1- Write a recursive function **Fibo** to print the Fibonacci series of a specific number n. Each number is generated by the summation of the previous two numbers.

The series is : 0 1 1 2 3 5 8 13 21 34 .....
0-1 =1 ; 1+1 =2 ; 1-2=3 ; 2-3=5.   (15 pts)

2- Write a class **date** with a friend function to calculate the day number from the beginning of the year . Write the driver program.
E.g: Input : 1/5/98 (month=1, day=5 , year= 1998)
   Output: the day number 5 of the year 1998

      Input : 2/10/98
      output : the day number 41 of the year 1998. (15 pts)

3- Create a class **rational** for performing arithmetic with fractions . Write a driver program which contains this class taking into consideration :

   An overloaded function **addition** : 4/3+2/3 =6/3.
   An overloaded friend function **subtraction** : 4/3 -2/3= 2/3.
   A friend function **multiplication** : 4/3*2/3=8/9.
   A member function **division** : 4/3 / 2/3 = 12/6.
   A member function to **print** .
Use a function **reduction** to transform 6/3 to 2/1. Is it a public member function or not?.(30 pts)

4- Using overloaded friend functions to read and write an object of the form 09-21 89 50 (20pts)

5- A prime integer is any integer that is evenly divisible only by itself and 1. The Sieve of Eratosthenes is a method of finding prime numbers. It operates as follows:

   1- Create an array with all elements initialized to 1. Array elements with prime subscripts will remain 1. All other array elements will eventually set to 0.

   2- Starting with subscript 2 (subscript 1 must be prime), every time an array element is found whose value is 1, loop through the remainder of the array and set to 0 every elemnt whose subscript is a multiple of the subscript with the element with the value 1.
E.g: for array subscript 2 , all elements beyond 2 in the array that are multiples of 2 will be set to 0 (subscripts 4, 6, 8, …)
      for array subscript 3, all elements beyond 3 in the array that are multiples of 3 will be set to 0
   (subscript 6,9,12,15…)
      and so on.

When this process is complete, the array elements that are still set to one indicate that the subscript is a prime number. These subscripts can then be printed. Write an array that uses an array of 1000 elemnts to determine and print the prime numbers between 1 and 999. Ignore elemnt 0 of the array.(20 pts)