

# CS202: Software Tools and Techniques for CSE

## Lecture 12

Shouvick Mondal

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August 2025

# Events and Delegates in C# Windows Forms App.

# Create a new project

## Recent project templates

Console App

Search for templates (Alt+S)  Clear all

C# Windows Desktop

MSTest Test Project A project that contains MSTest tests that can run on .NET on Windows.

Blank App, Packaged (WinUI 3 in Desktop) A project template for creating a Desktop app based on the Microsoft Store.

Class Library (WinUI 3 in Desktop) A project for creating a managed class library (.dll) for Desktop.

Blank App, Packaged with Windows Application Packaging Project (WinUI 3 in Desktop) A project template for creating a Desktop app based on the Windows UI Library (WinUI 3). A Windows Application Packaging (WAP) project is included to create a MSIX package for side-loading or distribution via the Microsoft Store.

Unit Test App (WinUI 3 in Desktop) A project to create a unit test app for WinUI 3 apps using MSTest.

Windows Forms App A project template for creating a .NET Windows Forms (WinForms) App.

Windows Forms App (.NET Framework) A project for creating an application with a Windows Forms (WinForms) user interface

Desktop

- Desktop
- Extensions
- Games
- IoT
- Library
- Machine Learning
- Mobile
- MSTest
- NUnit
- Office
- Other
- Playwright
- Roslyn
- Service
- SQL

Back

Next



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16:25 06-04-2025 ENG

# Create a new project

## Recent project templates



C#

 [Clear all](#)

C#

Windows

Desktop



MSTest Test Project

A project that contains MSTest tests that can run on .NET on Windows, Linux and MacOS.

[C#](#) [Linux](#) [macOS](#) [Windows](#) [Desktop](#) [MSTest](#) [Test](#) [Web](#)

Blank App, Packaged (WinUI 3 in Desktop)

A project template for creating a Desktop app based on the Windows UI Library (WinUI 3) along with a MSIX package for side-loading or distribution via the Microsoft Store.

[C#](#) [XAML](#) [Windows](#) [Desktop](#) [WinUI](#)

Class Library (WinUI 3 in Desktop)

A project for creating a managed class library (.dll) for Desktop apps based on the Windows UI Library (WinUI 3).

[C#](#) [XAML](#) [Windows](#) [Desktop](#) [WinUI](#)

Blank App, Packaged with Windows Application Packaging Project (WinUI 3 in Desktop)

A project template for creating a Desktop app based on the Windows UI Library (WinUI 3). A Windows Application Packaging (WAP) project is included to create a MSIX package for side-loading or distribution via the Microsoft Store.

[C#](#) [XAML](#) [Windows](#) [Desktop](#) [WinUI](#)

Unit Test App (WinUI 3 in Desktop)

A project to create a unit test app for WinUI 3 apps using MSTest.

[C#](#) [XAML](#) [Windows](#) [Desktop](#) [WinUI](#) [Test](#)

Windows Forms App

A project template for creating a .NET Windows Forms (WinForms) App.

[C#](#) [Windows](#) [Desktop](#)

Windows Forms App (.NET Framework)

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

[C#](#) [Windows](#) [Desktop](#)[Back](#)[Next](#)16:26  
06-04-2025

# Configure your new project

Windows Forms App C# Windows Desktop

Project name

WinFormsApp1

Location

C:\Users\shouwick\Desktop\IITGN\playground



Solution name ⓘ

WinFormsApp1

Place solution and project in the same directory

Project will be created in "C:\Users\shouwick\Desktop\IITGN\playground\WinFormsApp1\"

Back

Next



Type here to search



16:26

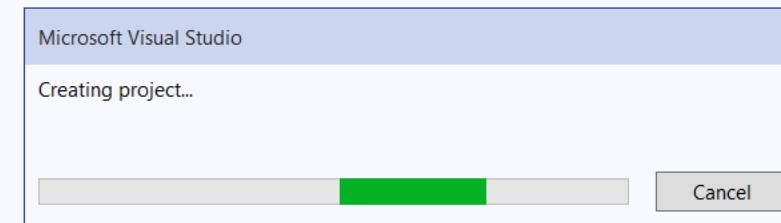
06-04-2025

## Additional information

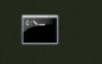
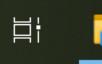
Windows Forms App C# Windows Desktop

Framework ⓘ

.NET 8.0 (Long Term Support)



Back Create



Toolbox

Search Toolbox

All Windows Forms

- Pointer
- BackgroundWorker
- BindingSource
- Button
- CheckBox
- CheckedListBox
- ColorDialog
- ComboBox
- ContextMenuStrip
- DataGridView
- DateTimePicker
- DomainUpDown
- ErrorProvider
- FileSystemWatcher
- FlowLayoutPanel
- FolderBrowserDialog
- FontDialog
- GroupBox
- HelpProvider
- HScrollBar
- ImageList
- Label
- LinkLabel
- ListBox
- ListView
- MaskedTextBox
- MenuStrip
- MonthCalendar
- NotifyIcon
- NumericUpDown
- OpenFileDialog

Form1.cs [Design]

Form1

Output

Show output from:

Properties

Form1 System.Windows.Forms.Form

- BackgroundImage  (none)
- BackgroundImageLayout  Tile
- Cursor  Default
- Font  Segoe UI, 9pt
- ForeColor  ControlText
- FormBorderStyle  Sizable
- RightToLeft  No
- RightToLeftLayout  False
- Text  Form1

The text associated with the control.

Solution Explorer

Search Solution Explorer (Ctrl+Shift+F)

Solution 'WinFormsApp1' (1 of 1 project)

WinFormsApp1

- Dependencies
- Form1.cs

  - Form1.Designer.cs
  - Form1.resx

- Program.cs

Solution Explorer Git Changes

Toolbox

Search Toolbox

All Windows Forms

- Pointer
- BackgroundWorker
- BindingSource
- Button
- CheckBox
- CheckedListBox
- ColorDialog
- ComboBox
- ContextMenuStrip
- DataGridView
- DateTimePicker
- DomainUpDown
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- FlowLayoutPanel
- FolderBrowserDialog
- FontDialog
- GroupBox
- HelpProvider
- HScrollBar
- ImageList
- Label
- LinkLabel
- ListBox
- ListView
- MaskedTextBox
- MenuStrip
- MonthCalendar
- NotifyIcon
- NumericUpDown
- OpenFileDialog

Form1.cs [Design] Start Without Debugging (Ctrl+F5)

Form1

Output

Show output from:

Properties

Form1 System.Windows.Forms.Form

- BackgroundImage  (none)
- BackgroundImageLayout  Tile
- Cursor  Default
- Font  Segoe UI, 9pt
- ForeColor  ControlText
- FormBorderStyle  Sizable
- RightToLeft  No
- RightToLeftLayout  False
- Text  Form1

The text associated with the control.

Solution Explorer

Search Solution Explorer (Ctrl+Shift+F)

Solution 'WinFormsApp1' (1 of 1 project)

WinFormsApp1

- Dependencies
- Form1.cs

  - Form1.Designer.cs
  - Form1.resx

- Program.cs

Solution Explorer Git Changes

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help Search WinFormsApp1 GitHub Copilot

Form1

Toolbox

Search Solution Explorer (Ctrl+;) Solution Explorer

Solution 'WinFormsApp1' (1 of 1 project)

WinFormsApp1

Dependencies

Form1.cs

Form1.Designer.cs

Form1.resx

Program.cs

Solution Explorer Git Changes

Properties

Form1 System.Windows.Forms.Form

BackgroundImage (none)

BackgroundImageLayout Tile

Cursor Default

Font Segoe UI, 9pt

ForeColor ControlText

FormBorderStyle Sizable

RightToLeft No

RightToLeftLayout False

Text Form1

The text associated with the control.

