PROJECT 3 CLASS MANUAL

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BinNum Class Manual

1. Introduction

The BinNum class provides functionality to handle 4-bit binary numbers. This class allows manipulation, conversion, and arithmetic operations on binary numbers.

2. Class Overview

The BinNum class includes methods for creating, copying, performing operations, converting to integer, accessing individual bits, and shifting binary numbers.

3. Constructors

- BinNum ().

  Creates a default BinNum object initialized as '0000'.

- BinNum (int num)

  Creates a BinNum object equivalent to a 4-bit binary representation of the provided integer num.

- BinNum (const BinNum& initBinNum)

  Copy constructor that initializes a BinNum object with the value of another BinNum object.

4. Assignment Operators

- BinNum& operator = (const BinNum& initBinNum)

Assigns the value of another BinNum object to the current object.

5. Arithmetic Operators

- BinNum operator + (BinNum& b)

  Performs addition between two BinNum objects.

- BinNum operator * (BinNum& b)

  Performs multiplication between two BinNum objects.

6. Conversion and Access Methods

- int bin2Base10 ()

  Converts the BinNum object to its equivalent integer value.

- char getBit (int i)

  Retrieves the bit at position i in the BinNum.

7. Other Methods

- void foo ()

  Placeholder method that does nothing.

8. Friend Functions

- friend ostream& operator << (ostream& s, BinNum& b)

  Overloads the output stream operator (`<<`) to display BinNum objects.

- friend istream& operator >> (istream& s, BinNum& b)

  Overloads the input stream operator (`>>`) to read BinNum objects.

9. Private Members

- char the_num [SIZE]

  An array storing the 4-bit binary number.

- void shiftBinNumBy (int shiftNum, BinNum& initBinNum)

Private method to shift the BinNum by a specified number of positions.

10. Usage

- Create BinNum objects using constructors.
- Perform arithmetic operations using overloaded operators.
- Convert BinNum objects to integers using bin2Base10().
- Access individual bits using getBit ().
- Use ostream and istream operators to display and input BinNum objects.

This manual provides an overview of the BinNum class, its methods, their purpose, and how to utilize them. Future version updates of the program may result to the expansion or modification of the manual based on additional functionalities or specific details of the BinNum class.