# Create a Windows Forms app in Visual Studio with C#

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In this short introduction to the Visual Studio integrated development environment (IDE), you'll create a simple C# application that has a Windows-based user interface (UI).

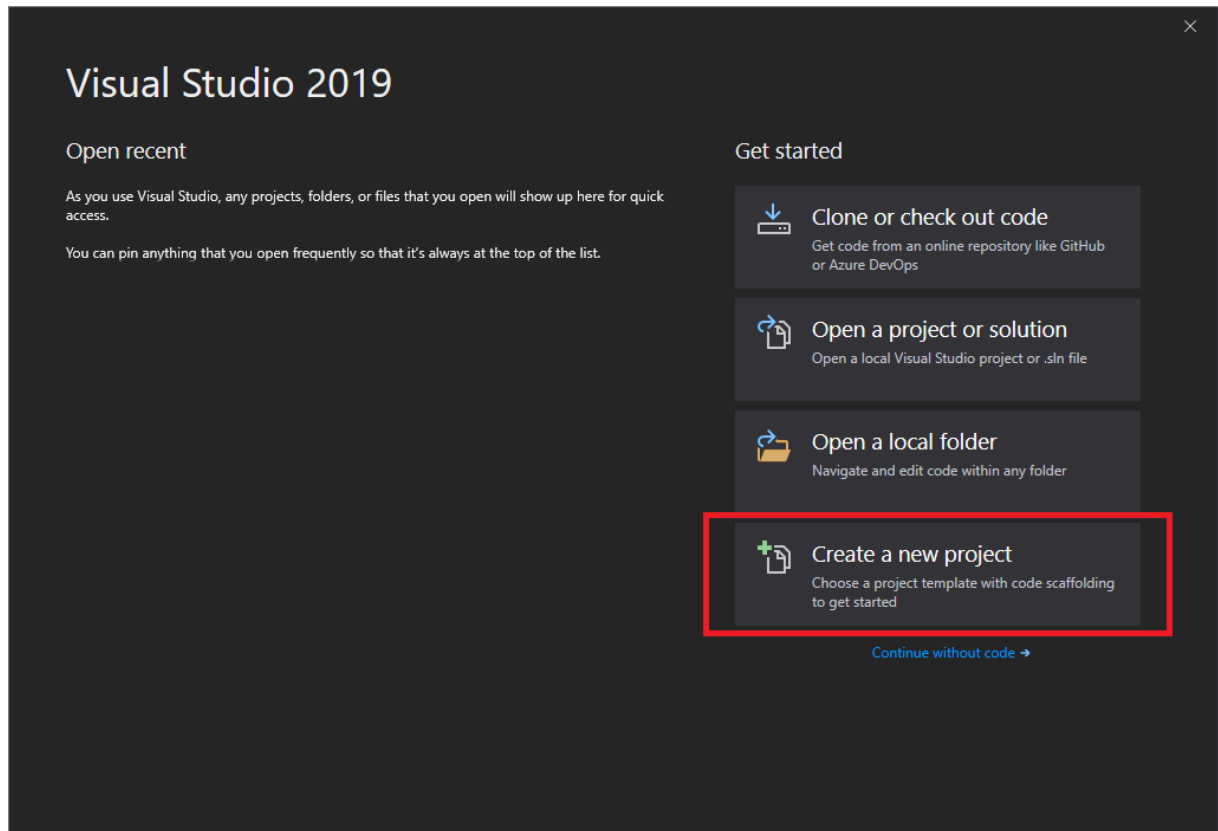If you haven't already installed Visual Studio, go to the Visual Studio downloads page to install it for free.

