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A diagram illustrating the conversion of different data types into binary. On the left, the words 'Numbers', 'Text', 'Images', 'Sound', and 'Videos' are listed vertically. On the right, the word 'Binary' is written. Five arrows originate from each of the five data types on the left and point towards the 'Binary' label on the right, indicating that all these diverse forms of information are ultimately represented as binary code.

Numbers

Text

Images

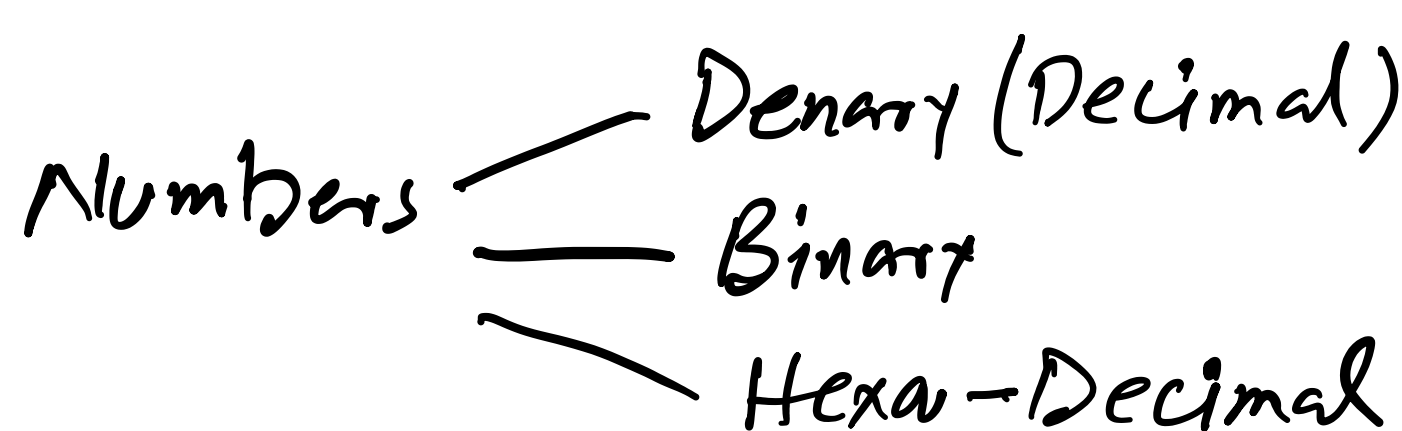
Sound

Videos

Binary

22/1/21

- * Intro.
- * Den \rightarrow Bin
- * Bin \rightarrow Den
- * Bin \rightarrow Hex.



✓ Denary / Decimal:

Base 10 : 0 1 2 3 4 5 6 7 8 9 Digit

$(2487)_{10}$
 2487_{10}

2	4	8	7
10^3	10^2	10^1	10^0
1000	100	10	1
			Position
			Base
			Weight

Problem {

2	4	8	7	INPUT
\times	\times	\times	\times	↓ OUTPUT
1000	100	10	1	
=	=	=	=	
2000	400	80	7	= (2487) ₁₀

Binary: 0 1 Base: 2 Binary Digit
Computer Stores bit

Whenever computer saves ANYTHING including number, it saves them in collection of eight bits. That is, least amount of data that a computer saves is eight bits. Other data that is saved is in collections of multiples of eight.

00010110

0	0	0	1	0	1	1	0
2 ⁷	2 ⁶	2 ⁵	2 ⁴	2 ³	2 ²	2 ¹	2 ⁰
128	64	32	16	8	4	2	1

$128 \quad 64 \quad 32 \quad 16 \quad 8 \quad 4 \quad 2 \quad 1$
 $\times \quad \times \quad \times \quad \times \quad \times \quad \times \quad \times \quad \times$ INPUT
 $0 \quad 0 \quad 0 \quad 1 \quad 0 \quad 1 \quad 1 \quad 0$
 $= \quad = \quad = \quad = \quad = \quad = \quad = \quad =$
 $0 + 0 + 0 + 16 + 0 + 4 + 2 + 0 = 22$ OUTPUT in Den.
 Bin \rightarrow Den.

Bin \rightarrow Den.
Binary

0 Even
1 Odd

[illegible]

Hexa-Decimal

$$\underline{6} + \underline{10} = 16 \quad \text{Base: 16}$$

0 1 2 3 4 5 6 7 8 9
A B C D E **F** → 15

2	C	8	D	A
16^4	16^3	16^2	16^1	16^0
65536	4096	256	16	1

So to
convert
 $AD \rightarrow B$
we use
a simpler
method.

Hex

8	4	2	1
---	---	---	---

Hex

8	4	2	1
---	---	---	---

Byte

0	1	1	1
---	---	---	---

Den

1	1	1	1
---	---	---	---

Hex

Hex

Den

127

0 1 1 1 1 1 1 1

Hex

7 F

$$(127)_{10} = (01111111)_2 = (7F)_{16}$$