Министерство науки и высшего образования Российской Федерации

Федеральное государственное бюджетное образовательное учреждение высшего образования

«Московский государственный технический университет

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Базовые компоненты интернет технологий

Отчет по домашнему заданию

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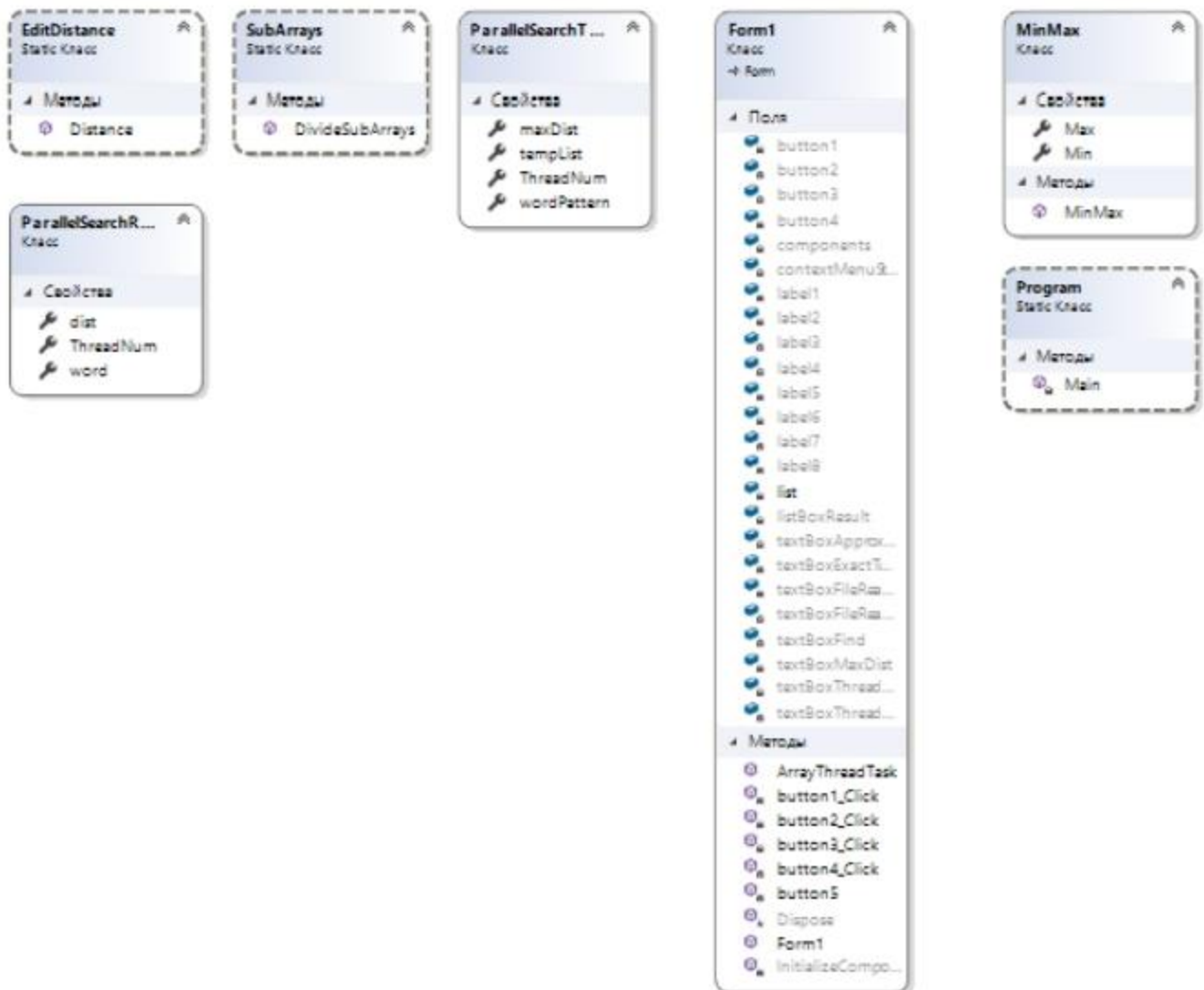Группа: ИУ5Ц-51Б

Преподаватель: Гапанюк Ю. Е.

2019 г.

Домашнее задание

Разработать программу, реализующую многопоточный поиск в файле.

1. Программа должна быть разработана в виде приложения Windows Forms на языке C#. По желанию вместо Windows Forms возможно использование WPF;

2. В качестве основы используется макет, разработанный в лабораторных работах №4 и №5;

3. Реализуйте функцию поиска с использованием расстояния Левенштейна в многопоточном варианте. Количество потоков для запуска функции поиска вводится на форме в поле ввода (TextBox).