Output

Show output from: Build

1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll

===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====

===== Build completed at 16:41 and took 01.656 seconds =====

Error List Output

Ready

Type here to search

19, 19 818 x 497 Add to Source Control Select Repository

16:41 06-04-2025

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help | Search WinFormsApp1

GitHub Copilot

Toolbox

Form1.cs [Design]

```
<Project Sdk="Microsoft.NET.Sdk">
  <PropertyGroup>
    <OutputType>WinExe</OutputType>
    <TargetFramework>net8.0-windows</TargetFramework>
    <Nullable>enable</Nullable>
    <UseWindowsForms>true</UseWindowsForms>
    <ImplicitUsings>enable</ImplicitUsings>
  </PropertyGroup>
</Project>
```

Preview of C:\Users\shouwick\Desktop\IITGN\playground\WinFormsApp1\WinFormsApp1.csproj

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'WinFormsApp1' (1 of 1 project)

WinFormsApp1

- Dependencies
- Form1.cs
- Form1.Designer.cs
- Form1.resx
- Program.cs

Solution Explorer Git Changes

Properties

WinFormsApp1 Project Properties

Misc

File Name	WinFormsApp1.csproj
Full Path	C:\Users\shouwick\Desktop\IITGN\playground\WinFormsApp1\WinFormsApp1.csproj
Project Folder	C:\Users\shouwick\Desktop\IITGN\playground\WinFormsApp1

No issues found

Output

Show output from: Build

```
1>WinFormsApp1 -> C:\Users\shouwick\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
===== Build completed at 16:41 and took 01.656 seconds =====
```

Server Explorer

Error List

Output

Ready

Type here to search

16:42  
06-04-2025

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help | Search WinFormsApp1

GitHub Copilot

Toolbox

Form1.Designer.cs [Design] Form1.cs [Design]

WinFormsApp1 WinFormsApp1.Form1 components

General

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

```
namespace WinFormsApp1
{
    partial class Form1
    {
        /// <summary>
        /// Required designer variable.
        /// </summary>
        private System.ComponentModel.IContainer components = null;

        /// <summary>
        /// Clean up any resources being used.
        /// </summary>
        /// <param name="disposing">true if managed resources should be disposed; otherwise, false.</param>
        protected override void Dispose(bool disposing)
        {
            if (disposing && (components != null))
            {
                components.Dispose();
            }
            base.Dispose(disposing);
        }
    }
}
```

Windows Form Designer generated code

110% No issues found

Output

Show output from: Build

```
1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped ======
===== Build completed at 16:41 and took 01.656 seconds ======
```

Server Explorer Toolbox Error List Output

Add to Source Control Select Repository

Type here to search

Ready

16:42 06-04-2025 ENG



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## Toolbox

## Search Toolbox

## General

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

Program.cs Form1.resx Form1.Designer.cs Form1.cs [Design]

```
C# WinFormsApp1
namespace WinFormsApp1
{
    internal static class Program
    {
        /// <summary>
        /// The main entry point for the application.
        /// </summary>
        [STAThread]
        static void Main()
        {
            // To cust void Program.Main()
            // see ht ApplicationConfiguration.Initialize();
            ApplicationConfiguration.Initialize();
            Application.Run(new Form1());
        }
    }
}
```

110% No issues found

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'WinFormsApp1' (1 of 1 project)

- WinFormsApp1
  - Dependencies
  - Form1.cs
    - C# Form1.Designer.cs
    - Form1.resx
  - C# Program.cs

Solution Explorer Git Changes

Properties



Type here to search





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## Toolbox

## Search Toolbox

## General

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

## Program.cs Form1.resx Form1.Designer.cs Form1.cs [Design]

```
C# WinFormsApp1
1  namespace WinFormsApp1
2  {
3      internal static class Program
4      {
5          /// <summary>
6          /// The main entry point for the application.
7          /// </summary>
8          [STAThread]
9          static void Main()
10         {
11             // To customize application configuration such as set high DPI settings or default font,
12             // see https://aka.ms/applicationconfiguration.
13             ApplicationConfiguration.Initialize();
14             Application.Run(new Form1());
15         }
16     }
17 }
```

void ApplicationConfiguration.Initialize()  
Bootstrap the application as follows:

```
global::System.Windows.Forms.Application.EnableVisualStyles();
global::System.Windows.Forms.Application.SetCompatibleTextRenderingDefault(false);
global::System.Windows.Forms.Application.SetHighDpiMode(HighDpiMode.SystemAware);
```

## Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'WinFormsApp1' (1 of 1 project)

- WinFormsApp1
  - Dependencies
  - Form1.cs
    - C# Form1.Designer.cs
    - Form1.resx
  - C# Program.cs

Solution Explorer Git Changes

Properties

110% No issues found

## Output

Show output from: Build

```
1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped ======
===== Build completed at 16:41 and took 01.656 seconds ======
```

Server Explorer Toolbox

Error List Output

↑ Add to Source Control Select Repository



Type here to search

16:43  
06-04-2025



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## Toolbox

## Search Toolbox

## General

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

Program.cs Form1.resx Form1.Designer.cs Form1.cs [Design]

```
namespace WinFormsApp1
{
    internal static class Program
    {
        /// <summary>
        /// The main entry point for the application.
        /// </summary>
        [STAThread]
        static void Main()
        {
            // To customize application configuration such as set high DPI settings or default font,
            // see https://aka.ms/applicationconfiguration.
            ApplicationConfiguration.Initialize();
            Application.Run(new Form1());
        }
    }
}
```

void Application.Run(Form mainForm) (+ 2 overloads)  
Begins running a standard application message loop on the current thread, and makes the specified form visible.  
Exceptions:  
[InvalidOperationException](#)  
[GitHub Examples and Documentation \(Alt+O\)](#)

110%   No issues found  Ln: 1 Ch: 1 SPC CRLF

## Output

Show output from: Build       

```
1>WinFormsApp1 -> C:\Users\shouwick\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
===== Build completed at 16:41 and took 01.656 seconds =====
```

## Server Explorer

## Toolbox

## Error List

## Output

↑ Add to Source Control  Select Repository 

Type here to search



16:43

06-04-2025



## Solution Explorer

Search Solution Explorer (Ctrl+;) 

Solution 'WinFormsApp1' (1 of 1 project)

- WinFormsApp1
  - Dependencies
  - Form1.cs
    - C# Form1.Designer.cs
    - Form1.resx
  - C# Program.cs

Solution Explorer  Git Changes 

## Properties



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## Toolbox

## Search Toolbox

## General

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

Program.cs Form1.resx Form1.Designer.cs Form1.cs [Design]

```
namespace WinFormsApp1
{
    internal static class Program
    {
        /// <summary>
        /// The main entry point for the application.
        /// </summary>
        [STAThread]
        static void Main()
        {
            // To customize application configuration such as set high DPI settings or default font,
            // see https://aka.ms/applicationconfiguration.
            ApplicationConfiguration.Initialize();
            Application.Run(new Form1());
        }
    }
}
```

Form1.Form10  
GitHub Examples and Documentation (Alt+O)

110% No issues found

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'WinFormsApp1' (1 of 1 project)

- WinFormsApp1
  - Dependencies
  - Form1.cs
    - C# Form1.Designer.cs
    - Form1.resx
  - C# Program.cs

Solution Explorer Git Changes

Properties



Type here to search





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## Toolbox

## Search Toolbox

## General

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

## Program.cs Form1.resx Form1.Designer.cs Form1.cs [Design]

```
C# WinFormsApp1
16      if (disposing && (components != null))
17      {
18          components.Dispose();
19      }
20      base.Dispose(disposing);
21  }
22
23 #region Windows Form Designer generated code
24
25 /// <summary>
26 /// Required method for Designer support - do not modify
27 /// the contents of this method with the code editor.
28 /// </summary>
29 private void InitializeComponent()
30 {
31     this.components = new System.ComponentModel.Container();
32     this.AutoScaleMode = System.Windows.Forms.AutoScaleMode.Font;
33     this.ClientSize = new System.Drawing.Size(800, 450);
34     this.Text = "Form1";
35 }
36
37 #endregion
38 }
39 }
```

110%   No issues found   Ln: 37 Ch: 19 SPC CRLF

## Output

```
Show output from: Build
1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped ======
===== Build completed at 16:41 and took 01.656 seconds ======
```

## Server Explorer Toolbox

## Error List Output

↑ Add to Source Control  Select Repository 

Type here to search

16:44  
06-04-2025

## Solution Explorer

## Search Solution Explorer (Ctrl+;)

```
Solution 'WinFormsApp1' (1 of 1 project)
  WinFormsApp1
    Dependencies
    Form1.cs
      Form1.Designer.cs
      Form1.resx
    Program.cs
```

## Solution Explorer Git Changes

## Properties

The screenshot shows the Microsoft Visual Studio IDE interface for a Windows Forms application named "WinFormsApp1".

**Top Bar:** File, Edit, View, Git, Project, Build, Debug, Test, Analyze, Tools, Extensions, Window, Help, Search, WinFormsApp1.

**Solution Explorer:** Shows the solution structure with one project: WinFormsApp1, containing Dependencies, Form1.cs, Form1.Designer.cs, Form1.resx, and Program.cs.

**Toolbox:** Search Toolbox, General. A message indicates: "There are no usable controls in this group. Drag an item onto this text to add it to the toolbox."

