МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РЕСПУБЛИКИ БЕЛАРУСЬ

БЕЛОРУССКИЙ НАЦИОНАЛЬНЫЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ

***Факультет информационных технологий и робототехники***

Кафедра программного обеспечения информационных систем и технологий

**Отчет по лабораторной работе № 11**

по дисциплине: ”Разработка приложений в визуальных средах ”

# **на тему: *”* Динамическое создание объектов на базе стандартных классов Windows Forms*”***

Вариант 1

Выполнил**:** студент группы 10701322 Бородкин Д.В.

Принял**:** доц. Гурский Н. Н.

Минск 2024

**Лабораторная работа № 11.**

**Цель лабораторной работы:** изучить принципы создания приложения без использования услуг инспектора объектов.

**Задание:** разработать приложение, реализующее вычисление определенного интеграла. Визуальные компоненты, предназначенные для задания исходных данных и вывода результатов, создавать на главной форме динамически.

**Текст программы:**

using System;

using System.Windows.Forms;

using System.Windows.Forms.DataVisualization.Charting;

namespace Lab\_11

{

public partial class Form1 : Form

{

private System.Windows.Forms.TabControl tabControl1;

private System.Windows.Forms.TabPage tabPage1;

private System.Windows.Forms.TabPage tabPage2;

private System.Windows.Forms.TextBox textBox1;

private System.Windows.Forms.GroupBox groupBox1;

private System.Windows.Forms.TextBox textBox3;

private System.Windows.Forms.TextBox textBox2;

private System.Windows.Forms.GroupBox groupBox2;

private System.Windows.Forms.TextBox textBox6;

private System.Windows.Forms.TextBox textBox5;

private System.Windows.Forms.TextBox textBox4;

private System.Windows.Forms.Label label3;

private System.Windows.Forms.Label label2;

private System.Windows.Forms.Label label1;

private System.Windows.Forms.Label label6;

private System.Windows.Forms.Label label5;

private System.Windows.Forms.Label label4;

private System.Windows.Forms.GroupBox groupBox3;

private System.Windows.Forms.GroupBox groupBox4;

private System.Windows.Forms.Label label7;

private System.Windows.Forms.TextBox textBox8;

private System.Windows.Forms.TextBox textBox7;

private System.Windows.Forms.TextBox textBox10;

private System.Windows.Forms.TextBox textBox9;

private System.Windows.Forms.Label label8;

private System.Windows.Forms.Label label10;

private System.Windows.Forms.Label label9;

private System.Windows.Forms.Button button1;

private System.Windows.Forms.Button button2;

private System.Windows.Forms.Button button3;

private System.Windows.Forms.Button button4;

private System.Windows.Forms.Button button5;

private System.Windows.Forms.Button button6;

private System.Windows.Forms.Button button7;

private System.Windows.Forms.Button button8;

private System.Windows.Forms.Button button9;

private System.Windows.Forms.GroupBox groupBox5;

private System.Windows.Forms.Label label11;

private System.Windows.Forms.TextBox textBox11;

private System.Windows.Forms.GroupBox groupBox6;

private System.Windows.Forms.RadioButton radioButton4;

private System.Windows.Forms.RadioButton radioButton3;

private System.Windows.Forms.RadioButton radioButton2;

private System.Windows.Forms.RadioButton radioButton1;

private System.Windows.Forms.RadioButton radioButton7;

private System.Windows.Forms.RadioButton radioButton6;

private System.Windows.Forms.RadioButton radioButton5;

private System.Windows.Forms.RadioButton radioButton8;

private System.Windows.Forms.RadioButton radioButton9;

private System.Windows.Forms.RadioButton radioButton10;

private System.Windows.Forms.RichTextBox richTextBox1;

private System.Windows.Forms.DataVisualization.Charting.Chart chart1;

private System.Windows.Forms.Button button11;

private System.Windows.Forms.Button button10;

private System.Windows.Forms.Button button13;

private System.Windows.Forms.Button button12;

private System.Windows.Forms.Button button15;

private System.Windows.Forms.ColorDialog colorDialog1;

private System.Windows.Forms.Button button14;

private System.Windows.Forms.Label label12;

private System.Windows.Forms.TextBox textBox12;

// Конструктор

public Form1()

{

f();

}

// Инициализация компонентов

void f()

{

System.Windows.Forms.DataVisualization.Charting.ChartArea chartArea1 = new System.Windows.Forms.DataVisualization.Charting.ChartArea();

System.Windows.Forms.DataVisualization.Charting.Legend legend1 = new System.Windows.Forms.DataVisualization.Charting.Legend();

System.Windows.Forms.DataVisualization.Charting.Title title1 = new System.Windows.Forms.DataVisualization.Charting.Title();

this.tabControl1 = new System.Windows.Forms.TabControl();

this.tabPage1 = new System.Windows.Forms.TabPage();

this.richTextBox1 = new System.Windows.Forms.RichTextBox();

this.tabPage2 = new System.Windows.Forms.TabPage();

this.chart1 = new System.Windows.Forms.DataVisualization.Charting.Chart();

this.textBox1 = new System.Windows.Forms.TextBox();

this.groupBox1 = new System.Windows.Forms.GroupBox();

this.radioButton7 = new System.Windows.Forms.RadioButton();

this.radioButton6 = new System.Windows.Forms.RadioButton();

this.radioButton5 = new System.Windows.Forms.RadioButton();

this.label3 = new System.Windows.Forms.Label();

this.label2 = new System.Windows.Forms.Label();

this.label1 = new System.Windows.Forms.Label();

this.textBox3 = new System.Windows.Forms.TextBox();

this.textBox2 = new System.Windows.Forms.TextBox();

this.groupBox2 = new System.Windows.Forms.GroupBox();

this.radioButton8 = new System.Windows.Forms.RadioButton();

this.radioButton9 = new System.Windows.Forms.RadioButton();

this.radioButton10 = new System.Windows.Forms.RadioButton();

this.label6 = new System.Windows.Forms.Label();

this.label5 = new System.Windows.Forms.Label();

this.label4 = new System.Windows.Forms.Label();

this.textBox6 = new System.Windows.Forms.TextBox();

this.textBox5 = new System.Windows.Forms.TextBox();

this.textBox4 = new System.Windows.Forms.TextBox();

this.groupBox3 = new System.Windows.Forms.GroupBox();

this.button10 = new System.Windows.Forms.Button();

this.button11 = new System.Windows.Forms.Button();

this.label8 = new System.Windows.Forms.Label();

this.label7 = new System.Windows.Forms.Label();

this.textBox8 = new System.Windows.Forms.TextBox();

this.textBox7 = new System.Windows.Forms.TextBox();

this.groupBox4 = new System.Windows.Forms.GroupBox();

this.button13 = new System.Windows.Forms.Button();

this.button12 = new System.Windows.Forms.Button();

this.label10 = new System.Windows.Forms.Label();

this.label9 = new System.Windows.Forms.Label();