4. Реализуйте функцию записи результатов поиска в файл отчета. Файл отчета создается в формате .txt или .html

Пример реализации ДЗ рассмотрен в учебном пособии, глава «Пример многопоточного поиска в текстовом файле с использованием технологии Windows Forms».

Диаграмма классов

EditDistance
Static Класс

▲ Методы
- 🔵 Distance

SubArrays
Static Класс

▲ Методы
- 🔵 DivideSubArrays

ParallelSearchT ...
Класс

▲ Свойства
- 🔧 maxDist
- 🔧 tempList
- 🔧 ThreadNum
- 🔧 wordPattern

Form1
Класс
↳ Form

▲ Поля
- button1
- button2
- button3
- button4
- components
- contextMenuSt...
- label1
- label2
- label3
- label4
- label5
- label6
- label7
- label8
- list
- listBoxResult
- textBoxApprox...
- textBoxExactTi...
- textBoxFileRe...
- textBoxFileRe...
- textBoxFind
- textBoxMaxDist
- textBoxThread...
- textBoxThread...

▲ Методы
- 🔵 ArrayThreadTask
- 🔵 button1_Click
- 🔵 button2_Click
- 🔵 button3_Click
- 🔵 button4_Click
- 🔵 button5
- 🔵 Dispose
- 🔵 Form1
- 🔵 InitializeCompo...

MinMax
Класс

▲ Свойства
- 🔧 Max
- 🔧 Min

▲ Методы
- 🔵 MinMax

Program
Static Класс

▲ Методы
- 🔵 Main

ParallelSearchR ...
Класс

▲ Свойства
- 🔧 dist
- 🔧 ThreadNum
- 🔧 word

Текст программы

Program.cs

```csharp
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;

namespace DZ
{
    static class Program
    {
        /// <summary>
        /// Главная точка входа для приложения.
        /// </summary>
        [STAThread]
        static void Main()
        {
            Console.Title = "Мурзин Вячеслав, ИУ5Ц-51Б";
            Application.EnableVisualStyles();
            Application.SetCompatibleTextRenderingDefault(false);
            Application.Run(new Form1());
        }
    }
}
```