**Code Editor:** Program.cs, Form1.resx, Form1.Designer.cs (selected), Form1.cs [Design]. The code editor displays the generated code for Form1.Designer.cs:

```
1  namespace WinFormsApp1
2  {
3      partial class Form1
4      {
5          /// <summary> Required designer variable.
6          private System.ComponentModel.IContainer components = null;
7
8          /// <summary> Clean up any resources being used.
9          protected override void Dispose(bool disposing)...
10
11         ...
12     }
13
14     ...
15
16     ...
17
18     ...
19
20     ...
21
22     ...
23     ...
24     ...
25     ...
26     ...
27     ...
28     ...
29     ...
30     ...
31     ...
32     ...
33     ...
34     ...
35     ...
36     ...
37     ...
38     ...
39     ...
40 }
```

**Status Bar:** 110 %, No issues found, Ln: 40 Ch: 1 SPC CRLF.

**Output:** Show output from: Build. Output log:

```
1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped ======
===== Build completed at 16:41 and took 01.656 seconds ======
```

**Bottom Bar:** Server Explorer, Toolbox, Error List, Output, Ready, Add to Source Control, Select Repository, 16:44, 06-04-2025, ENG.



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## Toolbox

## Search Toolbox

## General

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

## Program.cs Form1.resx Form1.Designer.cs Form1.cs [Design]

## WinFormsApp1 WinFormsApp1.Form1 Dispose(bool disposing)

```
1  namespace WinFormsApp1
2  {
3      partial class Form1
4      {
5          /// <summary> Required designer variable.
6          private System.ComponentModel.IContainer components = null;
7
8          /// <summary> Clean up any resources being used.
9          protected override void Dispose(bool disposing)
10         {
11             if (disposing && (components != null))
12             {
13                 components.Dispose();
14             }
15             base.Dispose(disposing);
16         }
17
18         Windows Form Designer generated code
19
20     }
21
22 }
23
24 }
```

## Solution Explorer

## Search Solution Explorer (Ctrl+;)

Solution 'WinFormsApp1' (1 of 1 project)

- WinFormsApp1
  - Dependencies
  - Form1.cs
    - C# Form1.Designer.cs
    - Form1.resx
  - Program.cs

Solution Explorer Git Changes

## Properties



110% No issues found Ln: 13 Ch: 108 Col: 57 SPC CRLF

## Output

Show output from: Build

```
1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped ======
===== Build completed at 16:41 and took 01.656 seconds ======
```

Server Explorer Toolbox

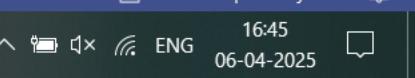
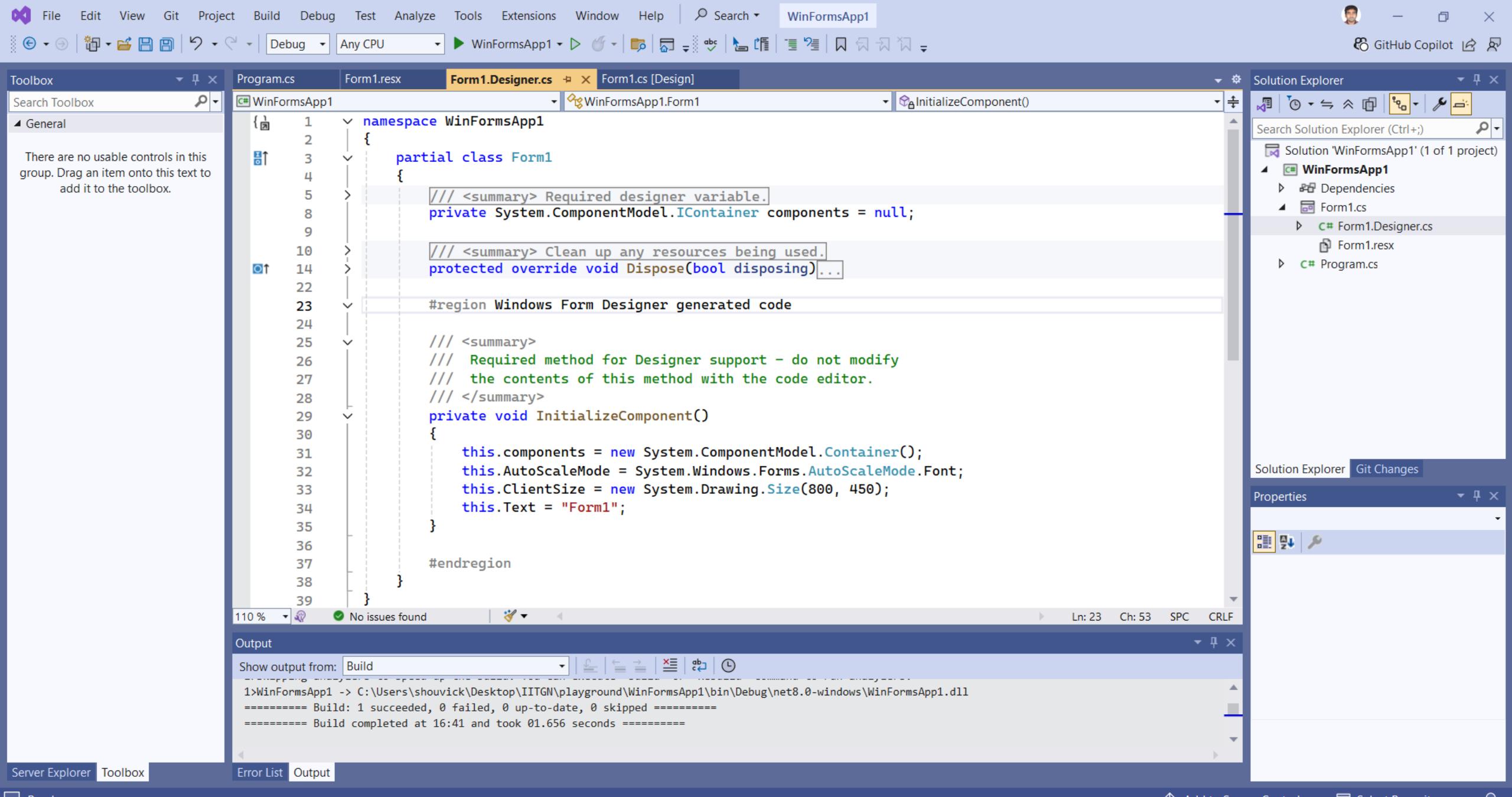
Error List Output

↑ Add to Source Control Select Repository



Type here to search

16:45  
06-04-2025





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## Toolbox

## Search Toolbox

## General

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

## Program.cs Form1.resx Form1.Designer.cs Form1.cs [Design]

```
C# WinFormsApp1 WinFormsApp1.Form1 InitializeComponent()
```

```
namespace WinFormsApp1
{
    partial class Form1
    {
        /// <summary> Required designer variable.
        private System.ComponentModel.IContainer components = null;

        /// <summary> Clean up any resources being used.
        protected override void Dispose(bool disposing)...
```

```
#region Windows Form Designer generated code
```

```
/// <summary>
/// Required method for Designer support - do not modify
/// the contents of this method with the code editor.
/// </summary>
private void InitializeComponent()
{
    this.components = ...
    this.AutoScaleMode...
    this.ClientSize = new System.Drawing.Size(800, 450);
    this.Text = "Form1";
}
```

```
#endregion
```

110% No issues found

## Output

```
Show output from: Build
```

```
1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
===== Build completed at 16:41 and took 01.656 seconds =====
```