this.textBox10 = new System.Windows.Forms.TextBox();

this.textBox9 = 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.button4 = new System.Windows.Forms.Button();

this.button5 = new System.Windows.Forms.Button();

this.button6 = new System.Windows.Forms.Button();

this.button7 = new System.Windows.Forms.Button();

this.button8 = new System.Windows.Forms.Button();

this.button9 = new System.Windows.Forms.Button();

this.groupBox5 = new System.Windows.Forms.GroupBox();

this.button14 = new System.Windows.Forms.Button();

this.label12 = new System.Windows.Forms.Label();

this.textBox12 = new System.Windows.Forms.TextBox();

this.button15 = new System.Windows.Forms.Button();

this.label11 = new System.Windows.Forms.Label();

this.textBox11 = new System.Windows.Forms.TextBox();

this.groupBox6 = new System.Windows.Forms.GroupBox();

this.radioButton4 = new System.Windows.Forms.RadioButton();

this.radioButton3 = new System.Windows.Forms.RadioButton();

this.radioButton2 = new System.Windows.Forms.RadioButton();

this.radioButton1 = new System.Windows.Forms.RadioButton();

this.colorDialog1 = new System.Windows.Forms.ColorDialog();

this.tabControl1.SuspendLayout();

this.tabPage1.SuspendLayout();

this.tabPage2.SuspendLayout();

((System.ComponentModel.ISupportInitialize)(this.chart1)).BeginInit();

this.groupBox1.SuspendLayout();

this.groupBox2.SuspendLayout();

this.groupBox3.SuspendLayout();

this.groupBox4.SuspendLayout();

this.groupBox5.SuspendLayout();

this.groupBox6.SuspendLayout();

this.SuspendLayout();

//

// tabControl1

//

this.tabControl1.Controls.Add(this.tabPage1);

this.tabControl1.Controls.Add(this.tabPage2);

this.tabControl1.Location = new System.Drawing.Point(216, 92);

this.tabControl1.Name = "tabControl1";

this.tabControl1.SelectedIndex = 0;

this.tabControl1.Size = new System.Drawing.Size(635, 373);

this.tabControl1.TabIndex = 0;

//

// tabPage1

//

this.tabPage1.Controls.Add(this.richTextBox1);

this.tabPage1.Location = new System.Drawing.Point(4, 25);

this.tabPage1.Name = "tabPage1";

this.tabPage1.Padding = new System.Windows.Forms.Padding(3);

this.tabPage1.Size = new System.Drawing.Size(627, 344);

this.tabPage1.TabIndex = 0;

this.tabPage1.Text = "Результат вычислений";

this.tabPage1.UseVisualStyleBackColor = true;

//

// richTextBox1

//

this.richTextBox1.Location = new System.Drawing.Point(6, 6);

this.richTextBox1.Name = "richTextBox1";

this.richTextBox1.ReadOnly = true;

this.richTextBox1.ScrollBars = System.Windows.Forms.RichTextBoxScrollBars.Horizontal;

this.richTextBox1.Size = new System.Drawing.Size(615, 332);

this.richTextBox1.TabIndex = 0;

this.richTextBox1.Text = "";

//

// tabPage2

//

this.tabPage2.Controls.Add(this.chart1);

this.tabPage2.Location = new System.Drawing.Point(4, 25);

this.tabPage2.Name = "tabPage2";

this.tabPage2.Padding = new System.Windows.Forms.Padding(3);

this.tabPage2.Size = new System.Drawing.Size(627, 344);

this.tabPage2.TabIndex = 1;

this.tabPage2.Text = "График";

this.tabPage2.UseVisualStyleBackColor = true;

//

// chart1

//

chartArea1.Name = "ChartArea1";

this.chart1.ChartAreas.Add(chartArea1);

legend1.Name = "Legend1";

this.chart1.Legends.Add(legend1);

this.chart1.Location = new System.Drawing.Point(6, 0);

this.chart1.Name = "chart1";

this.chart1.RightToLeft = System.Windows.Forms.RightToLeft.Yes;

this.chart1.Size = new System.Drawing.Size(615, 332);

this.chart1.TabIndex = 0;

this.chart1.Text = "chart1";

title1.Name = "Title1";

this.chart1.Titles.Add(title1);

//

// textBox1

//

this.textBox1.Location = new System.Drawing.Point(6, 111);

this.textBox1.Name = "textBox1";

this.textBox1.Size = new System.Drawing.Size(136, 22);

this.textBox1.TabIndex = 1;

this.textBox1.KeyPress += new System.Windows.Forms.KeyPressEventHandler(this.TextBox1\_KeyPress);

//

// groupBox1

//

this.groupBox1.Controls.Add(this.radioButton7);

this.groupBox1.Controls.Add(this.radioButton6);

this.groupBox1.Controls.Add(this.radioButton5);

this.groupBox1.Controls.Add(this.label3);

this.groupBox1.Controls.Add(this.label2);

this.groupBox1.Controls.Add(this.label1);

this.groupBox1.Controls.Add(this.textBox3);

this.groupBox1.Controls.Add(this.textBox2);

this.groupBox1.Controls.Add(this.textBox1);

this.groupBox1.Location = new System.Drawing.Point(10, 12);

this.groupBox1.Name = "groupBox1";

this.groupBox1.Size = new System.Drawing.Size(200, 226);

this.groupBox1.TabIndex = 2;

this.groupBox1.TabStop = false;

this.groupBox1.Text = "Первый интеграл:";

//

// radioButton7

//

this.radioButton7.AutoSize = true;

this.radioButton7.Location = new System.Drawing.Point(6, 69);

this.radioButton7.Name = "radioButton7";

this.radioButton7.Size = new System.Drawing.Size(102, 20);

this.radioButton7.TabIndex = 7;

this.radioButton7.TabStop = true;

this.radioButton7.Text = "sqrt1+sin(2x)";

this.radioButton7.UseVisualStyleBackColor = true;

//

// radioButton6

//

this.radioButton6.AutoSize = true;

this.radioButton6.Location = new System.Drawing.Point(6, 43);

this.radioButton6.Name = "radioButton6";

this.radioButton6.Size = new System.Drawing.Size(106, 20);

this.radioButton6.TabIndex = 6;

this.radioButton6.TabStop = true;

this.radioButton6.Text = "Cos(x)/sqrt(x)";

this.radioButton6.UseVisualStyleBackColor = true;

//

// radioButton5

//

this.radioButton5.AutoSize = true;

this.radioButton5.Location = new System.Drawing.Point(6, 21);

this.radioButton5.Name = "radioButton5";

this.radioButton5.Size = new System.Drawing.Size(101, 20);

this.radioButton5.TabIndex = 3;

this.radioButton5.TabStop = true;

this.radioButton5.Text = "Sin(x)/sqrt(x)";

this.radioButton5.UseVisualStyleBackColor = true;

