

OpenGL

- New
- Open
- Close
- Close Solution
- Save Selected Items (Ctrl+S)
- Save Selected Items As...
- Save All (Ctrl+Shift+S)
- Export Template...
- Page Setup...
- Print... (Ctrl+P)
- Account Settings...
- Recent Files
- Recent Projects and Solutions
- Exit (Alt+F4)

- Project... (Ctrl+Shift+N)**
- Web Site... (Shift+Alt+N)
- Team Project...
- Repository...
- File... (Ctrl+N)
- Project From Existing Code...

Create a private code repo and backlog for your project
 See how easy it is to get started with cloud services
 Discover ways to extend and customize the IDE

Ready to Cloud-power your experience?
[Connect to Azure](#)

News

Modern ASP.NET Web Forms Development – Dependency Injection
 We've all read various 'best practices' posts about this framework and that framework from expert developers in the community. They'll cover topics regarding ho...
 NEW четверг, октября 20, 2016

Test & Feedback – Collaborate with your team
 In the previous blogs, we have gone through the first two steps – Capture your findings and Create artifacts. In this blog, we will take you through the third step i.e...
 NEW четверг, октября 20, 2016

Application Insight Analytics: Schema updates
 We have enhanced the schema of Analytics, the powerful query language of Visual Studio Application Insights. We've separated metrics into performanceC...
 NEW четверг, октября 20, 2016

Windows Server 2016 Hyper-V large-scale VM performance for in-memory transaction processing
 With Windows Server 2016, Microsoft has significantly bumped up the Hyper-V Virtual Machine (VM) scale limit to embrace new scenarios such as running e-co...

New on Microsoft Platforms

- Windows
- Microsoft Azure
- ASP.NET and Web

Featured Videos

- NEW** IntelliTrace Experience (12:13)
- NEW** Windows Presentation Foundation Application Develop... (15:49)
- What's New in C# 6.0

- system-client
- SPTD
- deep-server-console
- deep-server-core
- deep-server
- deep
- spm_Editor2
- tias-tools
- theGame
- tiGantt

New Project



Recent

.NET Framework 4.5

Sort by: Default

Search Installed Templates (Ctrl+E)

Installed

Templates

Visual C#

Windows

Universal

Windows 8

Classic Desktop

SideWaffle

Web

Bridge.NET

Cloud

DuoCode

Extensibility

LightSwitch

Office SharePoint

SharpJS

Silverlight

Text

	Windows Forms Application	Visual C#
	WPF Application	Visual C#
	Console Application	Visual C#
	Shared Project	Visual C#
	Class Library	Visual C#
	Class Library (Portable)	Visual C#
	WPF Browser Application	Visual C#
	Empty Project	Visual C#
	Windows Service	Visual C#

Type: Visual C#

A project for creating an application with a Windows Forms user interface

Online

[Click here to go online and find templates.](#)

Name:

Location:

Solution name:

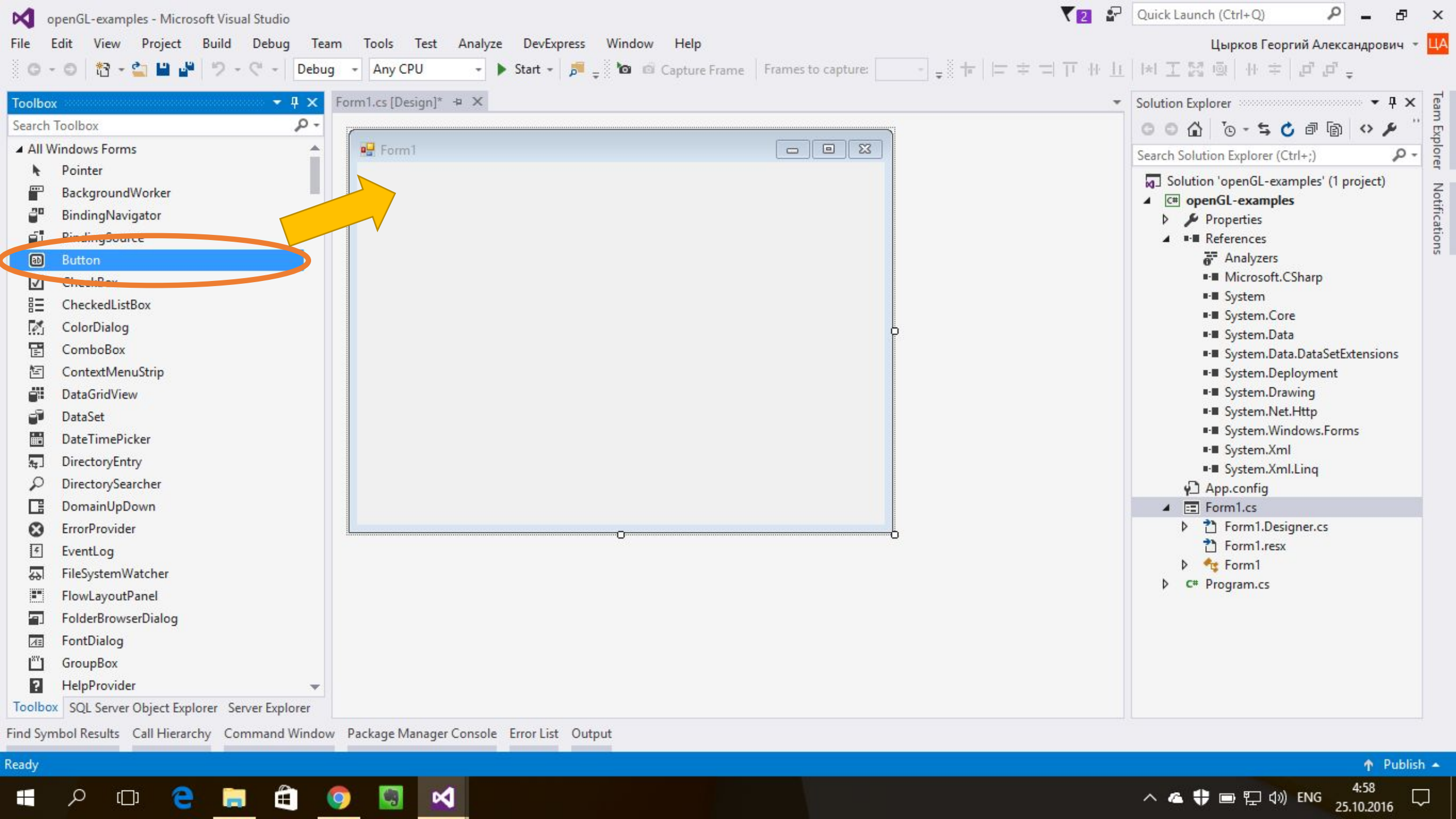
Browse...