## Server Explorer Toolbox

## Error List Output

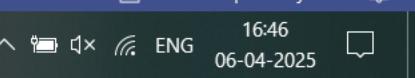
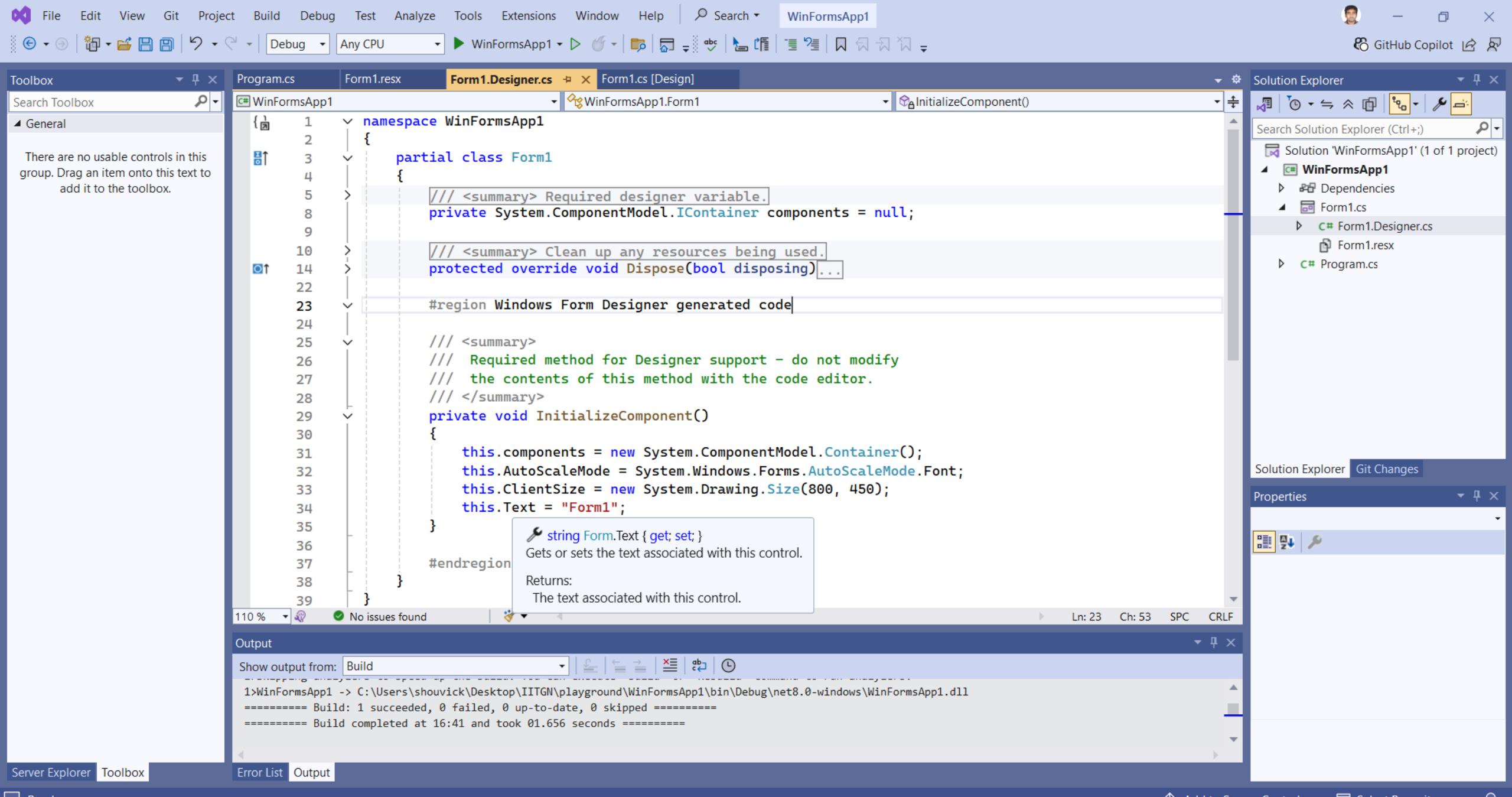
↑ Add to Source Control ▾ Select Repository ▾



Type here to search



16:45  
06-04-2025



Toolbox

Search Toolbox

All Windows Forms

- Pointer
- BackgroundWorker
- BindingSource
- Button
- CheckBox
- CheckedListBox
- ColorDialog
- ComboBox
- ContextMenuStrip
- DataGridView
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- DomainUpDown
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- FlowLayoutPanel
- FolderBrowserDialog
- FontDialog
- GroupBox
- HelpProvider
- HScrollBar
- ImageList
- Label
- LinkLabel
- ListBox
- ListView
- MaskedTextBox
- MenuStrip
- MonthCalendar
- NotifyIcon
- NumericUpDown
- OpenFileDialog

Server Explorer

Toolbox

Form1.cs [Design] Program.cs Form1.resx

Form1

Output

Show output from: Build

1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll  
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped ======

===== Build completed at 16:41 and took 01.656 seconds ======

Error List Output

Solution Explorer

Search Solution Explorer (Ctrl+;) GitHub Copilot

Solution 'WinFormsApp1' (1 of 1 project)

WinFormsApp1

Dependencies

Form1.cs

Form1.Designer.cs

Form1.resx

Program.cs

Solution Explorer Git Changes

Properties

Form1 System.Windows.Forms.Form

BackgroundImage (none)

BackgroundImageLayout Tile

Cursor Default

Font Segoe UI, 9pt

ForeColor ControlText

FormBorderStyle Sizable

RightToLeft No

RightToLeftLayout False

Text Form1

Text

The text associated with the control.

Toolbox

Search Toolbox

All Windows Forms

- Pointer
- BackgroundWorker
- BindingSource
- Button
- CheckBox
- CheckedListBox
- ColorDialog
- ComboBox
- ContextMenuStrip
- DataGridView
- DateTimePicker
- DomainUpDown
- ErrorProvider
- FileSystemWatcher
- FlowLayoutPanel
- FolderBrowserDialog
- FontDialog
- GroupBox
- HelpProvider
- HScrollBar
- ImageList
- Label
- LinkLabel
- ListBox
- ListView
- MaskedTextBox
- MenuStrip
- MonthCalendar
- NotifyIcon
- NumericUpDown
- OpenFileDialog

Server Explorer

Toolbox

Form1.cs [Design]\* Program.cs Form1.resx\*

Form1

button1

Output

Show output from: Build

```
1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
===== Build completed at 16:41 and took 01.656 seconds =====
```

Error List Output

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'WinFormsApp1' (1 of 1 project)

WinFormsApp1

Dependencies

Form1.cs

Form1.Designer.cs

Form1.resx

Program.cs

Solution Explorer

Git Changes

Properties

button1 System.Windows.Forms.Button

Font Segoe UI, 9pt

ForeColor ControlText

Image (none)

ImageAlign MiddleCenter

ImageIndex (none)

ImageKey (none)

ImageList (none)

RightToLeft No

Text button1

Text

The text associated with the control.

File Edit View Git Project Build Debug Format Test Analyze Tools Extensions Window Help | Search WinFormsApp1

GitHub Copilot

Toolbox

Search Toolbox

All Windows Forms

- Pointer
- BackgroundWorker
- BindingSource
- Button
- CheckBox
- CheckedListBox
- ColorDialog
- ComboBox
- ContextMenuStrip
- DataGridView
- DateTimePicker
- DomainUpDown
- ErrorProvider
- FileSystemWatcher
- FlowLayoutPanel
- FolderBrowserDialog
- FontDialog
- GroupBox
- HelpProvider
- HScrollBar
- ImageList
- Label
- LinkLabel
- ListBox
- ListView
- MaskedTextBox
- MenuStrip
- MonthCalendar
- NotifyIcon
- NumericUpDown
- OpenFileDialog

Form1.cs [Design]\* Program.cs Form1.resx Start Without Debugging (Ctrl+F5)

Form1

button1

Output

Show output from: Build

```
1>WinFormsApp1 -> C:\Users\shouwick\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
===== Build completed at 16:41 and took 01.656 seconds =====
```

Error List Output

Solution Explorer

Search Solution Explorer (Ctrl+;) Solution 'WinFormsApp1' (1 of 1 project)

- WinFormsApp1
  - Dependencies
  - Form1.cs
    - Form1.Designer.cs
    - Form1.resx
  - Program.cs

Properties

Form1 System.Windows.Forms.Form

BackgroundImage	(none)
BackgroundImageLayout	Tile
Cursor	Default
Font	Segoe UI, 9pt
ForeColor	ControlText
FormBorderStyle	Sizable
RightToLeft	No
RightToLeftLayout	False
Text	Form1

The text associated with the control.

Ready

Type here to search

19, 19 818 x 497 Add to Source Control Select Repository 16:47 06-04-2025 ENG

Toolbox

Form1.cs [Design] Program.cs Form1.resx

Form1

button1

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'WinFormsApp1' (1 of 1 project)

WinFormsApp1

Dependencies

Form1.cs

Form1.Designer.cs

Form1.resx

Program.cs

Properties

Form1 System.Windows.Forms.Form

BackgroundImage (none)

BackgroundImageLayout Tile

Cursor Default

Font Segoe UI, 9pt

ForeColor ControlText

FormBorderStyle Sizable

RightToLeft No

RightToLeftLayout False

Text Form1

The text associated with the control.

Output

Show output from: Build

1>WinFormsApp1 -> C:\Users\shouwick\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll

===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====

===== Build completed at 16:47 and took 0.990 seconds =====

Error List Output

Ready

Type here to search

19, 19 818 x 497

Add to Source Control Select Repository

16:47 06-04-2025

The screenshot shows the Microsoft Visual Studio IDE interface for a WinForms application named "WinFormsApp1".

