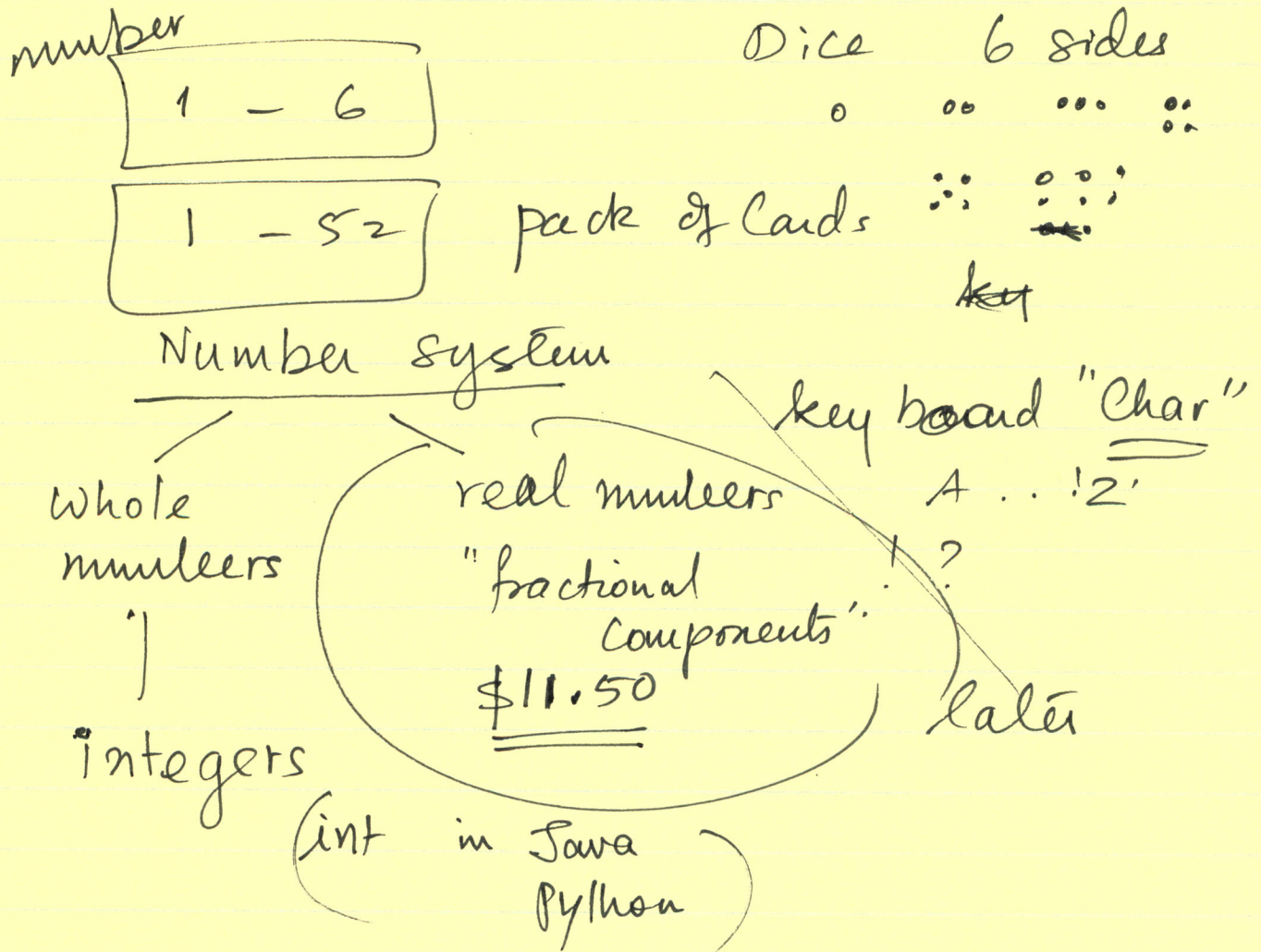


CSE 241

Feb 1, 2017

Topic: Number System
model "abstract"



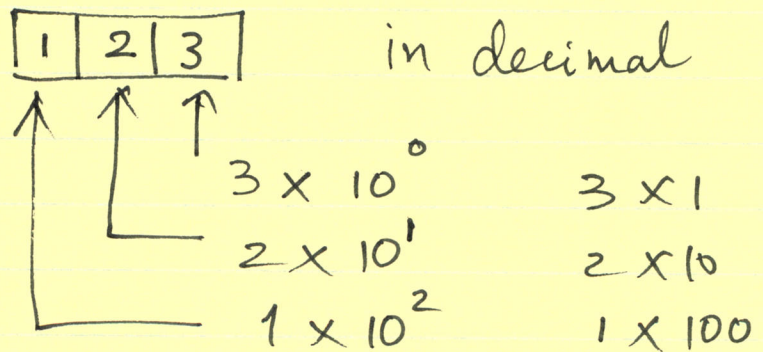
Characteristics of a number system:
1. Radix or the base of the number system

"set" of symbols allowed in the system
Decimal {0, 1, 2, 3, 4, 5, 6, 7, 8, 9}
10 radix 10

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2. Positional number system

each position has a weight



How do you represent numbers inside the electronic computer?

10 symbols in decimal system

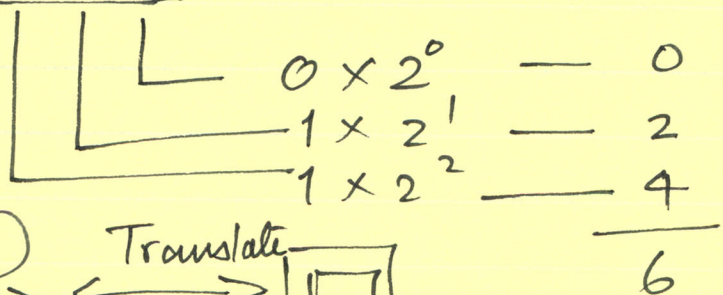
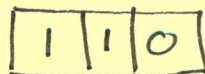


2 levels instead of 10 diff voltage levels?

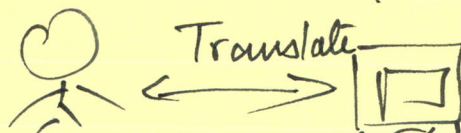
0	1
False	True
ON	OFF

Binary

radix?
2
number number system base 2



Problem:



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(Decimal)₁₀ → (number)_r
←

()₈

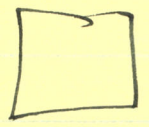
8 Octal

hexadecimal ()₁₆

Signed numbers:

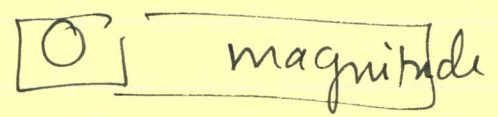
give me an idea ~~about~~ how you represent the sign.

1 bit binary digit

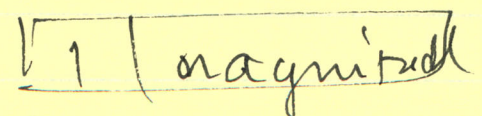


sign

1 bit



positive



negative