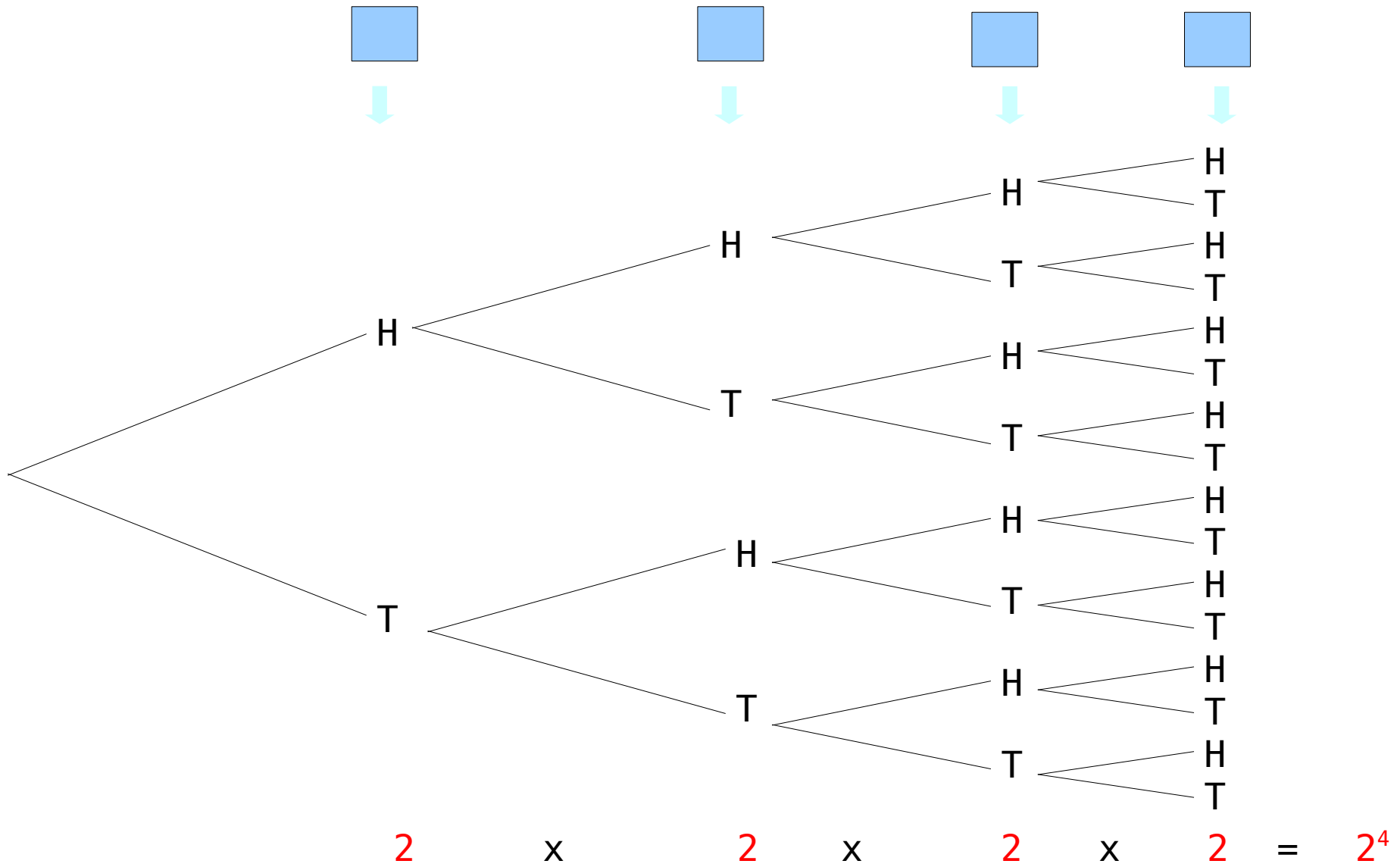
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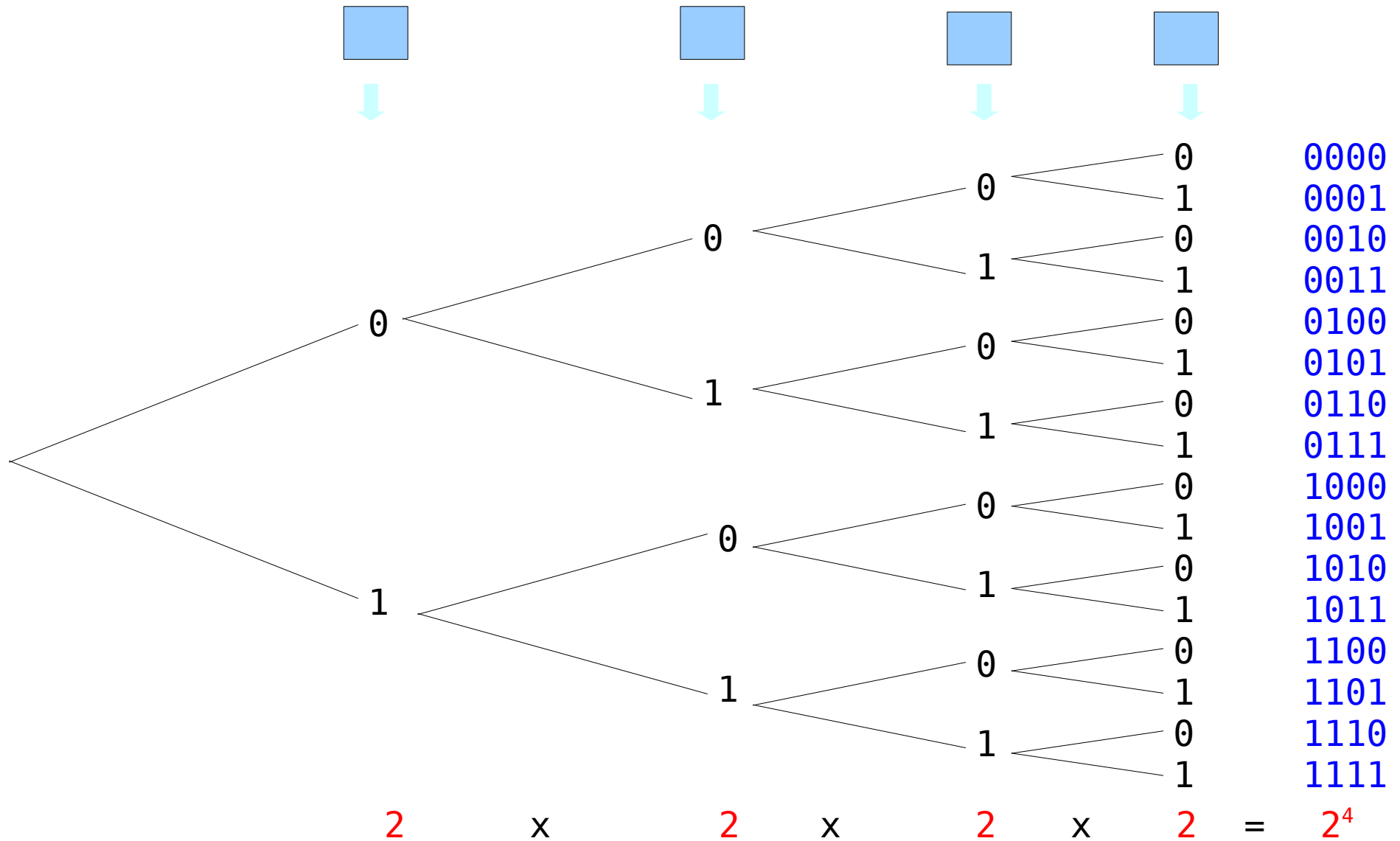
Please send corrections (or suggestions) to [youngwlim@hotmail.com](mailto:youngwlim@hotmail.com).