**Top Bar:** File, Edit, View, Git, Project, Build, Debug, Test, Analyze, Tools, Extensions, Window, Help, Search, WinFormsApp1.

**Solution Explorer:** Shows the solution structure with one project: WinFormsApp1, which contains Dependencies, Form1.cs (selected), Form1.Designer.cs, Form1.resx, and Program.cs.

**Toolbox:** Search Toolbox, General. A message indicates: "There are no usable controls in this group. Drag an item onto this text to add it to the toolbox."

**Code Editor:** Form1.cs [Design]\*, Program.cs, Form1.resx\*. The code editor displays the following C# code:

```
namespace WinFormsApp1
{
    public partial class Form1 : Form
    {
        public Form1()
        {
            InitializeComponent();
        }

        private void Form1_Load(object sender, EventArgs e)
        {
        }
    }
}
```

**Status Bar:** Ready, Add to Source Control, Select Repository, 16:49, 06-04-2025.



GitHub Copilot

Toolbox ▾

Search Toolbox

General

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

Form1.cs\* Form1.cs [Design]\* Program.cs Form1.resx\*

C# WinFormsApp1 WinFormsApp1.Form1 button1\_Click(object sender, EventArgs e)

```
4 {  
5     public Form1()  
6     {  
7         InitializeComponent();  
8     }  
9  
10    private void Form1_Load(object sender, EventArgs e)  
11    {  
12    }  
13  
14    private void button1_Click(object sender, EventArgs e)  
15    {  
16    }  
17 }  
18 }  
19 }  
20 }  
21 }
```

110% No issues found Ln: 17 Ch: 13 SPC CRLF

Output Show output from: Build

Solution Explorer

Search Solution Explorer (Ctrl+;)

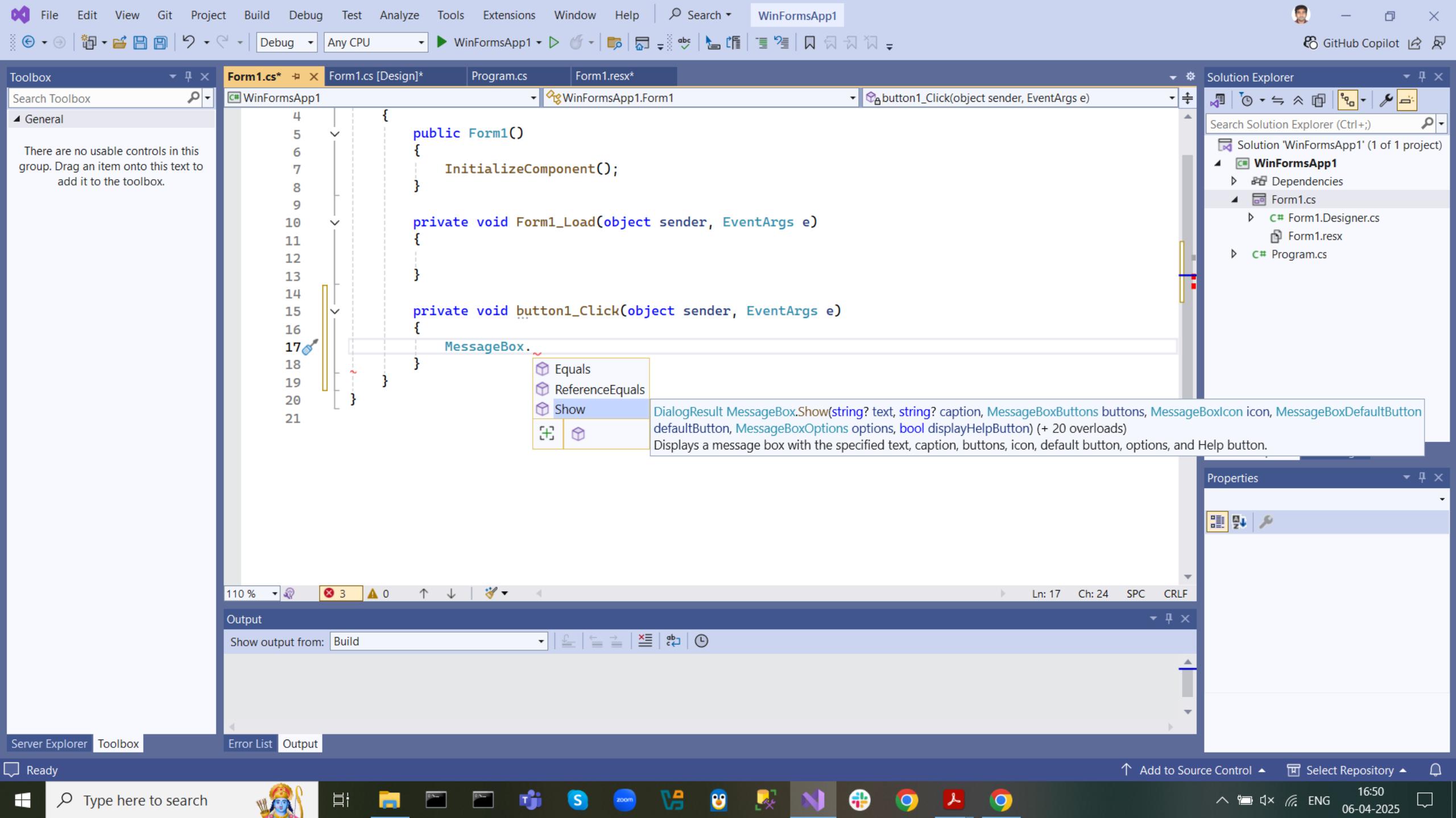
Solution 'WinFormsApp1' (1 of 1 project)

WinFormsApp1

- Dependencies
- Form1.cs
  - Form1.Designer.cs
  - Form1.resx
- Program.cs

Solution Explorer

Properties





GitHub Copilot

Toolbox

Search Toolbox

General

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

Form1.cs

Form1.cs [Design] Program.cs Form1.resx

C# WinFormsApp1 WinFormsApp1.Form1 button1\_Click(object sender, EventArgs e)

```
4 {  
5     public Form1()  
6     {  
7         InitializeComponent();  
8     }  
9  
10    private void Form1_Load(object sender, EventArgs e)  
11    {  
12    }  
13  
14    private void button1_Click(object sender, EventArgs e)  
15    {  
16        MessageBox.Show("button1 has was clicked!");  
17    }  
18}  
19  
20}
```

110% No issues found

Output

Show output from: Build

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'WinFormsApp1' (1 of 1 project)

WinFormsApp1

Dependencies

Form1.cs

Form1.Designer.cs

Form1.resx

Program.cs

Solution Explorer Git Changes

Properties

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help | Search WinFormsApp1

GitHub Copilot

Toolbox

Form1

button1

button1\_Click(object sender, EventArgs e)

sender, EventArgs e)

button1\_Clicked()

button1 has was clicked!

OK

110 % No issues found

Output

Show output from: Build

1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll  
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====  
===== Build completed at 16:51 and took 00.536 seconds =====

Server Explorer Toolbox Error List Output

Ready

221, 104 94 x 29

Add to Source Control Select Repository

Type here to search

16:51 06-04-2025

Solution Explorer

Solution 'WinFormsApp1' (1 of 1 project)

WinFormsApp1

Dependencies

Form1.cs

Form1.Designer.cs

Form1.resx

Program.cs

Solution Explorer Git Changes

Properties



## Toolbox

## Search Toolbox

## General

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

## WinFormsApp1

## Form1.Designer.cs

## Form1.cs

## Form1.cs [Design]

## Program.cs

## Form1.resx

## Main()

```
1  namespace WinFormsApp1
2  {
3      internal static class Program
4      {
5          /// <summary>
6          /// The main entry point for the application.
7          /// </summary>
8          [STAThread]
9          static void Main()
10         {
11             // To customize application configuration such as set high DPI settings or default font,
12             // see https://aka.ms/applicationconfiguration.
13             ApplicationConfiguration.Initialize();
14             Application.Run(new Form1());
15         }
16     }
17 }
```

110%   No issues found   Ln: 1 Ch: 1 SPC CRLF

## Output

Show output from: Build      

```
1>WinFormsApp1 -> C:\Users\shouwick\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped ======
===== Build completed at 16:51 and took 00.536 seconds ======
```

