Number system

1. What is number system?

**Ans**: Number system are used to represent a information in quantitative form.

1. Types of number system?

**Ans:** 4 types,

* Binary
* Decimal
* Hexa
* Octal

Binary number-system

The symbols of binary system are **0, 1**.

The **Radix**/**Base** of binary system is 2. **EX,** (1010101010)**2**

**Conversion Decimat to Binary 1st method,**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **512** | **256** | **128** | **64** | **32** | **16** | **8** | **4** | **2** | **1** |
|  |  |  |  |  |  |  | **1** | **0** | **1** |

**Conversion Decimat to Binary 2st method,**

**2 100 0**

2 50 **0**

2 25 **1**

2 12 **0**

2 6 **0**

2 3 **1**

2 1 **1**

0

(100)**10** = (1100100)**2**

Fractional decimal to binary

(169.9)10 = (?)**2**

1) First find the decimal of **Whole** part.

**For 0.9,**

0.**9** \* **2** (9 \* 2)

1.**8** \* **2** (8 \* 2)

1.**6** \* **2** (6 \* 2)

1.**2** \* **2** (2 \* 2) **Repeating**

0.**4** \* **2** (4 \* 2)

0.**8** \* **2** (8 \* 2)

1.**6** \* **2** (6 \* 2)

1.**2** \* **2** (2 \* 2) **Repeating**

0.**4** \* **2** (4 \* 2)

0.**8** \* **2** (8 \* 2)

1.**6** \* **2** (6 \* 2)

1.**2** \* **2** (2 \* 2) **Repeating**

0.**4** \* **2** (4 \* 2)

0.**8** \* **2** (8 \* 2)

Whenever we will write the fractional part we will write in **Top-Bottom** approach**.**

(**0.9**)10 = (**.11100**)2

(169.9)10 = (**10101001.11100**)2