Lab VIII

Operator Overloading

Question 1

Overloading insertion and extraction operator

Create a class rational which represents a numerical value by two double values NUMERATOR and DENOMINATOR. Include the following public member functions:

- Constructor with no arguments (default).
- Constructor with two parameters.
- Overload + operator to enable addition of two rational numbers.
- Reduce () function to reduce the rational number by eliminating the highest common factor between the numerator and the denominator.
- Overload >> operator to read the rational object.
- Overload << operator to display the rational object.

Write a main ( ) to test all the functions in the class.

Question 2

Matrix manipulation problem

Create a class matrix which represents a row by column representation of numbers. Include the following public member functions:

- Constructor with no arguments (default).
- A dynamic constructor to allocate memory dynamically.
- Overload + operator to enable addition of two matrix objects.
- Overload * operator to enable the multiplication of matrix objects
- check () function to check whether multiplication of two objects are possible.
- Overload >> operator to read the rational object.
- Overload << operator to display the rational object.

Write a main ( ) to test all the functions in the class.