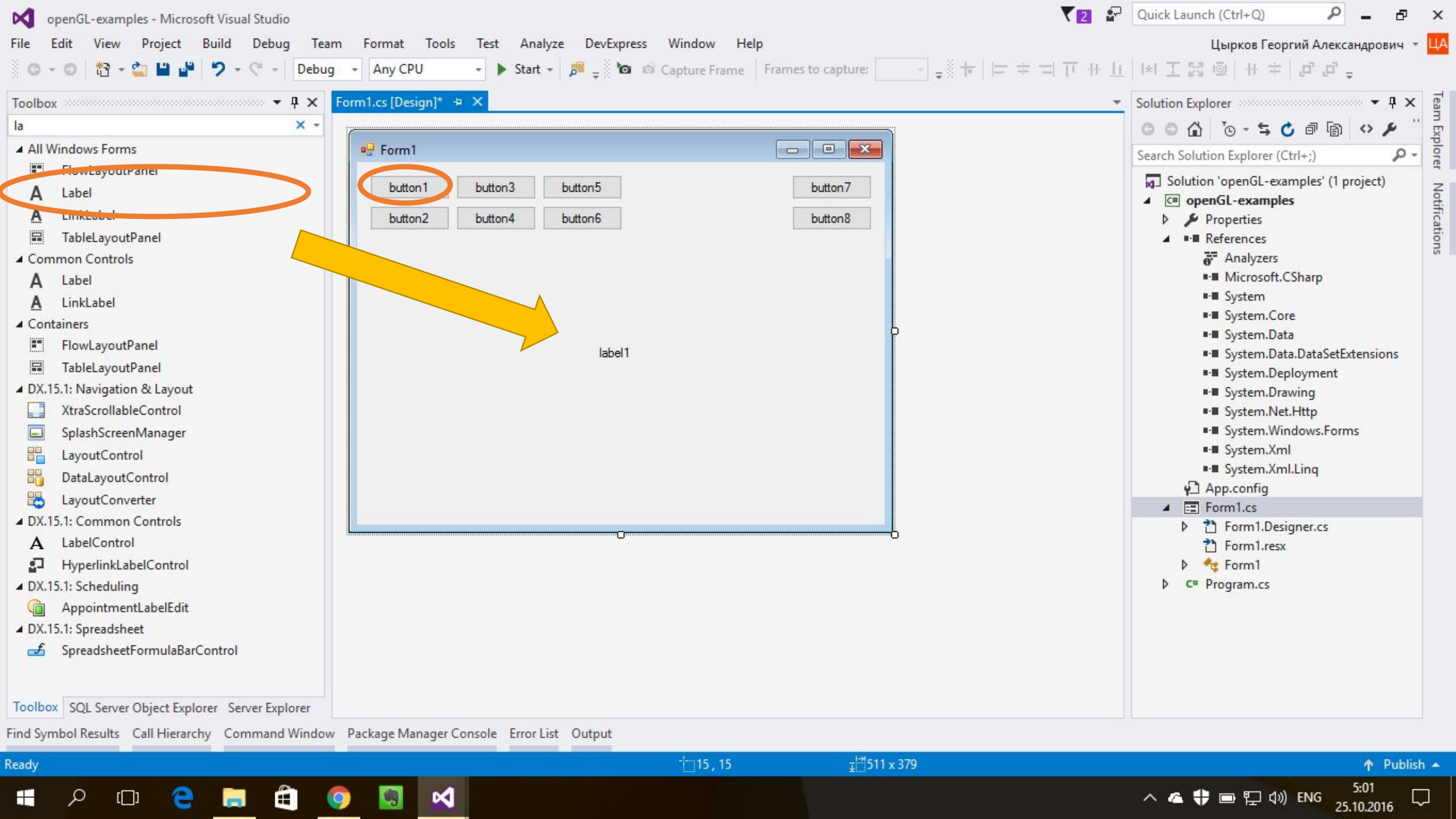
Create directory for solution

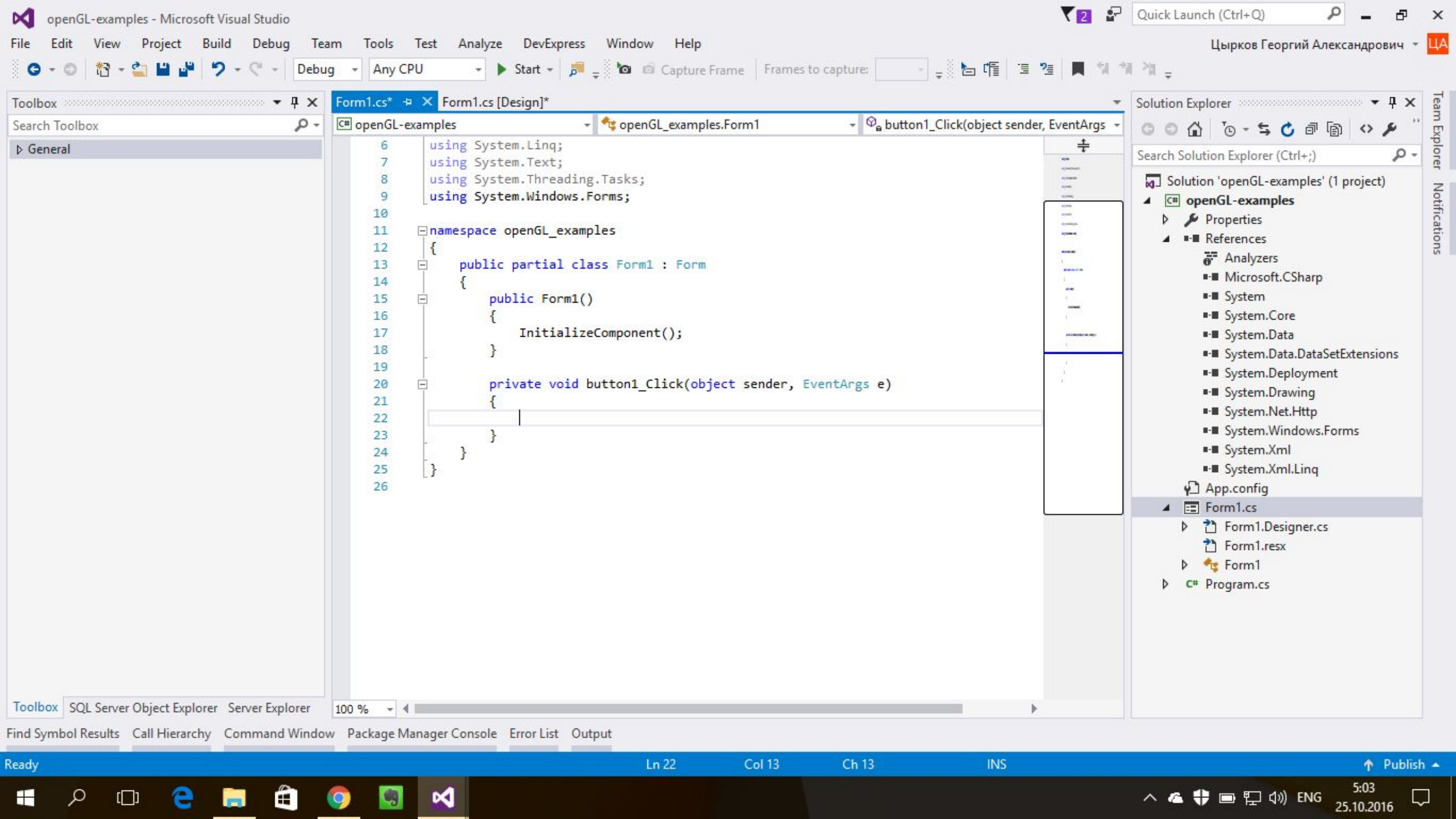
Create new Git repository

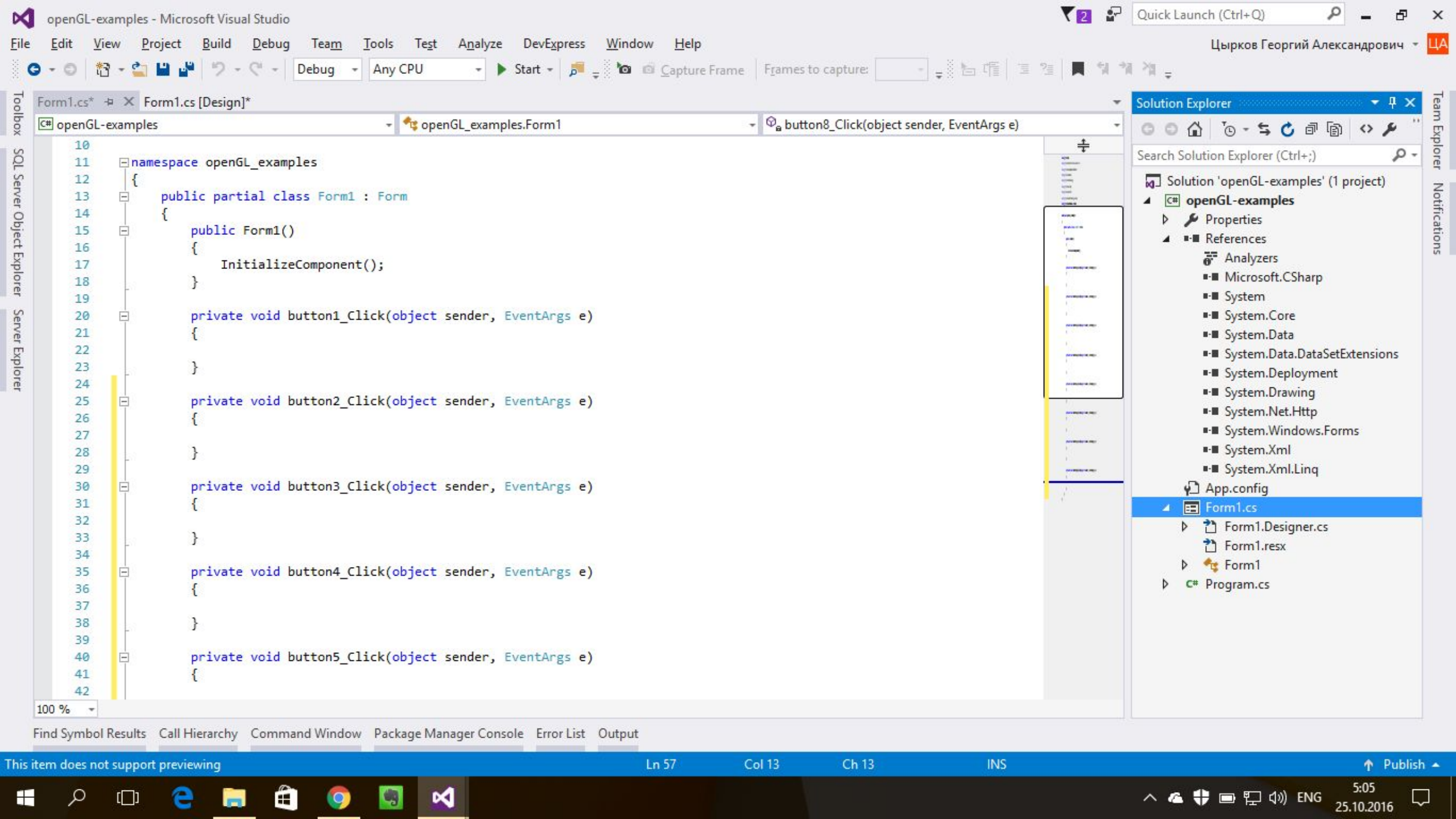
OK

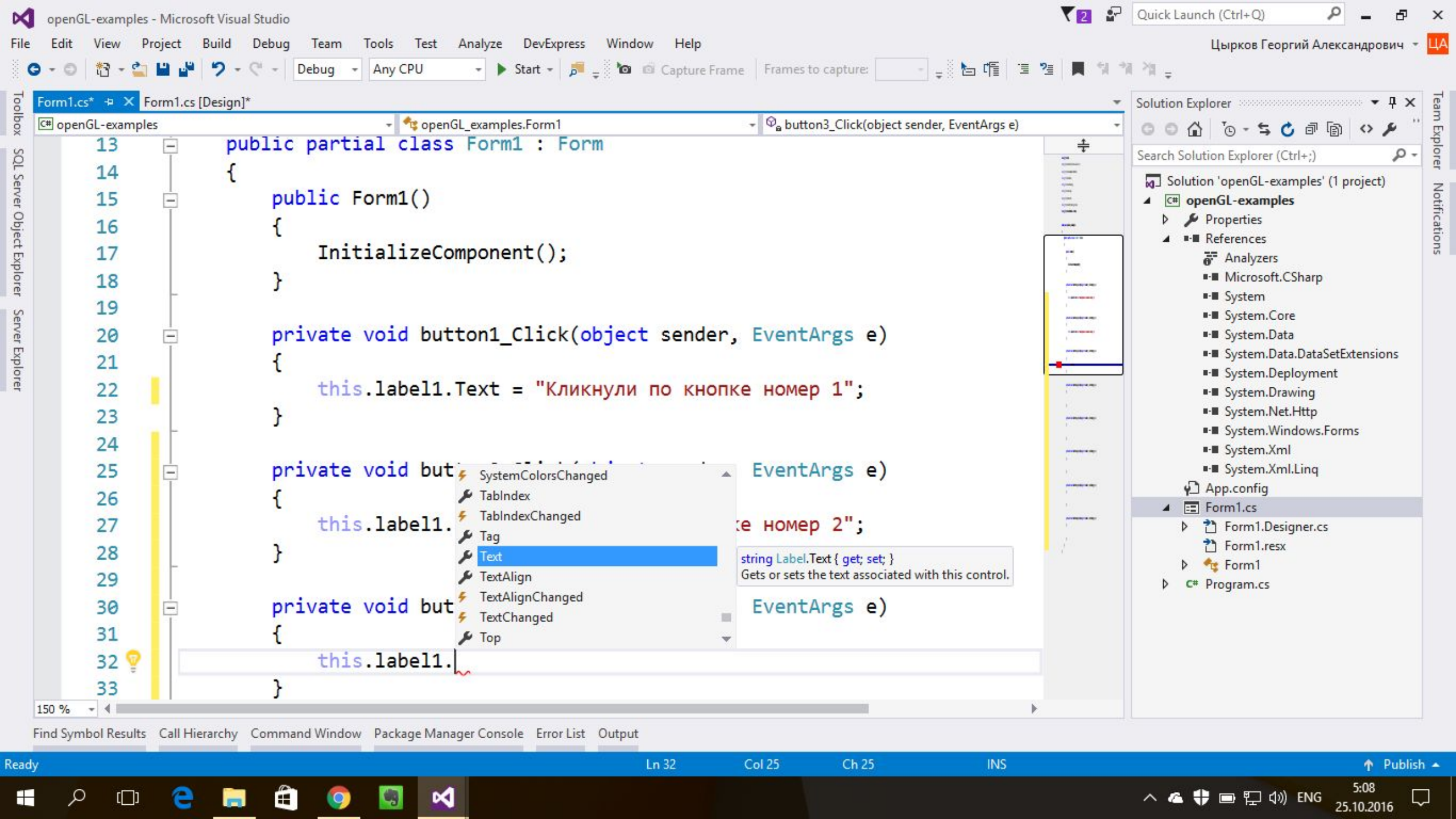
Cancel











```
13 public partial class Form1 : Form
14 {
15     public Form1()
16     {
17         InitializeComponent();
18     }
19
20     private void button1_Click(object sender, EventArgs e)
21     {
22         this.label1.Text = "Кликнули по кнопке номер 1";
23     }
24
25     private void button3_Click(object sender, EventArgs e)
26     {
27         this.label1.Text = "Кликнули по кнопке номер 2";
28     }
29
30     private void button3_Click(object sender, EventArgs e)
31     {
32         this.label1.Text = "Кликнули по кнопке номер 3";
33     }
```

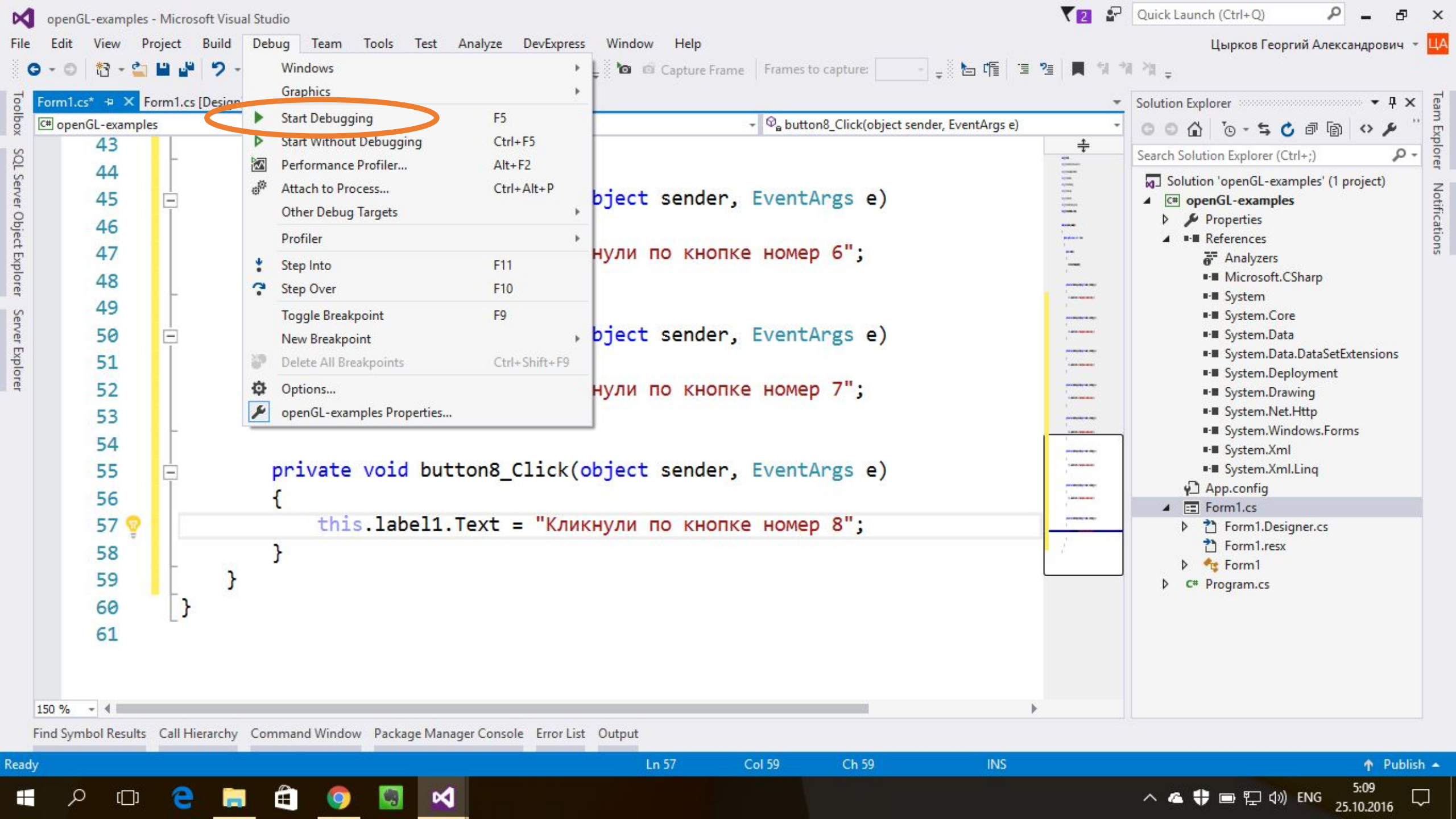
- SystemColorsChanged
- TabIndex
- TabIndexChanged
- Tag
- Text**
- TextAlign
- TextAlignChanged
- TextChanged
- Top

string Label.Text { get; set; }
Gets or sets the text associated with this control.

Solution Explorer

Search Solution Explorer (Ctrl+;)

- Solution 'openGL-examples' (1 project)
 - openGL-examples
 - Properties
 - References
 - Analyzers
 - Microsoft.CSharp
 - System
 - System.Core
 - System.Data
 - System.Data.DataSetExtensions
 - System.Deployment
 - System.Drawing
 - System.Net.Http
 - System.Windows.Forms
 - System.Xml
 - System.Xml.Linq
 - App.config
 - Form1.cs
 - Form1.Designer.cs
 - Form1.resx
 - Form1
 - Program.cs



Form1

button1	button3	button5
button2	button4	button6

label1

Form1

button1	button3	button5	button7
button2	button4	button6	button8

Кликнули по кнопке номер 7

Form1

button1	butt
button2	butt

The image shows a Windows Form titled 'Form1' in the Visual Studio Designer. The form contains eight buttons and one label. The buttons are arranged in two columns and four rows:

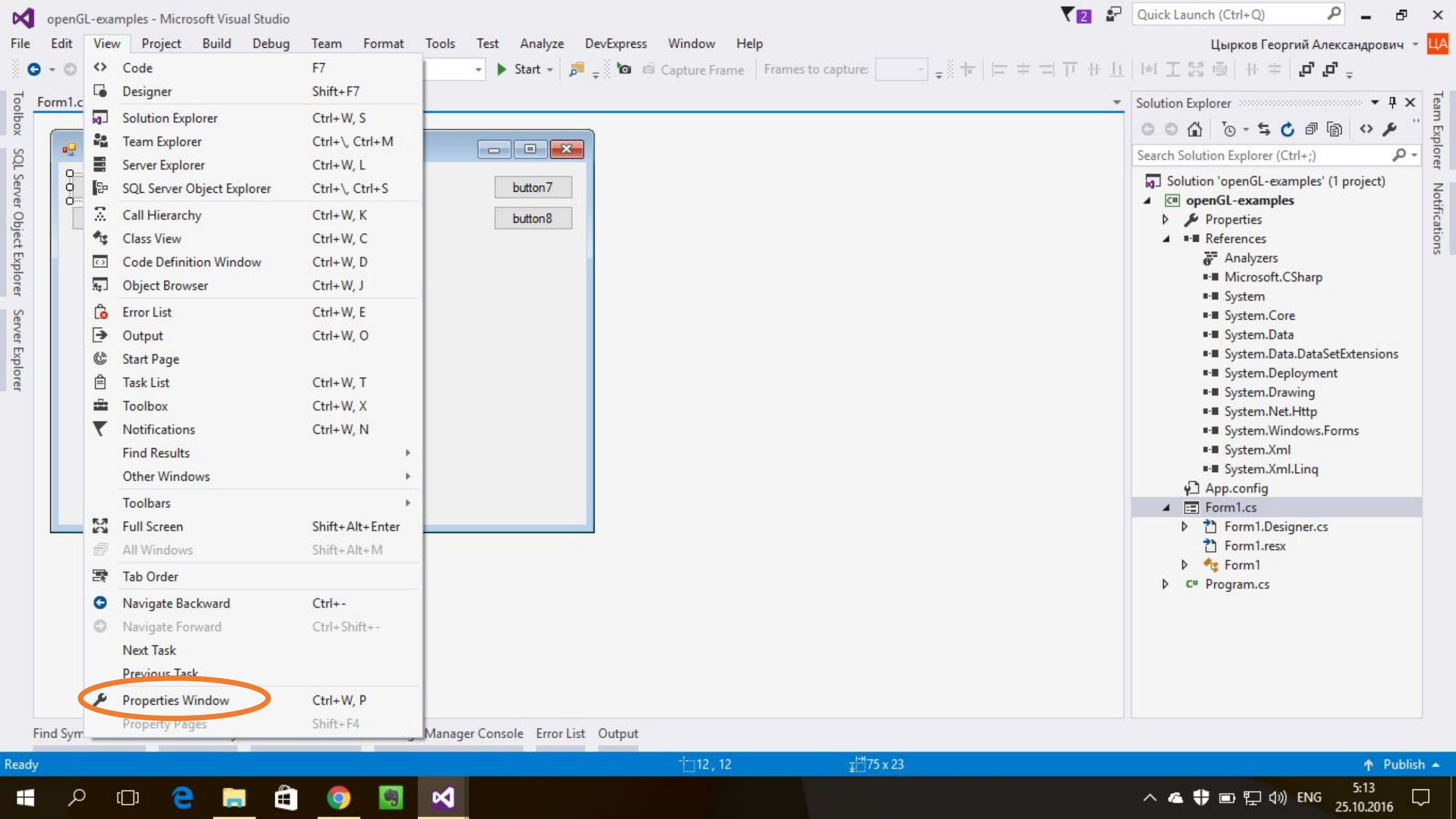
- Row 1: button1, button3, button5, button7
- Row 2: button2, button4, button6, button8

The label 'label1' is positioned at the bottom center of the form.

