Introduction

In this project we created a two main class, which called "Polynom" and "Monom" that implements several interfaces. And also a "Test" class.

We chose linkedlist as our data Structure, because we think it more useful and dynamic to changes, in a way that saves space in memory. so that in each node will be a one monom.

Note: We assumed that the input is normal , according to Elizabeth.

For ex: 3*x^2+5 2*x^2-3

Monom

We needed to do a class which representing a function of the form f(x)= a*x^b. This class was very useful for us, because we used her methods to the polynom class.

So this class contains constructors and Methods.

Constructors

1. Get a two numbers one to the coefficient and one to the power, to create a new monom
2. Copy from other monom.
3. Makin from a string.

Main Methods.

1. **derivative**
   This function compute a new monom which is the derivative of this monom.
2. **f**
   This functiom compute the value of f(x).
3. **multiply**
   This function multiplies one monom in another monom.
4. **ToString**
   This function print a string of the monom.

Polynom

A polynomial consists of monoms, as we said earlier, his methods were helped by the Monom functions.

Constructors

1. Default
   This is a default constructor for the polynom. We created a default monom and insert to the Polynom.
2. Copy
   This is a copy constructor from one polynom to another.
3. String Transformer

This is a constructor that transforms a string to a polynom.

Main Methods.

1. Add – to add two polynoms.
2. Copy – from one to another
3. Derivate - Compute a new Polynom which is the derivative of this Polynom.
4. Equals- Test if this Polynom is logically equals to another
5. Multiply- Multiply two polynoms.
6. Root
7. Area

We learned a lot of the efficiency and importance of interfaces, in OOP in java. And we'll try to use them ,If necessary, in the future.

Version

1.0

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