//

// label3

//

this.label3.AutoSize = true;

this.label3.Location = new System.Drawing.Point(6, 179);

this.label3.Name = "label3";

this.label3.Size = new System.Drawing.Size(45, 16);

this.label3.TabIndex = 5;

this.label3.Text = "Шаг h:";

//

// label2

//

this.label2.AutoSize = true;

this.label2.Location = new System.Drawing.Point(6, 135);

this.label2.Name = "label2";

this.label2.Size = new System.Drawing.Size(127, 16);

this.label2.TabIndex = 5;

this.label2.Text = "Верхний предел b:";

//

// label1

//

this.label1.AutoSize = true;

this.label1.Location = new System.Drawing.Point(6, 92);

this.label1.Name = "label1";

this.label1.Size = new System.Drawing.Size(123, 16);

this.label1.TabIndex = 4;

this.label1.Text = "Нижний предел a:";

//

// textBox3

//

this.textBox3.Location = new System.Drawing.Point(6, 198);

this.textBox3.Name = "textBox3";

this.textBox3.Size = new System.Drawing.Size(136, 22);

this.textBox3.TabIndex = 2;

this.textBox3.KeyPress += new System.Windows.Forms.KeyPressEventHandler(this.TextBox1\_KeyPress);

//

// textBox2

//

this.textBox2.Location = new System.Drawing.Point(6, 154);

this.textBox2.Name = "textBox2";

this.textBox2.Size = new System.Drawing.Size(136, 22);

this.textBox2.TabIndex = 2;

this.textBox2.KeyPress += new System.Windows.Forms.KeyPressEventHandler(this.TextBox1\_KeyPress);

//

// groupBox2

//

this.groupBox2.Controls.Add(this.radioButton8);

this.groupBox2.Controls.Add(this.radioButton9);

this.groupBox2.Controls.Add(this.radioButton10);

this.groupBox2.Controls.Add(this.label6);

this.groupBox2.Controls.Add(this.label5);

this.groupBox2.Controls.Add(this.label4);

this.groupBox2.Controls.Add(this.textBox6);

this.groupBox2.Controls.Add(this.textBox5);

this.groupBox2.Controls.Add(this.textBox4);

this.groupBox2.Location = new System.Drawing.Point(857, 12);

this.groupBox2.Name = "groupBox2";

this.groupBox2.Size = new System.Drawing.Size(200, 226);

this.groupBox2.TabIndex = 3;

this.groupBox2.TabStop = false;

this.groupBox2.Text = "Второй интеграл:";

//

// radioButton8

//

this.radioButton8.AutoSize = true;

this.radioButton8.Location = new System.Drawing.Point(9, 43);

this.radioButton8.Name = "radioButton8";

this.radioButton8.Size = new System.Drawing.Size(102, 20);

this.radioButton8.TabIndex = 10;

this.radioButton8.TabStop = true;

this.radioButton8.Text = "sqrt1+sin(2x)";

this.radioButton8.UseVisualStyleBackColor = true;

//

// radioButton9

//

this.radioButton9.AutoSize = true;

this.radioButton9.Location = new System.Drawing.Point(9, 69);

this.radioButton9.Name = "radioButton9";

this.radioButton9.Size = new System.Drawing.Size(106, 20);

this.radioButton9.TabIndex = 9;

this.radioButton9.TabStop = true;

this.radioButton9.Text = "Cos(x)/sqrt(x)";

this.radioButton9.UseVisualStyleBackColor = true;

//

// radioButton10

//

this.radioButton10.AutoSize = true;

this.radioButton10.Location = new System.Drawing.Point(9, 21);

this.radioButton10.Name = "radioButton10";

this.radioButton10.Size = new System.Drawing.Size(101, 20);

this.radioButton10.TabIndex = 8;

this.radioButton10.TabStop = true;

this.radioButton10.Text = "Sin(x)/sqrt(x)";

this.radioButton10.UseVisualStyleBackColor = true;

//

// label6

//

this.label6.AutoSize = true;

this.label6.Location = new System.Drawing.Point(6, 179);

this.label6.Name = "label6";

this.label6.Size = new System.Drawing.Size(45, 16);

this.label6.TabIndex = 5;

this.label6.Text = "Шаг h:";

//

// label5

//

this.label5.AutoSize = true;

this.label5.Location = new System.Drawing.Point(6, 135);

this.label5.Name = "label5";

this.label5.Size = new System.Drawing.Size(127, 16);

this.label5.TabIndex = 5;

this.label5.Text = "Верхний предел b:";

//

// label4

//

this.label4.AutoSize = true;

this.label4.Location = new System.Drawing.Point(6, 92);

this.label4.Name = "label4";

this.label4.Size = new System.Drawing.Size(123, 16);

this.label4.TabIndex = 5;

this.label4.Text = "Нижний предел a:";

//

// textBox6

//

this.textBox6.Location = new System.Drawing.Point(9, 198);

this.textBox6.Name = "textBox6";

this.textBox6.Size = new System.Drawing.Size(136, 22);

this.textBox6.TabIndex = 4;

this.textBox6.KeyPress += new System.Windows.Forms.KeyPressEventHandler(this.TextBox1\_KeyPress);

//

// textBox5

//

this.textBox5.Location = new System.Drawing.Point(9, 154);

this.textBox5.Name = "textBox5";

this.textBox5.Size = new System.Drawing.Size(136, 22);

this.textBox5.TabIndex = 3;

this.textBox5.KeyPress += new System.Windows.Forms.KeyPressEventHandler(this.TextBox1\_KeyPress);

//

// textBox4

//

this.textBox4.Location = new System.Drawing.Point(9, 111);

this.textBox4.Name = "textBox4";

this.textBox4.Size = new System.Drawing.Size(136, 22);

this.textBox4.TabIndex = 2;

this.textBox4.KeyPress += new System.Windows.Forms.KeyPressEventHandler(this.TextBox1\_KeyPress);

//

// groupBox3

//

this.groupBox3.Controls.Add(this.button10);

this.groupBox3.Controls.Add(this.button11);

this.groupBox3.Controls.Add(this.label8);

this.groupBox3.Controls.Add(this.label7);

this.groupBox3.Controls.Add(this.textBox8);

this.groupBox3.Controls.Add(this.textBox7);

this.groupBox3.Location = new System.Drawing.Point(10, 244);

this.groupBox3.Name = "groupBox3";

this.groupBox3.Size = new System.Drawing.Size(200, 113);

this.groupBox3.TabIndex = 4;

this.groupBox3.TabStop = false;

this.groupBox3.Text = "Выбор цвета:";

//

// button10

//

this.button10.Location = new System.Drawing.Point(71, 33);

this.button10.Name = "button10";

this.button10.Size = new System.Drawing.Size(111, 26);

this.button10.TabIndex = 1;

this.button10.Text = "Выбрать";

this.button10.UseVisualStyleBackColor = true;

this.button10.Click += new System.EventHandler(this.Button10\_Click);

