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Introduction

Number systems are systems in mathematics that are used to express numbers in various forms and are understood by computers. A number is a mathematical value used for counting and measuring objects, and for performing arithmetic calculations. Numbers have various categories like natural numbers, whole numbers, rational and irrational numbers, and so on. Similarly, there are various types of number systems that have different properties, like the binary number system, the octal number system, the decimal number system, and the hexadecimal number system.

A number system is a system representing numbers. It is also called the system of numeration and it defines a set of values to represent a quantity. These numbers are used as digits and the most common ones are 0 and 1, which are used to represent binary numbers. Digits from 0 to 9 are used to represent other types of number systems.

Number Systems Definition

A number system is defined as the representation of numbers by using digits or other symbols in a consistent manner. The value of any digit in a number can be determined by a digit, its position in the number, and the base of the number system. The numbers are represented in a unique manner and allow us to operate arithmetic operations like addition, subtraction, and division.

Types of Number Systems

There are different types of number systems in which the four main types are as follows.

- [Binary number system](#) (Base - 2)
- [Octal number system](#) (Base - 8)
- [Decimal number system](#) (Base - 10)
- [Hexadecimal number system](#) (Base - 16)