## Server Explorer

## Toolbox

## Error List

## Output

↑ Add to Source Control  Select Repository  



Type here to search



16:52

06-04-2025





GitHub Copilot

## Toolbox

## Search Toolbox

## General

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

WinFormsApp1 Form1.Designer.cs Form1.cs Form1.cs [Design] Program.cs Form1.resx

```
namespace WinFormsApp1
{
    partial class Form1
    {
        /// <summary>
        /// Required designer variable.
        /// </summary>
        private System.ComponentModel.IContainer components = null;

        /// <summary>
        /// Clean up any resources being used.
        /// </summary>
        /// <param name="disposing">true if managed resources should be disposed; otherwise, false.</param>
        protected override void Dispose(bool disposing)
        {
            if (disposing && (components != null))
            {
                components.Dispose();
            }
            base.Dispose(disposing);
        }

        Windows Form Designer generated code

        private Button button1;
    }
}
```

110% No issues found Ln: 1 Ch: 1 SPC CRLF

## Output

Show output from: Build

```
1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
===== Build completed at 16:51 and took 00.536 seconds =====
```

## Server Explorer

## Toolbox

## Error List

## Output

↑ Add to Source Control ▾ Select Repository ▾



Type here to search

16:52  
06-04-2025

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help | Search WinFormsApp1 GitHub Copilot

Toolbox | Debug Any CPU WinFormsApp1 Form1.Designer.cs Form1.cs Form1.cs [Design] Program.cs Form1.resx

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

namespace WinFormsApp1 { partial class Form1 ... }

110% No issues found Output Show output from: Build 1>WinFormsApp1 -> C:\Users\shouwick\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll ===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped ===== Build completed at 16:51 and took 00.536 seconds =====

Server Explorer Toolbox Error List Output Add to Source Control Select Repository

Type here to search

Ready 16:53 06-04-2025 ENG



GitHub Copilot

## Toolbox

## Search Toolbox

## General

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

WinFormsApp1 Form1.Designer.cs Form1.cs Form1.cs [Design] Program.cs Form1.resx

```
C# WinFormsApp1
  namespace WinFormsApp1
  {
    partial class Form1
    {
      /// <summary> Required designer variable.
      private System.ComponentModel.IContainer components = null;

      /// <summary> Clean up any resources being used.
      protected override void Dispose(bool disposing)...

      Windows Form Designer generated code

      private Button button1;
    }
  }
```

110 % No issues found Ln: 61 Ch: 1 SPC CRLF

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'WinFormsApp1' (1 of 1 project)

- WinFormsApp1
  - Dependencies
  - Form1.cs
    - C# Form1.Designer.cs
    - Form1.resx
  - Program.cs

Solution Explorer Git Changes

Properties

## Server Explorer

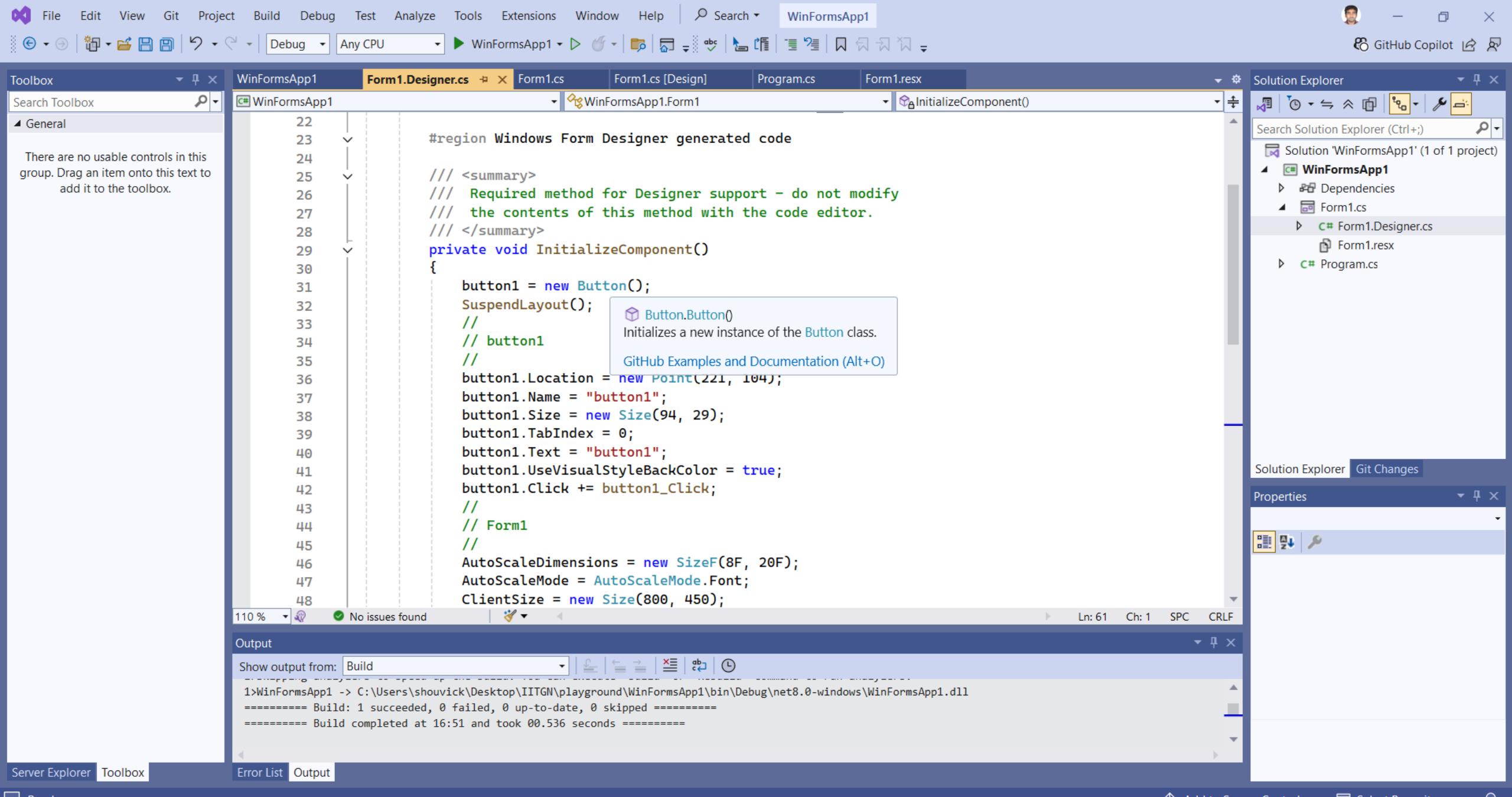
## Toolbox

## Error List Output



Type here to search







GitHub Copilot

## Toolbox

Search Toolbox

General

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

```
WinFormsApp1.cs WinFormsApp1.cs [Design] Program.cs Form1.resx
C# WinFormsApp1 WinFormsApp1.Form1 InitializeComponent()
31 button1 = new Button();
32 SuspendLayout();
33 // 
34 // button1
35 // 
36 button1.Location = new Point(221, 104);
37 button1.Name = "button1";
38 button1.Size = new Size(94, 29);
39 button1.TabIndex = 0;
40 button1.Text = "button1";
41 button1.UseVisualStyleBackColor = true;
42 button1.Click += button1_Click;
43 // 
44 // Form1
45 // Event Handler? Control.Click
46 // Occurs when the control is clicked.
47 AutoScaleDimensions = new SizeF(8F, 20F);
48 AutoSizeMode = AutoSizeMode.Font;
49 ClientSize = new Size(800, 450);
50 Controls.Add(button1);
51 Name = "Form1";
52 Text = "Form1";
53 Load += Form1_Load;
54 ResumeLayout(false);
55 }
56
57 #endregion
```

110% No issues found Ln: 42 Ch: 1 SPC CRLF

Output

Show output from: Build

```
1>WinFormsApp1 -> C:\Users\shouwick\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
===== Build completed at 16:51 and took 00.536 seconds =====
```

## Server Explorer

## Error List

## Output

↑ Add to Source Control ▾ Select Repository ▾



Type here to search



16:53

06-04-2025

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'WinFormsApp1' (1 of 1 project)

- WinFormsApp1
  - Dependencies
  - Form1.cs
    - C# Form1.Designer.cs
    - Form1.resx
  - Program.cs