//

// button11

//

this.button11.Location = new System.Drawing.Point(71, 80);

this.button11.Name = "button11";

this.button11.Size = new System.Drawing.Size(111, 26);

this.button11.TabIndex = 2;

this.button11.Text = "Выбрать";

this.button11.UseVisualStyleBackColor = true;

this.button11.Click += new System.EventHandler(this.Button11\_Click);

//

// label8

//

this.label8.AutoSize = true;

this.label8.Location = new System.Drawing.Point(68, 62);

this.label8.Name = "label8";

this.label8.Size = new System.Drawing.Size(99, 16);

this.label8.TabIndex = 7;

this.label8.Text = "Цвет площади";

//

// label7

//

this.label7.AutoSize = true;

this.label7.Location = new System.Drawing.Point(68, 18);

this.label7.Name = "label7";

this.label7.Size = new System.Drawing.Size(82, 16);

this.label7.TabIndex = 6;

this.label7.Text = "Цвет линии";

//

// textBox8

//

this.textBox8.Location = new System.Drawing.Point(13, 84);

this.textBox8.Name = "textBox8";

this.textBox8.ReadOnly = true;

this.textBox8.Size = new System.Drawing.Size(41, 22);

this.textBox8.TabIndex = 1;

//

// textBox7

//

this.textBox7.Location = new System.Drawing.Point(13, 30);

this.textBox7.Name = "textBox7";

this.textBox7.ReadOnly = true;

this.textBox7.Size = new System.Drawing.Size(41, 22);

this.textBox7.TabIndex = 0;

//

// groupBox4

//

this.groupBox4.Controls.Add(this.button13);

this.groupBox4.Controls.Add(this.button12);

this.groupBox4.Controls.Add(this.label10);

this.groupBox4.Controls.Add(this.label9);

this.groupBox4.Controls.Add(this.textBox10);

this.groupBox4.Controls.Add(this.textBox9);

this.groupBox4.Location = new System.Drawing.Point(857, 244);

this.groupBox4.Name = "groupBox4";

this.groupBox4.Size = new System.Drawing.Size(200, 113);

this.groupBox4.TabIndex = 5;

this.groupBox4.TabStop = false;

this.groupBox4.Text = "Выбор цвета:";

//

// button13

//

this.button13.Location = new System.Drawing.Point(78, 81);

this.button13.Name = "button13";

this.button13.Size = new System.Drawing.Size(111, 26);

this.button13.TabIndex = 10;

this.button13.Text = "Выбрать";

this.button13.UseVisualStyleBackColor = true;

this.button13.Click += new System.EventHandler(this.Button13\_Click);

//

// button12

//

this.button12.Location = new System.Drawing.Point(78, 33);

this.button12.Name = "button12";

this.button12.Size = new System.Drawing.Size(111, 26);

this.button12.TabIndex = 2;

this.button12.Text = "Выбрать";

this.button12.UseVisualStyleBackColor = true;

this.button12.Click += new System.EventHandler(this.Button12\_Click);

//

// label10

//

this.label10.AutoSize = true;

this.label10.Location = new System.Drawing.Point(75, 62);

this.label10.Name = "label10";

this.label10.Size = new System.Drawing.Size(99, 16);

this.label10.TabIndex = 9;

this.label10.Text = "Цвет площади";

//

// label9

//

this.label9.AutoSize = true;

this.label9.Location = new System.Drawing.Point(75, 18);

this.label9.Name = "label9";

this.label9.Size = new System.Drawing.Size(82, 16);

this.label9.TabIndex = 8;

this.label9.Text = "Цвет линии";

//

// textBox10

//

this.textBox10.Location = new System.Drawing.Point(13, 84);

this.textBox10.Name = "textBox10";

this.textBox10.ReadOnly = true;

this.textBox10.Size = new System.Drawing.Size(41, 22);

this.textBox10.TabIndex = 2;

//

// textBox9

//

this.textBox9.Location = new System.Drawing.Point(13, 33);

this.textBox9.Name = "textBox9";

this.textBox9.ReadOnly = true;

this.textBox9.Size = new System.Drawing.Size(41, 22);

this.textBox9.TabIndex = 1;

//

// button1

//

this.button1.Location = new System.Drawing.Point(12, 363);

this.button1.Name = "button1";

this.button1.Size = new System.Drawing.Size(198, 32);

this.button1.TabIndex = 0;

this.button1.Text = "Вычислить";

this.button1.UseVisualStyleBackColor = true;

this.button1.Click += new System.EventHandler(this.Button1\_Click);

//

// button2

//

this.button2.Location = new System.Drawing.Point(10, 401);

this.button2.Name = "button2";

this.button2.Size = new System.Drawing.Size(198, 35);

this.button2.TabIndex = 6;

this.button2.Text = "График";

this.button2.UseVisualStyleBackColor = true;

this.button2.Click += new System.EventHandler(this.Button2\_Click);

//

// button3

//

this.button3.Location = new System.Drawing.Point(10, 442);

this.button3.Name = "button3";

this.button3.Size = new System.Drawing.Size(198, 29);

this.button3.TabIndex = 7;

this.button3.Text = "Выход";

this.button3.UseVisualStyleBackColor = true;

this.button3.Click += new System.EventHandler(this.Button3\_Click);

//

// button4

//

this.button4.Location = new System.Drawing.Point(857, 442);

this.button4.Name = "button4";

this.button4.Size = new System.Drawing.Size(198, 29);

this.button4.TabIndex = 10;

this.button4.Text = "Очистить";

this.button4.UseVisualStyleBackColor = true;

this.button4.Click += new System.EventHandler(this.Button4\_Click);

//

// button5

//

this.button5.Location = new System.Drawing.Point(859, 401);

this.button5.Name = "button5";

this.button5.Size = new System.Drawing.Size(198, 35);

this.button5.TabIndex = 9;

this.button5.Text = "График";

this.button5.UseVisualStyleBackColor = true;

this.button5.Click += new System.EventHandler(this.Button5\_Click);

//

// button6

//

this.button6.Location = new System.Drawing.Point(859, 363);

this.button6.Name = "button6";

this.button6.Size = new System.Drawing.Size(198, 32);

this.button6.TabIndex = 8;

this.button6.Text = "Вычислить";

this.button6.UseVisualStyleBackColor = true;

this.button6.Click += new System.EventHandler(this.Button6\_Click);

//

// button7

//

this.button7.Location = new System.Drawing.Point(216, 471);

this.button7.Name = "button7";

this.button7.Size = new System.Drawing.Size(196, 37);

this.button7.TabIndex = 11;

this.button7.Text = "Сумма";

this.button7.UseVisualStyleBackColor = true;

this.button7.Click += new System.EventHandler(this.Button7\_Click);

//

// button8

//

this.button8.Location = new System.Drawing.Point(418, 471);

this.button8.Name = "button8";

this.button8.Size = new System.Drawing.Size(196, 37);

this.button8.TabIndex = 12;

this.button8.Text = "Разность";

this.button8.UseVisualStyleBackColor = true;

this.button8.Click += new System.EventHandler(this.Button8\_Click);