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# Coin Toss



# Coin Toss and Binary Number



**Data Type**

4

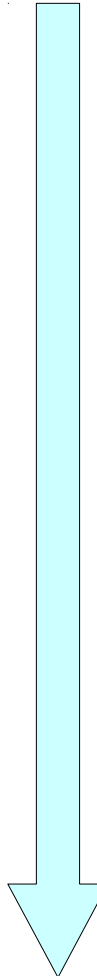
Young Won Lim  
7/7/10

# Hexadecimal and Octal Numbers

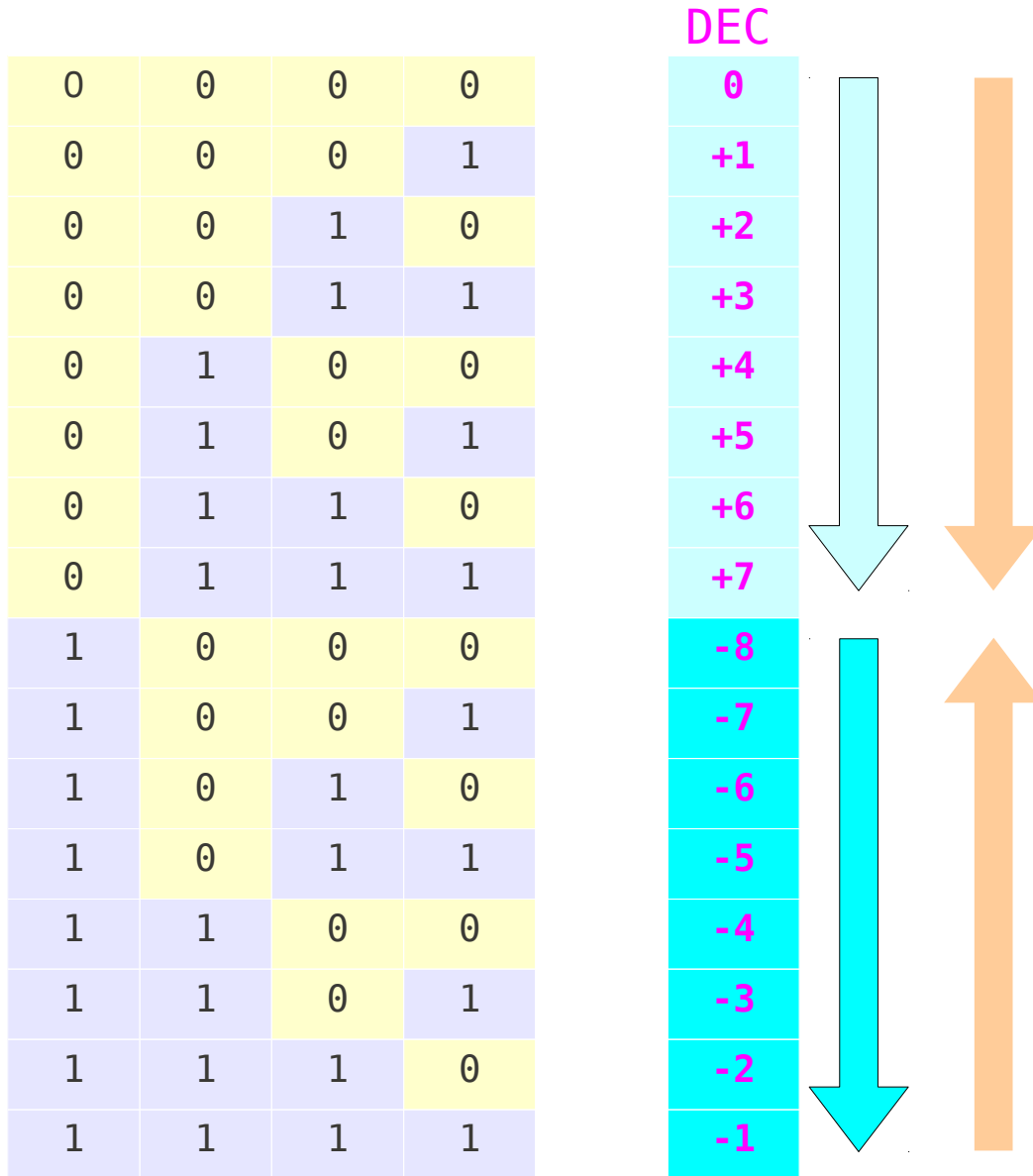
				DEC	HEX	OCT
0	0	0	0	0	0	0
0	0	0	1	1	1	1
0	0	1	0	2	2	2
0	0	1	1	3	3	3
0	1	0	0	4	4	4
0	1	0	1	5	5	5
0	1	1	0	6	6	6
0	1	1	1	7	7	7
1	0	0	0	8	8	10
1	0	0	1	9	9	11
1	0	1	0	10	A	12
1	0	1	1	11	B	13
1	1	0	0	12	C	14
1	1	0	1	13	D	15
1	1	1	0	14	E	16
1	1	1	1	15	F	17

