

Dynamic Event Handling

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Introduction

In developing a project when you use “Assign Action” to assign actions to an event, an event handling is built when the project is compiled into a program. When the program runs the event handler is executed when the event occurs. Most of samples show such event handling.

There are situations when you do not want to attach the event handler at compile time. You want to attach the event handler to the event in some desired situations while the program is running. So, when the program is running, before the event handler is attached to the event, when the event occurs the event handler is not executed. After attaching the event handler the event will trigger the execution of the event handler.

When the program is running, at some desired situations, you may want to detach the event handler which is attached to the event at runtime previously. After detaching the event handler when the event occurs the event handler is not executed.

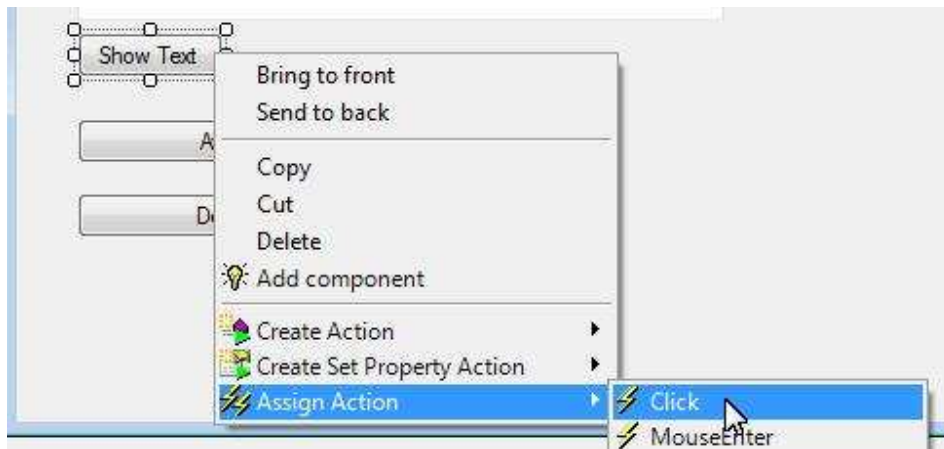
Attaching and detaching event handlers can be done at runtime by “attach event” actions and “detach event” actions. This document shows samples of doing such programming.

Sample Project

We use a Windows Form project to show dynamic event handlings. You may also do it in other projects, such as web projects.



We use a button “Show Text” to display some text on the text box when it is clicked. Usually we will do it by assigning an action to event Click of the button:

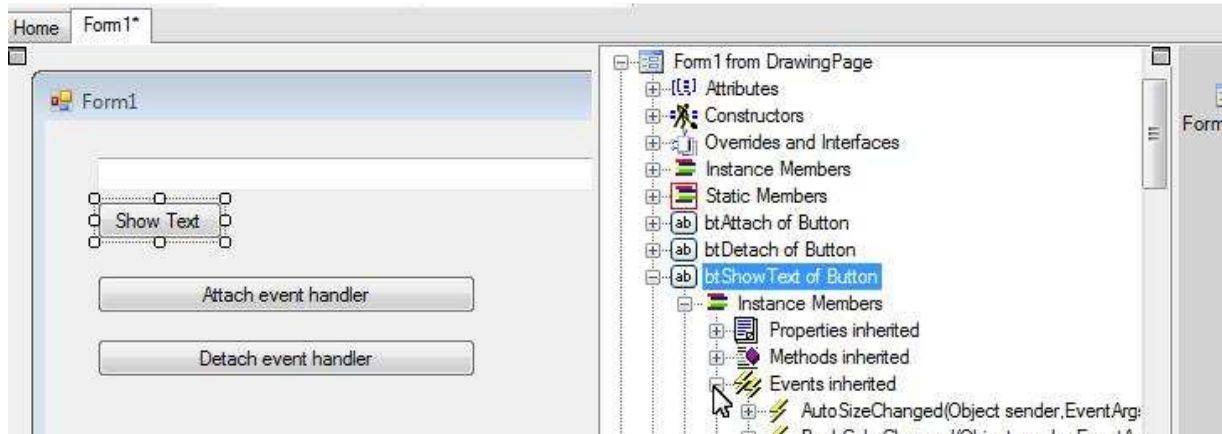


But for this sample, we are not going to do it by “Assign Action”.