//

// button9

//

this.button9.Location = new System.Drawing.Point(314, 513);

this.button9.Name = "button9";

this.button9.Size = new System.Drawing.Size(196, 37);

this.button9.TabIndex = 13;

this.button9.Text = "Общая область";

this.button9.UseVisualStyleBackColor = true;

this.button9.Click += new System.EventHandler(this.Button9\_Click);

//

// groupBox5

//

this.groupBox5.Controls.Add(this.button14);

this.groupBox5.Controls.Add(this.label12);

this.groupBox5.Controls.Add(this.textBox12);

this.groupBox5.Controls.Add(this.button15);

this.groupBox5.Controls.Add(this.label11);

this.groupBox5.Controls.Add(this.textBox11);

this.groupBox5.Location = new System.Drawing.Point(637, 471);

this.groupBox5.Name = "groupBox5";

this.groupBox5.Size = new System.Drawing.Size(418, 79);

this.groupBox5.TabIndex = 14;

this.groupBox5.TabStop = false;

this.groupBox5.Text = "Общая область, цвета:";

//

// button14

//

this.button14.Location = new System.Drawing.Point(266, 39);

this.button14.Name = "button14";

this.button14.Size = new System.Drawing.Size(111, 26);

this.button14.TabIndex = 12;

this.button14.Text = "Выбрать";

this.button14.UseVisualStyleBackColor = true;

this.button14.Click += new System.EventHandler(this.Button14\_Click);

//

// label12

//

this.label12.AutoSize = true;

this.label12.Location = new System.Drawing.Point(263, 24);

this.label12.Name = "label12";

this.label12.Size = new System.Drawing.Size(82, 16);

this.label12.TabIndex = 13;

this.label12.Text = "Цвет линии";

//

// textBox12

//

this.textBox12.Location = new System.Drawing.Point(201, 39);

this.textBox12.Name = "textBox12";

this.textBox12.ReadOnly = true;

this.textBox12.Size = new System.Drawing.Size(41, 22);

this.textBox12.TabIndex = 11;

//

// button15

//

this.button15.Location = new System.Drawing.Point(59, 37);

this.button15.Name = "button15";

this.button15.Size = new System.Drawing.Size(111, 26);

this.button15.TabIndex = 10;

this.button15.Text = "Выбрать";

this.button15.UseVisualStyleBackColor = true;

this.button15.Click += new System.EventHandler(this.Button15\_Click);

//

// label11

//

this.label11.AutoSize = true;

this.label11.Location = new System.Drawing.Point(56, 21);

this.label11.Name = "label11";

this.label11.Size = new System.Drawing.Size(99, 16);

this.label11.TabIndex = 8;

this.label11.Text = "Цвет площади";

//

// textBox11

//

this.textBox11.Location = new System.Drawing.Point(6, 39);

this.textBox11.Name = "textBox11";

this.textBox11.ReadOnly = true;

this.textBox11.Size = new System.Drawing.Size(41, 22);

this.textBox11.TabIndex = 7;

//

// groupBox6

//

this.groupBox6.Controls.Add(this.radioButton4);

this.groupBox6.Controls.Add(this.radioButton3);

this.groupBox6.Controls.Add(this.radioButton2);

this.groupBox6.Controls.Add(this.radioButton1);

this.groupBox6.Location = new System.Drawing.Point(220, 12);

this.groupBox6.Name = "groupBox6";

this.groupBox6.Size = new System.Drawing.Size(627, 74);

this.groupBox6.TabIndex = 15;

this.groupBox6.TabStop = false;

this.groupBox6.Text = "Метод вычислений:";

//

// radioButton4

//

this.radioButton4.AutoSize = true;

this.radioButton4.Location = new System.Drawing.Point(297, 47);

this.radioButton4.Name = "radioButton4";

this.radioButton4.Size = new System.Drawing.Size(245, 20);

this.radioButton4.TabIndex = 3;

this.radioButton4.TabStop = true;

this.radioButton4.Text = "Метод средних прямоугольников";

this.radioButton4.UseVisualStyleBackColor = true;

//

// radioButton3

//

this.radioButton3.AutoSize = true;

this.radioButton3.Location = new System.Drawing.Point(297, 21);

this.radioButton3.Name = "radioButton3";

this.radioButton3.Size = new System.Drawing.Size(239, 20);

this.radioButton3.TabIndex = 2;

this.radioButton3.TabStop = true;

this.radioButton3.Text = "Метод правых прямоугольников";

this.radioButton3.UseVisualStyleBackColor = true;

//

// radioButton2

//

this.radioButton2.AutoSize = true;

this.radioButton2.Location = new System.Drawing.Point(17, 47);

this.radioButton2.Name = "radioButton2";

this.radioButton2.Size = new System.Drawing.Size(231, 20);

this.radioButton2.TabIndex = 1;

this.radioButton2.TabStop = true;

this.radioButton2.Text = "Метод левых прямоугольников";

this.radioButton2.UseVisualStyleBackColor = true;

//

// radioButton1

//

this.radioButton1.AutoSize = true;

this.radioButton1.Location = new System.Drawing.Point(17, 21);

this.radioButton1.Name = "radioButton1";

this.radioButton1.Size = new System.Drawing.Size(136, 20);

this.radioButton1.TabIndex = 0;

this.radioButton1.TabStop = true;

this.radioButton1.Text = "Метод трапеций";

this.radioButton1.UseVisualStyleBackColor = true;

//

// Form1

//

this.AutoScaleDimensions = new System.Drawing.SizeF(8F, 16F);

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

this.ClientSize = new System.Drawing.Size(1067, 562);

this.Controls.Add(this.groupBox6);

this.Controls.Add(this.groupBox5);

this.Controls.Add(this.button9);

this.Controls.Add(this.button8);

this.Controls.Add(this.button7);

this.Controls.Add(this.button4);

this.Controls.Add(this.button5);

this.Controls.Add(this.button6);

this.Controls.Add(this.button3);

this.Controls.Add(this.button2);

this.Controls.Add(this.button1);

this.Controls.Add(this.groupBox4);

this.Controls.Add(this.groupBox3);

this.Controls.Add(this.groupBox2);

this.Controls.Add(this.groupBox1);

this.Controls.Add(this.tabControl1);

this.Name = "Form1";

this.Text = "Вычисление определённого интеграла";

this.Load += new System.EventHandler(this.Form1\_Load);

this.tabControl1.ResumeLayout(false);

this.tabPage1.ResumeLayout(false);

this.tabPage2.ResumeLayout(false);