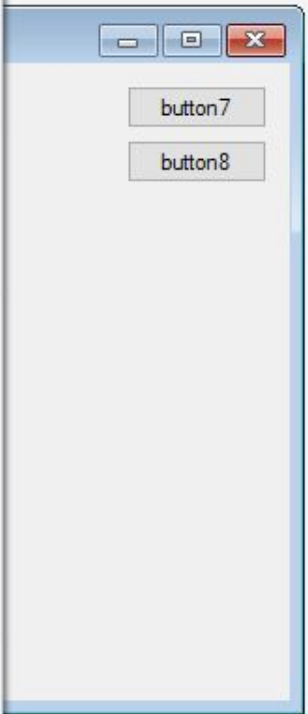
Solution Explorer

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 - openGL-examples
 - Properties
 - References
 - Analyzers
 - Microsoft.CSharp
 - System
 - System.Core
 - System.Data
 - System.Data.DataSetExtensions
 - System.Deployment
 - System.Drawing
 - System.Net.Http
 - System.Windows.Forms
 - System.Xml
 - System.Xml.Linq
 - App.config
 - Form1.cs
 - Form1.Designer.cs
 - Form1.resx
 - Form1
 - Program.cs



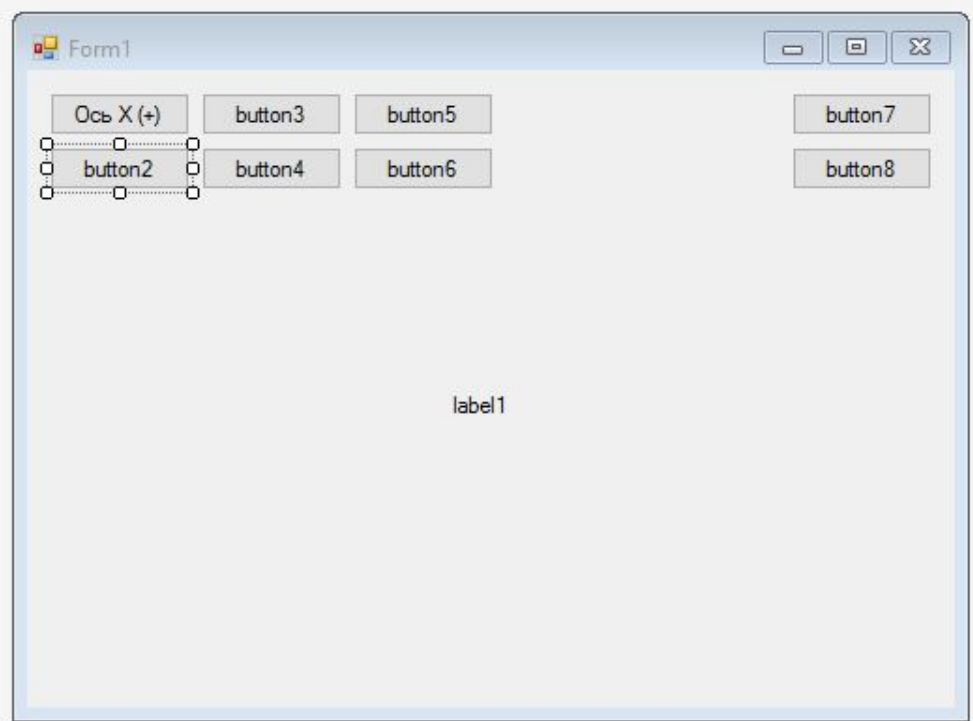
- <> Code F7
- Designer Shift+F7
- Solution Explorer Ctrl+W, S
- Team Explorer Ctrl+\, Ctrl+M
- Server Explorer Ctrl+W, L
- SQL Server Object Explorer Ctrl+\, Ctrl+S
- Call Hierarchy Ctrl+W, K
- Class View Ctrl+W, C
- Code Definition Window Ctrl+W, D
- Object Browser Ctrl+W, J
- Error List Ctrl+W, E
- Output Ctrl+W, O
- Start Page
- Task List Ctrl+W, T
- Toolbox Ctrl+W, X
- Notifications Ctrl+W, N
- Find Results
- Other Windows
- Toolbars
- Full Screen Shift+Alt+Enter
- All Windows Shift+Alt+M
- Tab Order
- Navigate Backward Ctrl+-
- Navigate Forward Ctrl+Shift+-
- Next Task
- Previous Task
- Properties Window Ctrl+W, P**
- Property Pages Shift+F4



Solution Explorer

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- Solution 'openGL-examples' (1 project)
 - openGL-examples
 - Properties
 - References
 - Analyzers
 - Microsoft.CSharp
 - System
 - System.Core
 - System.Data
 - System.Data.DataSetExtensions
 - System.Deployment
 - System.Drawing
 - System.Net.Http
 - System.Windows.Forms
 - System.Xml
 - System.Xml.Linq
 - App.config
 - Form1.cs
 - Form1.Designer.cs
 - Form1.resx
 - Form1
 - Program.cs



Properties

button2 System.Windows.Forms.Button

- Accessibility
 - AccessibleDescription
 - AccessibleName
 - AccessibleRole Default
- Appearance
 - BackColor Control
 - BackgroundImage (none)
 - BackgroundImageLayout Tile
 - Cursor Default
- FlatAppearance
 - FlatStyle Standard
- Font
 - Font Microsoft Sans Serif; 8,25pt
 - ForeColor ControlText
 - Image (none)
 - ImageAlign MiddleCenter
 - ImageIndex (none)
 - ImageKey (none)
 - ImageList (none)
 - RightToLeft No
- Text** button2
- TextAlign MiddleCenter
- TextImageRelation Overlay
- UseMnemonic True
- UseVisualStyleBackColor True
- UseWaitCursor False

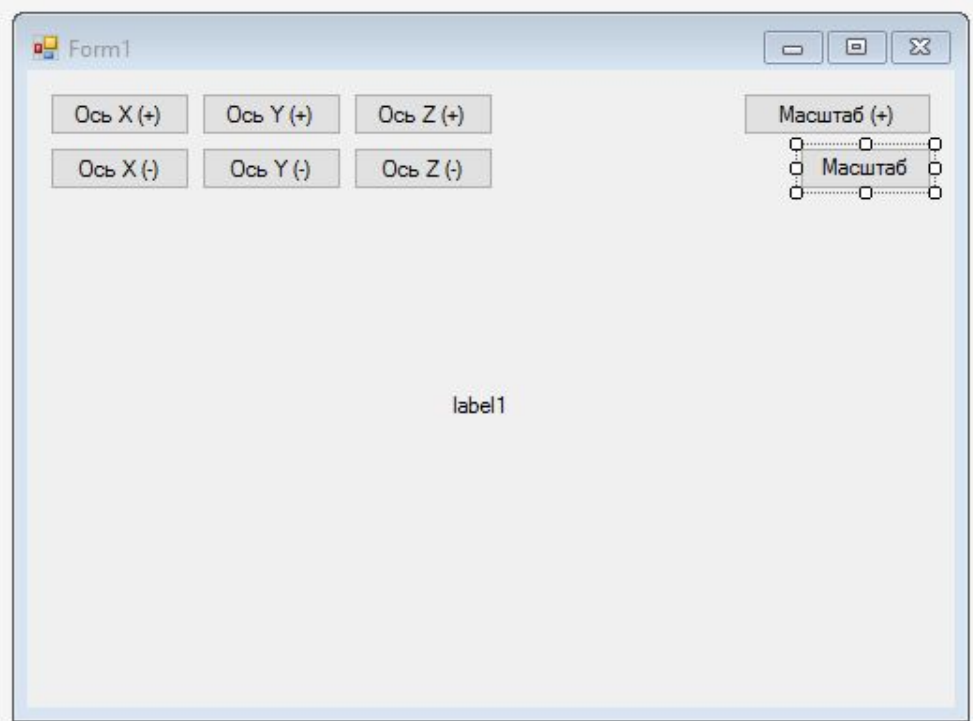
Behavior

- AllowDrop False

Solution Explorer

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- Solution 'openGL-examples' (1 project)
 - openGL-examples
 - Properties
 - References
 - System
 - System.Core
 - System.Data
 - System.Data.DataSetExtensions
 - System.Deployment
 - System.Drawing
 - System.Net.Http
 - System.Windows.Forms
 - System.Xml
 - System.Xml.Linq
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 - Form1.cs
 - Form1.Designer.cs
 - Form1.resx
 - Form1
 - Program.cs



Properties

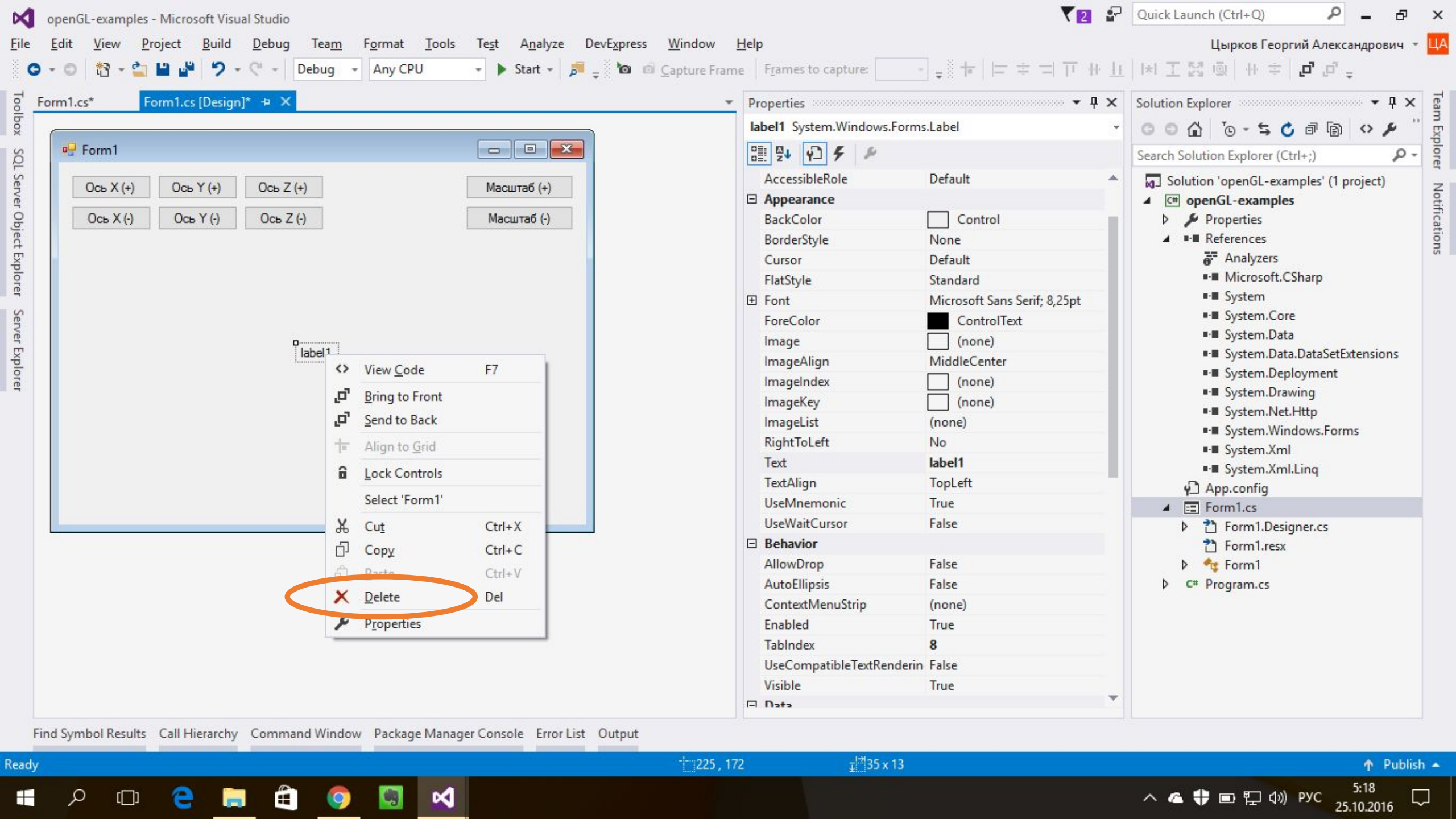
button8 System.Windows.Forms.Button

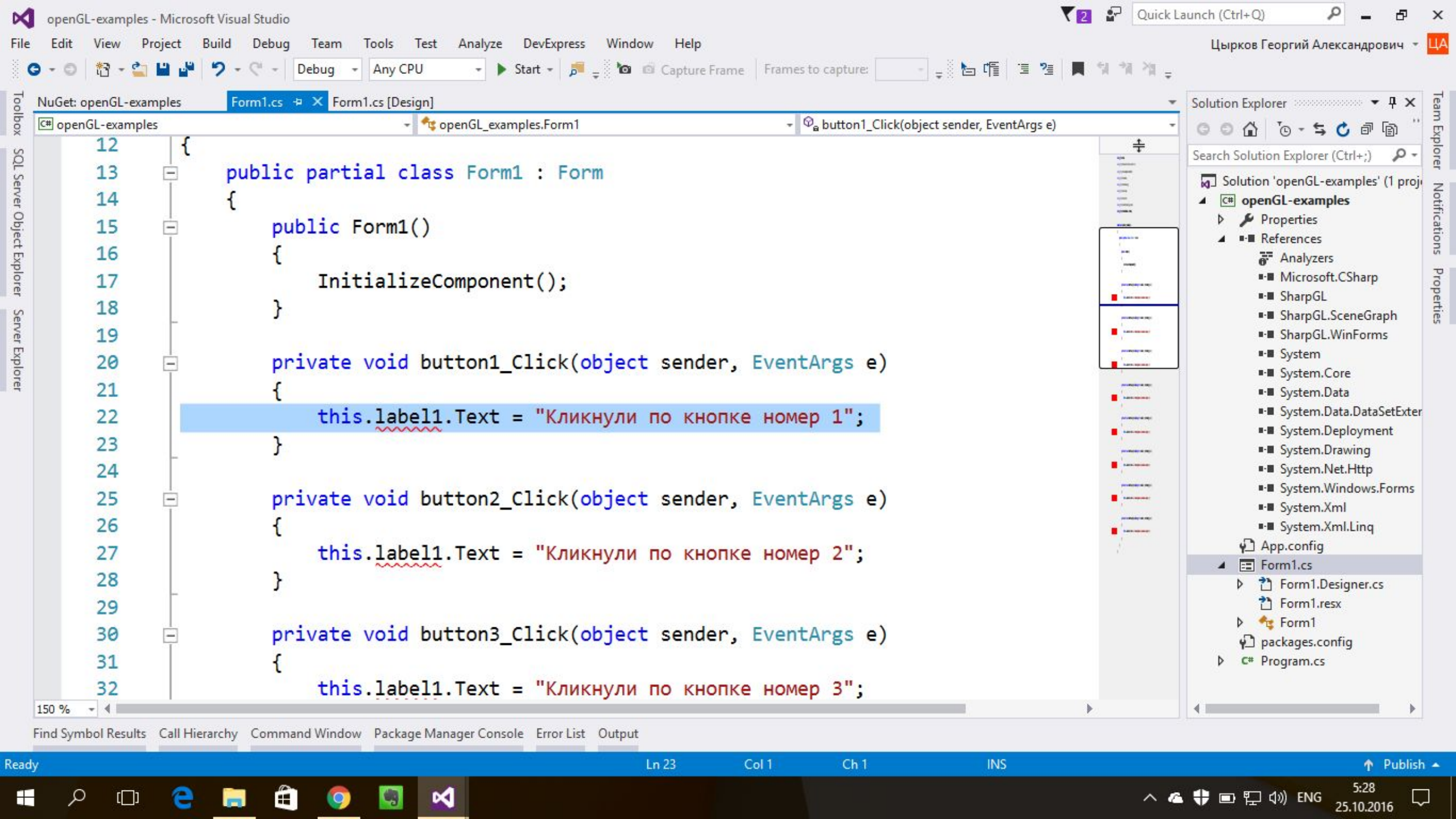
Accessibility	
AccessibleDescription	
AccessibleName	
AccessibleRole	Default
Appearance	
BackColor	<input type="checkbox"/> Control
BackgroundImage	<input type="checkbox"/> (none)
BackgroundImageLayout	Tile
Cursor	Default
FlatAppearance	
FlatStyle	Standard
Font	
ForeColor	<input checked="" type="checkbox"/> ControlText
Image	<input type="checkbox"/> (none)
ImageAlign	MiddleCenter
ImageIndex	<input type="checkbox"/> (none)
ImageKey	<input type="checkbox"/> (none)
ImageList	(none)
RightToLeft	No
Text	Масштаб (-)
TextAlign	MiddleCenter
TextImageRelation	Overlay
UseMnemonic	True
UseVisualStyleBackColor	True
UseWaitCursor	False
Behavior	
AllowDrop	False

