Number System

1) Binary (0 or 1) — 2 unique num
   0 — Bit
   8 bits — Byte
   $(00110011)_2$
2) Decimal (0 to 9) — 10 unique num
   $(700)_{10}$
3) Octal (0 to 7) — 8 unique num
   $(10340)_8$
4) Hexadecimal (16 unique num)
   $(0-9) = 10$
   $(A, B, C, D, E, f) = 6$
   $(2BC)_{16}$

Binary to Decimal

$(100111)_2 = (39)_{10}$

0×2^4, 0×2^3, 1×2^5, 1×2^2, 1×2^0, 1×2^1

$1 + 2 + 4 + 32$

$\Rightarrow 39$

$(0010)_2 = (2)_{10}$

Decimal to Binary

$(39)_{10} = (100111)_2$

		(Remainder)
2	39	
2	19	1
2	9	1
2	4	1
2	2	0
	1	0

$(100111)_2$

Decimal to octal (Same as above (Num = 8)

$(4320)_{10} = (10340)_8$

8	4320	
8	540	0
8	67	4
8	8	3
	1	0

$(10340)_8$

Decimal to Hexadecimal

$(700)_{10} = (2AB)_{16}$

16	700	
16	43	12
	2	11

$2\,(11)\,(12)$

$(2AB)_{16}$

Binary to Hexadecimal

512 128 32 16 8 4

Binary = $(1010111100)_2$ = $(\quad)_{16}$

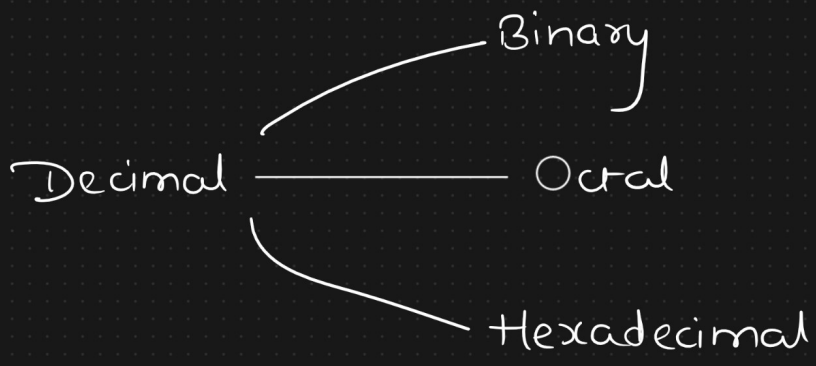
Decimal = $(702)_{10}$

512
128
32
16
14

702

16	702	
		< 16

Assignment


Binary
Decimal
Octal
Hexadecimal