Толмачева Т.В.   ИНФ-12-1   Л/Р №5

Вариант № 3

Используя 3 текстовых файла из 2 лб, считать из них данные в отдельные потоки, после чего все числа выше задаваемого пользователем записать в 1 файл, ниже – во 2 файл, а слова без повторений – в 3-й файл. Запись проводить прямо в процессе работы со всеми потоками.

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using System.IO;
using System.Threading;

namespace Lab_5
{
    public partial class Form1 : Form
    {
        bool FirstFile = false;
        bool SecondFile = false;
        bool ThirdFile = false;
        string dataFirst = String.Empty;
        string dataSecond = String.Empty;
        string dataThird = String.Empty;

        bool FirstOutFile = false;
        bool SecondOutFile = false;
        bool ThirdOutFile = false;
        string FirstOutPathFile = String.Empty;
        string SecondOutPathFile = String.Empty;
        string ThirdOutPathFile = String.Empty;

        static object OneLocker = new object();
        static object TwoLocker = new object();
        static object ThreeLocker = new object();

        public Form1()
        {
            InitializeComponent();
        }

        string ReadFile(ref string to)
        {
            if (openFileDialog.ShowDialog() == DialogResult.OK)
            {
                string fileName = openFileDialog.FileName;
                FileStream fstream = File.Open(fileName, FileMode.Open, FileAccess.Read);
                if (fstream != null)
                {
                    StreamReader reader = new StreamReader(fstream);
                    to = reader.ReadToEnd();
                    fstream.Close();
                    return Path.GetFileName(fileName);
                }
            }
            return String.Empty;
        }

        private void From1Button_Click(object sender, EventArgs e)
        {
            string name = ReadFile(ref dataFirst);
            if(!String.IsNullOrEmpty(name))
            {
                FirstFile = true;
                From1Label.Text = name;
            }
            InitCalc();
        }

        private void From2Button_Click(object sender, EventArgs e)
        {
            string name = ReadFile(ref dataSecond);
            if (!String.IsNullOrEmpty(name))
            {
                SecondFile = true;
                From2Label.Text = name;
            }
            InitCalc();
        }

        private void From3Button_Click(object sender, EventArgs e)
        {
            string name = ReadFile(ref dataThird);
            if (!String.IsNullOrEmpty(name))
            {
                ThirdFile = true;
                From3Label.Text = name;
            }
            InitCalc();
        }

        void InitCalc()
        {
            if (FirstOutFile && SecondOutFile && ThirdOutFile && FirstFile && SecondFile
&& ThirdFile && !String.IsNullOrEmpty(DigitBox.Text))
                CalcButton.Enabled = true;
            else
                CalcButton.Enabled = false;
        }

        private void DigitBox_KeyPress(object sender, KeyPressEventArgs e)
        {
            if (!Char.IsDigit(e.KeyChar))
            {
                if (e.KeyChar != (char)Keys.Back)
                {
                    e.Handled = true;
                }
            }
        }

        private void To1Button_Click(object sender, EventArgs e)
        {
            if (saveFileDialog.ShowDialog() == DialogResult.OK)
            {
                string name  = saveFileDialog.FileName;
                if (name != SecondOutPathFile && name != ThirdOutPathFile)
                {
                    FileStream stream = File.Open(name, FileMode.Truncate);
                    stream.Close();
                    FirstOutPathFile = name;
                    To1Label.Text = Path.GetFileName(name);
                    FirstOutFile = true;
                }
                else MessageBox.Show("Нельзя записывать в один файл!", "Ошибка");
            }
            InitCalc();
        }

        private void To2Button_Click(object sender, EventArgs e)
        {
            if (saveFileDialog.ShowDialog() == DialogResult.OK)
            {
                string name = saveFileDialog.FileName;
                if (name != FirstOutPathFile && name != ThirdOutPathFile)
                {
                    FileStream stream = File.Open(name, FileMode.Truncate);
                    stream.Close();
                    SecondOutPathFile = name;
                    To2Label.Text = Path.GetFileName(name);
                    SecondOutFile = true;
                }
                else MessageBox.Show("Нельзя записывать в один файл!", "Ошибка");
            }
            InitCalc();
        }