((System.ComponentModel.ISupportInitialize)(this.chart1)).EndInit();

this.groupBox1.ResumeLayout(false);

this.groupBox1.PerformLayout();

this.groupBox2.ResumeLayout(false);

this.groupBox2.PerformLayout();

this.groupBox3.ResumeLayout(false);

this.groupBox3.PerformLayout();

this.groupBox4.ResumeLayout(false);

this.groupBox4.PerformLayout();

this.groupBox5.ResumeLayout(false);

this.groupBox5.PerformLayout();

this.groupBox6.ResumeLayout(false);

this.groupBox6.PerformLayout();

this.ResumeLayout(false);

}

private OprIntegral I = new OprIntegral(); // Переменная для объекта графика 1

private OprIntegral I1 = new OprIntegral(); // Переменная для объекта графика 2

private OprIntegral I2; // Переменная для объекта общего графика

private OprIntegral I3; // Переменная для объекта общего графика

//Метод для выборки цветов на графике

private void SetTextBoxColor(TextBox textBox)

{

colorDialog1.AllowFullOpen = false;

colorDialog1.ShowHelp = true;

colorDialog1.Color = textBox.BackColor;

if (colorDialog1.ShowDialog() == DialogResult.OK)

{

textBox.BackColor = colorDialog1.Color;

}

}

//Цвет линии первого интеграла

private void Button10\_Click(object sender, EventArgs e)

{

SetTextBoxColor(textBox7);

}

//Цвет площади первого интеграла

private void Button11\_Click(object sender, EventArgs e)

{

SetTextBoxColor(textBox8);

}

//Цвет линии второго интеграла

private void Button12\_Click(object sender, EventArgs e)

{

SetTextBoxColor(textBox9);

}

//Цвет линии для общей

private void Button14\_Click(object sender, EventArgs e)

{

SetTextBoxColor(textBox12);

}

//Цвет площади второго интеграла

private void Button13\_Click(object sender, EventArgs e)

{

SetTextBoxColor(textBox10);

}

//Цвет площади объединения интегралов

private void Button15\_Click(object sender, EventArgs e)

{

SetTextBoxColor(textBox11);

}

//Проверка на ввод, чтобы только цифры были

private void TextBox1\_KeyPress(object sender, KeyPressEventArgs e)

{

// Разрешаем ввод цифр, знака минус и клавиши Backspace

if (char.IsDigit(e.KeyChar) || e.KeyChar == '-' || e.KeyChar == '\b' || e.KeyChar == '.')

{

// Разрешаем ввод

e.Handled = false;

}

else

{

// Запрещаем ввод

e.Handled = true;

}

}

//Вычислить интеграл первый

private void Button1\_Click(object sender, EventArgs e)

{

if (radioButton5.Checked)

{

I.f = I.F1;

RezCalc();

}

else if (radioButton6.Checked)

{

I.f = I.F2;

RezCalc();

}

else if (radioButton7.Checked)

{

I.f = I.F3;

RezCalc();

}

}

//Построить график первого интеграла

private void Button2\_Click(object sender, EventArgs e)

{

chart1.ResetAutoValues();

chart1.Series.Clear();

I.Mycolor = textBox7.BackColor; // Цвет линии первого интеграла

I.Ploshad = textBox8.BackColor; // Цвет площади

if (radioButton5.Checked)

{

I.f = I.F1;

Draw1();

}

else if (radioButton6.Checked)

{

I.f = I.F2;

Draw1();

}

else if (radioButton7.Checked)

{

I.f = I.F3;

Draw1();

}

}

//Вычислить второй интеграл

private void Button6\_Click(object sender, EventArgs e)

{

if (radioButton10.Checked)

{

I1.f = I1.F1;

RezCalc2();

}

else if (radioButton9.Checked)

{

I1.f = I1.F2;

RezCalc2();

}

else if (radioButton8.Checked)

{

I1.f = I1.F3;

RezCalc2();

}

}

//Построить график второго интеграла

private void Button5\_Click(object sender, EventArgs e)

{

chart1.ResetAutoValues();

chart1.Series.Clear();

I1.Mycolor = textBox9.BackColor; // Цвет линии второго интеграла

I1.Ploshad = textBox10.BackColor; // Цвет площади

if (radioButton10.Checked)

{

I1.f = I.F1;

Draw2();

}

else if (radioButton9.Checked)

{

I1.f = I.F2;

Draw2();

}

else if (radioButton8.Checked)

{

I1.f = I.F3;

Draw2();

}

}

// Метод подсчёта функций для первого интеграла

private double RezCalc()

{

I.GetSet\_A = double.TryParse(textBox1.Text, out double aValue) ? aValue : 1;

I.GetSet\_B = double.TryParse(textBox2.Text, out double bValue) ? bValue : 5;

I.GetSet\_H = double.TryParse(textBox3.Text, out double hValue) ? hValue : 10;

double rez1 = 0;

if (radioButton1.Checked)

{

rez1 = I.Trap();

}

else if (radioButton2.Checked)

{

rez1 = I.Left();

}

else if (radioButton3.Checked)

{

rez1 = I.Right();

}

else if (radioButton4.Checked)

{

rez1 = I.Middle();

}

// Результирующая строка для отображения пользовательских данных

string rezText = "Ваша выбранная функция: " + Environment.NewLine;

rezText += label1.Text + textBox1.Text + Environment.NewLine;

rezText += label2.Text + textBox2.Text + Environment.NewLine;

rezText += label3.Text + textBox3.Text + Environment.NewLine;

rezText += "Результаты вычисления : " + rez1.ToString("F5") + Environment.NewLine;

richTextBox1.Text = rezText.ToString() + Environment.NewLine;

return rez1;

}

//Метод для рисования графика 1

private void Draw1()

{

I.GetSet\_A = double.TryParse(textBox1.Text, out double aValue) ? aValue : 1;

I.GetSet\_B = double.TryParse(textBox2.Text, out double bValue) ? bValue : 5;

I.GetSet\_H = double.TryParse(textBox3.Text, out double hValue) ? hValue : 10;

I.Mychart = chart1;

if (radioButton1.Checked)

{

I.Trap();

I.DrawPl1(SeriesChartType.Area);

}

else if (radioButton2.Checked)

{

I.Left();

I.DrawPl1(SeriesChartType.Column);

}

else if (radioButton3.Checked)

{

I.Right();

I.DrawPl1(SeriesChartType.Column);

}

else if (radioButton4.Checked)

{

I.Middle();

I.DrawPl1(SeriesChartType.Column);

}

I.DrawF();

}

// Метод подсчёта функций для второго интеграла

private double RezCalc2()

{

I1.GetSet\_A = double.TryParse(textBox4.Text, out double aValue) ? aValue : 3;

I1.GetSet\_B = double.TryParse(textBox5.Text, out double bValue) ? bValue : 7;

I1.GetSet\_H = double.TryParse(textBox6.Text, out double hValue) ? hValue : 10;

double rez2 = 0;

if (radioButton1.Checked)

{

rez2 = I1.Trap();

}

else if (radioButton2.Checked)

{

rez2 = I1.Left();

}

else if (radioButton3.Checked)

{

rez2 = I1.Right();

}

else if (radioButton4.Checked)

