Lab 10 Operator Overloading –II

Problem 1:

Design a class String having a data member as char *s, int size, and define the appropriate function members, and you task is to overload binary operator '+' to concatenate two strings. For example:
If you pass string "hello" and "world" for s1 and s2 respectively, it will concatenate both into s3, and display the output as "helloworld".

Problem 2:

Design a class Increment for handling Complex numbers and include the following:
_ real: a double
_ imaginary: a double
The class has the following member functions.
a. A constructor initializing the number with default parameters.
b. Getters and Setters of the class data members as given below
- _ void setReal(double r)
- _ double getReal()const
- _ void setImaginary(double i)
- _ double getImaginary() const

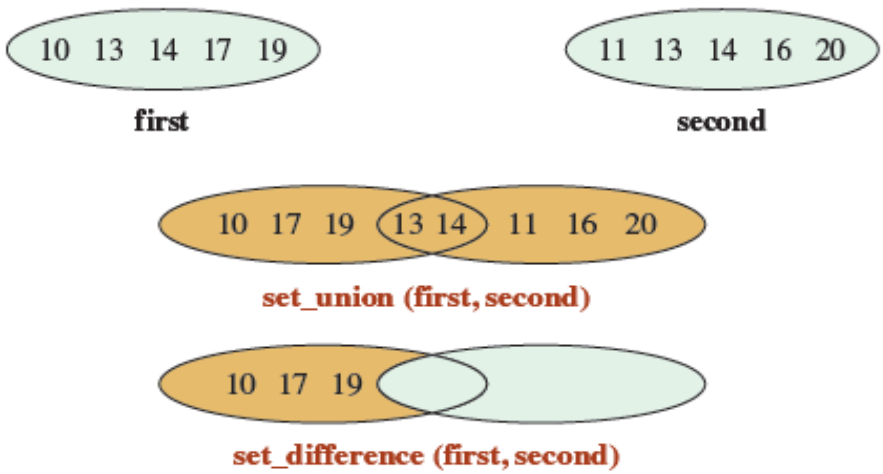
d. Overload unary ! operator which returns true if the real and the imaginary parts are zero, otherwise return false.
bool opeator!()const
rite main function to test all the implemented functionality.

Problem 3:

Declare and define a class Set representing a set of integers. A set is a collection of data without repetition or ordering. The class should have only private data members: a pointer to a dynamically allocated array of integers and an integer that holds the size of the set. The following shows the operators to be defined for a set.

Member Functions:

i. A constructor to create an empty set.
ii. A destructor.
iii. A binary friend function to get the union of two sets (overload the + operator).
iv. A binary friend function to determine the difference of two sets (overload the – operator).
v. A function to print the contents of a set.



Problem 4:

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.