Please develop class "Polynomial". The internal representation of a polynomial is an array of terms. Each term contains a coefficient and an exponent. For example, term 2x4 has the coefficient 2 and the exponent 4.   
  
Develop a complete class containing proper constructor and destructor functions as well as 'set' and 'get' functions. The class should also provide the following overloaded operator capabilities:  
  
a) Overload the addition operator (+) to add two polynomials.  
  
b) Overload the subtraction operator (-) to subtract two polynomials  
  
c) Overload the assignment operator to assign one polynomial to another  
  
d) Overload the multiplication operator (\*) to multiply two polynomials.  
  
e) Overload the addition assignment operator (+=), subtraction assignment operator (-=) and multiplication assignment operator (\*=)  
  
f) Overload the output operator (<<) so that it can display the polynomials.  For example, if in the main function we have:  
  
Polynomial poly1;  
//more code  
cout<<poly1;  
  
It would print out the polynomial (for example: 2x^2 + 3x^3).  
  
  
**Please use 3 files for this assignment.** The header file that contains the class declaration (.h file) should be named "Polynomial\_YourName.h". The class definition file (.cpp file) should be named "Polynomial\_YourName.cpp" and the class implementation should be named "Main\_YourName.cpp" file.  
  
**A sample output of the program:**  
  
Enter the number of polynomial terms: 2  
Enter coefficient and exponent : 2 2  
Enter coefficient and exponent: 3 3  
  
Enter number of polynomial terms 3:  
Enter coefficient and exponent : 1 1  
Enter coefficient and exponent : 2 2  
Enter coefficient and exponent : 3 3  
  
(please print out the polynomial in the following two lines out using the overloaded output operator)  
First Polynomial is : 2x^2 + 3x^3  
Second Polynomial is : 1x + 2x^2 + 3x^3  
  
Adding polynomial yields: 1x + 4x^2 + 6x^3  
+= the polynomial yields: 1x + 4x^2 + 6x^3  
  
Subtracting the polynomial yield : -1x  
-= the polynomials yields : -1x  
  
Multiplying the polynomials yields: 2x^3 + 7x^4 + 12x^5 + 9x^6  
\*= the polynomial yields: 2x^3 + 7x^4 + 12x^5 + 9x^6  
  
Assume that the greatest degree of an input polynomial will be 6 so that you can use a fixed size for the arrays. **Make sure to take into account the size of an array necessary when you multiply two polynomials.**