A polynomial object is a homogeneous ordered list of pairs <exponent, coefficient>, where each coefficient is unique. Operations include returning the degree, extracting the coefficient for a given exponent, addition, multiplication, as well as more elaborate operations like Euclidean division, and properties related to roots of polynomials.

#1. Design the Algorithm and Pseudo code which covers all the operations of Polynomial ADT. First chalk out a way to represent a polynomial in an array. You may restrict the degree of a polynomial to be less than some bound, say 100.

#2. Implement the one header file for the declaration of all polynomial ADT (For Ex: polynomial.h)

#3. Implement the function or method for Addition of two polynomials.

#4. Implement the functions or method for Difference of two polynomials.

#5. Implement the functions or methods for Multiplication of two polynomials.

#6. Implement the functions or methods for Evaluation of a polynomial at an integer point.

#7. Implement the function or method for Derivative of a polynomial, Scanning of a polynomial, Printing of a polynomial.

#8. Implement the function or method for Integral of a polynomial. (Fix the constant of integration using two real values a,b, where b specifies the value that the output polynomial would assume if evaluated at a.)

#9. Integrate all the above functions/methods of the Set class (For Ex: polynomial.cpp). You Must Implement The Methods To Appear In This File.