Structured Programming Language

Project Details:

Sir we tried to make a graph plotter on command line. The program takes the coefficient and constant of an equation and try to draw it on the graph in command prompt. Equation can be linear or non-linear.

Program Procedure:

At first the program ask for the degree (the higher) of equation. Then it takes the coefficients of the equation. At last it ask for the constant. One should input them perfectly as the equation. An example is given here.

We are interested about the equation below

$$X^3-X-Y+8=0$$

It is an equation of degree 3.

It can be written as below

$$1*X^3+0*Y^3+0*X^2+0*Y^2-X-Y+8=0$$

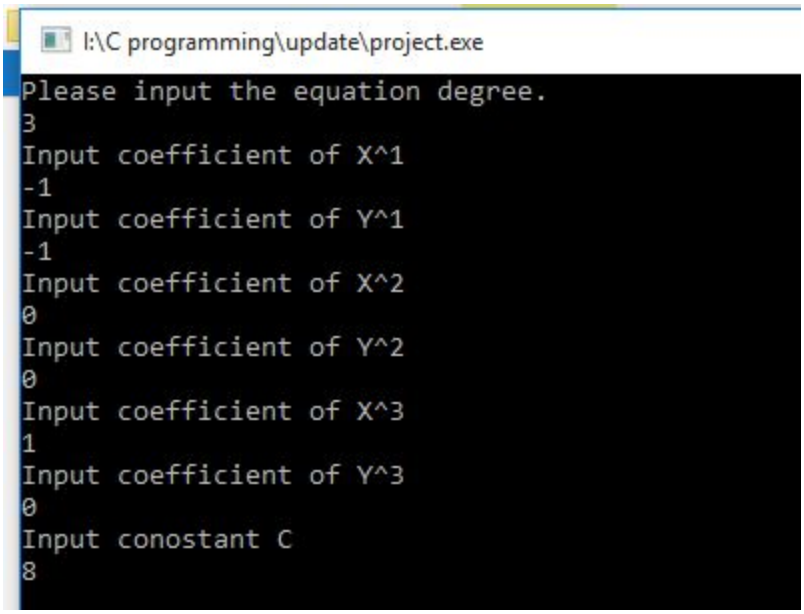
So the coefficient will be

For X^1	-1
For Y^1	-1
For X^2	0
For Y^2	0
For X^3	1
For Y^3	0

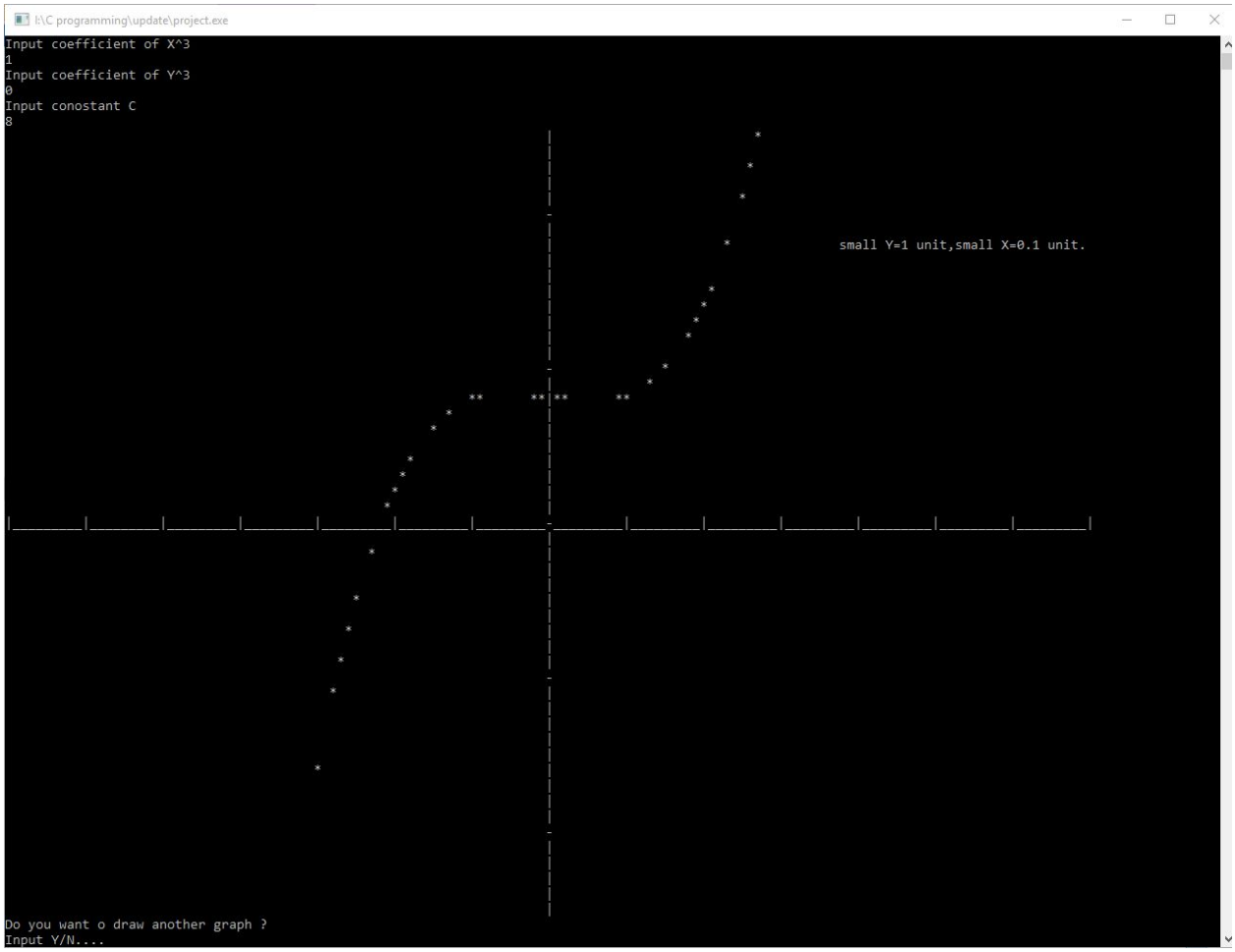
And the constant

C	8

Now the value need to be input like as the picture below



After the input the program will generate the graph below:



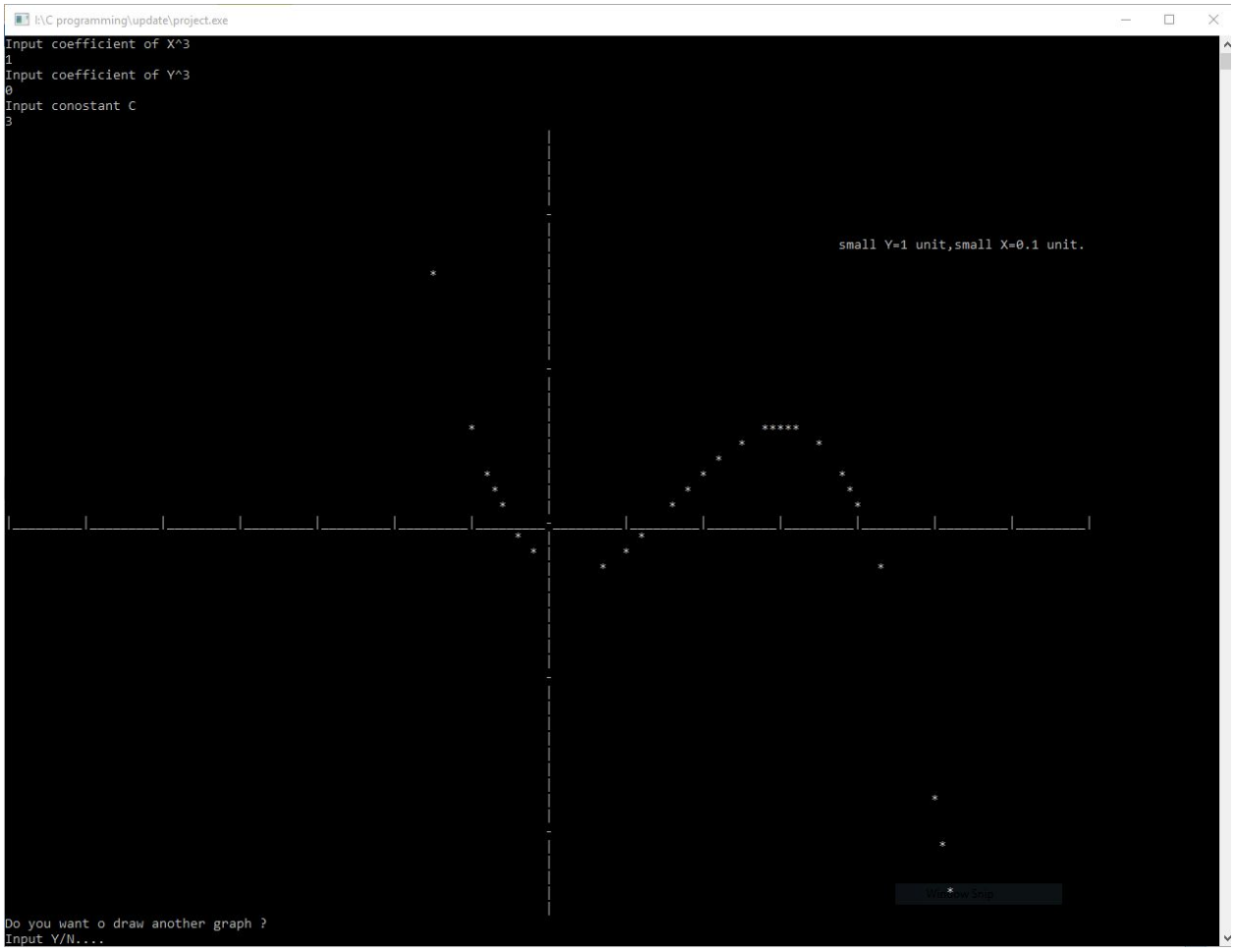
Limitation:

As it works in command prompt it have some limitations.

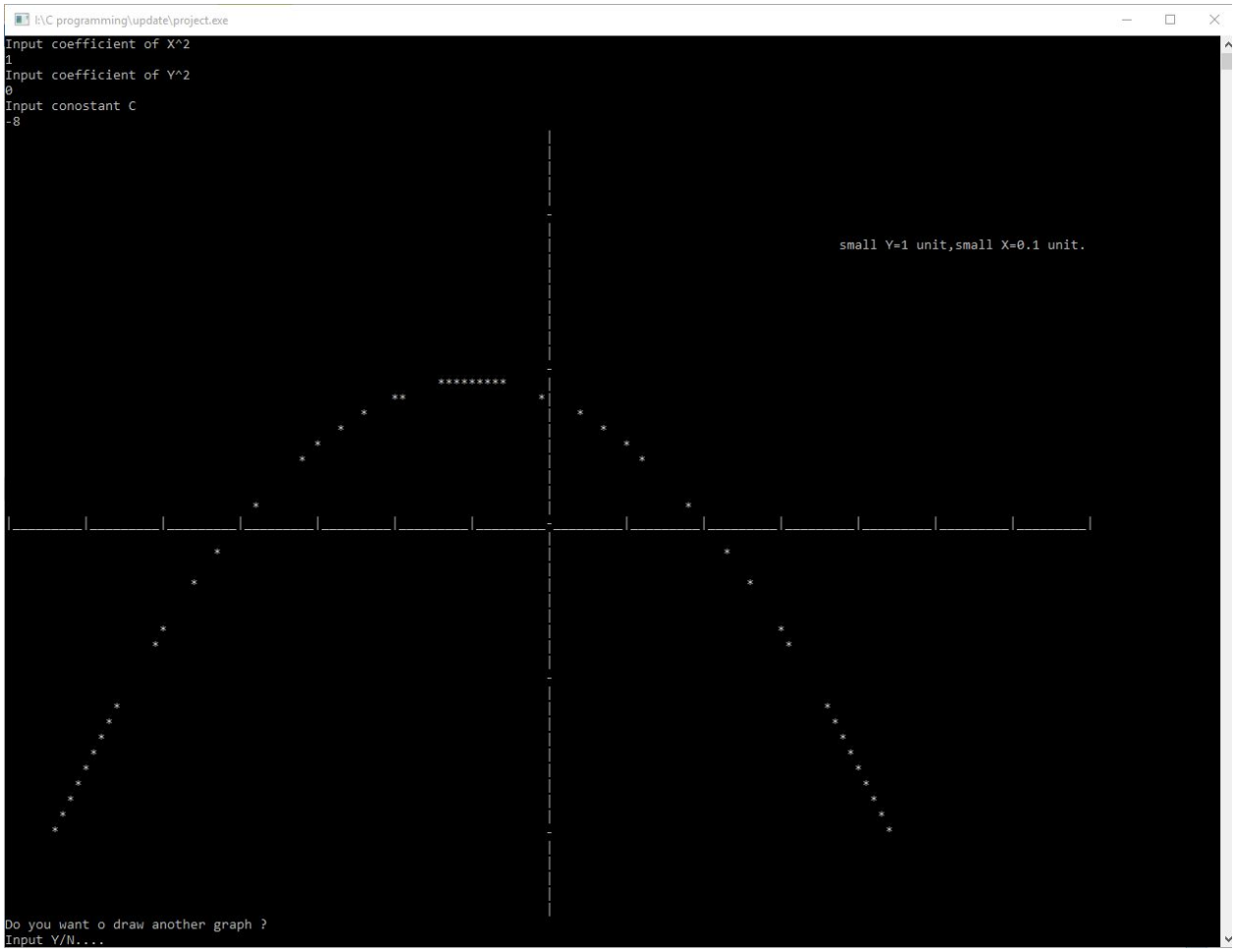
1. Some windows version do not support full screen command prompt. But it need to run in full screen. The command prompt should at least 144 character width and 52 character height.
2. It can not draw circle, eclipse perfectly because the width and height of characters are not the same (Also the scale). As a result they become changed from perfect shape.
3. It can not draw some equation. Because the program can not work in pixel level and we used 1 decimal point for the unknown value X. But some type of equation need smaller value for X. Such as 4 or more decimal point.