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 - openGL-examples
 - Properties
 - References
 - System
 - System.Core
 - System.Data
 - System.Data.DataSetExtensions
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 - System.Net.Http
 - System.Windows.Forms
 - System.Xml
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 - Form1.Designer.cs
 - Form1.resx
 - Form1
 - Program.cs





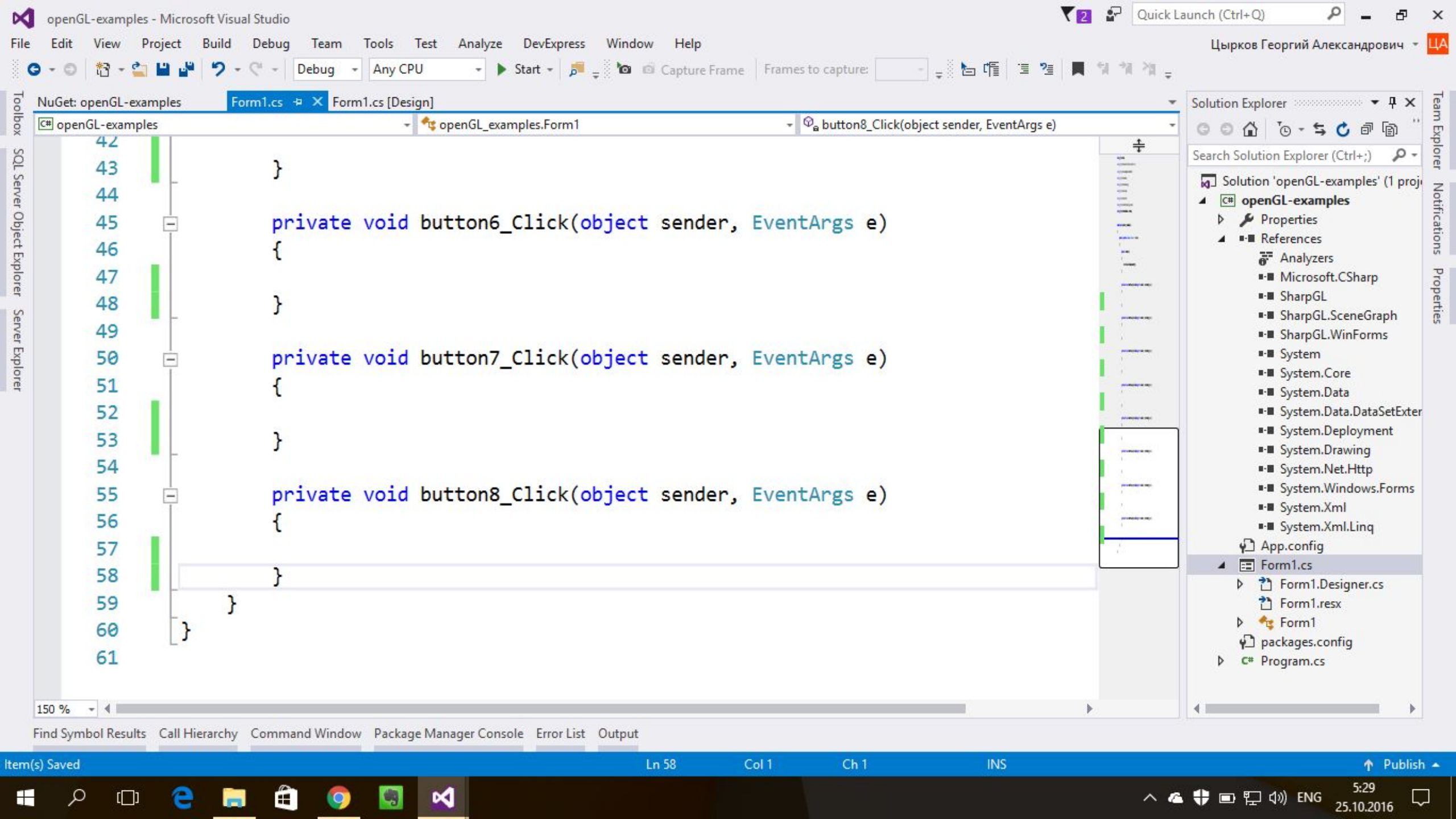
NuGet: openGL-examples Form1.cs Form1.cs [Design]

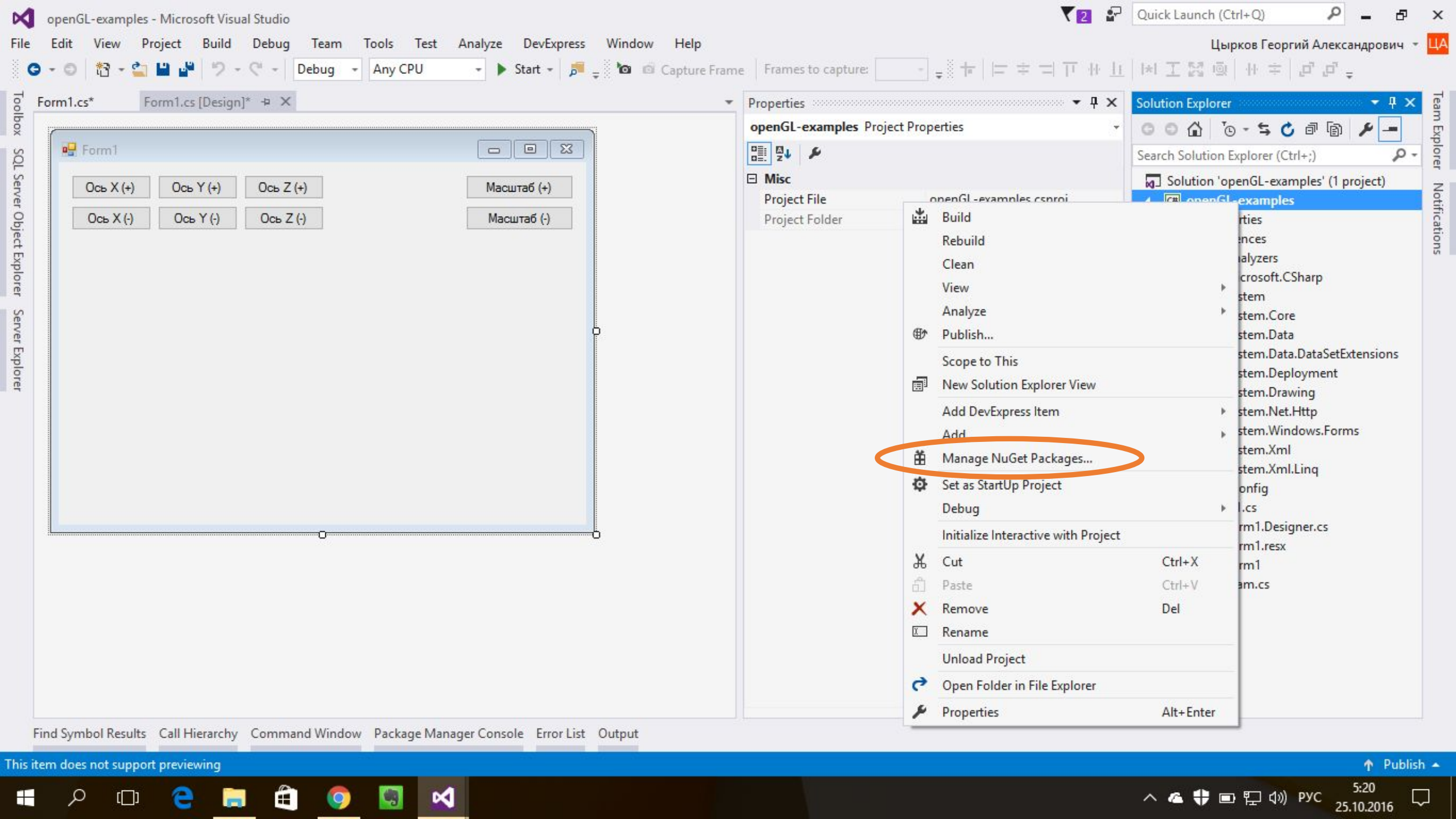
```
12 {  
13     public partial class Form1 : Form  
14     {  
15         public Form1()  
16         {  
17             InitializeComponent();  
18         }  
19  
20         private void button1_Click(object sender, EventArgs e)  
21         {  
22             this.label1.Text = "Кликнули по кнопке номер 1";  
23         }  
24  
25         private void button2_Click(object sender, EventArgs e)  
26         {  
27             this.label1.Text = "Кликнули по кнопке номер 2";  
28         }  
29  
30         private void button3_Click(object sender, EventArgs e)  
31         {  
32             this.label1.Text = "Кликнули по кнопке номер 3";  
33         }  
34     }  
35 }
```

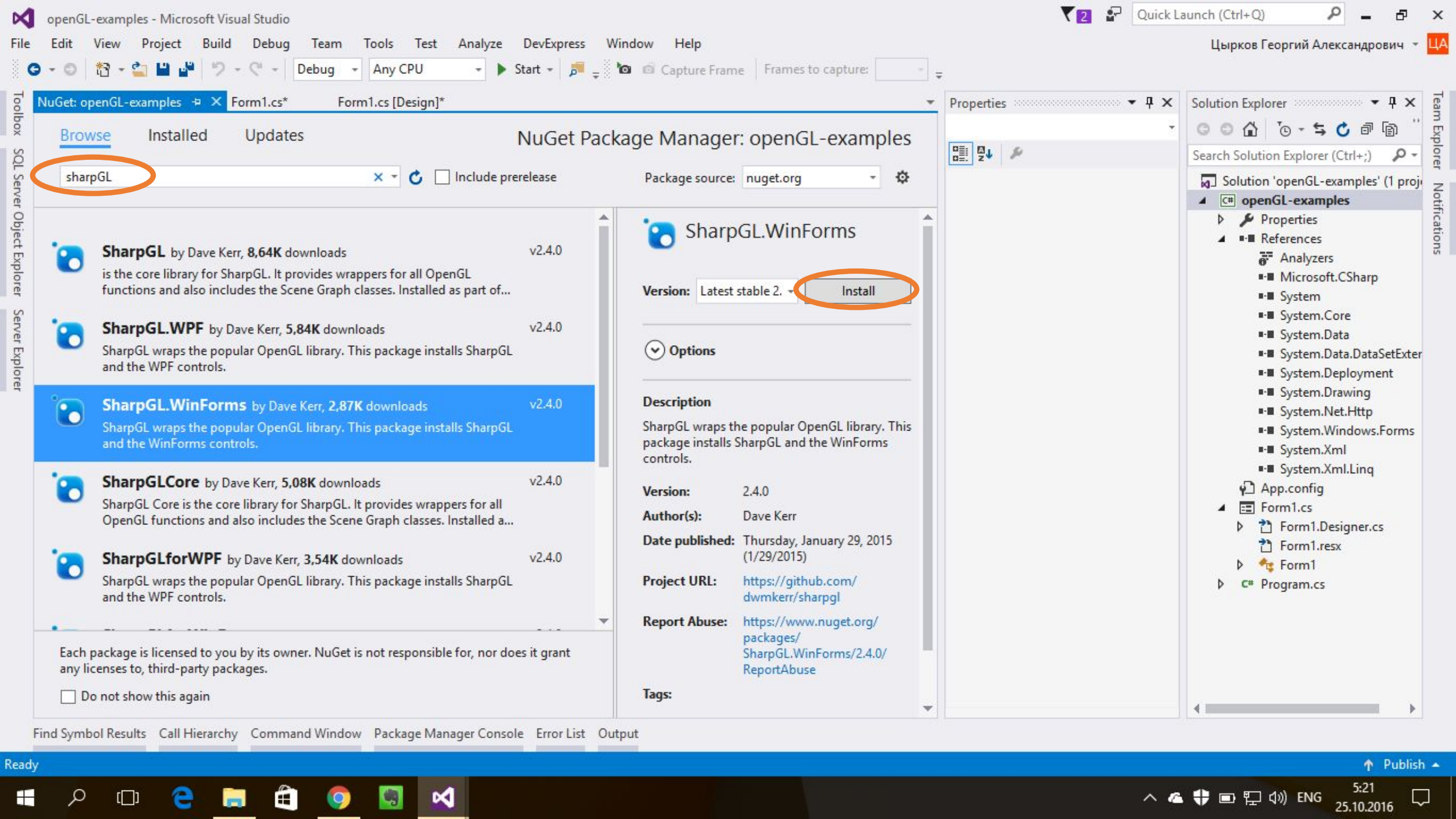
Solution Explorer

Search Solution Explorer (Ctrl+;)

- Solution 'openGL-examples' (1 project)
 - openGL-examples
 - Properties
 - References
 - Analyzers
 - Microsoft.CSharp
 - SharpGL
 - SharpGL.SceneGraph
 - SharpGL.WinForms
 - System
 - System.Core
 - System.Data
 - System.Data.DataSetExtensions
 - System.Deployment
 - System.Drawing
 - System.Net.Http
 - System.Windows.Forms
 - System.Xml
 - System.Xml.Linq
 - App.config
 - Form1.cs
 - Form1.Designer.cs
 - Form1.resx
 - Form1
 - packages.config
 - Program.cs







sharpGL

Package source: nuget.org

- SharpGL** by Dave Kerr, 8,64K downloads v2.4.0
is the core library for SharpGL. It provides wrappers for all OpenGL functions and also includes the Scene Graph classes. Installed as part of...
- SharpGL.WPF** by Dave Kerr, 5,84K downloads v2.4.0
SharpGL wraps the popular OpenGL library. This package installs SharpGL and the WPF controls.
- SharpGL.WinForms** by Dave Kerr, 2,87K downloads v2.4.0
SharpGL wraps the popular OpenGL library. This package installs SharpGL and the WinForms controls.
- SharpGLCore** by Dave Kerr, 5,08K downloads v2.4.0
SharpGL Core is the core library for SharpGL. It provides wrappers for all OpenGL functions and also includes the Scene Graph classes. Installed a...
- SharpGLforWPF** by Dave Kerr, 3,54K downloads v2.4.0
SharpGL wraps the popular OpenGL library. This package installs SharpGL and the WPF controls.