Solution Explorer Git Changes

Properties



GitHub Copilot

## Toolbox

Search Toolbox

General

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

```
31 button1 = new Button();
32 SuspendLayout();
33 //
34 // button1
35 //
36 button1.Location = new Point(221, 104);
37 button1.Name = "button1";
38 button1.Size = new Size(94, 29);
39 button1.TabIndex = 0;
40 button1.Text = "button1";
41 button1.UseVisualStyleBackColor = true;
42 button1.Click += button1_Click;
43 //
44 // Form1
45 // Event Handler? Control.Click
46 // Occurs when the control is clicked.
47 AutoScaleDimensions = new SizeF(8F, 20F);
48 AutoScaleMode = AutoScaleMode.Font;
49 ClientSize = new Size(800, 450);
50 Controls.Add(button1);
51 Name = "Form1";
52 Text = "Form1";
53 Load += Form1_Load;
54 ResumeLayout(false);
55
56 #endregion
```

110% No issues found Ln: 42 Ch: 26 SPC CRLF

Output

Show output from: Build

```
1>WinFormsApp1 -> C:\Users\shouwick\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
===== Build completed at 16:51 and took 00.536 seconds =====
```

## Server Explorer

## Error List

## Output

↑ Add to Source Control Select Repository



Type here to search

16:54  
06-04-2025

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'WinFormsApp1' (1 of 1 project)

WinFormsApp1

- Dependencies
- Form1.cs
- Form1.Designer.cs
- Form1.resx
- Program.cs

Solution Explorer Git Changes

Properties



GitHub Copilot

Toolbox ▾

Search Toolbox

General

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

WinFormsApp1 Form1.Designer.cs Form1.cs Form1.cs [Design] Program.cs Form1.resx

```
C# WinFormsApp1 WinFormsApp1.Form1 InitializeComponent()
```

31 button1 = new Button();  
32 SuspendLayout();  
33 //  
34 // button1  
35 //  
36 button1.Location = new Point(221, 104);  
37 button1.Name = "button1";  
38 button1.Size = new Size(94, 29);  
39 button1.TabIndex = 0;  
40 button1.Text = "button1";  
41 button1.UseVisualStyleBackColor = true;  
42 button1.Click += button1\_Click;   
43 //  
44 // Form1  
45 //  
46 AutoScaleDimensions = new SizeF(8F, 20F);  
47 AutoScaleMode = AutoScaleMode.Font;  
48 ClientSize = new Size(800, 450);  
49 Controls.Add(button1);  
50 Name = "Form1";  
51 Text = "Form1";  
52 Load += Form1\_Load;  
53 ResumeLayout(false);  
54 }  
55  
56 #endregion  
57

110% No issues found Ln: 42 Ch: 29 SPC CRLF

Output

Show output from: Build

```
1>WinFormsApp1 -> C:\Users\shouwick\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
===== Build completed at 16:51 and took 00.536 seconds =====
```

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'WinFormsApp1' (1 of 1 project)

- WinFormsApp1
  - Dependencies
  - Form1.cs
    - Form1.Designer.cs
    - Form1.resx
  - Program.cs

Solution Explorer Git Changes Properties



GitHub Copilot

## Toolbox

Search Toolbox

General

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

```
31     button1 = new Button();
32     SuspendLayout();
33     //
34     // button1
35     //
36     button1.Location = new Point(221, 104);
37     button1.Name = "button1";
38     button1.Size = new Size(94, 29);
39     button1.TabIndex = 0;
40     button1.Text = "button1";
41     button1.UseVisualStyleBackColor = true;
42     button1.Click += button1_Click;
43     //
44     // Form1
45     //
46     AutoScaleDimensions = new SizeF(8F, 20F);
47     AutoScaleMode = AutoScaleMode.Font;
48     ClientSize = new Size(800, 450);
49     Controls.Add(button1);
50     Name = "Form1";
51     Text = "Form1";
52     Load += Form1_Load;
53     ResumeLayout(false);
54 }
55
56 #endregion
```

110% No issues found Ln: 42 Ch: 43 SPC CRLF

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'WinFormsApp1' (1 of 1 project)

- WinFormsApp1
  - Dependencies
  - Form1.cs
    - Form1.Designer.cs
    - Form1.resx
  - Program.cs

Solution Explorer Git Changes

Properties

Server Explorer

Toolbox

Error List

Output

↑ Add to Source Control Select Repository



Type here to search



16:54

06-04-2025





GitHub Copilot

Toolbox

Search Toolbox

General

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

WinFormsApp1 Form1.Designer.cs Form1.cs Form1.cs [Design] Program.cs Form1.resx

```
C# WinFormsApp1 WinFormsApp1.Form1 InitializeComponent()
31 button1 = new Button();
32 SuspendLayout();
33 //
34 // button1
35 //
36 button1.Location = new Point(221, 104);
37 button1.Name = "button1";
38 button1.Size = new Size(94, 29);
39 button1.TabIndex = 0;
40 button1.Text = "button1";
41 button1.UseVisualStyleBackColor = true;
42 button1.Click += button1_Click;
43 //
44 // Form1
45 //
46 AutoScaleDimensions = new SizeF(8F, 20F);
47 AutoSizeMode = AutoSizeMode.Font;
48 ClientSize = new Size(800, 450);
49 Controls.Add(button1);
50 Name = "Form1";
51 Text = "Form1";
52 Load += Form1_Load;
53 ResumeLayout(false);
54 }
55 #endregion
```

110% No issues found

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

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'WinFormsApp1' (1 of 1 project)

- WinFormsApp1
  - Dependencies
  - Form1.cs
    - C# Form1.Designer.cs
    - Form1.resx
  - C# Program.cs

Solution Explorer Git Changes

Properties

File Edit View Git Project Build Debug Format Test Analyze Tools Extensions Window Help | Search WinFormsApp1

GitHub Copilot

Toolbox

Search Toolbox

All Windows Forms

- Pointer
- BackgroundWorker
- BindingSource
- Button
- CheckBox
- CheckedListBox
- ColorDialog
- ComboBox
- ContextMenuStrip
- DataGridView
- DateTimePicker
- DomainUpDown
- ErrorProvider
- FileSystemWatcher
- FlowLayoutPanel
- FolderBrowserDialog
- FontDialog
- GroupBox
- HelpProvider
- HScrollBar
- ImageList
- Label
- LinkLabel
- ListBox
- ListView
- MaskedTextBox
- MenuStrip
- MonthCalendar
- NotifyIcon
- NumericUpDown
- OpenFileDialog

WinFormsApp1 Form1.Designer.cs Form1.cs Form1.cs [Design] Program.cs Form1.resx

Form1

button1

Output

Show output from: Build

```
1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
===== Build completed at 16:51 and took 00.536 seconds =====
```

Error List Output

Add to Source Control Select Repository

Solution Explorer

Search Solution Explorer (Ctrl+;) Solution 'WinFormsApp1' (1 of 1 project)

WinFormsApp1

- Dependencies
- Form1.cs
- Form1.Designer.cs
- Form1.resx
- Program.cs

Properties

button1 System.Windows.Forms.Button

Categorized Forecolor Segoe UI, 9pt

Image (none) ControlText MiddleCenter

ImageAlign (none) ImageIndex (none) ImageKey (none)

ImageList (none) RightToLeft No

Text button1

The text associated with the control.

Type here to search

Ready

16:55 06-04-2025 ENG

File Edit View Git Project Build Debug Format Test Analyze Tools Extensions Window Help | Search WinFormsApp1

GitHub Copilot

Toolbox

Search Toolbox

All Windows Forms

- Pointer
- BackgroundWorker
- BindingSource
- Button
- CheckBox
- CheckedListBox
- ColorDialog
- ComboBox
- ContextMenuStrip
- DataGridView
- DateTimePicker
- DomainUpDown
- ErrorProvider
- FileSystemWatcher
- FlowLayoutPanel
- FolderBrowserDialog
- FontDialog
- GroupBox
- HelpProvider
- HScrollBar
- ImageList
- Label
- LinkLabel
- ListBox
- ListView
- MaskedTextBox
- MenuStrip
- MonthCalendar
- NotifyIcon
- NumericUpDown
- OpenFileDialog

WinFormsApp1 Form1.Designer.cs Form1.cs Form1.cs [Design] Program.cs Form1.resx

Form1

button1

Output

Show output from: Build

1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll  
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped ======

===== Build completed at 16:51 and took 00.536 seconds ======

Error List Output

Add to Source Control Select Repository

Ready

Type here to search

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'WinFormsApp1' (1 of 1 project)

WinFormsApp1

Dependencies

Form1.cs

Form1.Designer.cs

Form1.resx

Program.cs

Properties

button1 System.Windows.Forms.Button

Font

For Alphabetical Segoe UI, 9pt

Image

ImageAlign

ImageIndex

ImageKey

ImageList

RightToLeft

Text

button1

The text associated with the control.