> ⓘ **Note**
>
> Some of the screenshots in this tutorial use the dark theme. If you aren't using the dark theme but would like to, see the **Personalize the Visual Studio IDE and Editor** page to learn how.
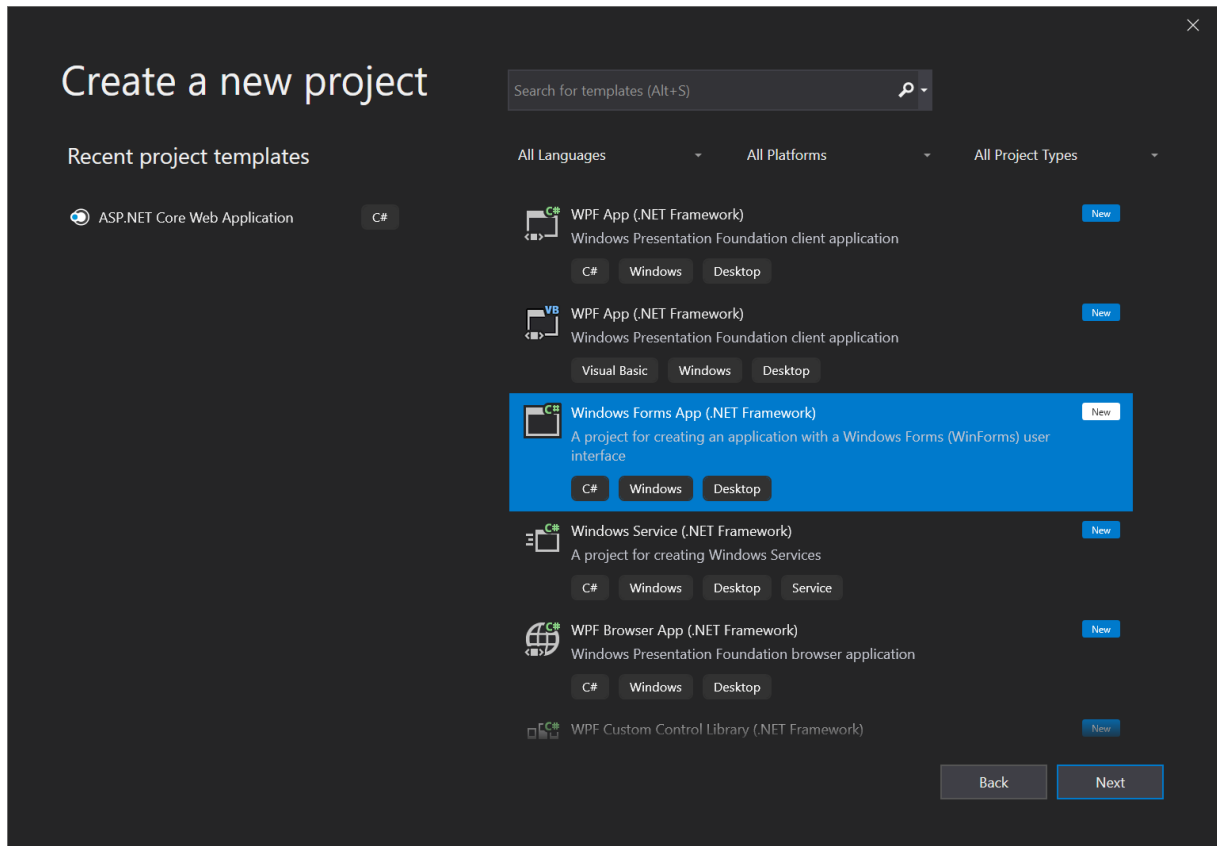
## Create a project

First, you'll create a C# application project. The project type comes with all the template files you'll need, before you've even added anything.

1. Open Visual Studio 2019.

2. On the start window, choose **Create a new project**.

3. On the **Create a new project** window, choose the **Windows Forms App (.NET Framework)** template for C#.

(If you prefer, you can refine your search to quickly get to the template you want. For example, enter or type *Windows Forms App* in the search box. Next, choose **C#** from the Language list, and then choose **Windows** from the Platform list.)