4. The slope is not ok as seen. Because the scale of X and Y are different. One character on X axis define 0.1 unit and One character on Y axis define 1 unit. So the slope is not seen 1(=tan(45)) for the equation X-Y=0.

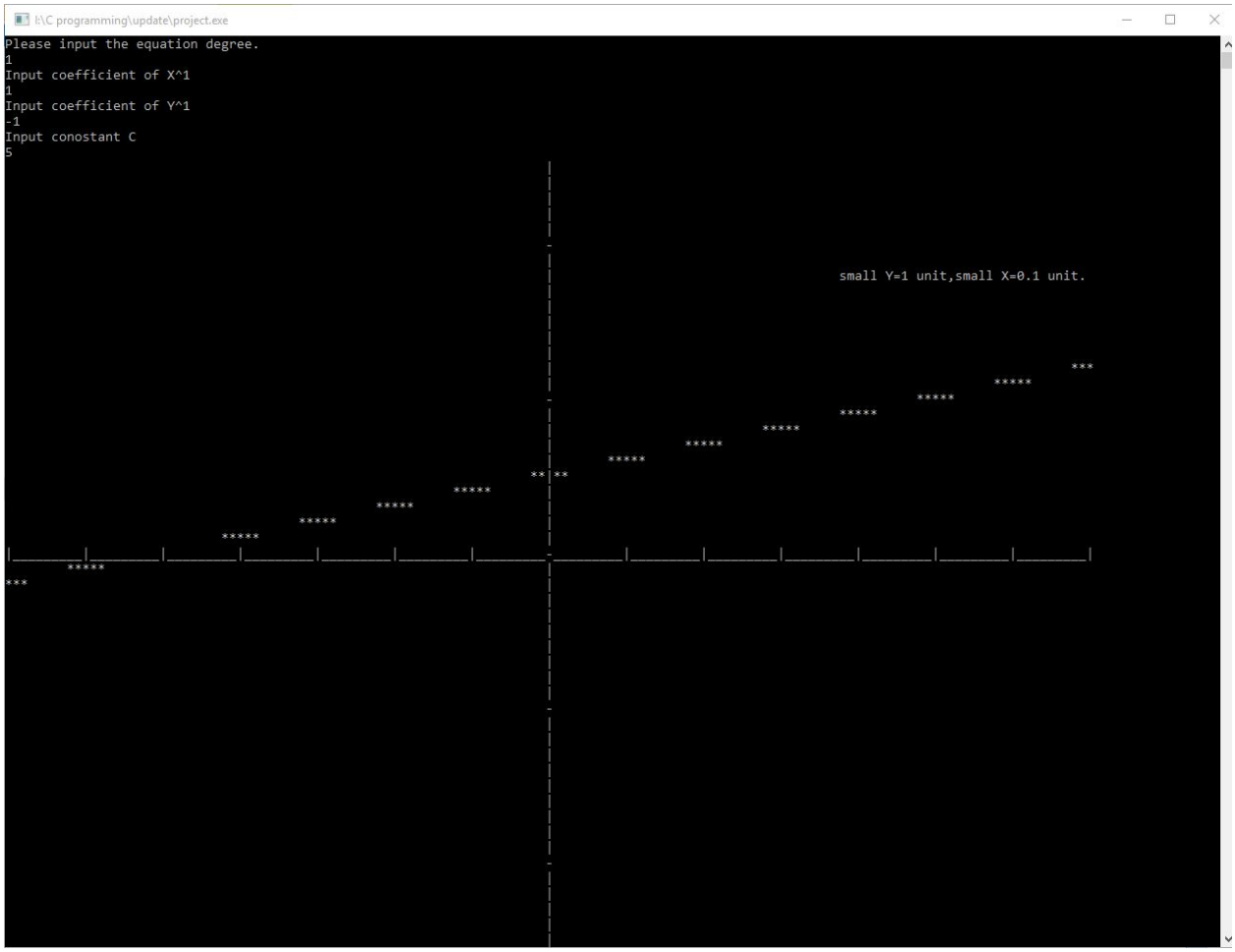
Some Screenshot:



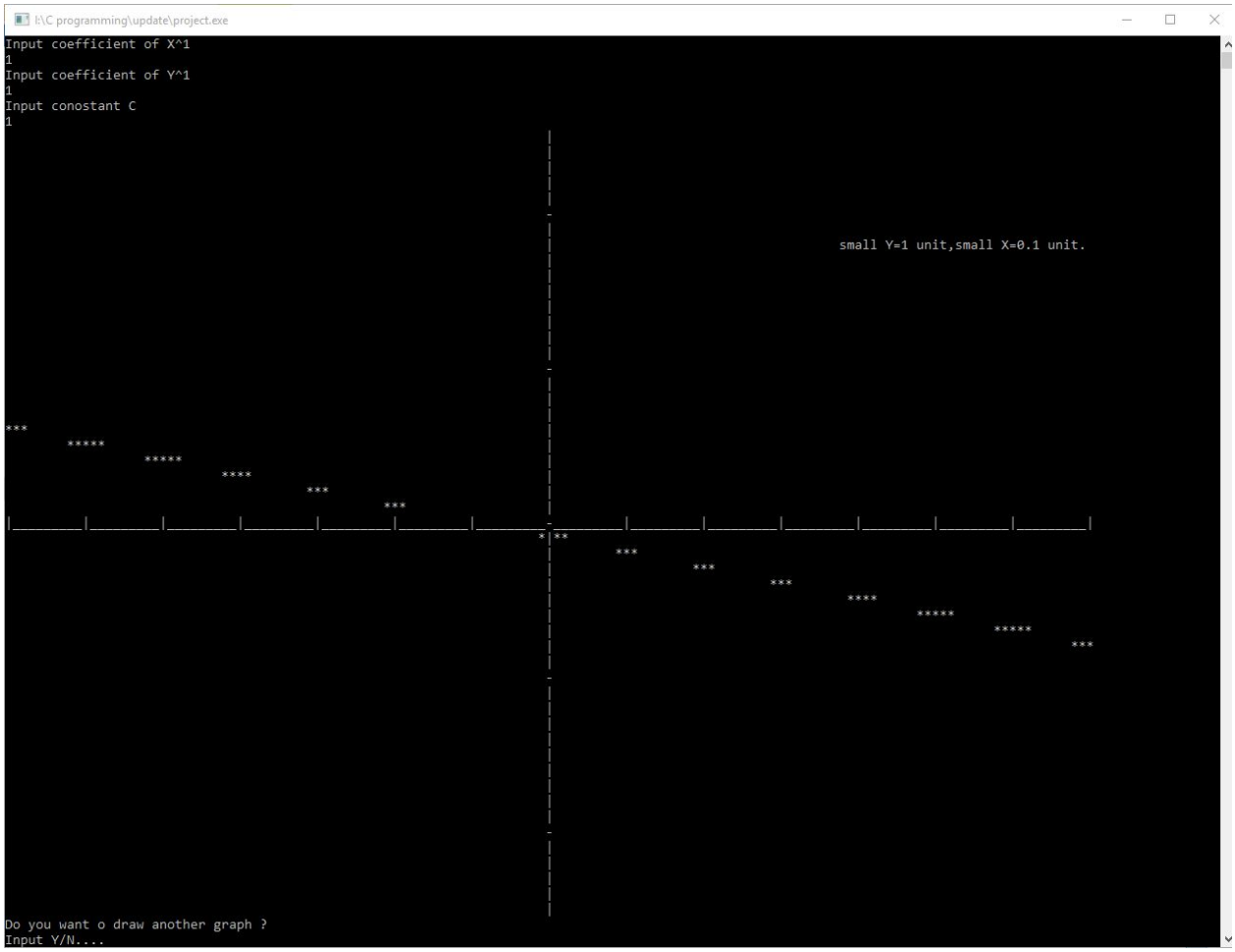
Equation: $X^3-5X^2+3X+Y+3=0$



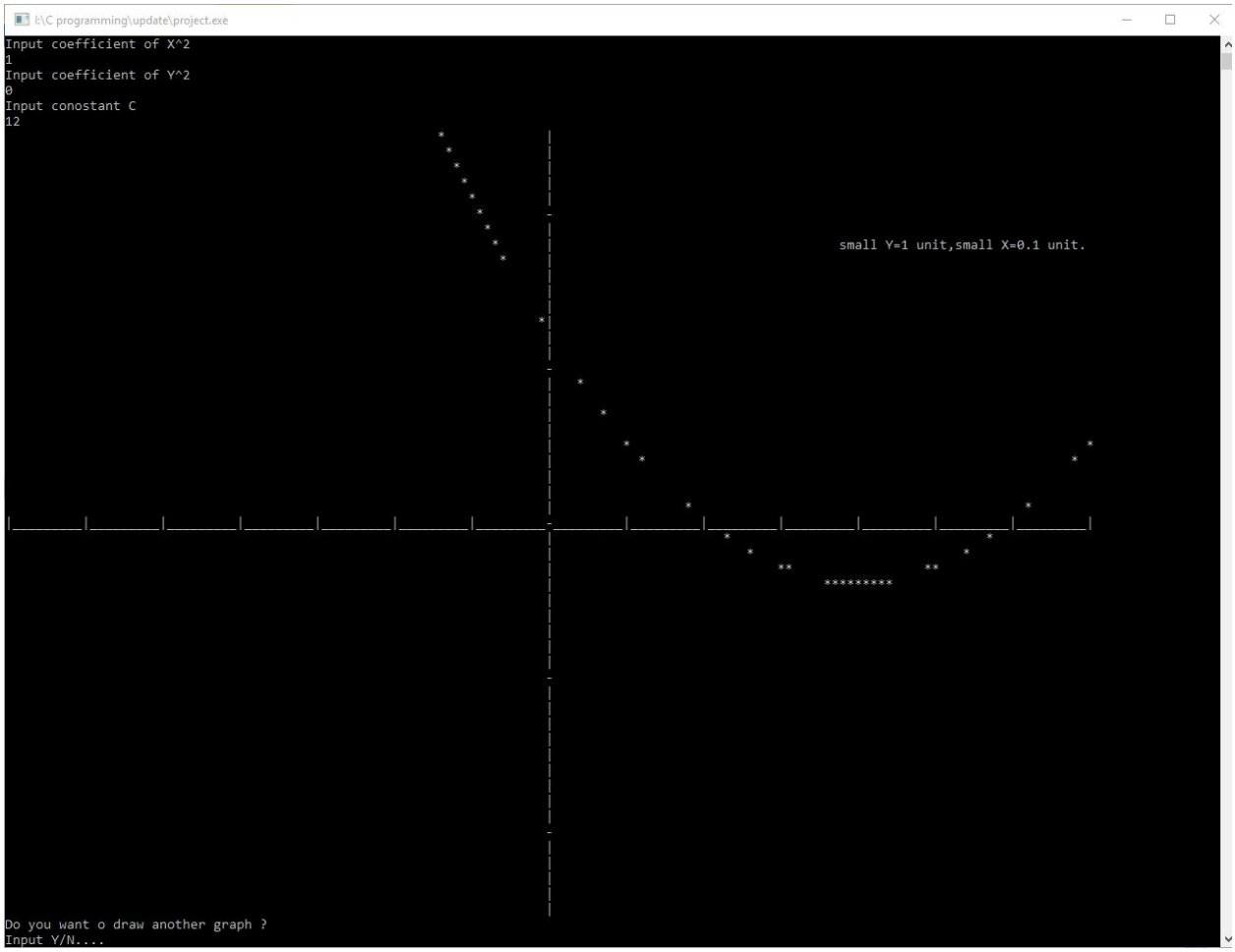