{

rez2 = I1.Middle();

}

// Результирующая строка для отображения пользовательских данных

string rezText = "Ваши введённые данные: " + Environment.NewLine;

rezText += label4.Text + textBox4.Text + Environment.NewLine;

rezText += label5.Text + textBox5.Text + Environment.NewLine;

rezText += label6.Text + textBox6.Text + Environment.NewLine;

rezText += "Результаты вычисления : " + rez2.ToString("F5") + Environment.NewLine;

richTextBox1.Text = rezText.ToString() + Environment.NewLine;

return rez2;

}

//Метод для рисования графика 2

private void Draw2()

{

I1.GetSet\_A = double.TryParse(textBox4.Text, out double aValue) ? aValue : 3;

I1.GetSet\_B = double.TryParse(textBox5.Text, out double bValue) ? bValue : 7;

I1.GetSet\_H = double.TryParse(textBox6.Text, out double hValue) ? hValue : 10;

I1.Mychart = chart1;

if (radioButton1.Checked)

{

I1.Trap();

I1.DrawPl2(SeriesChartType.Area);

}

else if (radioButton2.Checked)

{

I1.Left();

I1.DrawPl2(SeriesChartType.Column);

}

else if (radioButton3.Checked)

{

I1.Right();

I1.DrawPl2(SeriesChartType.Column);

}

else if (radioButton4.Checked)

{

I1.Middle();

I1.DrawPl2(SeriesChartType.Column);

}

I1.DrawF2();

}

//Выход из приложения

private void Button3\_Click(object sender, EventArgs e)

{

Application.Exit();

}

//Очистить текстовые поля

private void Button4\_Click(object sender, EventArgs e)

{

textBox1.Clear();

textBox2.Clear();

textBox3.Clear();

textBox4.Clear();

textBox5.Clear();

textBox6.Clear();

richTextBox1.Clear();

}

//Сумма двух интегралов

private void Button7\_Click(object sender, EventArgs e)

{

if (radioButton5.Checked)

{

I.f = I.F1;

RezCalc();

}

else if (radioButton6.Checked)

{

I.f = I.F2;

RezCalc();

}

else if (radioButton7.Checked)

{

I.f = I.F3;

RezCalc();

}

if (radioButton10.Checked)

{

I1.f = I1.F1;

RezCalc2();

}

else if (radioButton9.Checked)

{

I1.f = I1.F2;

RezCalc2();

}

else if (radioButton8.Checked)

{

I1.f = I1.F3;

RezCalc2();

}

double integral1 = RezCalc();

double integral2 = RezCalc2();

double rezultTwo = integral1 + integral2;

// Результирующая строка для отображения пользовательских данных

string rezText = "Ваши введённые данные первого интеграла: " + Environment.NewLine;

rezText += label1.Text + textBox1.Text + Environment.NewLine;

rezText += label2.Text + textBox2.Text + Environment.NewLine;

rezText += label3.Text + textBox3.Text + Environment.NewLine;

rezText += "Первый интеграл: " + integral1.ToString("F5") + Environment.NewLine;

rezText += "Ваши введённые данные второго интеграла: " + Environment.NewLine;

rezText += label4.Text + textBox4.Text + Environment.NewLine;

rezText += label5.Text + textBox5.Text + Environment.NewLine;

rezText += label6.Text + textBox6.Text + Environment.NewLine;

rezText += "Второй интеграл: " + integral2.ToString("F5") + Environment.NewLine;

rezText += "Сумма двух интегралов: " + rezultTwo.ToString("F5") + Environment.NewLine;

richTextBox1.Text = rezText.ToString() + Environment.NewLine;

}

//Разность двух интегралов

private void Button8\_Click(object sender, EventArgs e)

{

if (radioButton5.Checked)

{

I.f = I.F1;

RezCalc();

}

else if (radioButton6.Checked)

{

I.f = I.F2;

RezCalc();

}

else if (radioButton7.Checked)

{

I.f = I.F3;

RezCalc();

}

if (radioButton10.Checked)

{

I1.f = I1.F1;

RezCalc2();

}

else if (radioButton9.Checked)

{

I1.f = I1.F2;

RezCalc2();

}

else if (radioButton8.Checked)

{

I1.f = I1.F3;

RezCalc2();

}

double integral1 = RezCalc();

double integral2 = RezCalc2();

double rezultTwo1 = integral1 - integral2;

double rezultTwo2 = integral2 - integral1;

// Результирующая строка для отображения пользовательских данных

string rezText = "Ваши введённые данные первого интеграла: " + Environment.NewLine;

rezText += label1.Text + textBox1.Text + Environment.NewLine;

rezText += label2.Text + textBox2.Text + Environment.NewLine;

rezText += label3.Text + textBox3.Text + Environment.NewLine;

rezText += "Первый интеграл: " + integral1.ToString("F5") + Environment.NewLine;

rezText += "Ваши введённые данные второго интеграла: " + Environment.NewLine;

rezText += label4.Text + textBox4.Text + Environment.NewLine;

rezText += label5.Text + textBox5.Text + Environment.NewLine;

rezText += label6.Text + textBox6.Text + Environment.NewLine;

rezText += "Второй интеграл: " + integral2.ToString("F5") + Environment.NewLine;

rezText += "Разность двух интегралов (1 - 2): " + rezultTwo1.ToString("F5") + Environment.NewLine;

rezText += "Разность двух интегралов (2 - 1): " + rezultTwo2.ToString("F5") + Environment.NewLine;

richTextBox1.Text = rezText.ToString() + Environment.NewLine;

}

//Общая область двух интегралов

private void Button9\_Click(object sender, EventArgs e)

{

chart1.ResetAutoValues();

chart1.Series.Clear();

Pl1();

Pl2();

G1();

G();

}

//График объединения 1

private void G()

{

if (I.GetSet\_B < I1.GetSet\_A)

{

I2 = new OprIntegral();

I2.GetSet\_A = double.TryParse(textBox4.Text, out double aValue) ? aValue : 3;

I2.GetSet\_B = double.TryParse(textBox2.Text, out double bValue) ? bValue : 5;

I2.GetSet\_H = double.TryParse(textBox6.Text, out double hValue) ? hValue : 0.3;

I2.Mychart = chart1;

I2.Mycolor = textBox12.BackColor; // Цвет линии

I2.Ploshad = textBox11.BackColor; // Цвет площади

if (radioButton5.Checked)

{

I2.f = I2.F1;

}

else if (radioButton6.Checked)

{

I2.f = I2.F2;

}

else if (radioButton7.Checked)

{

I2.f = I2.F3;

}

if (radioButton1.Checked)

{

I2.Trap();

I2.UfPl(SeriesChartType.Area);

}

else if (radioButton2.Checked)

{

I2.Left();

I2.UfPl(SeriesChartType.Column);

}

else if (radioButton3.Checked)

{

I2.Right();

I2.UfPl(SeriesChartType.Column);

}

else if (radioButton4.Checked)