SharpGL.WinForms

Version: Latest stable 2.0 **Install**

Options

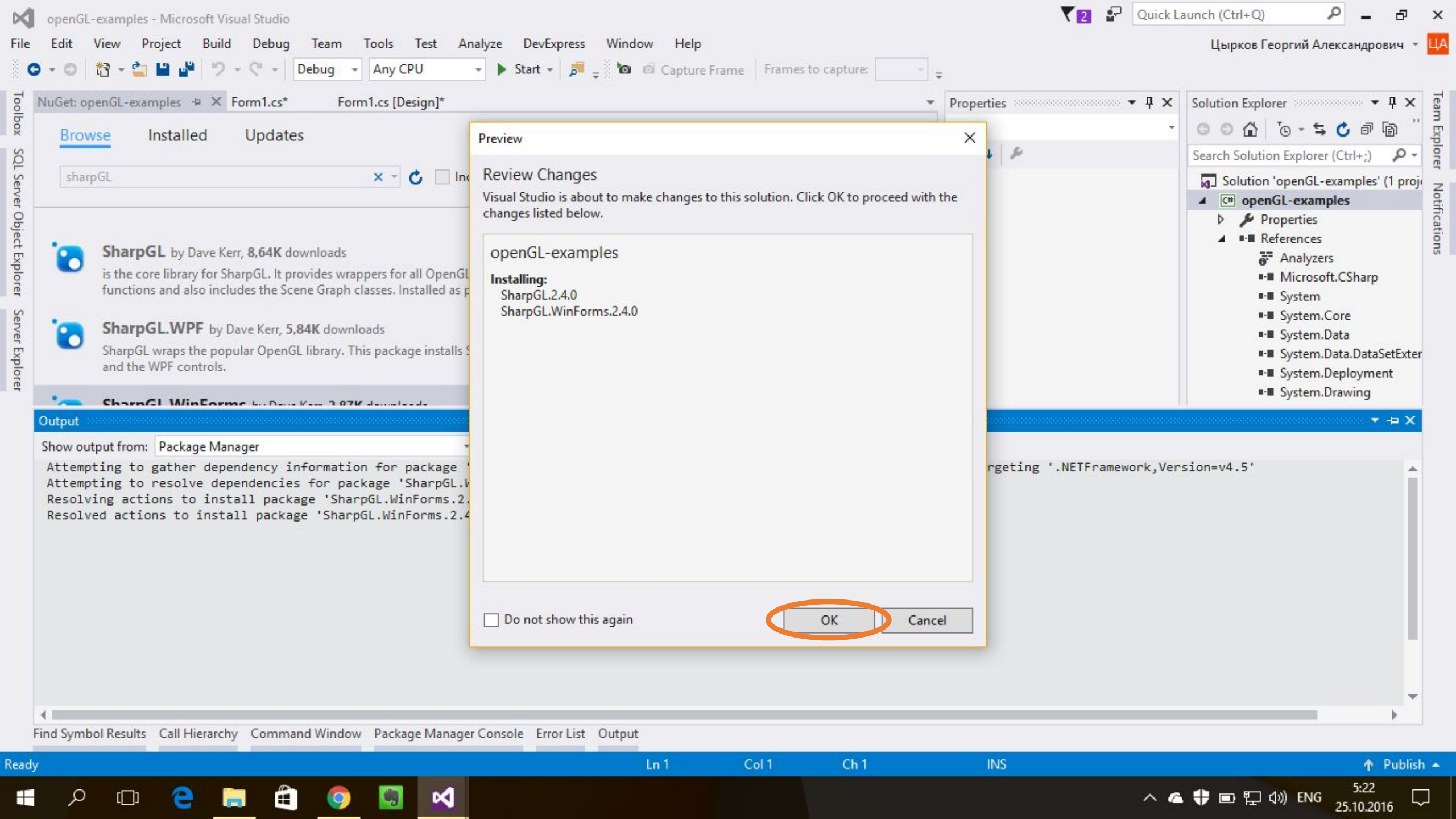
Description

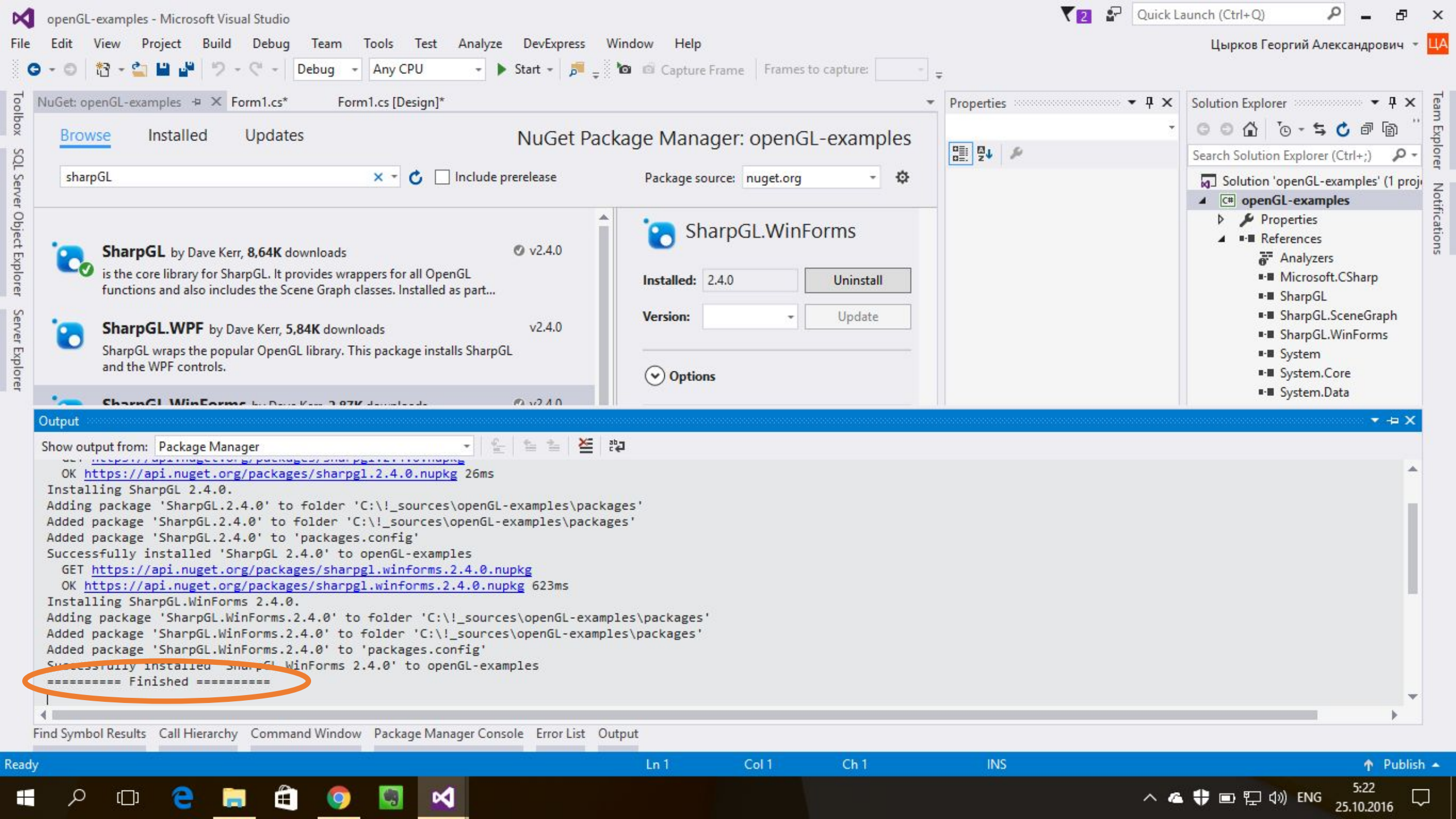
SharpGL wraps the popular OpenGL library. This package installs SharpGL and the WinForms controls.

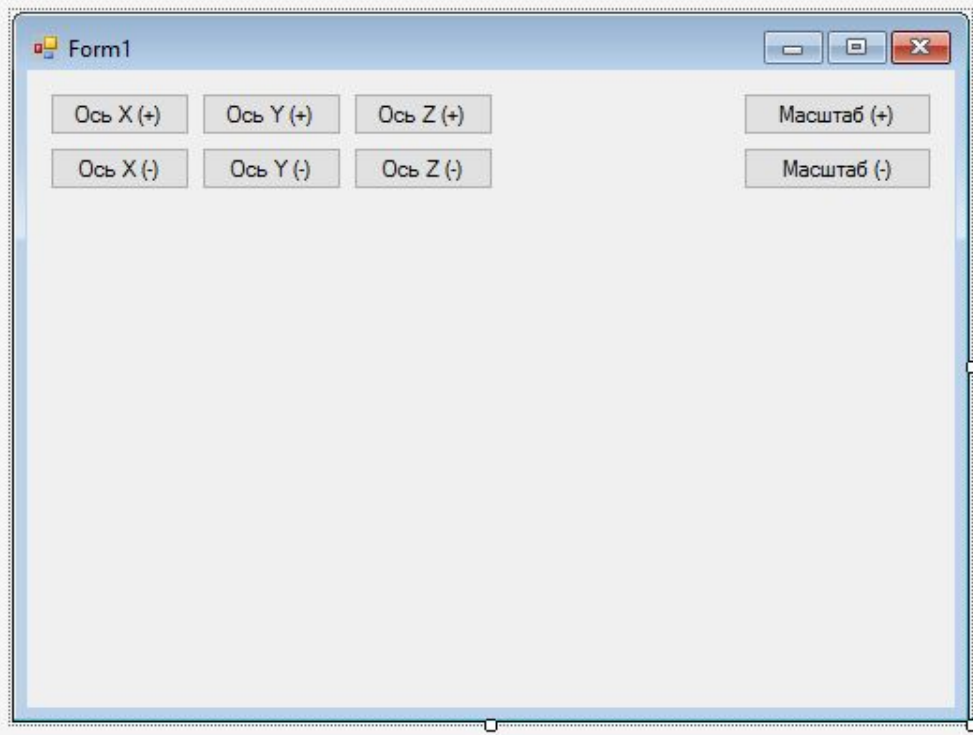
Version: 2.4.0
Author(s): Dave Kerr
Date published: Thursday, January 29, 2015 (1/29/2015)
Project URL: <https://github.com/dwmkerr/sharpgl>
Report Abuse: <https://www.nuget.org/packages/SharpGL.WinForms/2.4.0/ReportAbuse>

Tags:

- Solution 'OpenGL-examples' (1 proj)
- OpenGL-examples
 - Properties
 - References
 - Analyzers
 - Microsoft.CSharp
 - System
 - System.Core
 - System.Data
 - System.Data.DataSetExt...
 - System.Deployment
 - System.Drawing
 - System.Net.Http
 - System.Windows.Forms
 - System.Xml
 - System.Xml.Linq
 - App.config
 - Form1.cs
 - Form1.Designer.cs
 - Form1.resx
 - Form1
 - Program.cs







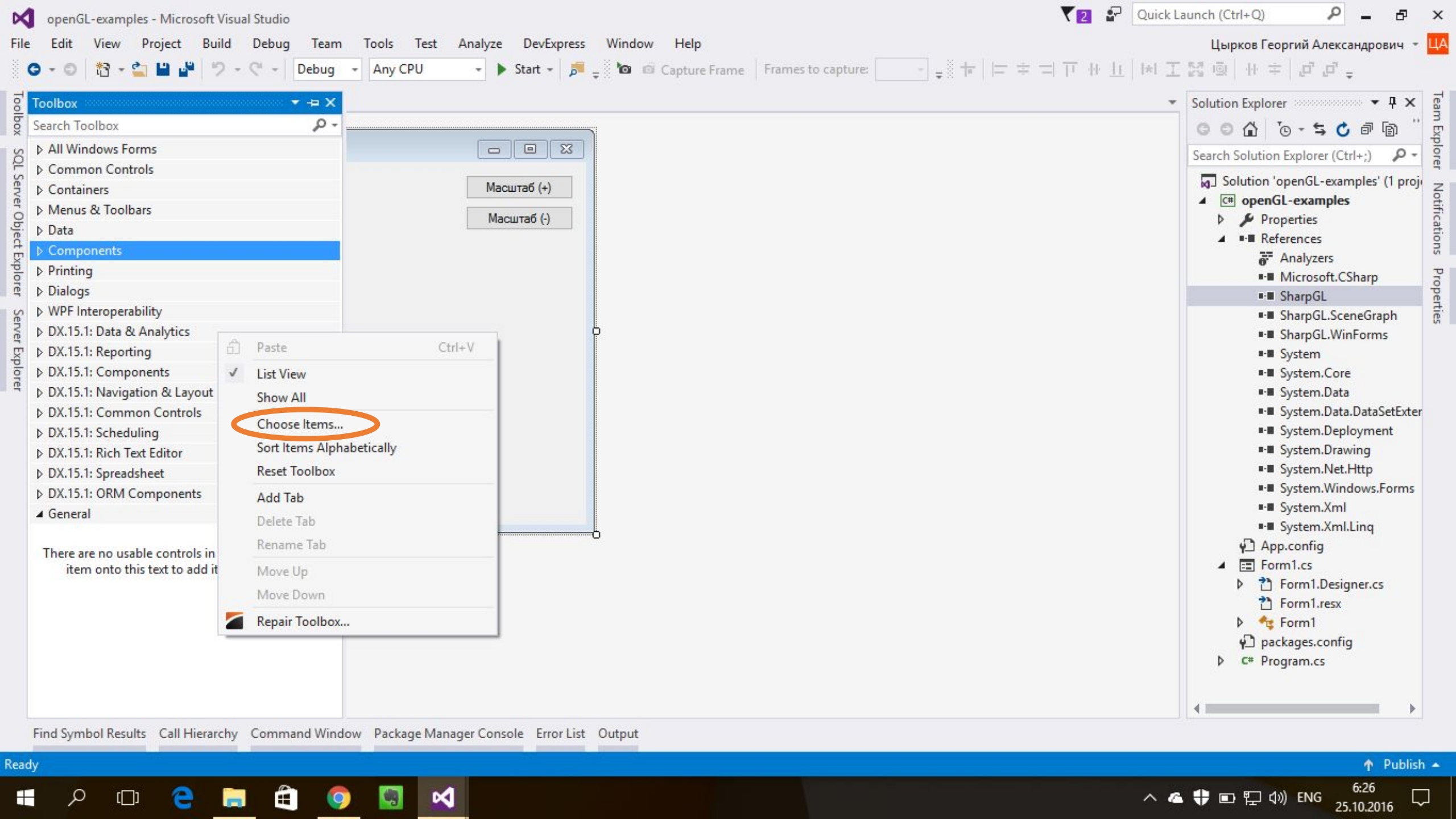
Properties Form1 System.Windows.Forms.Form

AutoSizeMode	GrowOnly
Location	0; 0
MaximumSize	0; 0
MinimumSize	0; 0
Padding	0; 0; 0; 0
Size	511; 379
StartPosition	WindowsDefaultL
WindowState	Normal
Misc	
AcceptButton	(none)
CancelButton	(none)
KeyPreview	False
Window Style	
ControlBox	True
HelpButton	False
Icon	(Icon)
IsMdiContainer	False
MainMenuStrip	(none)
MaximizeBox	True
MinimizeBox	True
Opacity	100%
ShowIcon	True
ShowInTaskbar	True
SizeGripStyle	Auto
TopMost	False
TransparencyKe	

Solution Explorer

Search Solution Explorer (Ctrl+;)

- Solution 'openGL-examples' (1 proj)
 - openGL-examples
 - Properties
 - References
 - System
 - System.Core
 - System.Data
 - System.Data.DataSetExt
 - System.Deployment
 - System.Drawing
 - System.Net.Http
 - System.Windows.Forms
 - System.Xml
 - System.Xml.Linq
 - App.config
 - Form1.cs
 - Form1.Designer.cs
 - Form1.resx
 - Form1
 - packages.config
 - Program.cs



Toolbox

Search Toolbox

- ▶ All Windows Forms
- ▶ Common Controls
- ▶ Containers
- ▶ Menus & Toolbars
- ▶ Data
- ▶ Components**
- ▶ Printing
- ▶ Dialogs
- ▶ WPF Interoperability
- ▶ DX.15.1: Data & Analytics
- ▶ DX.15.1: Reporting
- ▶ DX.15.1: Components
- ▶ DX.15.1: Navigation & Layout
- ▶ DX.15.1: Common Controls
- ▶ DX.15.1: Scheduling
- ▶ DX.15.1: Rich Text Editor
- ▶ DX.15.1: Spreadsheet
- ▶ DX.15.1: ORM Components
- ▲ General

There are no usable controls in this category. Drag an item onto this text to add it to the design.

Масштаб (+)

Масштаб (-)

Paste Ctrl+V

List View

Show All

Choose Items...

Sort Items Alphabetically

Reset Toolbox

Add Tab

Delete Tab

Rename Tab

Move Up

Move Down

Repair Toolbox...