# Unsigned Integer Number

				DEC
0	0	0	0	0
0	0	0	1	1
0	0	1	0	2
0	0	1	1	3
0	1	0	0	4
0	1	0	1	5
0	1	1	0	6
0	1	1	1	7
1	0	0	0	8
1	0	0	1	9
1	0	1	0	10
1	0	1	1	11
1	1	0	0	12
1	1	0	1	13
1	1	1	0	14
1	1	1	1	15

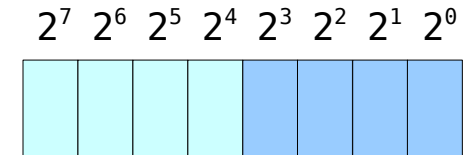


# Signed Integer Number

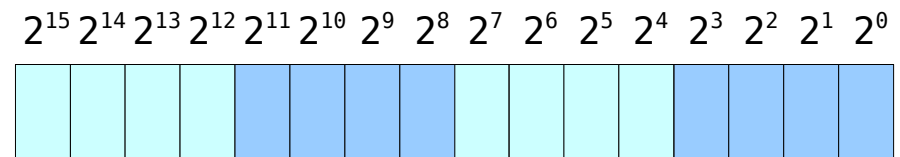


# Unsigned Integer Numbers in 1, 2, 4 Bytes

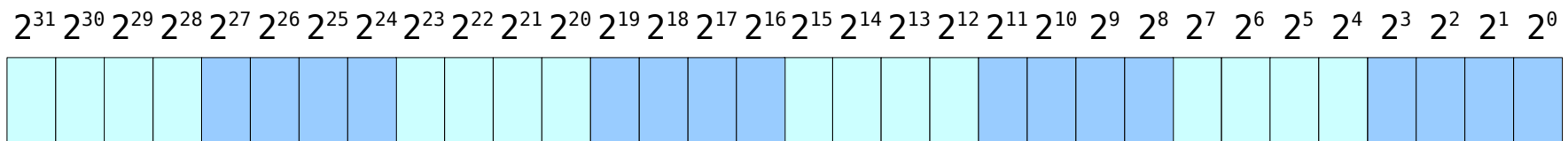
1 Byte : unsigned char



2 Bytes: unsigned short



4 Bytes: unsigned int  
unsigned long

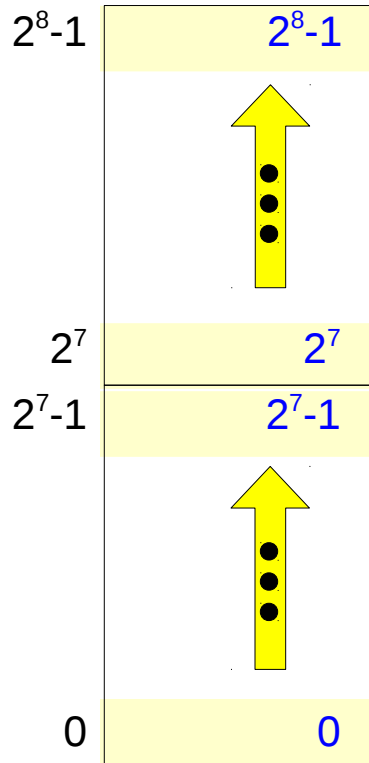




# Unsigned Integer Ranges

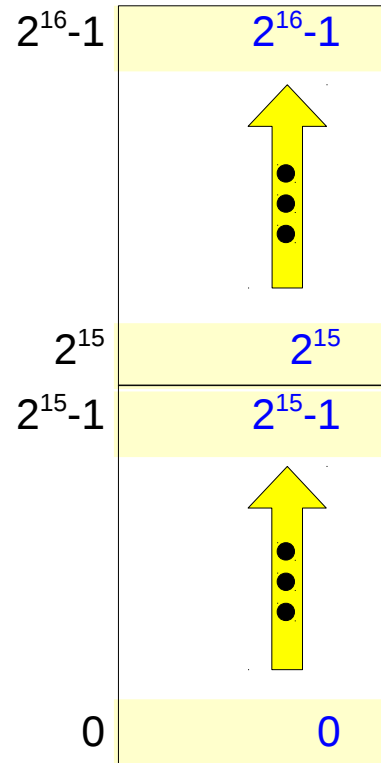
