Assignment 10 - OOPS

1. Create a class **MyDouble,** which will store a double number in two integers. One is integral part and other is decimal part.
   For eg. For number – 103.45

   Integral part is 103 and decimal part is 45

   And you need to treat this number as a normal double value.

   Data members (both private) -
   - int integral
   - int decimal

   Functions -
   - User defined constructor with 2 arguments i.e. integral and decimal
   - Print : prints the number (For eg. 103.45, 18.97)
   - + : adds two double numbers
     - Input : 18.97 and 5.54
     - Output : 24.51
   - - : subtracts two double numbers
   - ++ : Pre increment and Post increment

2. Create a class **Polynomial.**

   A polynomial is an arithmetic expression of the form –

   $$a_nx^n + \dots + a_2x^2 + a_1x^1 + a_0$$

   where x is a variable that can take on different numeric values and a_n , ... , a_2 , a_1 , and a_0 are constants called the coefficients of the polynomial. The highest exponent with non-zero coefficient, n, is called the degree of the polynomial. A polynomial whose coefficients are all zero has degree -1.

   To represent a polynomial, you need to use an array to hold the coefficients. Following functions need to be implemented –

   - setCoefficient : for a given power, it sets the coefficient value. You need to use this method for building your polynomial.
   - changeCoefficient : for a given power, it changes the coefficient value
   - + : Add two polynomials
   - - : Subtract two polynomials
   - * : Multiply two polynomials
   - Evaluate : for given x, it evaluates the polynomial and return the answer
   - Degree : returns the degree of a polynomial

For the above operations, you need to keep in mind the basic properties of a polynomial.