Solution Explorer

Search Solution Explorer (Ctrl+;)

- Solution 'openGL-examples' (1 project)
- ▲ C# openGL-examples
 - ▶ Properties
 - ▲ References
 - Analyzer
 - Microsoft.CSharp
 - SharpGL
 - SharpGL.SceneGraph
 - SharpGL.WinForms
 - System
 - System.Core
 - System.Data
 - System.Data.DataSetExtensions
 - System.Deployment
 - System.Drawing
 - System.Net.Http
 - System.Windows.Forms
 - System.Xml
 - System.Xml.Linq
 - App.config
 - Form1.cs
 - ▶ Form1.Designer.cs
 - Form1.resx
 - ▶ Form1
 - packages.config
 - Program.cs

Choose Toolbox Items



Universal Windows 8 Components

Universal Windows Components

Windows Phone Silverlight Components

WPF Components

.NET Framework Components

COM Components

System.Activities Components

Silverlight Components

	Name	Namespace ▲	Assembly Name
<input type="checkbox"/>	VScrollBarArray	Microsoft.VisualBasic.Compatibility.VB6	Microsoft.VisualBasic.Compatibility
<input type="checkbox"/>	WebBrowserArray	Microsoft.VisualBasic.Compatibility.VB6	Microsoft.VisualBasic.Compatibility
<input checked="" type="checkbox"/>	OpenGLControl	SharpGL	SharpGL.WinForms
<input checked="" type="checkbox"/>	SceneControl	SharpGL	SharpGL.WinForms
<input checked="" type="checkbox"/>	GLColourPicker	SharpGL.Controls	SharpGL.WinForms
<input checked="" type="checkbox"/>	BackgroundWorker	System.ComponentModel	System
<input type="checkbox"/>	Component	System.ComponentModel	System
<input type="checkbox"/>	MarshalByValueComponent	System.ComponentModel	System
<input type="checkbox"/>	AssemblyInstaller	System.Configuration.Install	System.Configuration.Install

Filter:

Clear

GLColourPicker

Browse...



Language: Invariant Language (Invariant Country)

Version: 2.4.0.0

OK

Cancel

Reset

Открытие



Упорядочить ▼

★ Быстрый доступ

!_sources

!_data

OneDrive

Рабочий стол

Download

Document

Pictures

OneDrive

Этот компьютер

Сеть

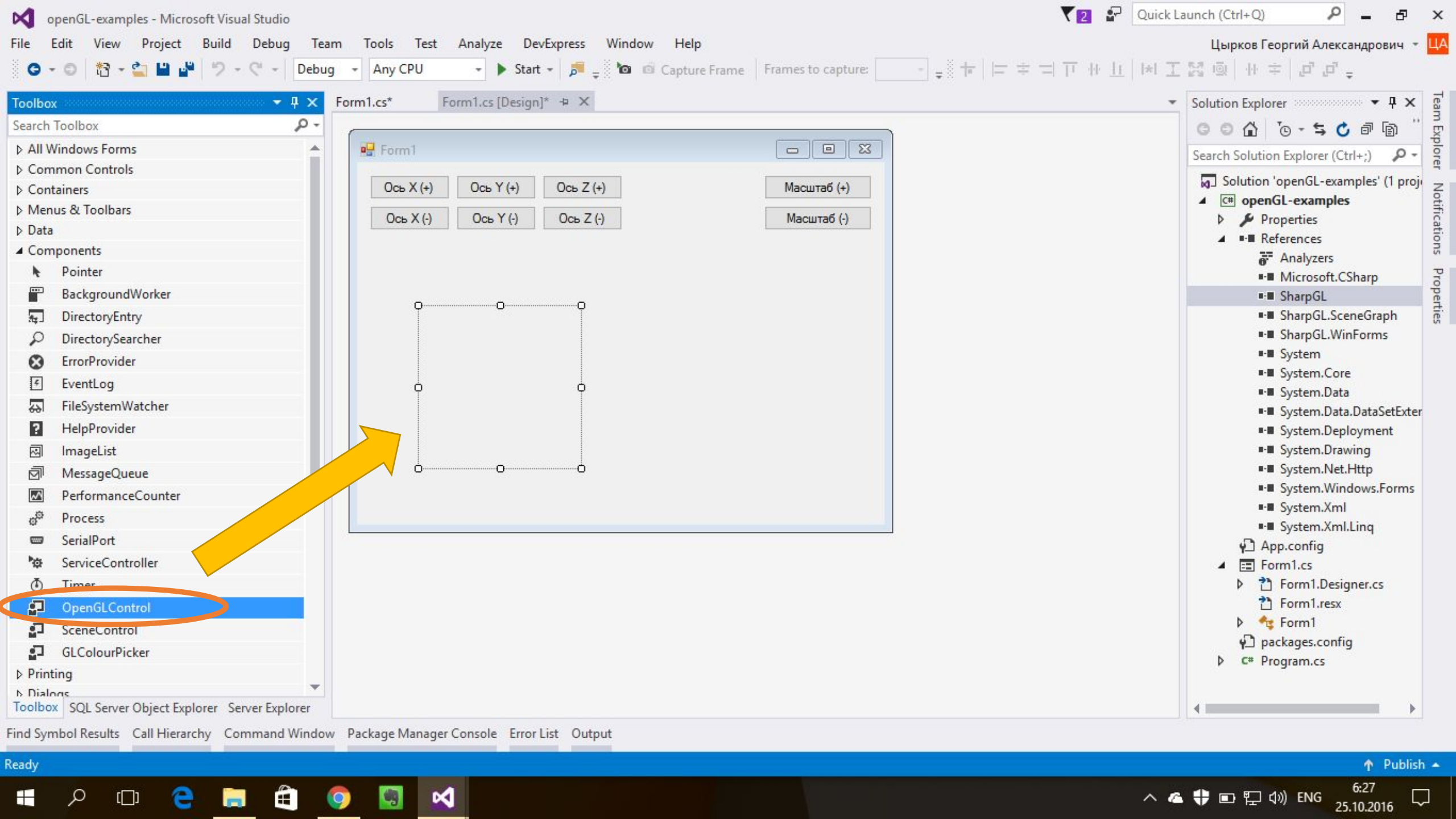
40

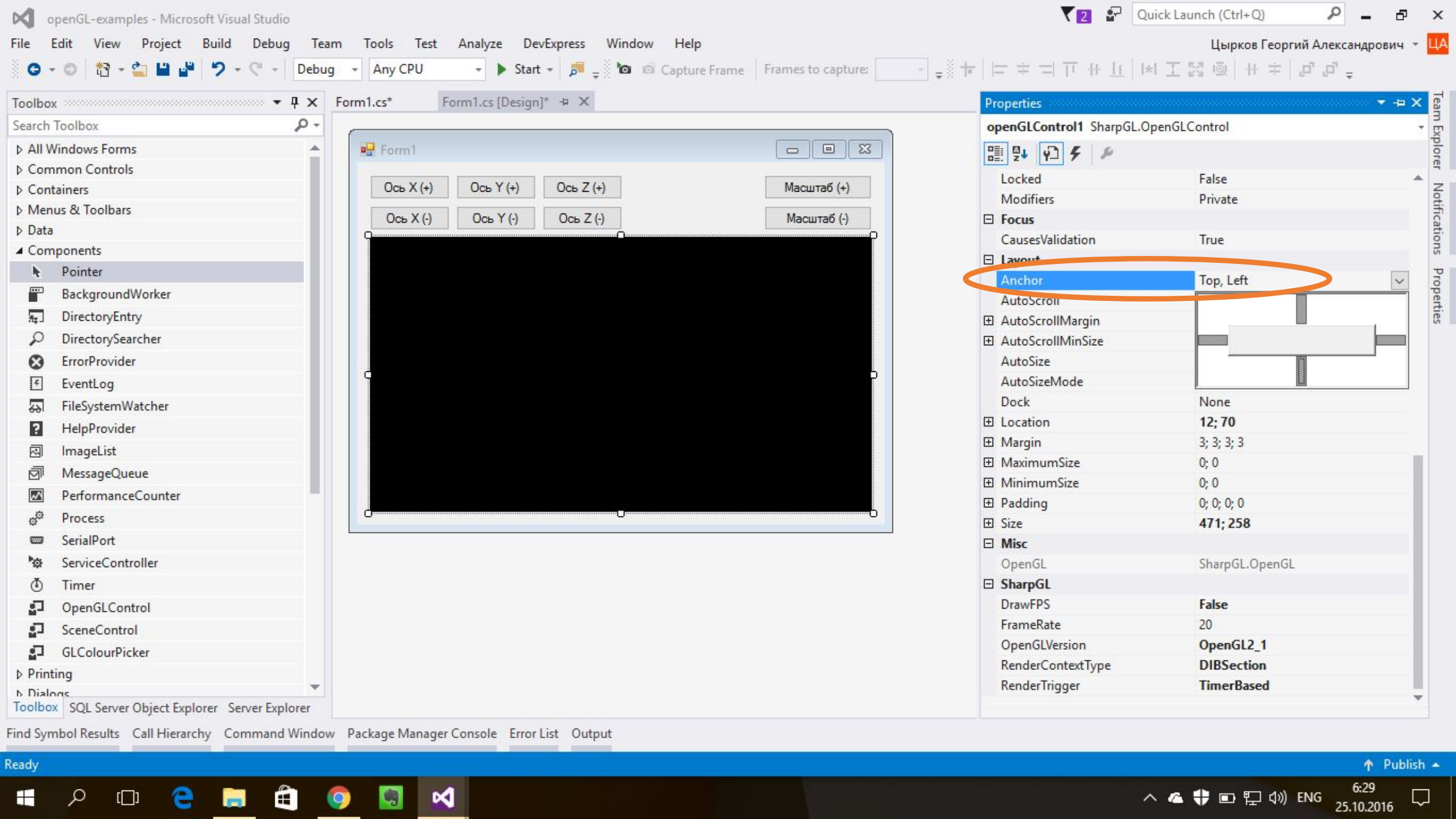


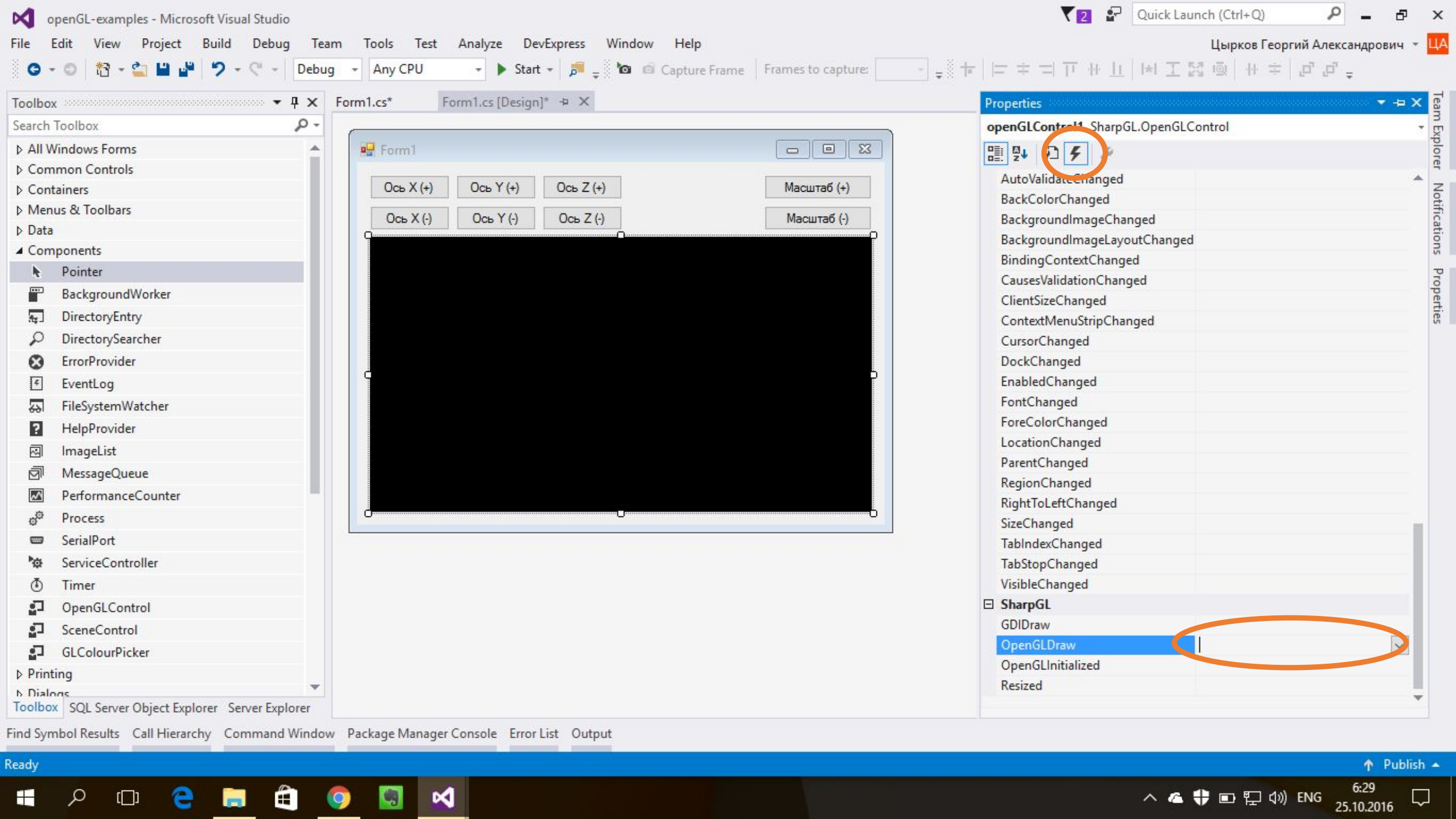
es (*.dll; *.exe)