        private void To3Button_Click(object sender, EventArgs e)
        {
            if (saveFileDialog.ShowDialog() == DialogResult.OK)
            {
                string name = saveFileDialog.FileName;
                if (name != SecondOutPathFile && name != FirstOutPathFile)
                {
                    FileStream stream = File.Open(name, FileMode.Truncate);
                    stream.Close();
                    ThirdOutPathFile = name;
                    To3Label.Text = Path.GetFileName(name);
                    ThirdOutFile = true;
                }
                else MessageBox.Show("Нельзя записывать в один файл!", "Ошибка");
            }
            InitCalc();
        }

        private void DigitBox_TextChanged(object sender, EventArgs e)
        {
            InitCalc();
        }

        private void CalcButton_Click(object sender, EventArgs e)
        {
            Thread OneFile = new Thread(new ThreadStart(() =>
            {
                processFunction(dataFirst, Convert.ToInt32(DigitBox.Text));
            }));

            Thread TwoFile = new Thread(new ThreadStart(() =>
            {
                processFunction(dataSecond, Convert.ToInt32(DigitBox.Text));
            }));

            Thread ThreeFile = new Thread(new ThreadStart(() =>
            {
                processFunction(dataThird, Convert.ToInt32(DigitBox.Text));
            }));
```

```
            OneFile.Start();
            TwoFile.Start();
            ThreeFile.Start();
            OneFile.Join();
            TwoFile.Join();
            ThreeFile.Join();
        }

        private void processFunction(string str, int control)
        {
            List<decimal> list_num_b = new List<decimal>();
            List<decimal> list_num_m = new List<decimal>();
            List<string> list_words = new List<string>();
            string[] words = str.Split(new char[] { ' ', ',', '.', ':', '\t', '\n' },
StringSplitOptions.RemoveEmptyEntries);

            for (int i = 0; i < words.Length; ++i)
            {
                decimal number;
                if (decimal.TryParse(words[i], out number))
                {
                    if (number > control) list_num_b.Add(number);
                    else if (number < control) list_num_m.Add(number);
                }
                else list_words.Add(words[i]);
            }

            lock (OneLocker)
            {
                FileStream stream = File.Open(FirstOutPathFile, FileMode.Append);
                if (stream != null)
                {
                    StreamWriter writer = new StreamWriter(stream);

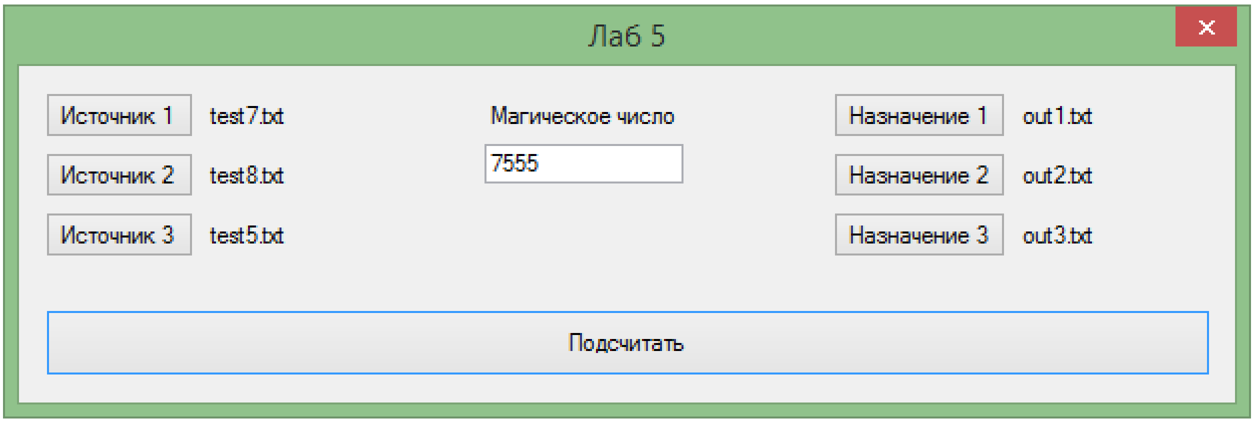
                    writer.WriteLine(string.Join(", ", list_words.ToArray().Distinct()));
                    writer.Flush();
                    stream.Close();
                }
            }

