Assignment 4: Polynomial Class

Cop 3331 – Object Oriented Software Design – Fall 2016 – USF
Due: 10-31-2016 @ 11:30 pm.

Instructor: José J Galvis **Points: 100**

1. MAIN OBJECTIVE

Develop the class Polynomial.

2. DESCRIPTION

The internal representation of a Polynomial is an array of terms. Each term contains a coefficient and an exponent, e.g., the term

$$2x^4$$

has the coefficient 2 and the exponent 4.

Develop a complete class containing proper constructor and destructor functions as well as *set, get,* and *print* 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 (*=).

Write an application that tests all the functionality provided by class Polynomial:

- create three Polynomials
- add two Polynomials, using + and += operators
- subtract two Polynomials, using – and -= operators
- assign one Polynomial to another Polynomial
- multiply two Polynomials, using * and *= operators.

For every operation performed, display the corresponding result using class Polynomial's function *print.*

3. ACADENMIC INTEGRITY

For this assignment, students must work individually. The code must be 100% original. Code from any other party is not allowed in your assignment.

4. DELIVERABLES

Design your class using both the interface (header) file and the implementation (.cpp) file.

Place all the required files (,h and .cpp) into a folder and name the folder with your full name and the assignment number (ex: **JoeDoeAssignment04)**.

Place the folder into a .zip file (ex: **JoeDoeAssignment04.zip**) and upload the .zip file to Canvas by 10/31/16 @ 11:30 pm.