{

I2.Middle();

I2.UfPl(SeriesChartType.Column);

}

I2.Unification();

}

}

//График объединения 2

private void G1()

{

if (I.GetSet\_B < I1.GetSet\_A)

{

I3 = new OprIntegral();

I3.GetSet\_A = double.TryParse(textBox4.Text, out double aValue) ? aValue : 3;

I3.GetSet\_B = double.TryParse(textBox2.Text, out double bValue) ? bValue : 5;

I3.GetSet\_H = double.TryParse(textBox6.Text, out double hValue) ? hValue : 0.3;

I3.Mychart = chart1;

I3.Mycolor = textBox12.BackColor; // Цвет линии

I3.Ploshad = textBox11.BackColor; // Цвет площади

if (radioButton10.Checked)

{

I3.f = I3.F1;

}

else if (radioButton9.Checked)

{

I3.f = I3.F2;

}

else if (radioButton8.Checked)

{

I3.f = I3.F3;

}

if (radioButton1.Checked)

{

I3.Trap();

I3.UfPl1(SeriesChartType.Area);

}

else if (radioButton2.Checked)

{

I3.Left();

I3.UfPl1(SeriesChartType.Column);

}

else if (radioButton3.Checked)

{

I3.Right();

I3.UfPl1(SeriesChartType.Column);

}

else if (radioButton4.Checked)

{

I3.Middle();

I3.UfPl1(SeriesChartType.Column);

}

I3.Unification1();

}

}

//Для объединения графиков 1

private void Pl1()

{

I.GetSet\_A = double.TryParse(textBox1.Text, out double aValue) ? aValue : 1;

I.GetSet\_B = double.TryParse(textBox4.Text, out double bValue) ? bValue : 5;

I.GetSet\_H = double.TryParse(textBox3.Text, out double hValue) ? hValue : 0.3;

I.Mychart = chart1;

I.Mycolor = textBox7.BackColor; // Цвет линии первого интеграла

I.Ploshad = textBox8.BackColor; // Цвет площади

if (radioButton5.Checked)

{

I.f = I.F1;

}

else if (radioButton6.Checked)

{

I.f = I.F2;

}

else if (radioButton7.Checked)

{

I.f = I.F3;

}

if (radioButton1.Checked)

{

I.Trap();

I.DrawPl1(SeriesChartType.Area);

}

else if (radioButton2.Checked)

{

I.Left();

I.DrawPl1(SeriesChartType.Column);

}

else if (radioButton3.Checked)

{

I.Right();

I.DrawPl1(SeriesChartType.Column);

}

else if (radioButton4.Checked)

{

I.Middle();

I.DrawPl1(SeriesChartType.Column);

}

I.DrawF();

}

//Для объединения графиков 2

private void Pl2()

{

I1.GetSet\_A = double.TryParse(textBox2.Text, out double aValue) ? aValue : 3;

I1.GetSet\_B = double.TryParse(textBox5.Text, out double bValue) ? bValue : 7;

I1.GetSet\_H = double.TryParse(textBox6.Text, out double hValue) ? hValue : 0.3;

I1.Mychart = chart1;

I1.Mycolor = textBox9.BackColor; // Цвет линии второго интеграла

I1.Ploshad = textBox10.BackColor; // Цвет площади

if (radioButton10.Checked)

{

I1.f = I1.F1;

}

else if (radioButton9.Checked)

{

I1.f = I1.F2;

}

else if (radioButton8.Checked)

{

I1.f = I1.F3;

}

if (radioButton1.Checked)

{

I1.Trap();

I1.DrawPl2(SeriesChartType.Area);

}

else if (radioButton2.Checked)

{

I1.Left();

I1.DrawPl2(SeriesChartType.Column);

}

else if (radioButton3.Checked)

{

I1.Right();

I1.DrawPl2(SeriesChartType.Column);

}

else if (radioButton4.Checked)

{

I1.Middle();

I1.DrawPl2(SeriesChartType.Column);

}

I1.DrawF2();

}

// Загрузчик формы

private void Form1\_Load(object sender, EventArgs e)

{

textBox1.Text = "1";

textBox2.Text = "5";

textBox3.Text = "0,03";

textBox4.Text = "3";

textBox5.Text = "7";

textBox6.Text = "0,03";

textBox7.BackColor = System.Drawing.Color.Blue;

textBox8.BackColor = System.Drawing.Color.Gold;

textBox9.BackColor = System.Drawing.Color.Red;

textBox10.BackColor = System.Drawing.Color.Green;

textBox11.BackColor = System.Drawing.Color.Yellow;

textBox12.BackColor = System.Drawing.Color.BlueViolet;

radioButton6.Checked = true;

radioButton9.Checked = true;

radioButton1.Checked = true;

}

}

}

**Результаты выполнения программы:**

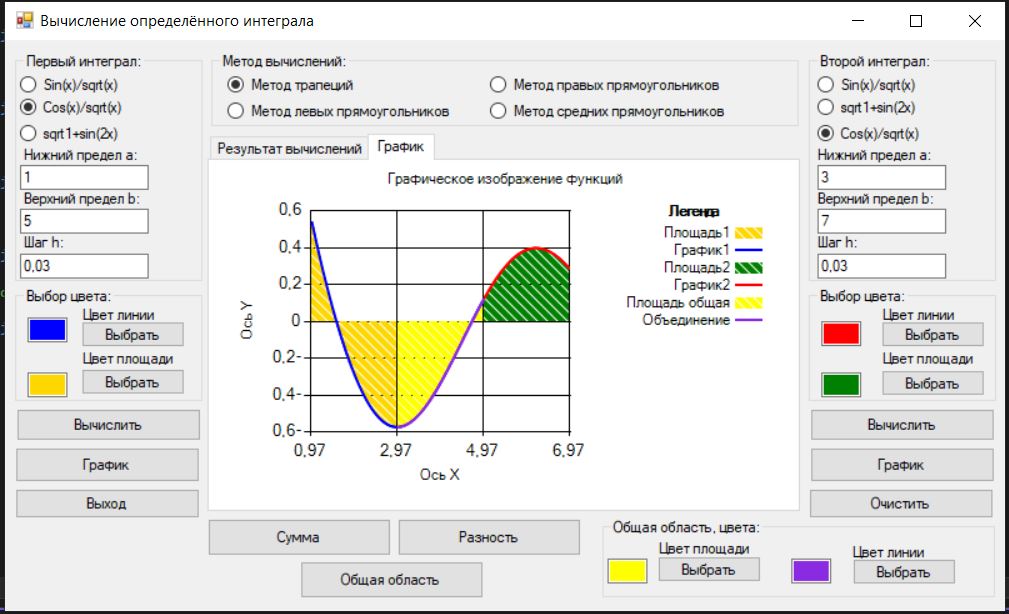


Рисунок 1. Результат работы программы.

**Вывод:** изучил принципы создания приложения без использования услуг инспектора объектов.