> ⓘ **Note**
>
> If you do not see the **Windows Forms App (.NET Framework)** template, you can install it from the **Create a new project** window. In the **Not finding what you're looking for?** message, choose the **Install more tools and features** link.
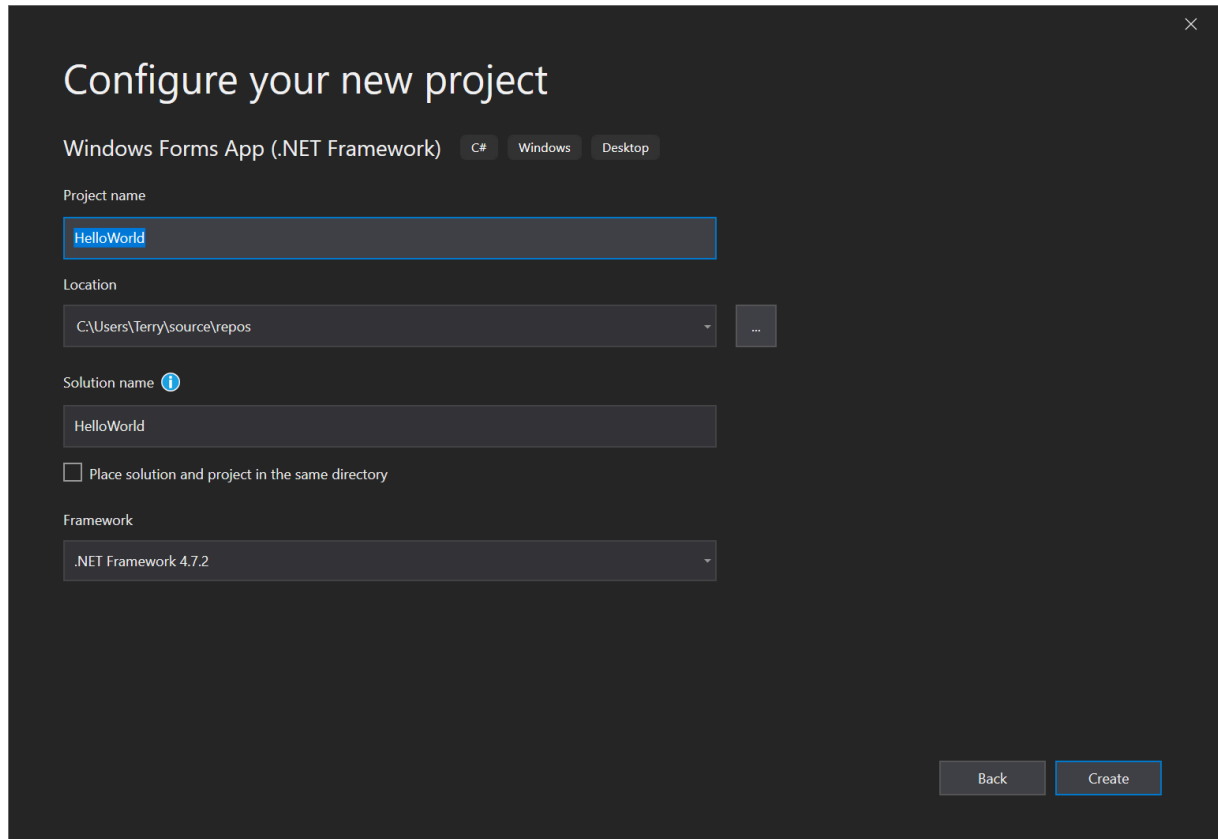>
> 
>
> Next, in the Visual Studio Installer, choose the Choose the **.NET desktop development** workload.
>
> 
>
> After that, choose the **Modify** button in the Visual Studio Installer. You might be

prompted to save your work; if so, do so. Next, choose **Continue** to install the workload. Then, return to step 2 in this "**Create a project**" procedure.