Form1.Designer.cs

```csharp
namespace DZ

{

  partial class Form1

  {

    /// Обязательная переменная конструктора.

    private System.ComponentModel.IContainer components = null;

    /// Освободить все используемые ресурсы.

    /// <param name="disposing">истинно, если управляемый ресурс должен быть удален;
иначе ложно.</param>

    protected override void Dispose(bool disposing)

    {

      if (disposing && (components != null))

      {

        components.Dispose();

      }

      base.Dispose(disposing);

    }
```

```csharp
#region Код, автоматически созданный конструктором форм Windows

/// Требуемый метод для поддержки конструктора — не изменяйте
/// содержимое этого метода с помощью редактора кода.
private void InitializeComponent()
{
  this.components = new System.ComponentModel.Container();
  this.label1 = new System.Windows.Forms.Label();
  this.label2 = new System.Windows.Forms.Label();
  this.label3 = new System.Windows.Forms.Label();
  this.label4 = new System.Windows.Forms.Label();
  this.label5 = new System.Windows.Forms.Label();
  this.label6 = new System.Windows.Forms.Label();
  this.label7 = new System.Windows.Forms.Label();
  this.label8 = new System.Windows.Forms.Label();
  this.contextMenuStrip1 = new System.Windows.Forms.ContextMenuStrip(this.components);
  this.textBoxFileReadTime = new System.Windows.Forms.TextBox();
  this.textBoxFileReadCount = new System.Windows.Forms.TextBox();
  this.textBoxFind = new System.Windows.Forms.TextBox();
  this.textBoxExactTime = new System.Windows.Forms.TextBox();
  this.textBoxMaxDist = new System.Windows.Forms.TextBox();
  this.textBoxThreadCount = new System.Windows.Forms.TextBox();
  this.textBoxApproxTime = new System.Windows.Forms.TextBox();
  this.textBoxThreadCountAll = new System.Windows.Forms.TextBox();
  this.button1 = new System.Windows.Forms.Button();
  this.button2 = new System.Windows.Forms.Button();
  this.button3 = new System.Windows.Forms.Button();
  this.listBoxResult = new System.Windows.Forms.ListBox();
  this.button4 = new System.Windows.Forms.Button();
  //this.button5 = new System.Windows.Forms.Button();
  this.SuspendLayout();
  //
```

```csharp
// label1
this.button1.Location = new System.Drawing.Point(40, 498);

this.button1.Margin = new System.Windows.Forms.Padding(4);

this.button1.Name = "button1";

this.button1.Size = new System.Drawing.Size(157, 37);

this.button1.TabIndex = 0;

this.button1.Text = "Чтение из файла";

this.button1.UseVisualStyleBackColor = true;

this.button1.Click += new System.EventHandler(this.button1_Click);

//

this.label1.AutoSize = true;

this.label1.Location = new System.Drawing.Point(137, 24);

this.label1.Name = "label1";

this.label1.Size = new System.Drawing.Size(130, 13);

this.label1.TabIndex = 0;

this.label1.Text = "Время чтения из файла:";

//

// label2
this.button2.Location = new System.Drawing.Point(12, 99);

this.button2.Name = "button2";

this.button2.Size = new System.Drawing.Size(119, 80);

this.button2.TabIndex = 18;

this.button2.Text = "Чёткий поиск";

this.button2.UseVisualStyleBackColor = true;

this.button2.Click += new System.EventHandler(this.button2_Click);

//

this.label2.AutoSize = true;

this.label2.Location = new System.Drawing.Point(137, 53);

this.label2.Name = "label2";

this.label2.Size = new System.Drawing.Size(203, 13);

this.label2.TabIndex = 1;

this.label2.Text = "Количество уникальных слов в файле:";

//
```

```csharp
// label3
this.button3.Location = new System.Drawing.Point(12, 186);

this.button3.Name = "button3";

this.button3.Size = new System.Drawing.Size(119, 80);

this.button3.TabIndex = 19;

this.button3.Text = "Параллельный нечёткий поиск";

this.button3.UseVisualStyleBackColor = true;

this.button3.Click += new System.EventHandler(this.button3_Click);

//

this.label3.AutoSize = true;

this.label3.Location = new System.Drawing.Point(137, 82);

this.label3.Name = "label3";

this.label3.Size = new System.Drawing.Size(101, 13);

this.label3.TabIndex = 2;

this.label3.Text = "Слово для поиска:";

//

// label4

//

this.label4.AutoSize = true;