Equation: $X^2+2X+Y-8=0$



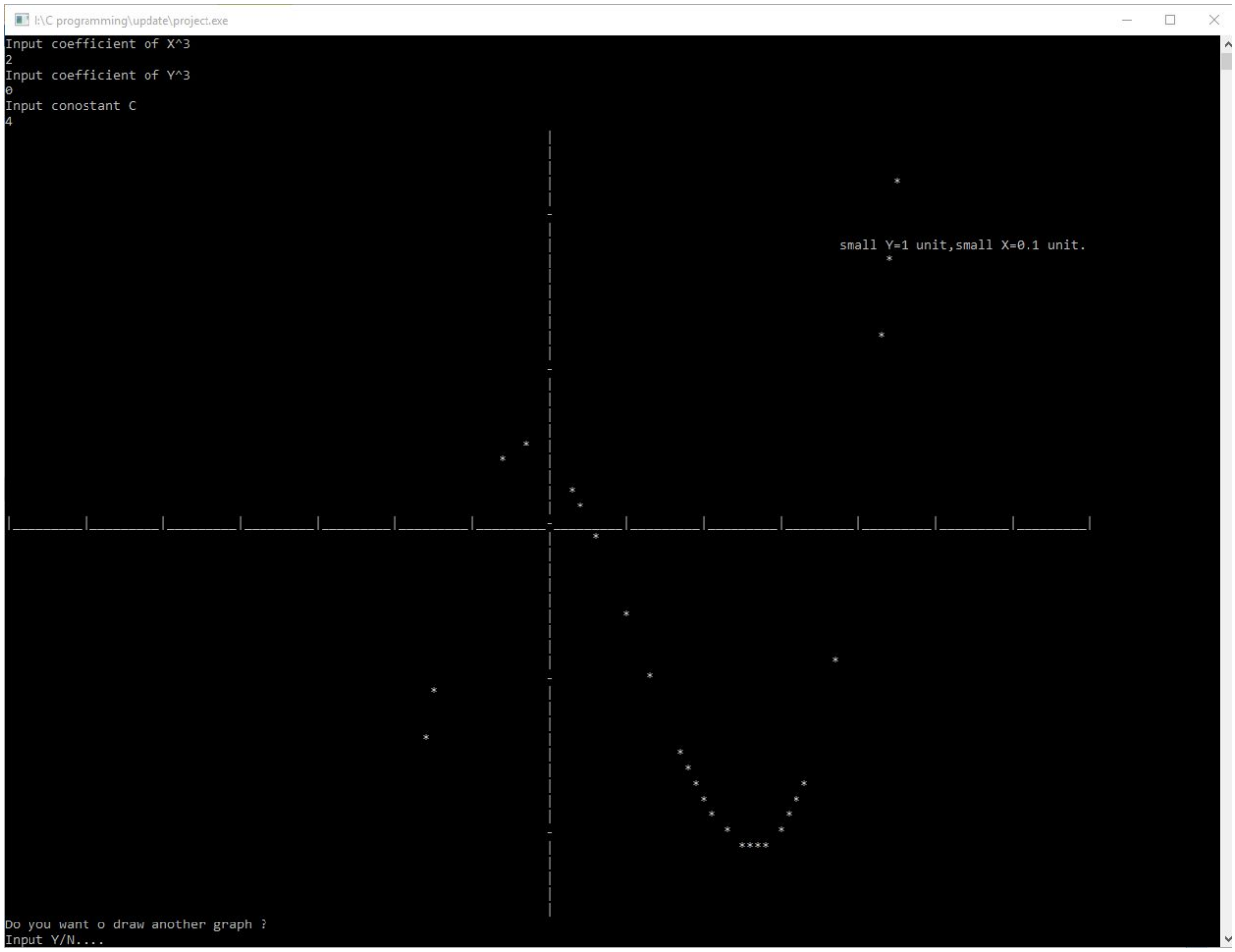
Equation: X-Y+5=0



Equation: X+Y+1=0



Equation: $X^2-8X-Y+12=0$



Equation: $2X^3-7X^2-5X-Y+4=0$