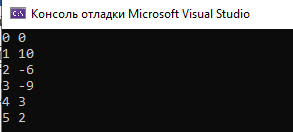
Умножение многочленов

string input1 = "2x^2+3x-5";

string input2 = "x^3-2x";



using System;

using System.Collections.Generic;

using System.Linq;

namespace Multiply

{

class Program

{

struct Part { public int coef; public int power; };

static void Main(string[] args)

{

string input1 = "2x^2+3x-5";

string input2 = "x^3-2x";

char[] admissibleSymbols = new char[] { '0', '1', '2', '3', '4', '5', '6', '7', '8', '9', '^', '+', '-', 'x', ' ', '\*' };

bool check(string str)

{

bool flag = true;

foreach (var item in str)

{

if (admissibleSymbols.ToList().IndexOf(item) == -1)

{

flag = false;

break;

}

}

return flag;

}

List<String> \_split(string str)

{

string currentPart = "";

List<string> array = new List<string>();

while (str.Length > 0)

{

if (str[0] == '+' || str[0] == '-')

{

array.Add(currentPart);

currentPart = "";

}

currentPart += str[0];

str = str.Substring(1);

}

array.Add(currentPart);

return array;

}

int getPower(string str)

{

if (str.ToList().IndexOf('x') == -1)

{

return 0;

}

else if (str.ToList().IndexOf('^') == -1)

{

return 1;

}

else

{

string result = str.Substring(str.ToList().IndexOf('^') + 1);

return int.Parse(result);

}

}

int getCoef(string str)

{

try

{

str = str.Substring(0, (str.ToList().IndexOf('x') == -1) ? str.Length : str.ToList().IndexOf('x'));

int coef = int.Parse(str);

return coef;

}

catch (Exception)

{

return 1;

}

}

Part Multiply(string arg1, string arg2)

{

Part part;

part.coef = getCoef(arg1) \* getCoef(arg2);

part.power = getPower(arg1) + getPower(arg2);

return part;

}

if (!check(input1))

{

Console.WriteLine("первый не корректен");

return;

}

if (!check(input2))

{

Console.WriteLine("второй не корректен");

return;

}

List<Part> arr = new List<Part>();

int maxPower = -1;

List<String> splitedInput1 = \_split(input1);

List<String> splitedInput2 = \_split(input2);

for (int i = 0; i < splitedInput1.Count; i++)

{

for (int j = 0; j < splitedInput2.Count; j++)

{

Part multiply = Multiply(splitedInput1[i], splitedInput2[j]);

if (maxPower < multiply.power)

{

maxPower = multiply.power;

}

arr.Add(multiply);

}

}

List<int> output = new List<int>();

for (int i = 0; i <= maxPower; i++)

{

output.Add(0);

}

foreach (var item in arr)

{

output[item.power] += item.coef;

}

for (int i = 0; i < output.Count; i++)

{

Console.WriteLine(i + " " + output[i]);

}

Console.ReadKey();

}

}

}