this.label4.Location = new System.Drawing.Point(137, 116);

this.label4.Name = "label4";

this.label4.Size = new System.Drawing.Size(124, 13);

this.label4.TabIndex = 3;

this.label4.Text = "Время чёткого поиска:";

//

// label5

//

this.label5.AutoSize = true;

this.label5.Location = new System.Drawing.Point(137, 149);

this.label5.Name = "label5";

this.label5.Size = new System.Drawing.Size(266, 13);

this.label5.TabIndex = 4;

this.label5.Text = "Максимальное расстояние для нечёткого поиска: ";
```

```csharp
//
// label6
//
this.label6.AutoSize = true;
this.label6.Location = new System.Drawing.Point(137, 182);
this.label6.Name = "label6";
this.label6.Size = new System.Drawing.Size(113, 13);
this.label6.TabIndex = 5;
this.label6.Text = "Количество потоков:";
//
// label7
//
this.label7.AutoSize = true;
this.label7.Location = new System.Drawing.Point(137, 214);
this.label7.Name = "label7";
this.label7.Size = new System.Drawing.Size(186, 13);
this.label7.TabIndex = 6;
this.label7.Text = "Вычисленное количество потоков: ";
//
// label8
//
this.label8.AutoSize = true;
this.label8.Location = new System.Drawing.Point(137, 249);
this.label8.Name = "label8";
this.label8.Size = new System.Drawing.Size(135, 13);
this.label8.TabIndex = 7;
this.label8.Text = "Время нечёткого потока:";
//
// contextMenuStrip1
//
this.contextMenuStrip1.Name = "contextMenuStrip1";
this.contextMenuStrip1.Size = new System.Drawing.Size(61, 4);
//
```

```
// textBoxFileReadTime
//
this.textBoxFileReadTime.Location = new System.Drawing.Point(273, 24);

this.textBoxFileReadTime.Name = "textBoxFileReadTime";

this.textBoxFileReadTime.ReadOnly = true;

this.textBoxFileReadTime.Size = new System.Drawing.Size(100, 20);

this.textBoxFileReadTime.TabIndex = 9;
//
// textBoxFileReadCount
//
this.textBoxFileReadCount.Location = new System.Drawing.Point(346, 53);

this.textBoxFileReadCount.Name = "textBoxFileReadCount";

this.textBoxFileReadCount.ReadOnly = true;

this.textBoxFileReadCount.Size = new System.Drawing.Size(100, 20);

this.textBoxFileReadCount.TabIndex = 10;
//
// textBoxFind
//
this.textBoxFind.Location = new System.Drawing.Point(245, 82);

this.textBoxFind.Name = "textBoxFind";

this.textBoxFind.Size = new System.Drawing.Size(100, 20);

this.textBoxFind.TabIndex = 11;
//
// textBoxExactTime
//
this.textBoxExactTime.Location = new System.Drawing.Point(268, 116);

this.textBoxExactTime.Name = "textBoxExactTime";

this.textBoxExactTime.ReadOnly = true;

this.textBoxExactTime.Size = new System.Drawing.Size(100, 20);

this.textBoxExactTime.TabIndex = 12;
//
// textBoxMaxDist
//
```

```
this.textBoxMaxDist.Location = new System.Drawing.Point(410, 149);

this.textBoxMaxDist.Name = "textBoxMaxDist";

this.textBoxMaxDist.Size = new System.Drawing.Size(100, 20);

this.textBoxMaxDist.TabIndex = 13;

//

// textBoxThreadCount

//

this.textBoxThreadCount.Location = new System.Drawing.Point(257, 182);

this.textBoxThreadCount.Name = "textBoxThreadCount";

this.textBoxThreadCount.Size = new System.Drawing.Size(100, 20);

this.textBoxThreadCount.TabIndex = 14;

//

// textBoxApproxTime

//

this.textBoxApproxTime.Location = new System.Drawing.Point(330, 214);

this.textBoxApproxTime.Name = "textBoxApproxTime";

this.textBoxApproxTime.ReadOnly = true;

this.textBoxApproxTime.Size = new System.Drawing.Size(100, 20);

this.textBoxApproxTime.TabIndex = 15;

//

// textBoxThreadCountAll

//

this.textBoxThreadCountAll.Location = new System.Drawing.Point(279, 249);

this.textBoxThreadCountAll.Name = "textBoxThreadCountAll";

this.textBoxThreadCountAll.ReadOnly = true;

this.textBoxThreadCountAll.Size = new System.Drawing.Size(100, 20);

this.textBoxThreadCountAll.TabIndex = 16;

//

// button1

//

this.button1.Location = new System.Drawing.Point(13, 13);

this.button1.Name = "button1";

this.button1.Size = new System.Drawing.Size(118, 80);
```

```csharp
this.button1.TabIndex = 17;

this.button1.Text = "Чтение из файла";

this.button1.UseVisualStyleBackColor = true;


//

// button2

//

this.button2.Location = new System.Drawing.Point(12, 99);

this.button2.Name = "button2";