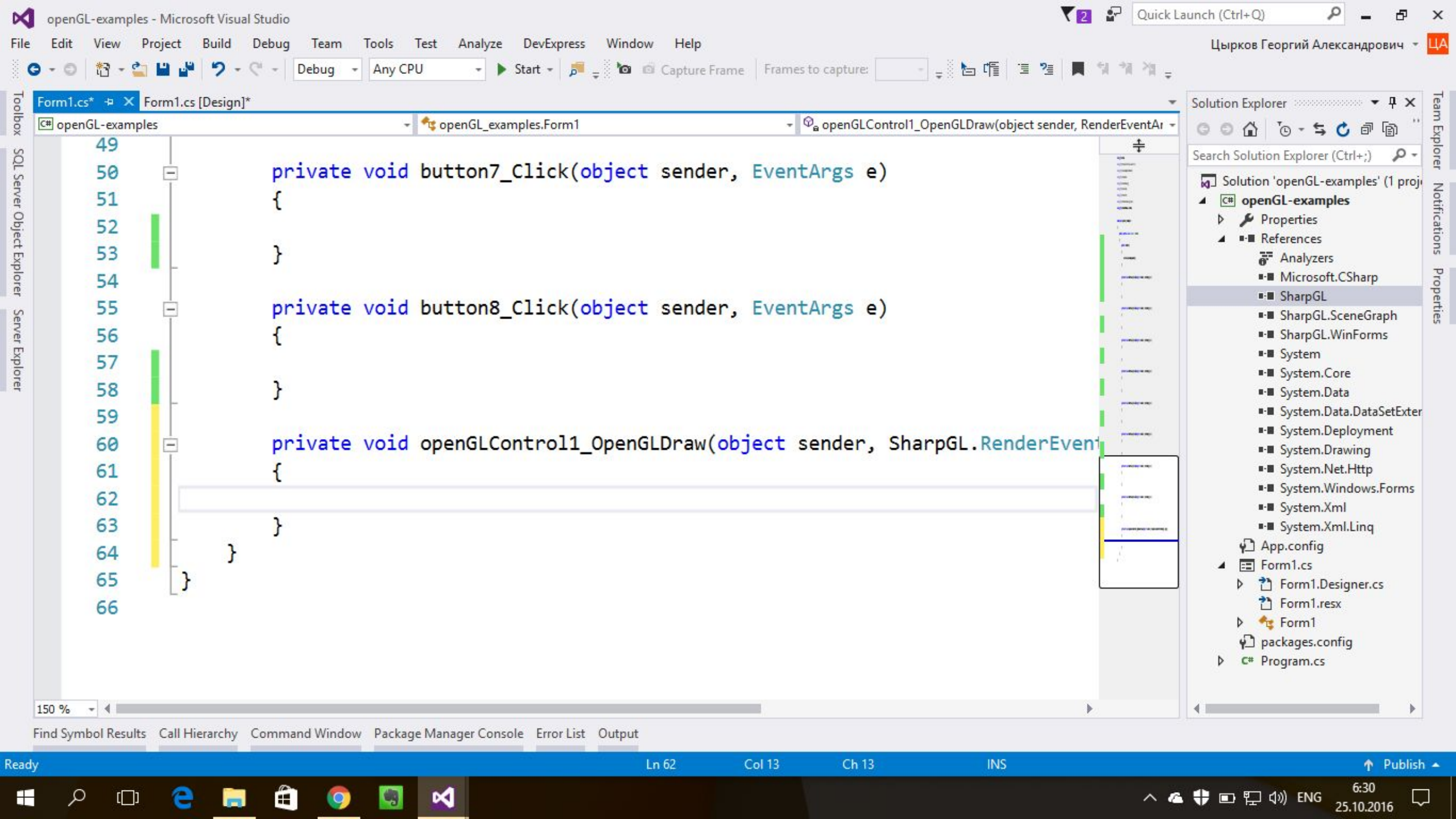
ть

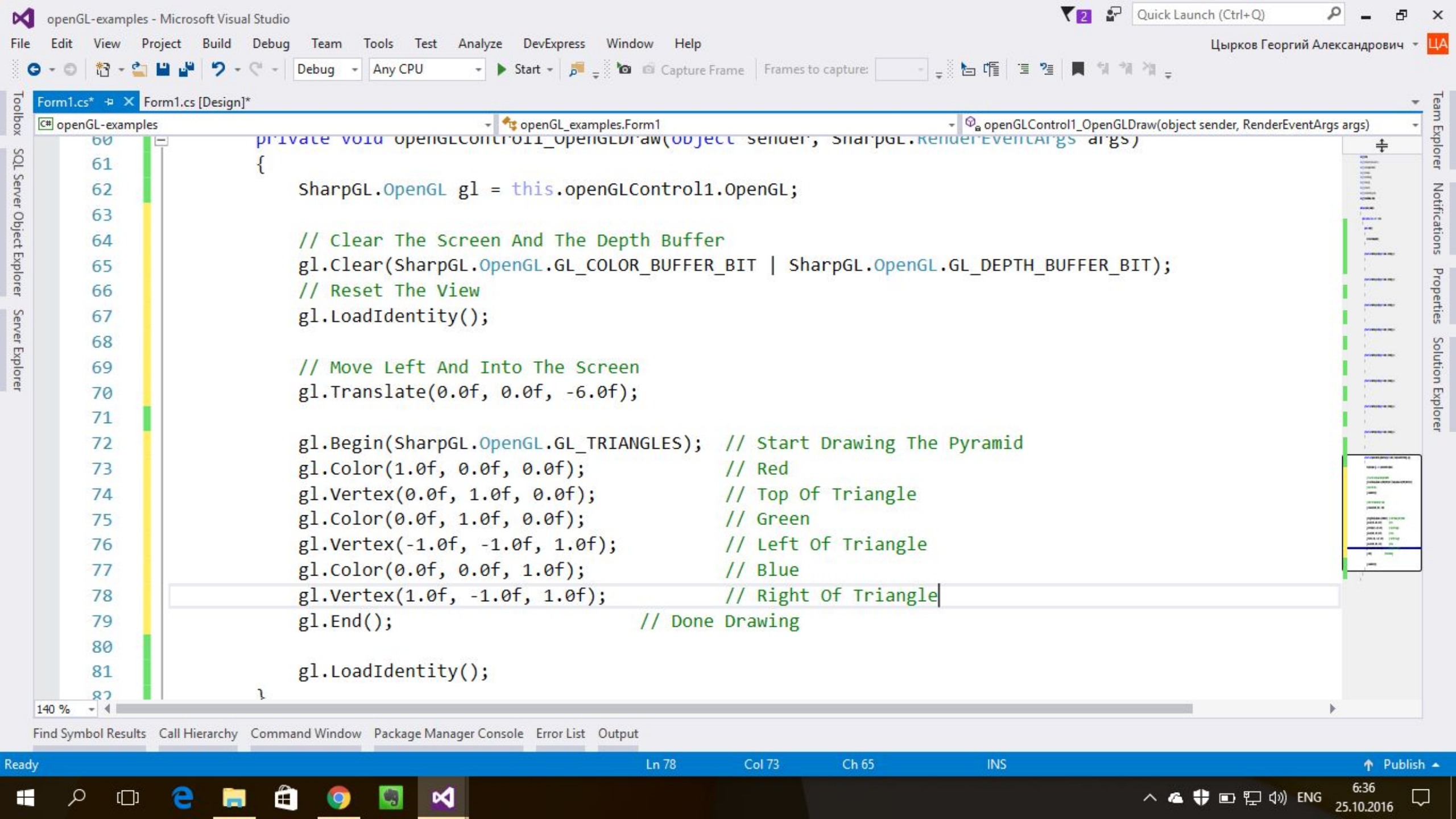
Отмена

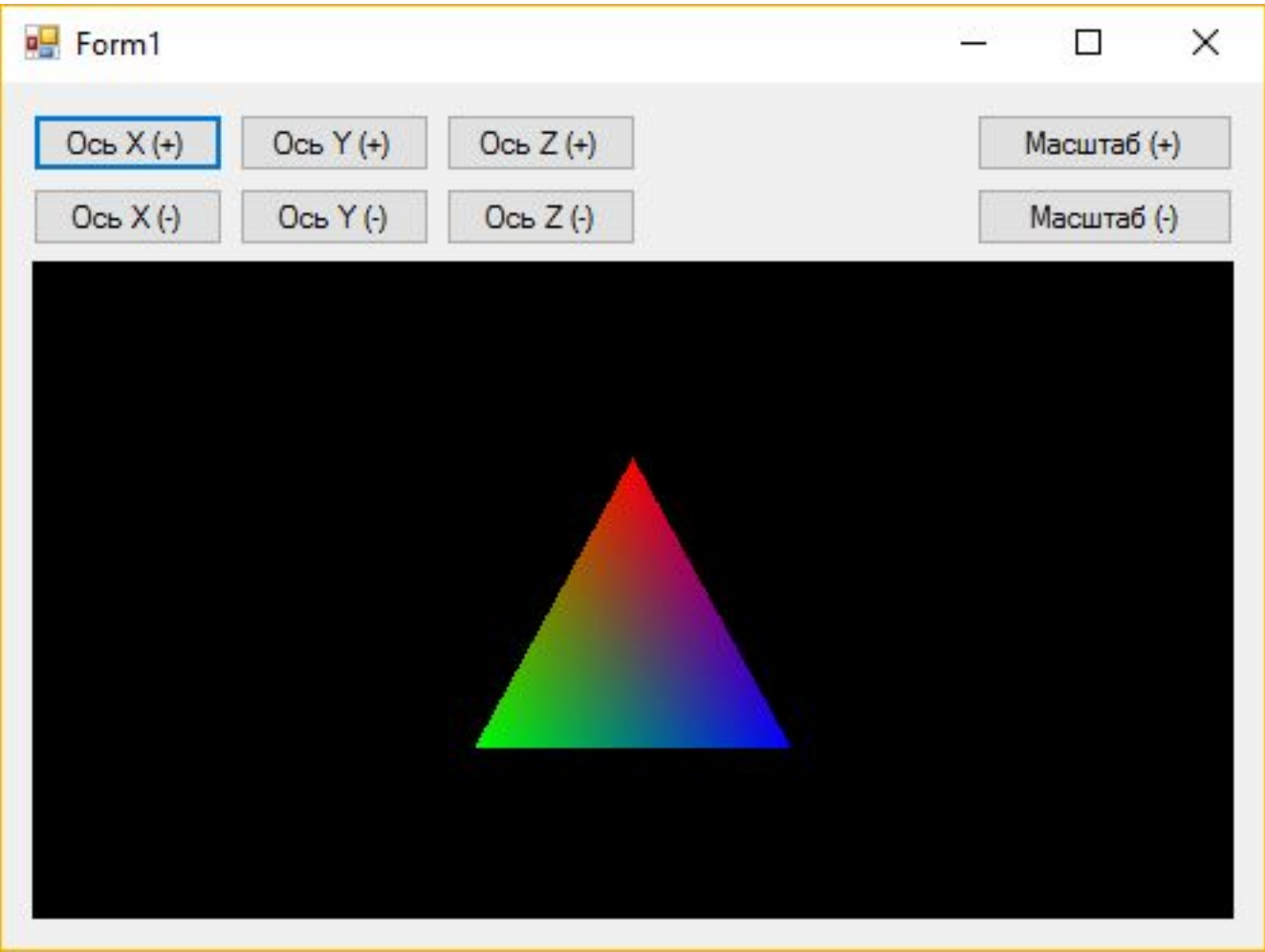


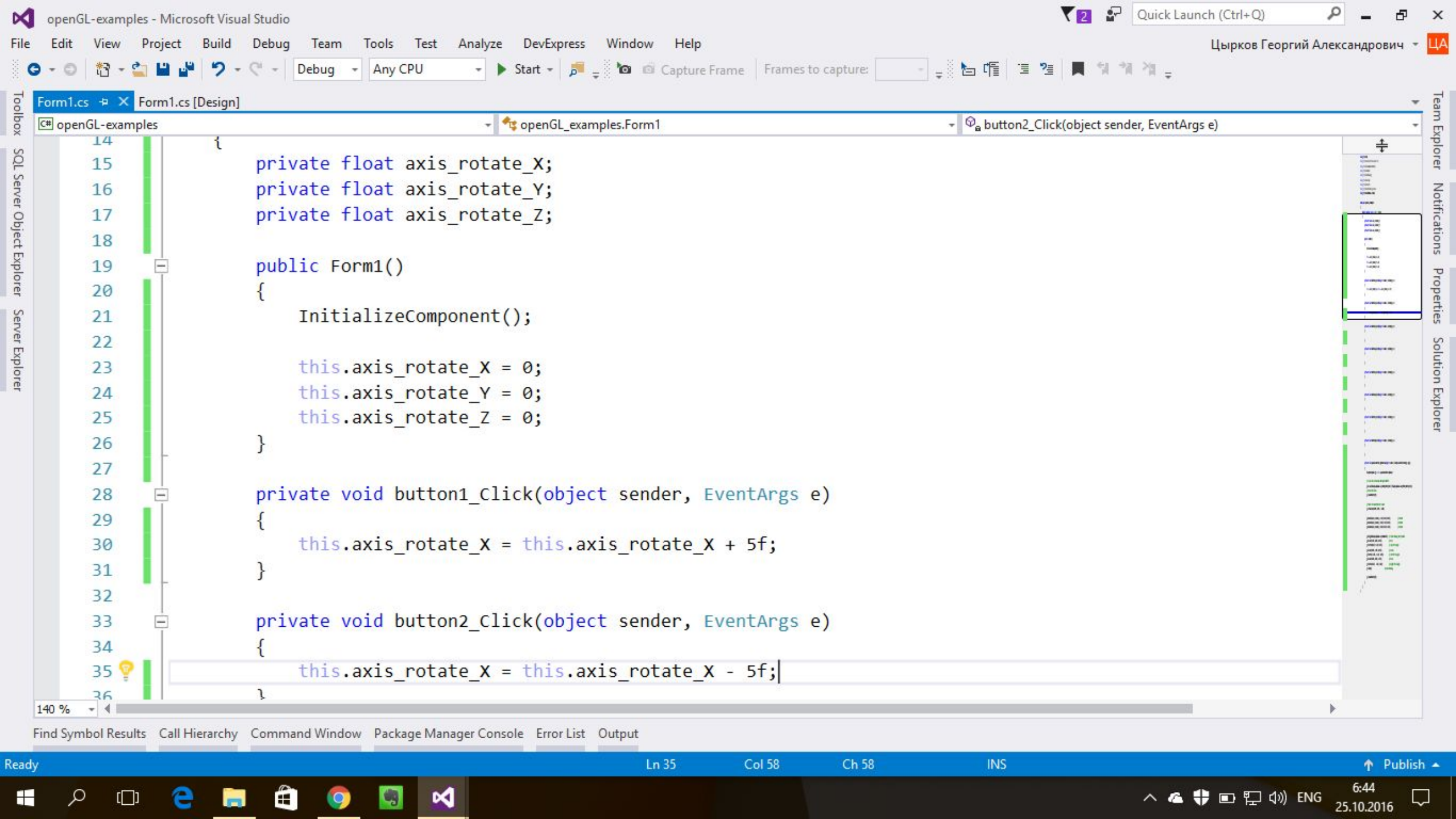


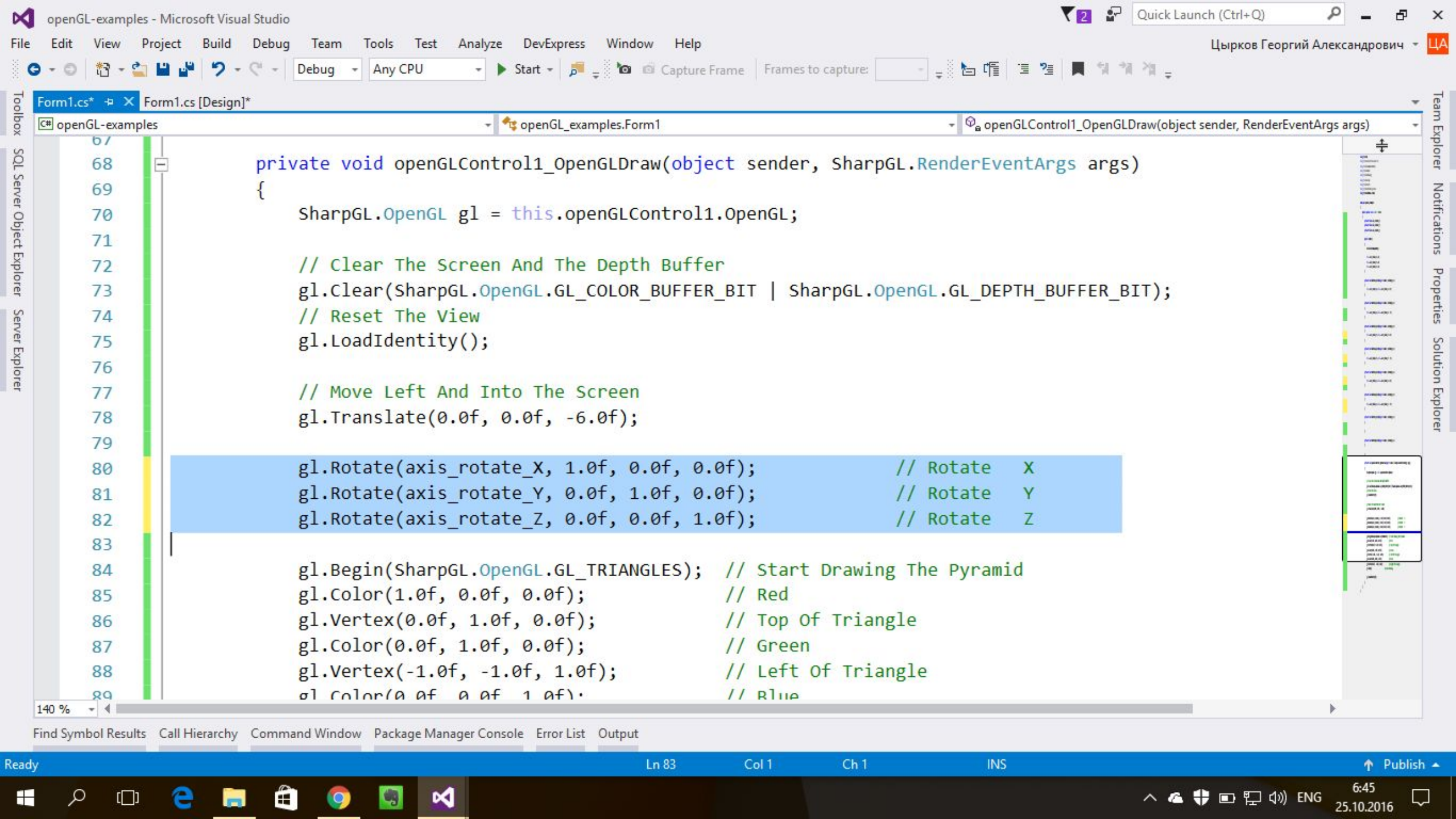




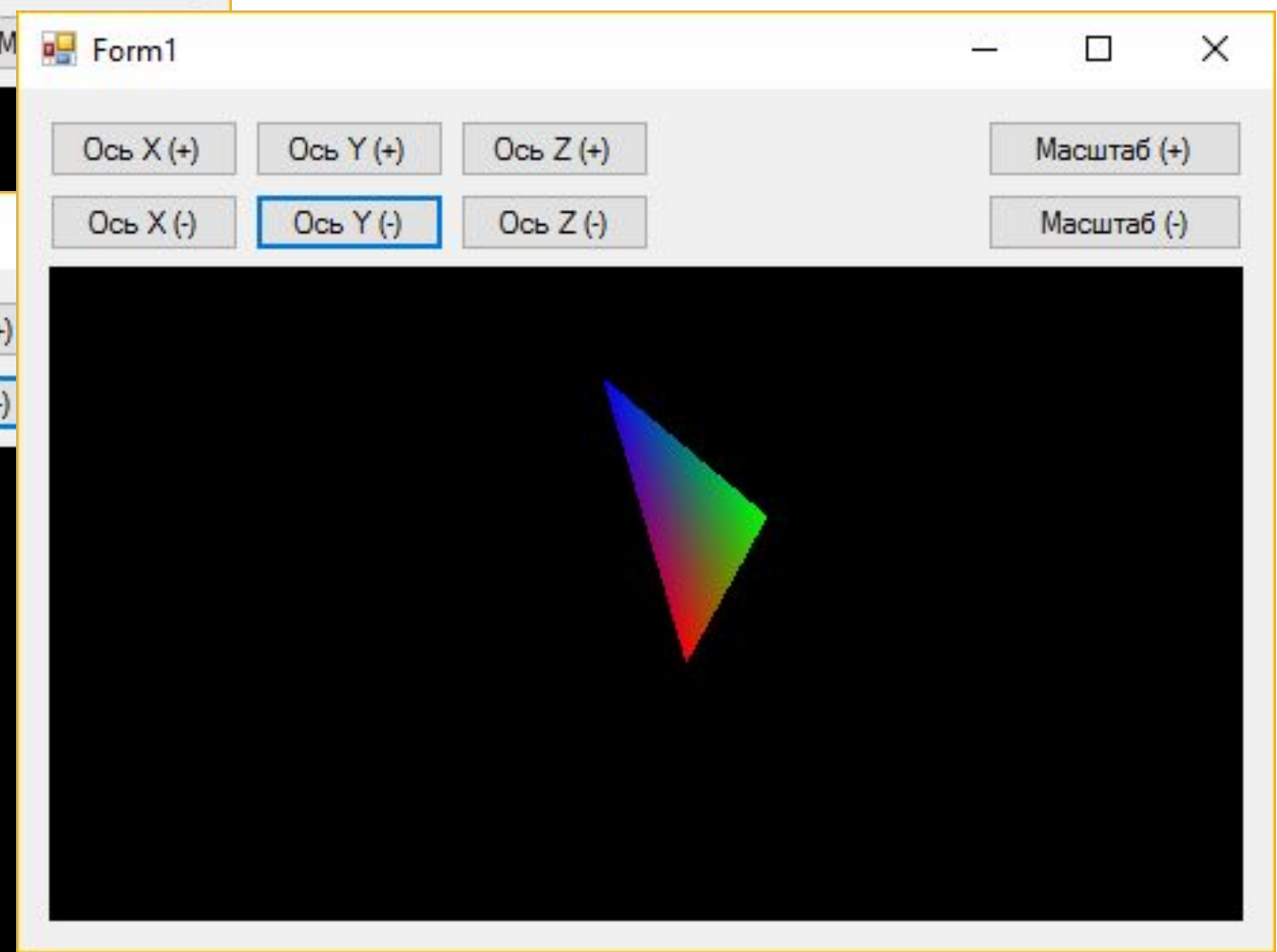
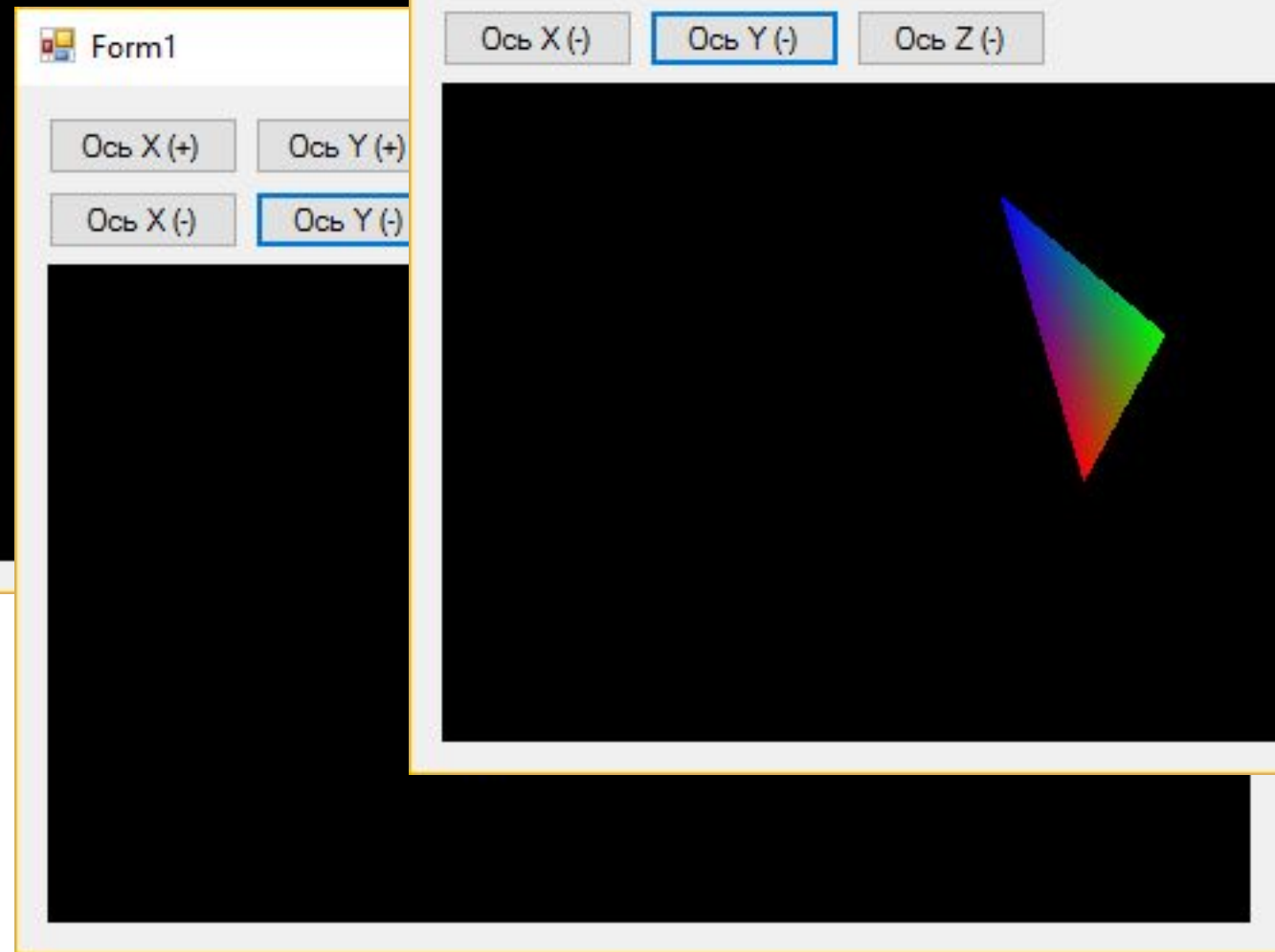
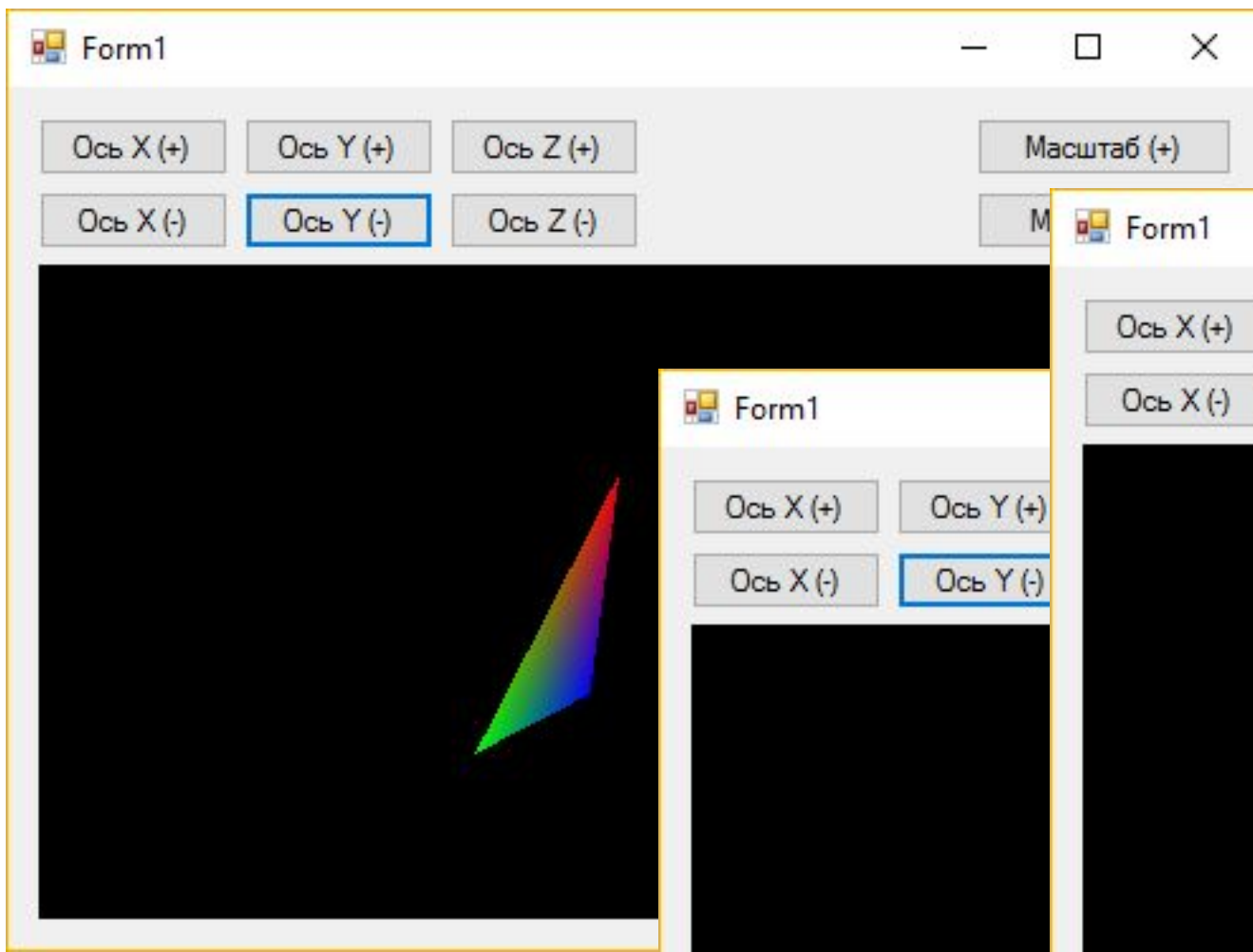








```
67
68 private void OpenGLControl1_OpenGLDraw(object sender, SharpGL.RenderEventArgs args)
69 {
70     SharpGL.OpenGL gl = this.OpenGLControl1.OpenGL;
71
72     // Clear The Screen And The Depth Buffer
73     gl.Clear(SharpGL.OpenGL.GL_COLOR_BUFFER_BIT | SharpGL.OpenGL.GL_DEPTH_BUFFER_BIT);
74     // Reset The View
75     gl.LoadIdentity();
76
77     // Move Left And Into The Screen
78     gl.Translate(0.0f, 0.0f, -6.0f);
79
80     gl.Rotate(axis_rotate_X, 1.0f, 0.0f, 0.0f); // Rotate X
81     gl.Rotate(axis_rotate_Y, 0.0f, 1.0f, 0.0f); // Rotate Y
82     gl.Rotate(axis_rotate_Z, 0.0f, 0.0f, 1.0f); // Rotate Z
83
84     gl.Begin(SharpGL.OpenGL.GL_TRIANGLES); // Start Drawing The Pyramid
85     gl.Color(1.0f, 0.0f, 0.0f); // Red
86     gl.Vertex(0.0f, 1.0f, 0.0f); // Top Of Triangle
87     gl.Color(0.0f, 1.0f, 0.0f); // Green
88     gl.Vertex(-1.0f, -1.0f, 1.0f); // Left Of Triangle
89     gl.Color(0.0f, 0.0f, 1.0f); // Blue
```




```
OpenGL-examples - Microsoft Visual Studio
File Edit View Project Build Debug Team Tools Test Analyze DevExpress Window Help
Debug Any CPU Start Capture Frame Frames to capture:
Form1.cs* Form1.cs [Design]*
OpenGL-examples OpenGL-examples.Form1 OpenGLControl1_OpenGLDraw(object sender, Rend
83
84 gl.Begin(SharpGL.OpenGL.GL_TRIANGLES); // Start Drawing The Pyramid
85 gl.Color(1.0f, 0.0f, 0.0f); // Red
86 gl.Vertex(0.0f, 1.0f, 0.0f); // Top Of Triangle (Front)
87 gl.Color(0.0f, 1.0f, 0.0f);
88 gl.Vertex(-1.0f, -1.0f, 1.0f);
89 gl.Color(0.0f, 0.0f, 1.0f);
90 gl.Vertex(1.0f, -1.0f, 1.0f);
91
92 gl.Color(1.0f, 0.0f, 0.0f);
93 gl.Vertex(0.0f, 1.0f, 0.0f);
94 gl.Color(0.0f, 0.0f, 1.0f);
95 gl.Vertex(1.0f, -1.0f, 1.0f);
96 gl.Color(0.0f, 1.0f, 0.0f);
97 gl.Vertex(1.0f, -1.0f, -1.0f);
98
99 gl.Color(1.0f, 0.0f, 0.0f);
100 gl.Vertex(0.0f, 1.0f, 0.0f);
101 gl.Color(0.0f, 1.0f, 0.0f);
102 gl.Vertex(1.0f, -1.0f, -1.0f);
103 gl.Color(0.0f, 0.0f, 1.0f);
104 gl.Vertex(-1.0f, -1.0f, -1.0f);
105
```

```
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OpenGL-examples OpenGL-examples.Form1 OpenGLControl1_OpenGLDraw(object sender, Rend
105
106 gl.Color(1.0f, 0.0f, 0.0f); // Red
107 gl.Vertex(0.0f, 1.0f, 0.0f); // Top Of Triangle (Left)
108 gl.Color(0.0f, 0.0f, 1.0f); // Blue
109 gl.Vertex(-1.0f, -1.0f, -1.0f); // Left Of Triangle (Left)
110 gl.Color(0.0f, 1.0f, 0.0f); // Green
111 gl.Vertex(-1.0f, -1.0f, 1.0f); // Right Of Triangle (Left)
112 gl.End(); // Done Drawing The Pyramid
113
114 gl.LoadIdentity();
115
}
140 %
Find Symbol Results Call Hierarchy Command Window Package Manager Console Error List Output
Ready Ln 112 Col 22 Ch 22 INS Publish
```

