Number Properties Calculator

The "Number Properties Calculator" is a C++ project designed to analyze and present various attributes of a given integer. This project encompasses a range of functionalities within a class, enabling users to explore diverse aspects of a number without directly referencing function names. The project allows users to input an integer during its instantiation, which serves as the focal point for all subsequent calculations.

The calculator provides insights into the following number properties

Odd or Even Nature:

Users can identify whether the given number is odd or even, understanding its divisibility by 2.

Prime Number Check:

The project assesses if the number is prime, verifying its unique divisibility characteristics.

Roots Computation:

It calculates both square and cube roots, showcasing fundamental mathematical roots of the number.

Scientific Notation Conversion:

The number can be transformed into scientific notation, providing a compact representation.

Logarithmic Analysis:

Users gain insights into the logarithmic value of the number, unveiling its relative scale.

Factorial Calculation:

The project computes the factorial, offering the product of sequential integers up to the given number.

Factor Identification:

It identifies all factors, revealing numbers that evenly divide the given integer.

Palindrome Check:

Users can confirm if the number reads the same forwards and backwards, a characteristic of palindromic numbers.

Triangular Number Verification:

The project detects triangular numbers, indicating if the integer forms an equilateral triangle.

Happiness Evaluation:

Users can explore whether the number is a happy number, a unique property in number theory.

Fibonacci Number Recognition:

The project checks if the number is a Fibonacci number, part of the famous Fibonacci sequence.

Narcissistic Number Assessment:

Users can verify if the number is narcissistic, representing a rare self-referential property.

Number Base Determination:

The project converts decimal number into Binary, Octal and Hexadecimal representation.

The "Number Properties Calculator" provides a comprehensive toolkit for understanding the inherent properties of an integer. Users can utilize this tool to explore the intricacies of different numbers, delving into the fascinating world of mathematics and number theory.