1 Byte

$2^7$	$2^6$	$2^5$	$2^4$	$2^3$	$2^2$	$2^1$	$2^0$
-------	-------	-------	-------	-------	-------	-------	-------



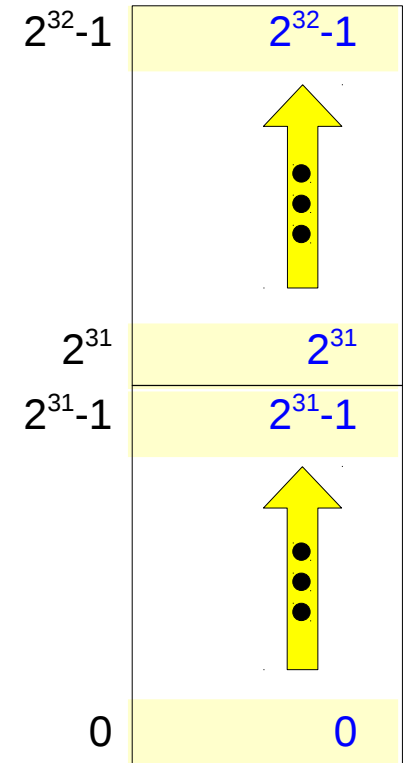
2 Bytes

$2^{15}$	$2^{14}$	$2^{13}$	$2^{12}$	$2^{11}$	$2^{10}$	$2^9$	$2^8$
$2^7$	$2^6$	$2^5$	$2^4$	$2^3$	$2^2$	$2^1$	$2^0$



4 Bytes

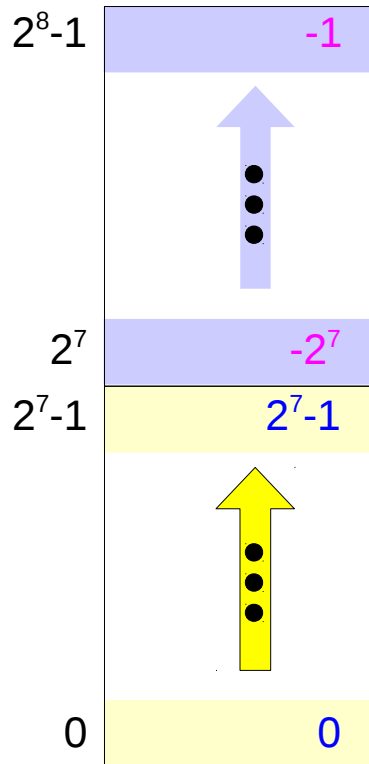
$2^{31}$	$2^{30}$	$2^{29}$	$2^{28}$	$2^{27}$	$2^{26}$	$2^{25}$	$2^{24}$
$2^{23}$	$2^{22}$	$2^{21}$	$2^{20}$	$2^{19}$	$2^{18}$	$2^{17}$	$2^{16}$
$2^{15}$	$2^{14}$	$2^{13}$	$2^{12}$	$2^{11}$	$2^{10}$	$2^9$	$2^8$
$2^7$	$2^6$	$2^5$	$2^4$	$2^3$	$2^2$	$2^1$	$2^0$