this.button2.Size = new System.Drawing.Size(119, 80);

this.button2.TabIndex = 18;

this.button2.Text = "Чёткий поиск";

this.button2.UseVisualStyleBackColor = true;

//

// button3

//

this.button3.Location = new System.Drawing.Point(12, 186);

this.button3.Name = "button3";

this.button3.Size = new System.Drawing.Size(119, 80);

this.button3.TabIndex = 19;

this.button3.Text = "Параллельный нечёткий поиск";

this.button3.UseVisualStyleBackColor = true;

//

// listBoxResult

//

this.listBoxResult.FormattingEnabled = true;

this.listBoxResult.Location = new System.Drawing.Point(140, 283);

this.listBoxResult.Name = "listBoxResult";

this.listBoxResult.Size = new System.Drawing.Size(370, 160);

this.listBoxResult.TabIndex = 20;

//

// button4

//
```

```csharp
this.button4.Location = new System.Drawing.Point(140, 450);

this.button4.Name = "button4";

this.button4.Size = new System.Drawing.Size(132, 44);

this.button4.TabIndex = 21;

this.button4.Text = "Сохранение";

this.button4.UseVisualStyleBackColor = true;

this.button4.Click += new System.EventHandler(this.button4_Click);

//

// button5

//

//this.button5.Location = new System.Drawing.Point(378, 450);

//this.button5.Name = "button5";

//this.button5.Size = new System.Drawing.Size(132, 44);

//this.button5.TabIndex = 22;

//this.button5.Text = "Выход";

//this.button5.UseVisualStyleBackColor = true;

//

// Form1

//

this.AutoScaleDimensions = new System.Drawing.SizeF(6F, 13F);

this.AutoScaleMode = System.Windows.Forms.AutoScaleMode.Font;

this.ClientSize = new System.Drawing.Size(624, 506);

//this.Controls.Add(this.button5);

this.Controls.Add(this.button4);

this.Controls.Add(this.listBoxResult);

this.Controls.Add(this.button3);

this.Controls.Add(this.button2);

this.Controls.Add(this.button1);

this.Controls.Add(this.textBoxThreadCountAll);

this.Controls.Add(this.textBoxApproxTime);

this.Controls.Add(this.textBoxThreadCount);

this.Controls.Add(this.textBoxMaxDist);

this.Controls.Add(this.textBoxExactTime);
```

```csharp
            this.Controls.Add(this.textBoxFind);

            this.Controls.Add(this.textBoxFileReadCount);

            this.Controls.Add(this.textBoxFileReadTime);

            this.Controls.Add(this.label8);

            this.Controls.Add(this.label7);

            this.Controls.Add(this.label6);

            this.Controls.Add(this.label5);

            this.Controls.Add(this.label4);

            this.Controls.Add(this.label3);

            this.Controls.Add(this.label2);

            this.Controls.Add(this.label1);

            this.Name = "Form1";

            this.Text = "Form1";

            this.ResumeLayout(false);

            this.PerformLayout();


        }


        #endregion


        private System.Windows.Forms.Label label1;

        private System.Windows.Forms.Label label2;

        private System.Windows.Forms.Label label3;

        private System.Windows.Forms.Label label4;

        private System.Windows.Forms.Label label5;

        private System.Windows.Forms.Label label6;

        private System.Windows.Forms.Label label7;

        private System.Windows.Forms.Label label8;

        private System.Windows.Forms.ContextMenuStrip contextMenuStrip1;

        private System.Windows.Forms.TextBox textBoxFileReadTime;

        private System.Windows.Forms.TextBox textBoxFileReadCount;

        private System.Windows.Forms.TextBox textBoxFind;

        private System.Windows.Forms.TextBox textBoxExactTime;
```

```csharp
        private System.Windows.Forms.TextBox textBoxMaxDist;

        private System.Windows.Forms.TextBox textBoxThreadCount;

        private System.Windows.Forms.TextBox textBoxApproxTime;

        private System.Windows.Forms.TextBox textBoxThreadCountAll;

        private System.Windows.Forms.Button button1;

        private System.Windows.Forms.Button button2;

        private System.Windows.Forms.Button button3;

        private System.Windows.Forms.ListBox listBoxResult;

        private System.Windows.Forms.Button button4;

        //private System.Windows.Forms.Button button5;

    }

}
```