            lock (TwoLocker)
            {
                FileStream stream = File.Open(SecondOutPathFile, FileMode.Append);
                if (stream != null)
                {
                    StreamWriter writer = new StreamWriter(stream);

                    writer.WriteLine(string.Join(", ", list_num_b.ToArray().Distinct()));
                    writer.Flush();
                    stream.Close();
                }
            }

            lock (ThreeLocker)
            {
                FileStream stream = File.Open(ThirdOutPathFile, FileMode.Append);
                if (stream != null)
                {
                    StreamWriter writer = new StreamWriter(stream);

                    writer.WriteLine(string.Join(", ", list_num_m.ToArray().Distinct()));
                    writer.Flush();
                    stream.Close();
                }
            }
        }
    }
}
```



Источник 1 test7.txt

Источник 2 test8.txt

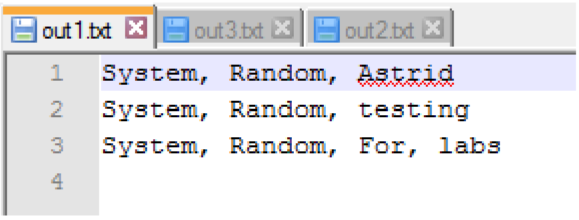
Источник 3 test5.txt

Магическое число 7555

Назначение 1 out1.txt

Назначение 2 out2.txt

Назначение 3 out3.txt



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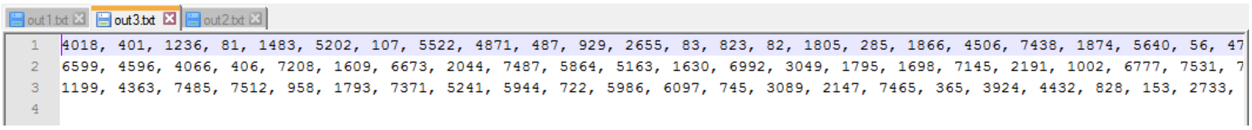

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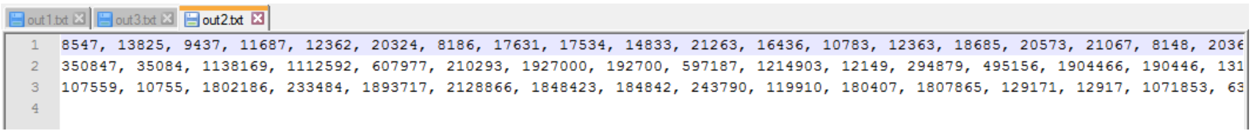
4018, 401, 1236, 81, 1483, 5202, 107, 5522, 4871, 487, 929, 2655, 83, 823, 82, 1805, 285, 1866, 4506, 7438, 1874, 5640, 56, 47
6599, 4596, 4066, 406, 7208, 1609, 6673, 2044, 7487, 5864, 5163, 1630, 6992, 3049, 1795, 1698, 7145, 2191, 1002, 6777, 7531, 7
1199, 4363, 7485, 7512, 958, 1793, 7371, 5241, 5944, 722, 5986, 6097, 745, 3089, 2147, 7465, 365, 3924, 4432, 828, 153, 2733,

```



```
8547, 13825, 9437, 11687, 12362, 20324, 8186, 17631, 17534, 14833, 21263, 16436, 10783, 12363, 18685, 20573, 21067, 8148, 2036
350847, 35084, 1138169, 1112592, 607977, 210293, 1927000, 192700, 597187, 1214903, 12149, 294879, 495156, 1904466, 190446, 131
107559, 10755, 1802186, 233484, 1893717, 2128866, 1848423, 184842, 243790, 119910, 180407, 1807865, 129171, 12917, 1071853, 63

```