4. In the **Configure your new project** window, type or enter *HelloWorld* in the **Project name** box. Then, choose **Create**.
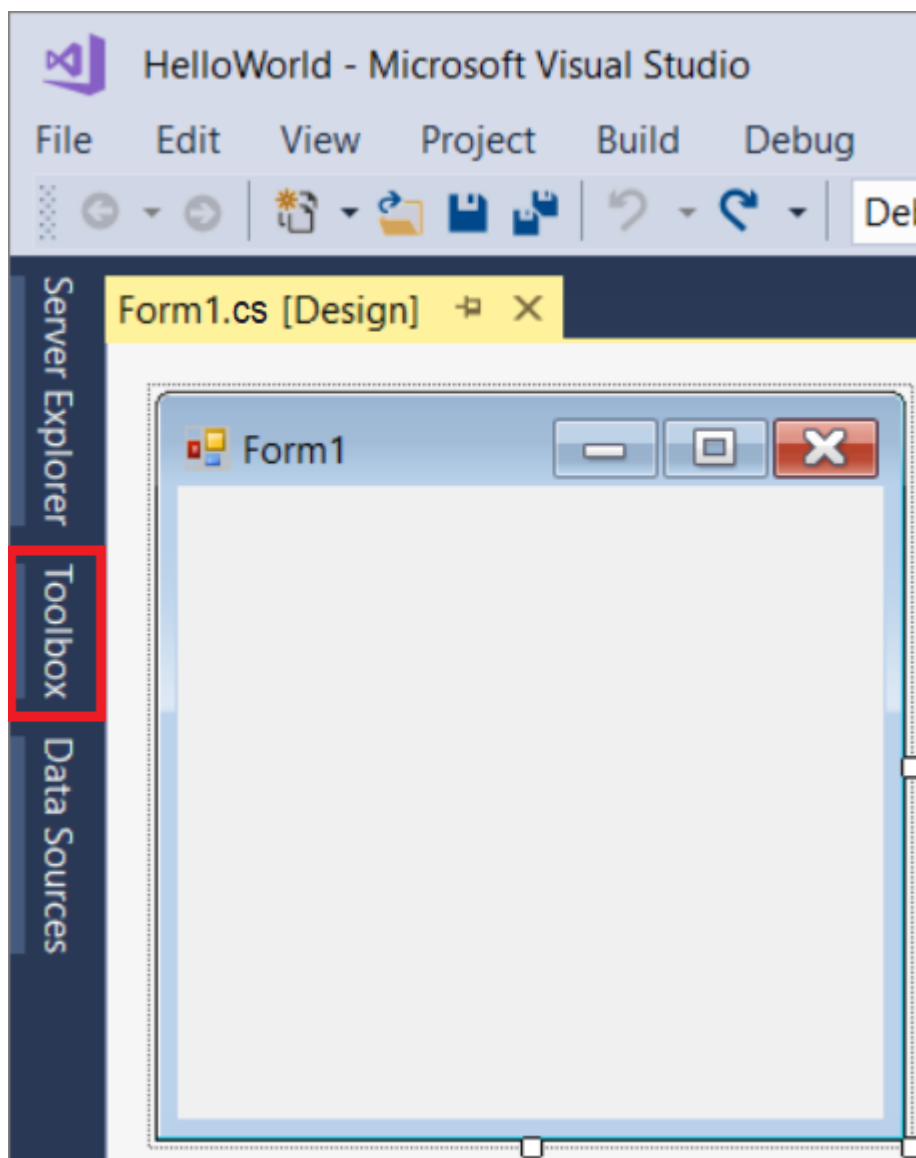


Visual Studio opens your new project.

# Create the application

After you select your C# project template and name your file, Visual Studio opens a form for you. A form is a Windows user interface. We'll create a "Hello World" application by adding controls to the form, and then we'll run the app.
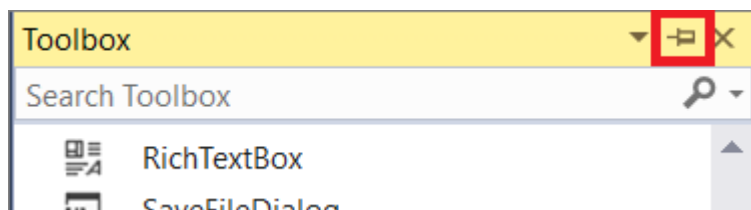
# Add a button to the form