# Signed Integer Ranges

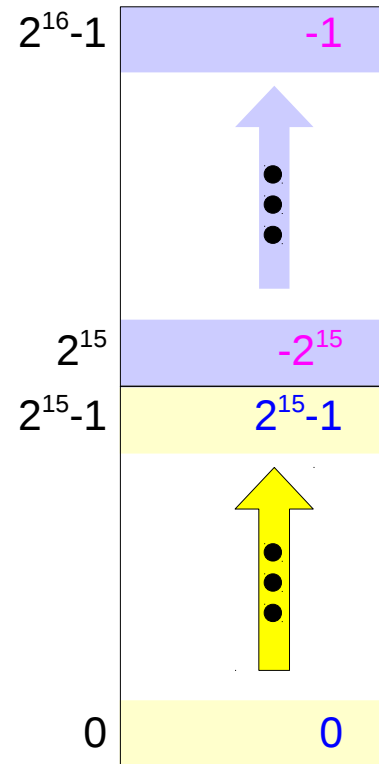
1 Byte

$2^7$	$2^6$	$2^5$	$2^4$	$2^3$	$2^2$	$2^1$	$2^0$
-------	-------	-------	-------	-------	-------	-------	-------



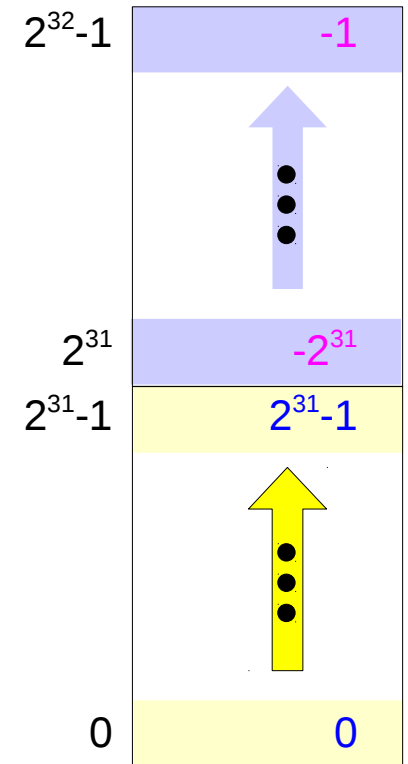
2 Bytes

$2^{15}$	$2^{14}$	$2^{13}$	$2^{12}$	$2^{11}$	$2^{10}$	$2^9$	$2^8$
$2^7$	$2^6$	$2^5$	$2^4$	$2^3$	$2^2$	$2^1$	$2^0$



4 Bytes

$2^{31}$	$2^{30}$	$2^{29}$	$2^{28}$	$2^{27}$	$2^{26}$	$2^{25}$	$2^{24}$
$2^{23}$	$2^{22}$	$2^{21}$	$2^{20}$	$2^{19}$	$2^{18}$	$2^{17}$	$2^{16}$
$2^{15}$	$2^{14}$	$2^{13}$	$2^{12}$	$2^{11}$	$2^{10}$	$2^9$	$2^8$
$2^7$	$2^6$	$2^5$	$2^4$	$2^3$	$2^2$	$2^1$	$2^0$



## References

- [1] Essential C, Nick Parlante
- [2] Efficient C Programming, Mark A. Weiss
- [3] C A Reference Manual, Samuel P. Harbison & Guy L. Steele Jr.
- [4] C Language Express, I. K. Chun