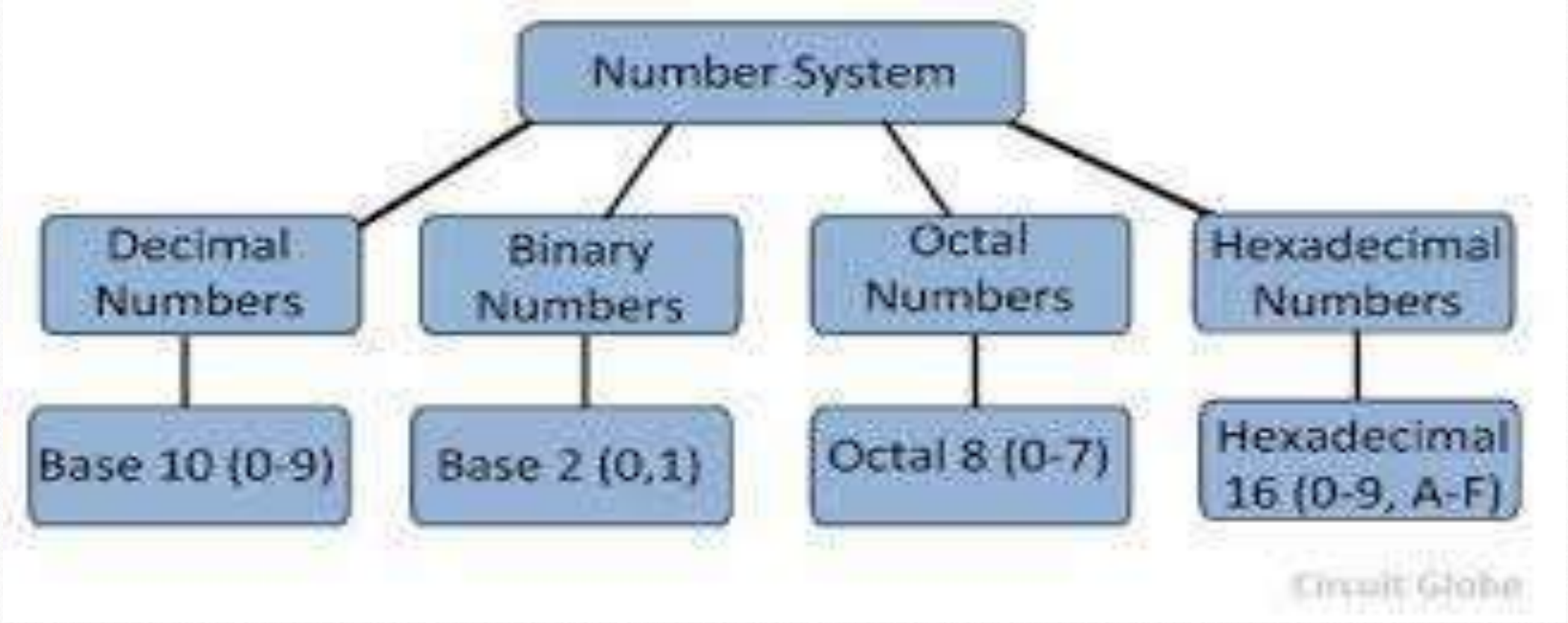
Introduction to Digital Electronics

By
A.Anirose
Assistant Professor
Department of Physics (SF)
Bodinayakanur.

- **Digital electronics** is a field of electronics involving the study of digital signals and the engineering of devices that use or produce them. This is in contrast to analog electronics and analog signals.


Number System
Decimal Numbers
Binary Numbers
Octal Numbers
Hexadecimal Numbers
Base 10 (0-9)
Base 2 (0,1)
Octal 8 (0-7)
Hexadecimal 16 (0-9, A-F)

Binary to Decimal

$(1010.01)_2$

$(1010.01)_2 = (10.25)_{10}$

- $1\times2^3 + 0x2^2 + 1\times2^1 + 0x2^0 + 0x2^{-1} + 1\times2^{-2}$
- $= 8+0+2+0+0+0.25$
- $= 10.25$

Decimal to Octal

- $(10.25)_{10}$

  $(10)_{10} = (12)_8$

Fractional part:

$0.25 \times 8 = 2.00$

$(.25)_{10} = (.2)_8$

Answer: $(10.25)_{10} = (12.2)_8$

Octal to Decimal

- $(12.2)_8$

$$1 \times 8^1 + 2 \times 8^0 + 2 \times 8^{-1} = 8+2+0.25 = 10.25$$

$(12.2)_8 = (10.25)_{10}$

THANK YOU