Form1.cs

```csharp
namespace DZ

{

    partial class Form1

    {

        /// Обязательная переменная конструктора.

        private System.ComponentModel.IContainer components = null;

        /// Освободить все используемые ресурсы.

        /// <param name="disposing">истинно, если управляемый ресурс должен быть удален;
иначе ложно.</param>

        protected override void Dispose(bool disposing)

        {

            if (disposing && (components != null))

            {

                components.Dispose();

            }

            base.Dispose(disposing);

        }


        #region Код, автоматически созданный конструктором форм Windows
```

```csharp
/// Требуемый метод для поддержки конструктора — не изменяйте
/// содержимое этого метода с помощью редактора кода.
private void InitializeComponent()
{
    this.components = new System.ComponentModel.Container();
    this.label1 = new System.Windows.Forms.Label();
    this.label2 = new System.Windows.Forms.Label();
    this.label3 = new System.Windows.Forms.Label();
    this.label4 = new System.Windows.Forms.Label();
    this.label5 = new System.Windows.Forms.Label();
    this.label6 = new System.Windows.Forms.Label();
    this.label7 = new System.Windows.Forms.Label();
    this.label8 = new System.Windows.Forms.Label();
    this.contextMenuStrip1 = new System.Windows.Forms.ContextMenuStrip(this.components);
    this.textBoxFileReadTime = new System.Windows.Forms.TextBox();
    this.textBoxFileReadCount = new System.Windows.Forms.TextBox();
    this.textBoxFind = new System.Windows.Forms.TextBox();
    this.textBoxExactTime = new System.Windows.Forms.TextBox();
    this.textBoxMaxDist = new System.Windows.Forms.TextBox();
    this.textBoxThreadCount = new System.Windows.Forms.TextBox();
    this.textBoxApproxTime = new System.Windows.Forms.TextBox();
    this.textBoxThreadCountAll = new System.Windows.Forms.TextBox();
    this.button1 = new System.Windows.Forms.Button();
    this.button2 = new System.Windows.Forms.Button();
    this.button3 = new System.Windows.Forms.Button();
    this.listBoxResult = new System.Windows.Forms.ListBox();
    this.button4 = new System.Windows.Forms.Button();
    //this.button5 = new System.Windows.Forms.Button();
    this.SuspendLayout();
    //
    // label1
    this.button1.Location = new System.Drawing.Point(40, 498);
```

```csharp
this.button1.Margin = new System.Windows.Forms.Padding(4);

this.button1.Name = "button1";

this.button1.Size = new System.Drawing.Size(157, 37);

this.button1.TabIndex = 0;

this.button1.Text = "Чтение из файла";

this.button1.UseVisualStyleBackColor = true;

this.button1.Click += new System.EventHandler(this.button1_Click);

//

this.label1.AutoSize = true;

this.label1.Location = new System.Drawing.Point(137, 24);

this.label1.Name = "label1";

this.label1.Size = new System.Drawing.Size(130, 13);

this.label1.TabIndex = 0;

this.label1.Text = "Время чтения из файла:";

//

// label2

this.button2.Location = new System.Drawing.Point(12, 99);

this.button2.Name = "button2";

this.button2.Size = new System.Drawing.Size(119, 80);

this.button2.TabIndex = 18;

this.button2.Text = "Чёткий поиск";

this.button2.UseVisualStyleBackColor = true;

this.button2.Click += new System.EventHandler(this.button2_Click);

//

this.label2.AutoSize = true;

this.label2.Location = new System.Drawing.Point(137, 53);

this.label2.Name = "label2";

this.label2.Size = new System.Drawing.Size(203, 13);

this.label2.TabIndex = 1;

this.label2.Text = "Количество уникальных слов в файле:";

//

// label3

this.button3.Location = new System.Drawing.Point(12, 186);
```

```
this.button3.Name = "button3";

this.button3.Size = new System.Drawing.Size(119, 80);

this.button3.TabIndex = 19;

this.button3.Text = "Параллельный нечёткий поиск";

this.button3.UseVisualStyleBackColor = true;

this.button3.Click += new System.EventHandler(this.button3_Click);

//

this.label3.AutoSize = true;

this.label3.Location = new System.Drawing.Point(137, 82);

this.label3.Name = "label3";

this.label3.Size = new System.Drawing.Size(101, 13);

this.label3.TabIndex = 2;

this.label3.Text = "Слово для поиска:";

//

// label4

//

this.label4.AutoSize = true;

this.label4.Location = new System.Drawing.Point(137, 116);

this.label4.Name = "label4";