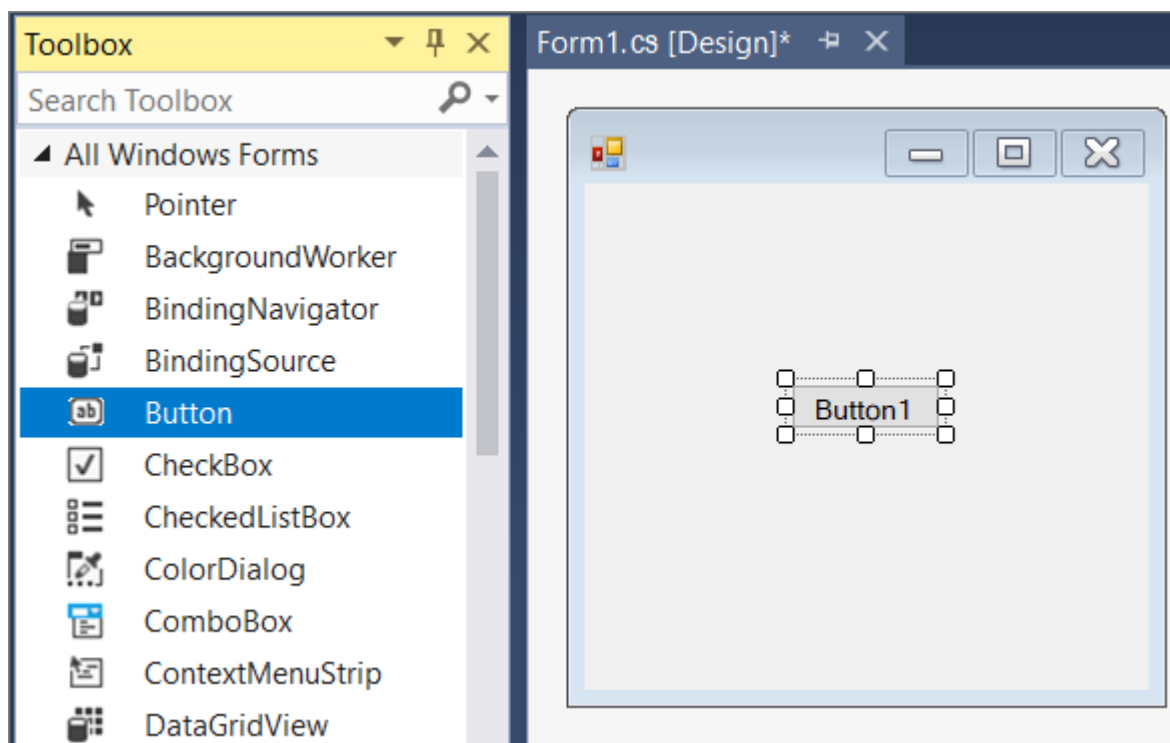1. Choose **Toolbox** to open the Toolbox fly-out window.

(If you don't see the **Toolbox** fly-out option, you can open it from the menu bar. To do so, **View** > **Toolbox**. Or, press **Ctrl+Alt+X**.)
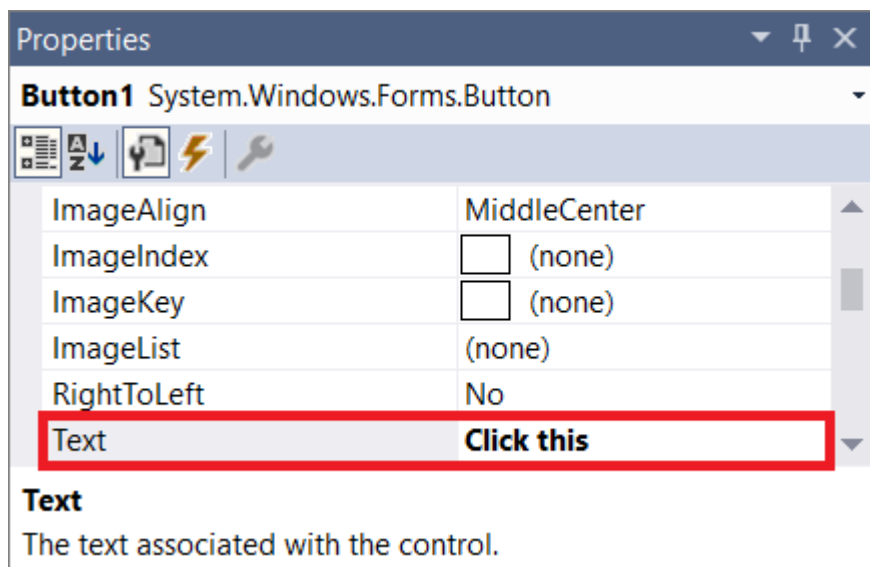
2. Choose the **Pin** icon to dock the **Toolbox** window.



