

# The Number System: An Overview

**Bennett Brown\***

*Department of Physics, University of South Florida, Tampa, USA*

## Editorial

A number framework is a set of texts used to transmit numerical information. It is the numerical documentation for addressing amounts of a specific collection in a predictable manner using digits or various graphics. It depicts each number in a unique way and tackles the figures' number crunching and logarithmic design. It also enables us to work on arithmetic problems like as choice, deduction, and division. The digit, its location in the number, the base of the number framework, and the types of number systems may all influence the estimation of any digit in a number. The following are the four most common number framework types:

### Decimal Number System

It generates numbers using ten digits, such as 0-9, for example. Every digit in the number is located in a certain location as a result of distinct forces of ten. The spot esteem is labeled from left to right as units, second to one side as tens, hundreds, thousands, and so on. Units have a spot incentive of 100, tens have a spot incentive of 101, hundreds have a spot incentive of 102, thousands have a spot incentive of 103, and so on.

### Paired Number System

Binary number framework is a number system having a base value of two. It generates numbers using two digits, such as 0 and 1. Binary Numbers are numbers that are framed using these two digits. The paired number framework is extremely useful in electronic devices and computer systems because it can be easily implemented using only two states: ON and OFF for example 0 and 1. The decimal numbers 0 through 9 are referred to as 0, 1, 10, 11, 100, 101, 110, 111, 1000, and 1001.

### Octal Number System

The base worth of an octal number system is eight. For the production of

Octal Numbers, it uses 8 digits, such as 0-7. Octal numbers may be converted to decimal numbers by repeating each digit with the spot value and then adding the result. The spot values here are 80, 81, and 82. Octal numbers are useful for displaying UTF8 numbers.

### Hexadecimal Number System

Hexadecimal Number System is a number system having a base of 16 characters. It makes use of 16 digits to generate its numbers. The numbers 0-9 are treated as they are in the decimal number framework, but the digits 10-15 are addressed as A-F, for example, 10 is addressed as A, 11 is addressed as B, 12 is addressed as C, 13 is addressed as D, 14 is addressed as E, and 15 is addressed as F. When dealing with memory address spaces, hexadecimal numbers are quite useful. The decimal positional numeral framework is the most widely used numeral system, with decimal referring to the use of ten pictures to construct all numerals (0, 1, 2, 3, 4, 5, 6, 7, 8, 9). This was an Indian invention that was completed in the middle ages by Islam [1-5].

## References

1. Lu, Mi. "A novel division algorithm for the residue number system." *IEEE Trans Comp* 41 (1992): 1026-1032.
2. Posch, Karl C. "Base extension using a convolution sum in residue number systems." *Computing* 50 (1993): 93-104.
3. Shenoy, A. P. "Fast base extension using a redundant modulus in RNS." *IEEE Trans Comp* 38 (1989): 292-297.
4. Liu, Bo. "An optical multiplication based on a quadratic residue number system." *Micr Opt Tech Lett* 11(1996): 274-277.
5. Sasaki, Akio. "The Basis for Implementation of Ad idive Operations in the Residue Number System." *IEEE Trans Comp* 100 (1968): 1066-1073.

**How to cite this article:** Brown, Bennett. "The Number System: An Overview." *J Phys Math* 13 (2022): 354

**\*Address for Correspondence:** Bennett Brown, Department of Physics, University of South Florida, Tampa, USA, e-mail: bennettbrown@mathphys.us

**Copyright:** © 2022 Brown B. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

**Received:** 05 January, 2022, Manuscript No. jpm-22-55750; **Editor Assigned:** 07 January, 2022, PreQC No. P-55750; **Reviewed:** 15 January, 2022, QC No. Q-55750; **Revised:** 20 January, 2022, Manuscript No. R-55750; **Published:** 25 January, 2022, DOI: 10.37421/2090-0902.22.13.354