Lab # 9

Operator Overloading as Members

Task 1

BigInt class is used for the mathematical operations that involve very big integer calculations that are outside the limit of all available primitive data types. For example, factorial of 100 contains 158 digits in it so we can't store it in any primitive data type available. We can store as large Integer as we want in it.
Your goal is to overload the operators for a generic **"BigInt"** class. You will need to write two files (BigInt.h and BigInt.cpp) and test your program by writing main function. Your implemented class must fully provide the definitions of following class (interface) functions.

```
class BigInt
{
//think about the private data members
public:
BigInt(int val = 0);
BigInt(const string& text);
BigInt(const BigInt& copy); // copy constructor

BigInt operator+(const BigInt& val) const;
BigInt operator+(int val) const;
BigInt operator-(const BigInt& val) const;
BigInt operator-(int val) const;

// Logical Operators
bool operator==(const BigInt& val) const;
bool operator!=(const BigInt& val) const;

// Unary Operators
BigInt& operator++();  // Pre-increment Operator
BigInt operator++(int);  // Post-increment Operator
BigInt& operator--();  // Pre-decrement Operator
BigInt operator--( int ); // Post-decrement Operator
operator string();    // return value of the BigInt as string
~BigInt(); // destructor
};

ostream& operator<<(ostream& output, const BigInt& val); // outputs the
BigInt
istream& operator>>(istream& input, BigInt& val); // inputs the BigInt
```

Task 2

Write a class **Matrix.** This class has three private data members.

rows: An integer that holds the numbers of rows for matrix.

columns: An integer that holds the numbers of columns for matrix.

matrix: An integer pointer to pointer that points to 2D array (rows x columns).

The class has the following member functions.

Matrix (int r, int c)	Constructs a new Matrix object to represent the given matrix
d++	Overload Post-increment Operator
++d	Overload Pre-increment Operator
d--	Overload Post-decrement Operator
--d	Overload Pre-decrement Operator
void setRows(int r)	It sets row of a matrix.
int getRows()const	Returns row of matrix.
void setCol(int c)	It sets column of a matrix.
int getCol()const	Returns column of matrix.

THE END