3. Choose the **Button** control and then drag it onto the form.

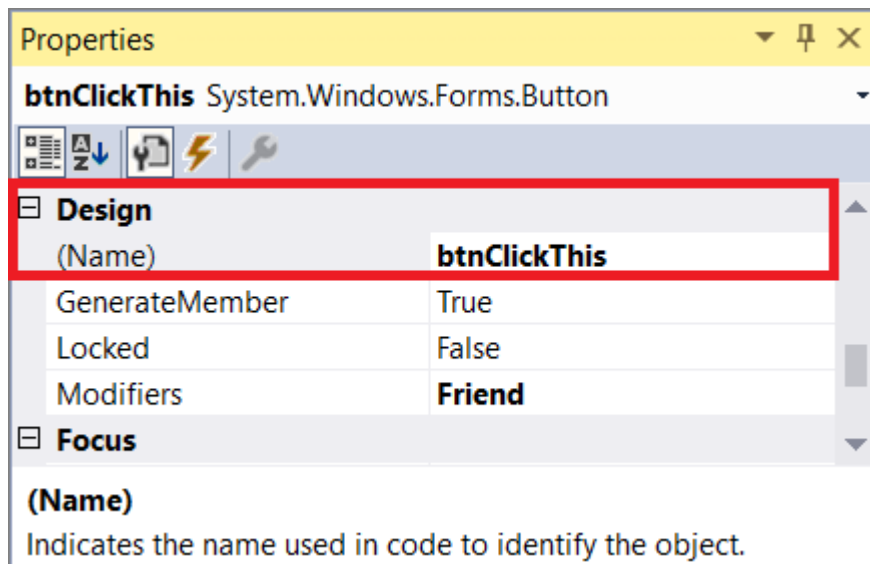4. In the **Properties** window, locate **Text**, change the name from **Button1** to `Click this`, and then press **Enter**.



(If you don't see the **Properties** window, you can open it from the menu bar. To do so, choose **View** > **Properties Window**. Or, press **F4**.)

5. In the **Design** section of the **Properties** window, change the name from **Button1** to `btnClickThis`, and then press **Enter**.

> **ⓘ Note**
>
> If you've alphabetized the list in the **Properties** window, **Button1** appears in the
> **(DataBindings)** section, instead.

## Add a label to the form

Now that we've added a button control to create an action, let's add a label control to send
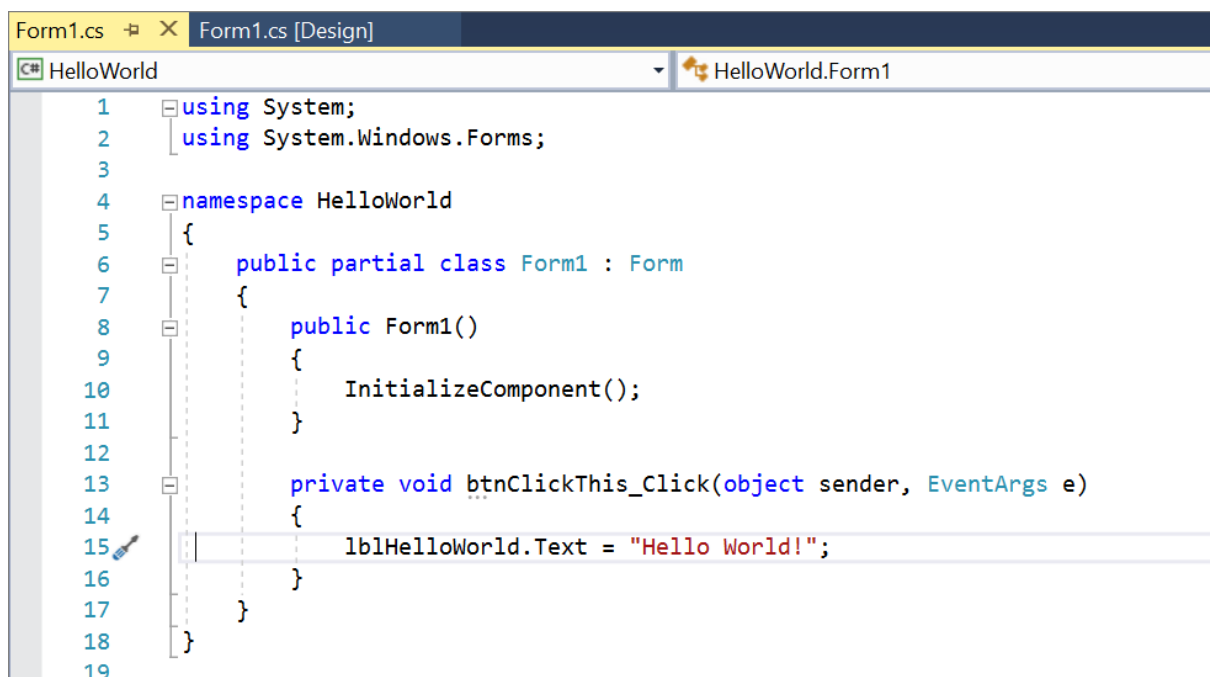text to.

1. Select the **Label** control from the **Toolbox** window, and then drag it onto the form
   and drop it beneath the **Click this** button.