this.label4.Size = new System.Drawing.Size(124, 13);

this.label4.TabIndex = 3;

this.label4.Text = "Время чёткого поиска:";

//

// label5

//

this.label5.AutoSize = true;

this.label5.Location = new System.Drawing.Point(137, 149);

this.label5.Name = "label5";

this.label5.Size = new System.Drawing.Size(266, 13);

this.label5.TabIndex = 4;

this.label5.Text = "Максимальное расстояние для нечёткого поиска: ";

//

// label6
```

```
//
this.label6.AutoSize = true;

this.label6.Location = new System.Drawing.Point(137, 182);

this.label6.Name = "label6";

this.label6.Size = new System.Drawing.Size(113, 13);

this.label6.TabIndex = 5;

this.label6.Text = "Количество потоков:";

//

// label7

//

this.label7.AutoSize = true;

this.label7.Location = new System.Drawing.Point(137, 214);

this.label7.Name = "label7";

this.label7.Size = new System.Drawing.Size(186, 13);

this.label7.TabIndex = 6;

this.label7.Text = "Вычисленное количество потоков: ";

//

// label8

//

this.label8.AutoSize = true;

this.label8.Location = new System.Drawing.Point(137, 249);

this.label8.Name = "label8";

this.label8.Size = new System.Drawing.Size(135, 13);

this.label8.TabIndex = 7;

this.label8.Text = "Время нечёткого потока:";

//

// contextMenuStrip1

//

this.contextMenuStrip1.Name = "contextMenuStrip1";

this.contextMenuStrip1.Size = new System.Drawing.Size(61, 4);

//

// textBoxFileReadTime

//
```

```
this.textBoxFileReadTime.Location = new System.Drawing.Point(273, 24);

this.textBoxFileReadTime.Name = "textBoxFileReadTime";

this.textBoxFileReadTime.ReadOnly = true;

this.textBoxFileReadTime.Size = new System.Drawing.Size(100, 20);

this.textBoxFileReadTime.TabIndex = 9;

//

// textBoxFileReadCount

//

this.textBoxFileReadCount.Location = new System.Drawing.Point(346, 53);

this.textBoxFileReadCount.Name = "textBoxFileReadCount";

this.textBoxFileReadCount.ReadOnly = true;

this.textBoxFileReadCount.Size = new System.Drawing.Size(100, 20);

this.textBoxFileReadCount.TabIndex = 10;

//

// textBoxFind

//

this.textBoxFind.Location = new System.Drawing.Point(245, 82);

this.textBoxFind.Name = "textBoxFind";

this.textBoxFind.Size = new System.Drawing.Size(100, 20);

this.textBoxFind.TabIndex = 11;

//

// textBoxExactTime

//

this.textBoxExactTime.Location = new System.Drawing.Point(268, 116);

this.textBoxExactTime.Name = "textBoxExactTime";

this.textBoxExactTime.ReadOnly = true;

this.textBoxExactTime.Size = new System.Drawing.Size(100, 20);

this.textBoxExactTime.TabIndex = 12;

//

// textBoxMaxDist

//

this.textBoxMaxDist.Location = new System.Drawing.Point(410, 149);

this.textBoxMaxDist.Name = "textBoxMaxDist";
```

```
this.textBoxMaxDist.Size = new System.Drawing.Size(100, 20);

this.textBoxMaxDist.TabIndex = 13;

//

// textBoxThreadCount

//

this.textBoxThreadCount.Location = new System.Drawing.Point(257, 182);

this.textBoxThreadCount.Name = "textBoxThreadCount";

this.textBoxThreadCount.Size = new System.Drawing.Size(100, 20);

this.textBoxThreadCount.TabIndex = 14;

//

// textBoxApproxTime

//

this.textBoxApproxTime.Location = new System.Drawing.Point(330, 214);

this.textBoxApproxTime.Name = "textBoxApproxTime";

this.textBoxApproxTime.ReadOnly = true;

this.textBoxApproxTime.Size = new System.Drawing.Size(100, 20);

this.textBoxApproxTime.TabIndex = 15;

//

// textBoxThreadCountAll

//

this.textBoxThreadCountAll.Location = new System.Drawing.Point(279, 249);

this.textBoxThreadCountAll.Name = "textBoxThreadCountAll";

this.textBoxThreadCountAll.ReadOnly = true;

this.textBoxThreadCountAll.Size = new System.Drawing.Size(100, 20);

this.textBoxThreadCountAll.TabIndex = 16;

//

// button1

//

this.button1.Location = new System.Drawing.Point(13, 13);

this.button1.Name = "button1";

this.button1.Size = new System.Drawing.Size(118, 80);

this.button1.TabIndex = 17;

this.button1.Text = "Чтение из файла";
```

```csharp
            this.button1.UseVisualStyleBackColor = true;
            //
            // button2
            //
            this.button2.Location = new System.Drawing.Point(12, 99);
            this.button2.Name = "button2";
            this.button2.Size = new System.Drawing.Size(119, 80);
            this.button2.TabIndex = 18;
            this.button2.Text = "Чёткий поиск";