16:55 06-04-2025 ENG

File Edit View Git Project Build Debug Format Test Analyze Tools Extensions Window Help | Search WinFormsApp1

GitHub Copilot

Toolbox

Search Toolbox

All Windows Forms

- Pointer
- BackgroundWorker
- BindingSource
- Button
- CheckBox
- CheckedListBox
- ColorDialog
- ComboBox
- ContextMenuStrip
- DataGridView
- DateTimePicker
- DomainUpDown
- ErrorProvider
- FileSystemWatcher
- FlowLayoutPanel
- FolderBrowserDialog
- FontDialog
- GroupBox
- HelpProvider
- HScrollBar
- ImageList
- Label
- LinkLabel
- ListBox
- ListView
- MaskedTextBox
- MenuStrip
- MonthCalendar
- NotifyIcon
- NumericUpDown
- OpenFileDialog

WinFormsApp1 Form1.Designer.cs Form1.cs Form1.cs [Design] Program.cs Form1.resx

Form1

button1

Output

Show output from: Build

1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll  
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped ======

===== Build completed at 16:51 and took 00.536 seconds ======

Error List Output

Add to Source Control Select Repository

Ready

Type here to search

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'WinFormsApp1' (1 of 1 project)

WinFormsApp1

Dependencies

Form1.cs

Form1.Designer.cs

Form1.resx

Program.cs

Solution Explorer Git Changes

Properties

button1 System.Windows.Forms.Button

Font Segoe UI, 9pt

ForeColor Properties ControlText

Image (none)

ImageAlign MiddleCenter

ImageIndex (none)

ImageKey (none)

ImageList (none)

RightToLeft No

Text button1

The text associated with the control.

16:55 06-04-2025 ENG

File Edit View Git Project Build Debug Format Test Analyze Tools Extensions Window Help | Search WinFormsApp1

GitHub Copilot

Toolbox

Search Toolbox

All Windows Forms

- Pointer
- BackgroundWorker
- BindingSource
- Button
- CheckBox
- CheckedListBox
- ColorDialog
- ComboBox
- ContextMenuStrip
- DataGridView
- DateTimePicker
- DomainUpDown
- ErrorProvider
- FileSystemWatcher
- FlowLayoutPanel
- FolderBrowserDialog
- FontDialog
- GroupBox
- HelpProvider
- HScrollBar
- ImageList
- Label
- LinkLabel
- ListBox
- ListView
- MaskedTextBox
- MenuStrip
- MonthCalendar
- NotifyIcon
- NumericUpDown
- OpenFileDialog

WinFormsApp1 Form1.Designer.cs Form1.cs Form1.cs [Design] Program.cs Form1.resx

Form1

button1

Output

Show output from: Build

1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll  
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped ======

===== Build completed at 16:51 and took 00.536 seconds ======

Error List Output

Add to Source Control Select Repository

Ready

Type here to search

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'WinFormsApp1' (1 of 1 project)

WinFormsApp1

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Solution Explorer Git Changes

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button1 System.Windows.Forms.Button

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16:55 06-04-2025 ENG

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help | Search WinFormsApp1

GitHub Copilot

Toolbox

Search Toolbox

All Windows Forms

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- HelpProvider
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- ImageList
- Label
- LinkLabel
- ListBox
- ListView
- MaskedTextBox
- MenuStrip
- MonthCalendar
- NotifyIcon
- NumericUpDown
- OpenFileDialog

WinFormsApp1 Form1.Designer.cs Form1.cs Form1.cs [Design] Program.cs Form1.resx

Form1

button1

Output

Show output from: Build

```
1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
===== Build completed at 16:51 and took 00.536 seconds =====
```

Error List Output

Solution Explorer

Search Solution Explorer (Ctrl+;) Solution 'WinFormsApp1' (1 of 1 project)

- WinFormsApp1
  - Dependencies
  - Form1.cs
    - Form1.Designer.cs
    - Form1.resx
  - Program.cs

Properties

button1 System.Windows.Forms.Button

Click button1\_Click

MouseCaptureChanged Form1\_Load

MouseClick button1\_Click

Appearance

Behavior

ChangeUIStates

ControlAdded

ControlRemoved

Click

Occurs when the component is clicked.

Ready

Type here to search

16:56 06-04-2025

Screenshot of Microsoft Visual Studio IDE showing a WinForms application named "WinFormsApp1".

The main window displays the "Form1.cs [Design]\*" tab, showing a single button labeled "button1" on a blank form.

The Solution Explorer shows the project structure:

- Solution 'WinFormsApp1' (1 of 1 project)
  - WinFormsApp1
    - Dependencies
    - Form1.cs
    - Form1.Designer.cs
    - Form1.resx
    - Program.cs

The Properties window shows the following events for Form1:

- Load: Form1\_Load
- HelpButtonClicked
- HelpRequested
- ImeModeChanged
- InputLanguageChan
- InputLanguageChan
- Load
- QueryAccessibilityH
- Shown
- StyleChanged

The Output window displays the build results:

```
1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
===== Build completed at 16:51 and took 00.536 seconds =====
```

The status bar at the bottom indicates "Ready".

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help | Search WinFormsApp1

GitHub Copilot

Toolbox

Search Toolbox

All Windows Forms

- Pointer
- BackgroundWorker
- BindingSource
- Button
- CheckBox
- CheckedListBox
- ColorDialog
- ComboBox
- ContextMenuStrip
- DataGridView
- DateTimePicker
- DomainUpDown
- ErrorProvider
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- ImageList
- Label
- LinkLabel
- ListBox
- ListView
- MaskedTextBox
- MenuStrip
- MonthCalendar
- NotifyIcon
- NumericUpDown
- OpenFileDialog

WinFormsApp1 Form1.Designer.cs\* Form1.cs\* Form1.cs [Design]\* Program.cs Form1.resx\*

Form1

button1

Output

Show output from: Build

```
1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
===== Build completed at 16:51 and took 00.536 seconds =====
```

Error List Output

Add to Source Control Select Repository

Solution Explorer

Search Solution Explorer (Ctrl+Shift+F)

Solution 'WinFormsApp1' (1 of 1 project)

- WinFormsApp1
  - Dependencies
  - Form1.cs
    - Form1.Designer.cs
    - Form1.resx
  - Program.cs

Properties

Form1 System.Windows.Forms.Form

QueryAccessibilityId  
Shown  
StyleChanged  
SystemColorsChanged

Data

(DataBindings) (ControlBindings)

DataContextChange

Drag Drop

DragDrop

(DataBindings)

The data bindings for the control.

Type here to search

Ready

16:57 06-04-2025 ENG

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help | Search WinFormsApp1

GitHub Copilot

Toolbox

Search Toolbox

All Windows Forms

- Pointer
- BackgroundWorker
- BindingSource
- Button
- CheckBox
- CheckedListBox
- ColorDialog
- ComboBox
- ContextMenuStrip
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- ImageList
- Label
- LinkLabel
- ListBox
- ListView
- MaskedTextBox
- MenuStrip
- MonthCalendar
- NotifyIcon
- NumericUpDown
- OpenFileDialog

WinFormsApp1

Form1.Designer.cs\*

Form1.cs\*

Form1.cs [Design]\*

Program.cs

Form1.resx\*

Solution Explorer

Search Solution Explorer (Ctrl+;)

Solution 'WinFormsApp1' (1 of 1 project)

- WinFormsApp1
  - Dependencies
  - Form1.cs
    - C# Form1.Designer.cs
    - Form1.resx
  - Program.cs

Output

Show output from: Build

```
1>WinFormsApp1 -> C:\Users\shouvik\Desktop\IITGN\playground\WinFormsApp1\bin\Debug\net8.0-windows\WinFormsApp1.dll
===== Build: 1 succeeded, 0 failed, 0 up-to-date, 0 skipped =====
===== Build completed at 16:51 and took 00.536 seconds =====
```

Error List Output

Ready

Type here to search

221, 104

94 x 29

Add to Source Control Select Repository

16:59  
06-04-2025

GitHub Copilot

# Texts, References, and Acknowledgements

## Textbook:

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- Mark J. Price (2024). *C# 13 and .NET 9 – Modern Cross-Platform Development Fundamentals*, 9th edition, Packt Publishing Ltd.

## Reference:

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- Soni, M. (2016). *DevOps for Web Development*. Packt Publishing Ltd.
- Yusuf Sulistyo Nugroho, Hideaki Hata, and Kenichi Matsumoto. 2020. *How different are different diff algorithms in Git? Use --histogram for code changes*. Empirical Softw. Engg. 25, 1 (Jan 2020), 790–823.