2. In either the **Design** section or the **(DataBindings)** section of the **Properties** window,
   change the name of **Label1** to `lblHelloWorld`, and then press **Enter**.

## Add code to the form

1. In the **Form1.cs [Design]** window, double-click the **Click this** button to open the
   **Form1.cs** window.

   (Alternatively, you can expand **Form1.cs** in **Solution Explorer**, and then choose
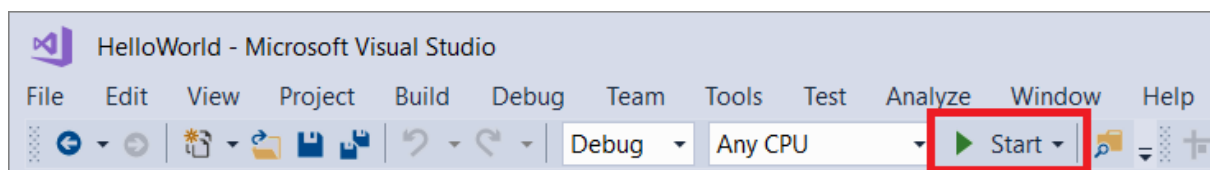   **Form1**.)

2. In the **Form1.cs** window, after the **private void** line, type or enter `lblHelloWorld.Text`
   = `"Hello World!";` as shown in the following screenshot:

```
Form1.cs  ╤ ✕  Form1.cs [Design]
C# HelloWorld                                    ▼    ⚑ HelloWorld.Form1
     1    ⊟using System;
     2     │using System.Windows.Forms;
     3
     4    ⊟namespace HelloWorld
     5     │{
     6    ⊟│    public partial class Form1 : Form
     7     │    {
     8    ⊟│        public Form1()
     9     │        {
    10     │            InitializeComponent();
    11     │        }
    12
    13    ⊟│        private void btnClickThis_Click(object sender, EventArgs e)
    14     │        {
    15🖌 │            lblHelloWorld.Text = "Hello World!";
    16     │        }
    17     │    }
    18    │}
    19
```
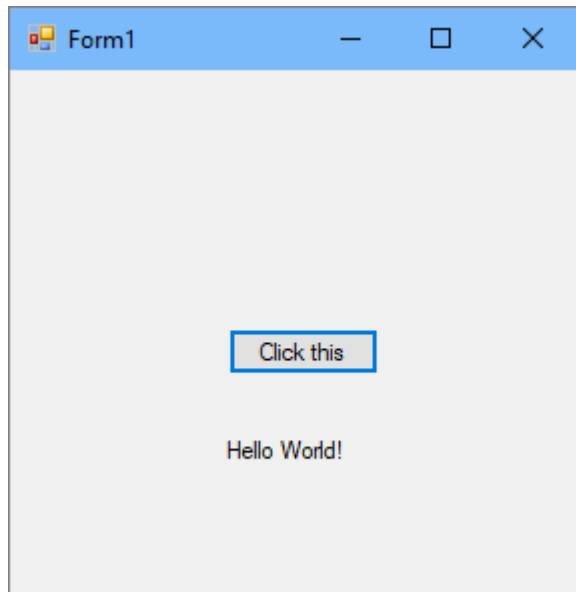
# Run the application

1. Choose the **Start** button to run the application.

   ```
   ▷◁ HelloWorld - Microsoft Visual Studio
   File   Edit   View   Project   Build   Debug   Team   Tools   Test   Analyze   Window   Help
   ◉ ▾ ◯ │ 🎝 ▾ 🖴 💾 🗗 │ ⤺ ▾ ⤻ ▾ │ Debug   ▾  Any CPU          ▾ │ ▶ Start ▾ │ 🔎 ▾ ┊ ╫
   ```

   Several things will happen. In the Visual Studio IDE, the **Diagnostics Tools** window will
   open, and an **Output** window will open, too. But outside of the IDE, a **Form1** dialog
   box appears. It will include your **Click this** button and text that says **Label1**.

2. Choose the **Click this** button in the **Form1** dialog box. Notice that the **Label1** text
   changes to **Hello World!**.

3. Close the **Form1** dialog box to stop running the app.

# Next steps

To learn more, continue with the following tutorial:

Tutorial: Create a picture viewer

# See also

- More C# tutorials
- Visual Basic tutorials
- C++ tutorials

**Is this page helpful?**

👍 Yes   👎 No