            this.button2.UseVisualStyleBackColor = true;
            //
            // button3
            //
            this.button3.Location = new System.Drawing.Point(12, 186);
            this.button3.Name = "button3";
            this.button3.Size = new System.Drawing.Size(119, 80);
            this.button3.TabIndex = 19;
            this.button3.Text = "Параллельный нечёткий поиск";
            this.button3.UseVisualStyleBackColor = true;
            //
            // listBoxResult
            //
            this.listBoxResult.FormattingEnabled = true;
            this.listBoxResult.Location = new System.Drawing.Point(140, 283);
            this.listBoxResult.Name = "listBoxResult";
            this.listBoxResult.Size = new System.Drawing.Size(370, 160);
            this.listBoxResult.TabIndex = 20;
            //
            // button4
            //
            this.button4.Location = new System.Drawing.Point(140, 450);
            this.button4.Name = "button4";
```

```csharp
this.button4.Size = new System.Drawing.Size(132, 44);

this.button4.TabIndex = 21;

this.button4.Text = "Сохранение";

this.button4.UseVisualStyleBackColor = true;

this.button4.Click += new System.EventHandler(this.button4_Click);
//
// button5
//
//this.button5.Location = new System.Drawing.Point(378, 450);

//this.button5.Name = "button5";

//this.button5.Size = new System.Drawing.Size(132, 44);

//this.button5.TabIndex = 22;

//this.button5.Text = "Выход";

//this.button5.UseVisualStyleBackColor = true;
//
// Form1
//
this.AutoScaleDimensions = new System.Drawing.SizeF(6F, 13F);

this.AutoScaleMode = System.Windows.Forms.AutoScaleMode.Font;

this.ClientSize = new System.Drawing.Size(624, 506);

//this.Controls.Add(this.button5);

this.Controls.Add(this.button4);

this.Controls.Add(this.listBoxResult);

this.Controls.Add(this.button3);

this.Controls.Add(this.button2);

this.Controls.Add(this.button1);

this.Controls.Add(this.textBoxThreadCountAll);

this.Controls.Add(this.textBoxApproxTime);

this.Controls.Add(this.textBoxThreadCount);

this.Controls.Add(this.textBoxMaxDist);

this.Controls.Add(this.textBoxExactTime);

this.Controls.Add(this.textBoxFind);

this.Controls.Add(this.textBoxFileReadCount);
```

```csharp
            this.Controls.Add(this.textBoxFileReadTime);

            this.Controls.Add(this.label8);

            this.Controls.Add(this.label7);

            this.Controls.Add(this.label6);

            this.Controls.Add(this.label5);

            this.Controls.Add(this.label4);

            this.Controls.Add(this.label3);

            this.Controls.Add(this.label2);

            this.Controls.Add(this.label1);

            this.Name = "Form1";

            this.Text = "Form1";

            this.ResumeLayout(false);

            this.PerformLayout();


        }


        #endregion


        private System.Windows.Forms.Label label1;

        private System.Windows.Forms.Label label2;

        private System.Windows.Forms.Label label3;

        private System.Windows.Forms.Label label4;

        private System.Windows.Forms.Label label5;

        private System.Windows.Forms.Label label6;

        private System.Windows.Forms.Label label7;

        private System.Windows.Forms.Label label8;

        private System.Windows.Forms.ContextMenuStrip contextMenuStrip1;

        private System.Windows.Forms.TextBox textBoxFileReadTime;

        private System.Windows.Forms.TextBox textBoxFileReadCount;

        private System.Windows.Forms.TextBox textBoxFind;

        private System.Windows.Forms.TextBox textBoxExactTime;

        private System.Windows.Forms.TextBox textBoxMaxDist;

        private System.Windows.Forms.TextBox textBoxThreadCount;
```
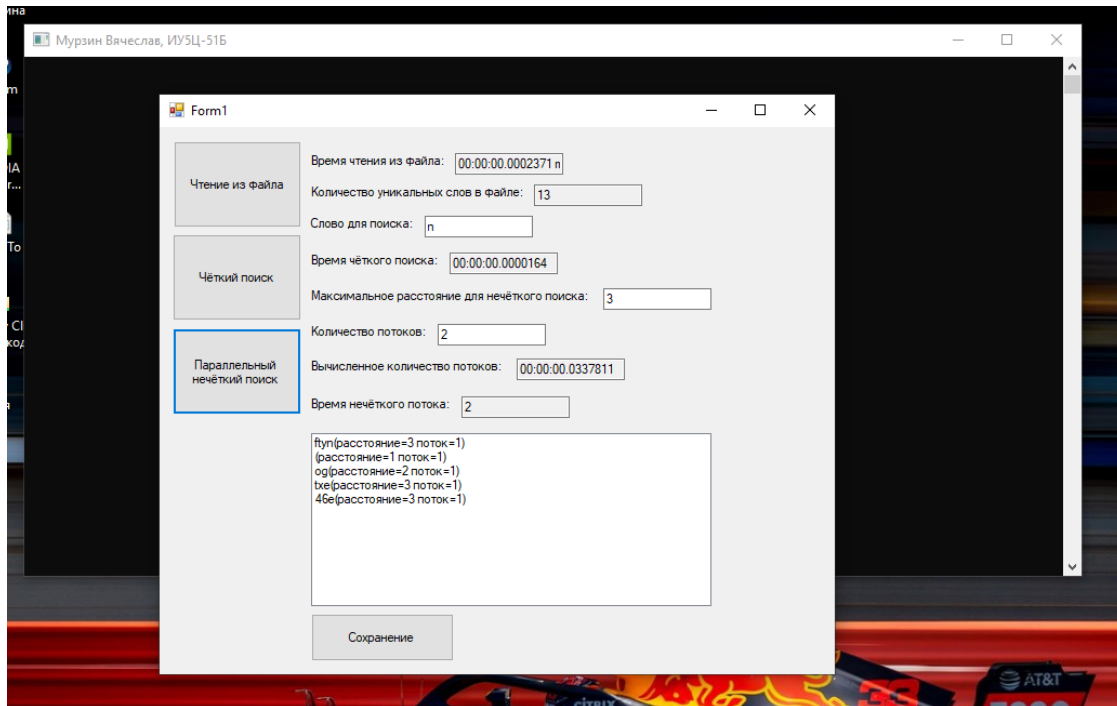
```csharp
        private System.Windows.Forms.TextBox textBoxApproxTime;

        private System.Windows.Forms.TextBox textBoxThreadCountAll;

        private System.Windows.Forms.Button button1;

        private System.Windows.Forms.Button button2;

        private System.Windows.Forms.Button button3;

        private System.Windows.Forms.ListBox listBoxResult;

        private System.Windows.Forms.Button button4;

        //private System.Windows.Forms.Button button5;
    }
}
```

Тест программы

Ссылка на репозиторий исходных кодов GitHub

https://github.com/SalyVo/DZ