

Data Structure Assignment 2 – Polynomial Calculation

Task : (I/O: 15/15/30 points, coding style: 10 points)

Please write a program to calculate two polynomials $f(x)$ and $g(x)$ as followed:

First, there are two input data(polynomials for $f(x)$ and $g(x)$) for every test cases (only **one space** between them). You have to read the keyboard input till the end of the file (**Hint: `while(scanf("%s %s", input1, input2)!=EOF) {}`**), and all the input/output polynomials are in the simplest and in descending power (the coefficients are integers). At last, calculate $f(x) + g(x)$, $f(x) - g(x)$ and $f(x) * g(x)$. Be sure that there are **3 lines of output**, even if you did not implement all of the calculations. It helps us test your program automatically.

The program must be implemented by **linked list**, or you will get zero points.

Example:

input	output
-3x ² +5x-4 x+1	-3x ² +6x-3 -3x ² +4x-5 -3x ³ +2x ² +x-4
100x ⁹⁹ +1 x ² -1	100x ⁹⁹ +x ² 100x ⁹⁹ -x ² +2 100x ¹⁰¹ -100x ⁹⁹ +x ² -1

Note: You must use **C** as your programming language. We suggest you to write some comments and define the methods/functions below: "getCoef()", "polyAdd()", "polySub()", "polyMul()", they are related to your coding style points.

Put the files below in the **folder** (folder name: studentID), and compress this **folder** as "**studentID.zip**"

1. **One** source code file (filename: studentID.c)
2. **One report** with your coding environment (OS, IDE, ...), problems you encountered, and references. (filename: studentID.pdf) **(20 points)**

All the file names are correct, or you'll get zero points. **(10 points)**

Deadline: 2018/10/30 23:59. **You must hand in the assignment on time, or you will get zero points.**

Warning: We encourage you to discuss assignments with each other. However, you have the responsibility to finish the assignments individually. **Do not copy others' assignment, or you will get zero points.**