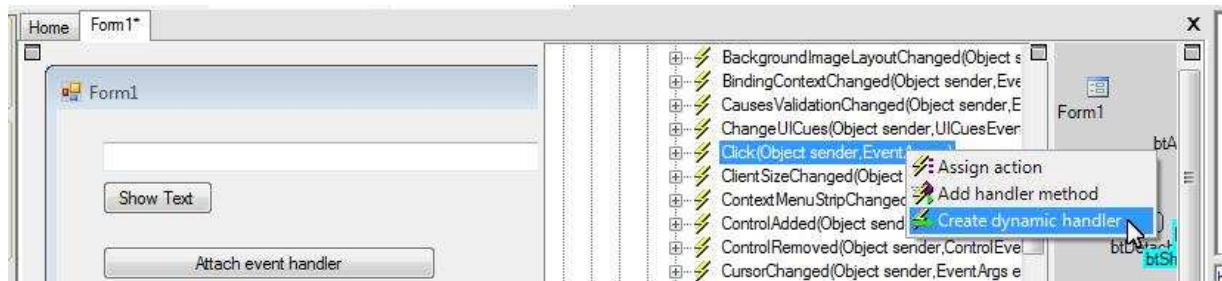
Attach Event Handler

Create Dynamic Handler

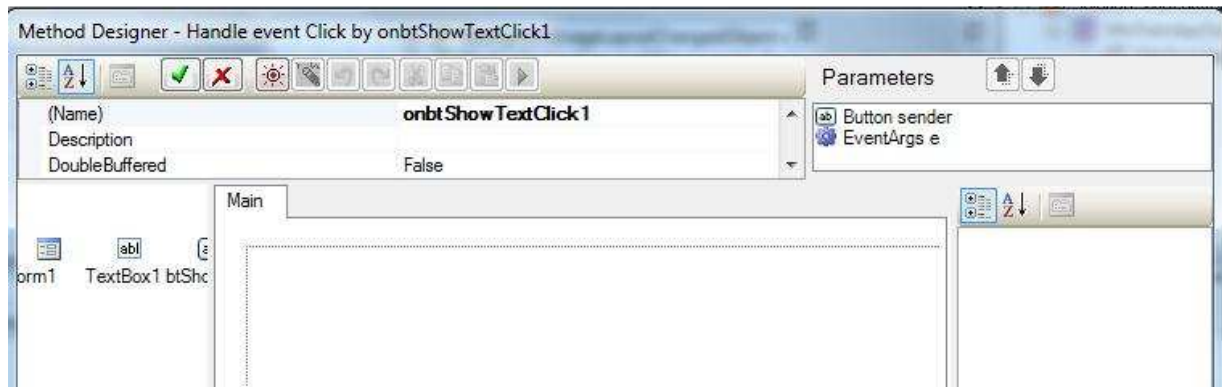
Under button “Show Text”, find its Click event:



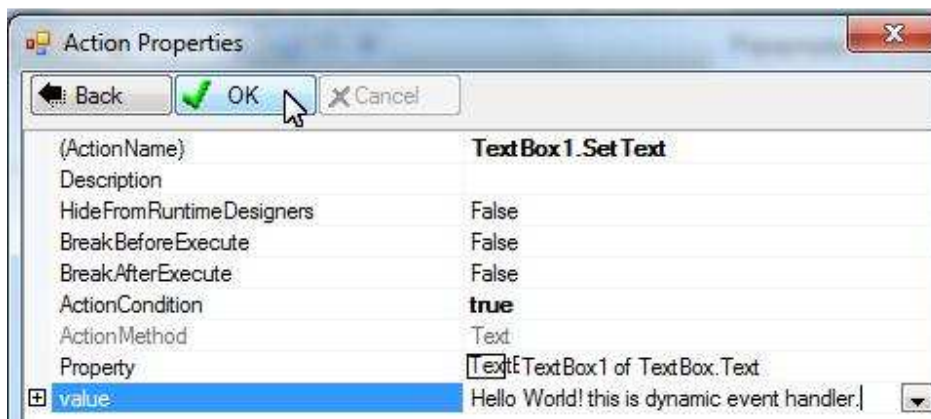
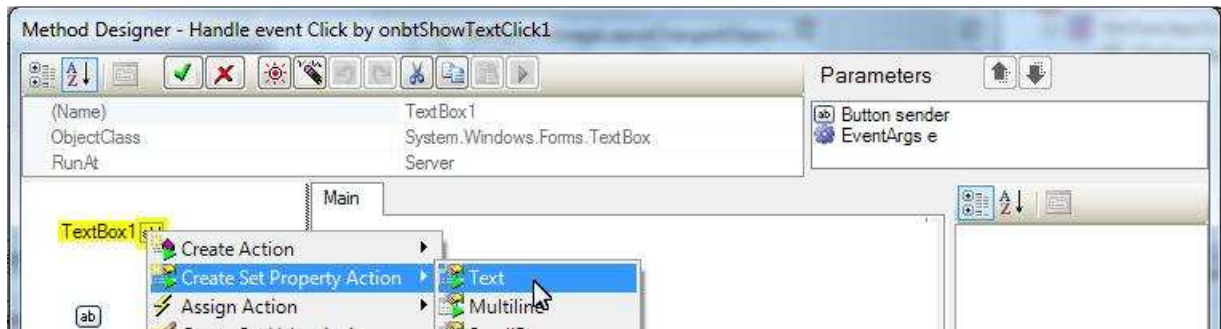
Right-click "Click"; choose "Create dynamic handler":



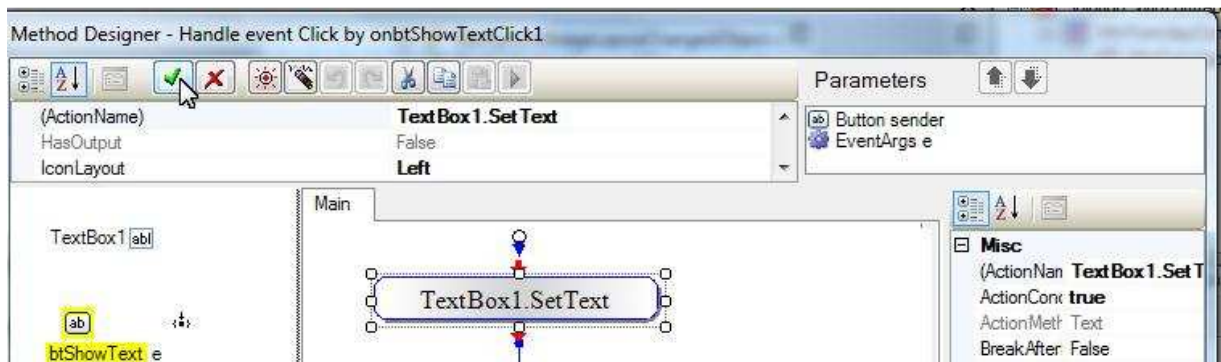
A method editor appears for creating the dynamic handler.



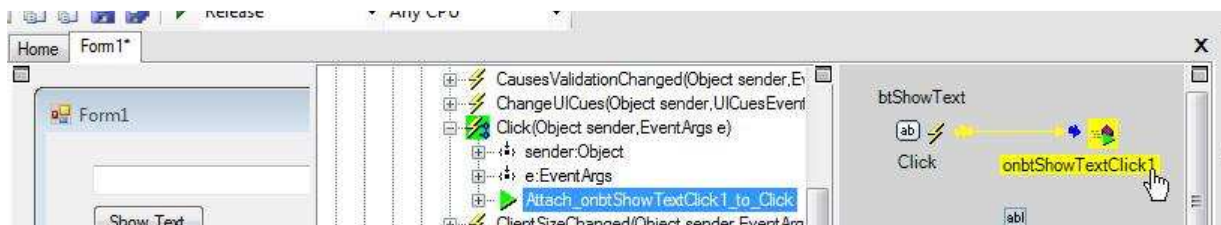
For this sample, let's add an action to show some text on the text box:



The action appears in the method editor. For this sample, that is all we need for this handler:



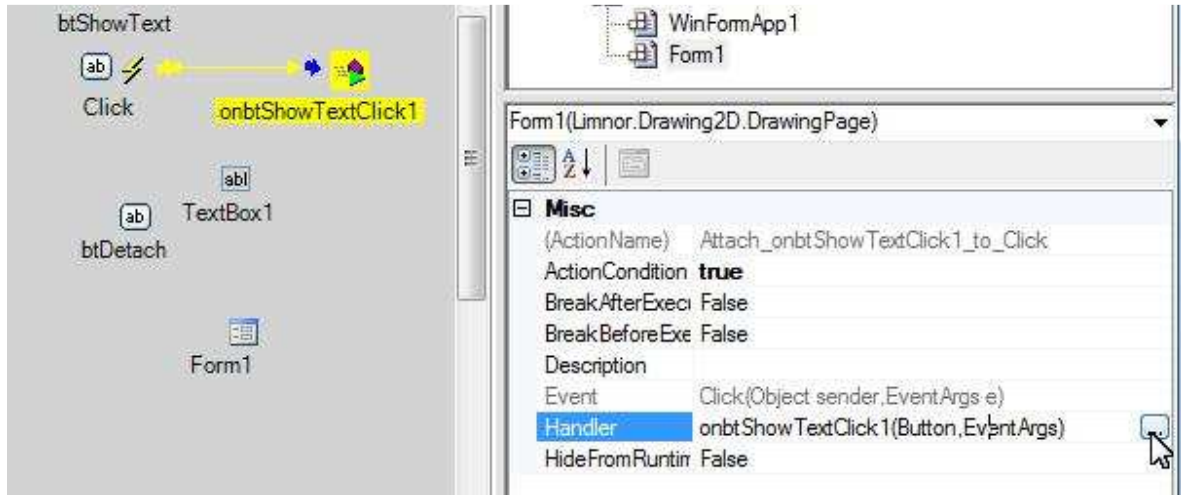
A dynamic event handler action is created:



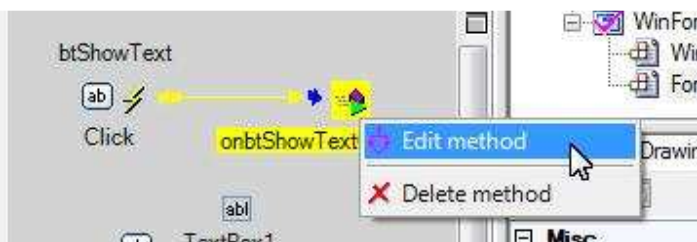
You can see that in the event map, the button's Click event will trigger a handler "onbtShowTextClick1". Note that the link line is yellow, not blue, indicating that it is a dynamic handler.

Modify dynamic handler

You may modify a dynamic handler by editing its handler property:

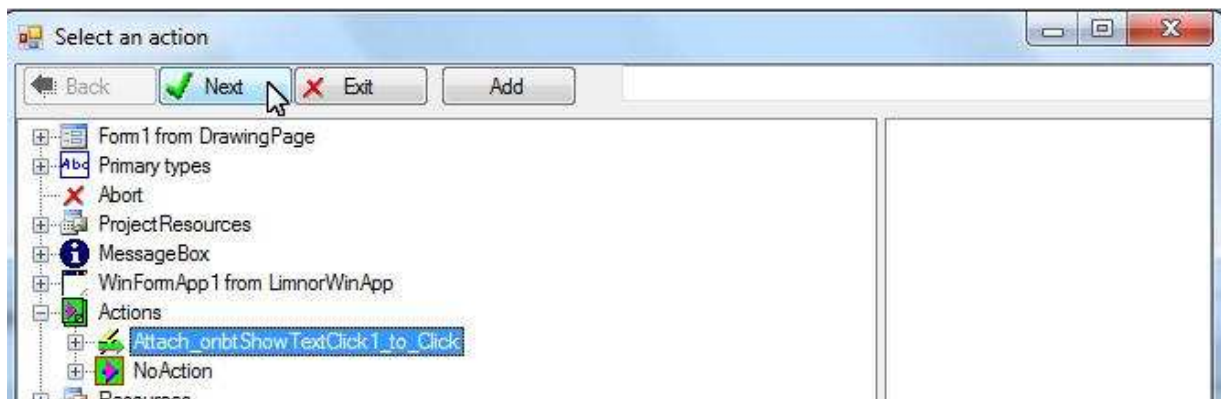
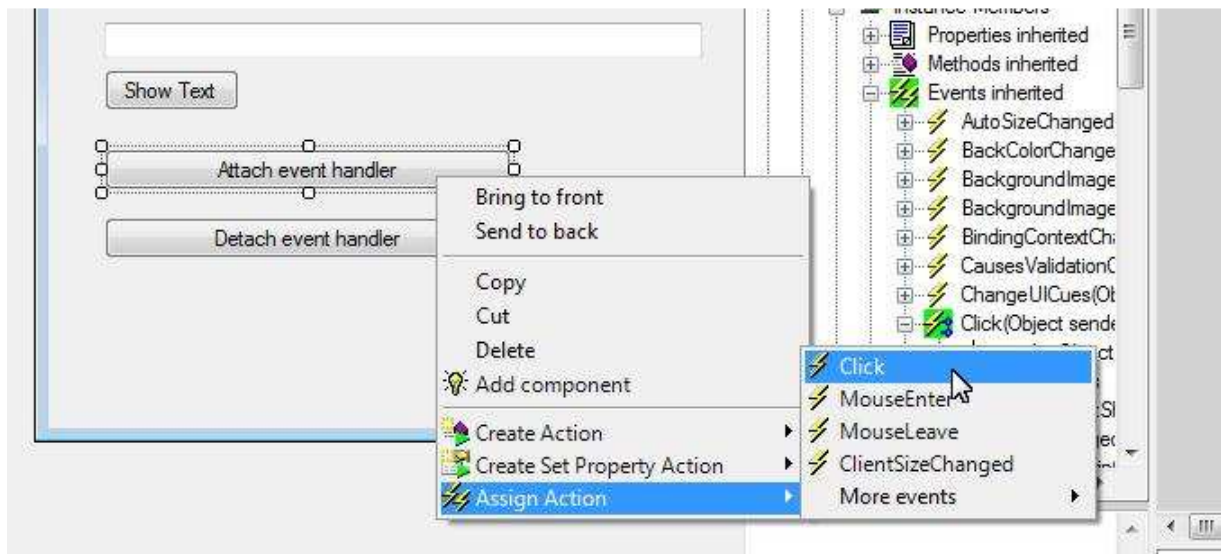


Or by right-clicking the handler icon and choosing Edit:

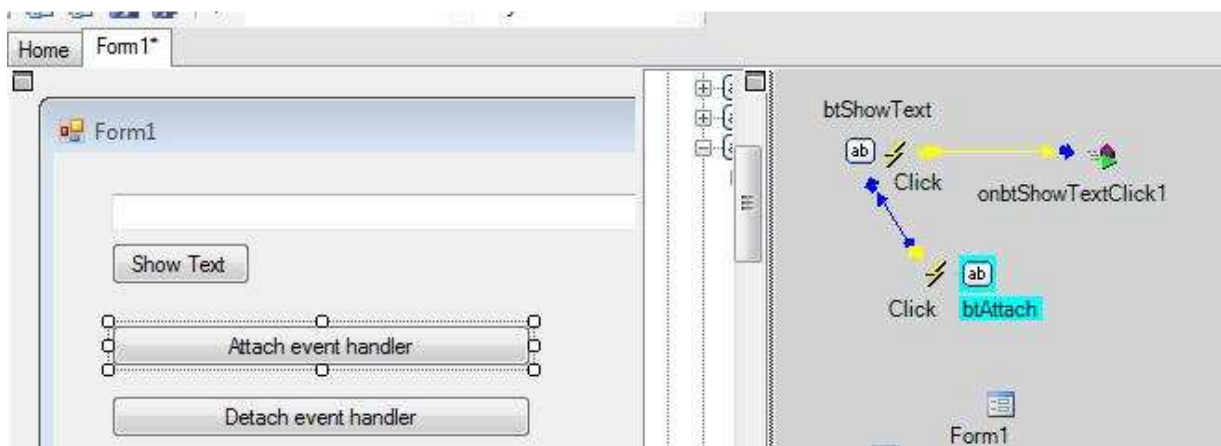


Execute attach-event action

Your program should choose right moments to attach dynamic event handlers to events. For this sample, we simply do it when the user clicks a button:



The action is assigned to the button:

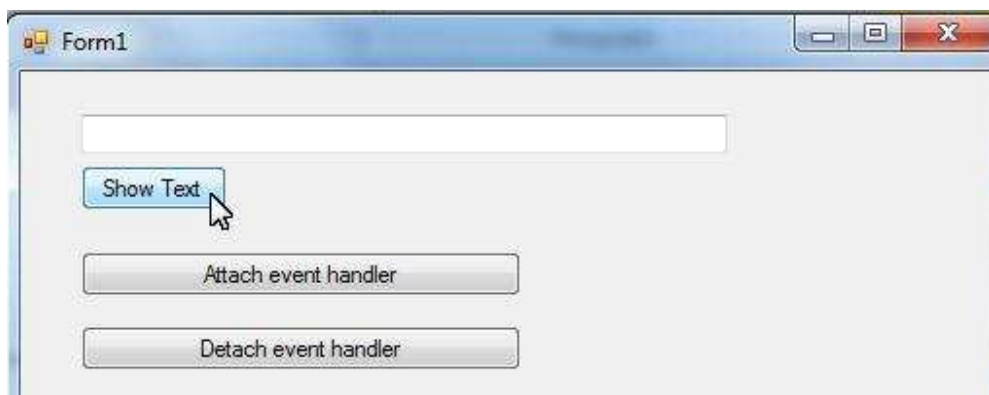


We can see that a blue line from button "btAttach" points to button "btShowText". This blue line activates the yellow line from button "btShowText" to handler method "onbtShowTextClick1".

Run the project:

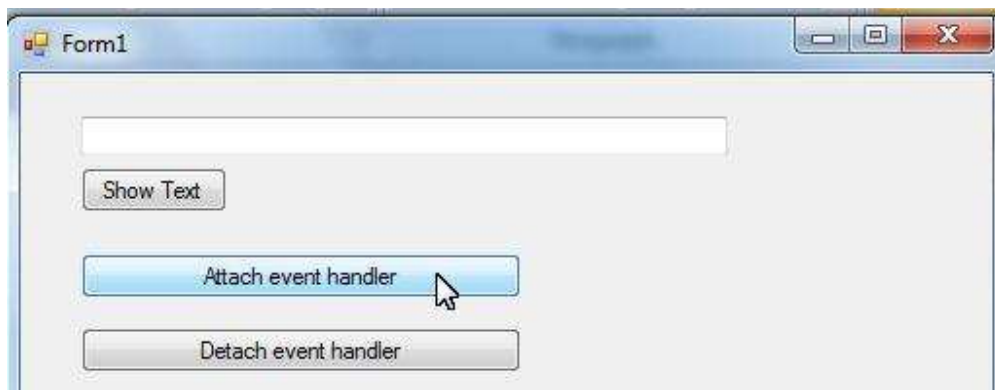


The form appears. Click button "Show Text". Nothing happens.

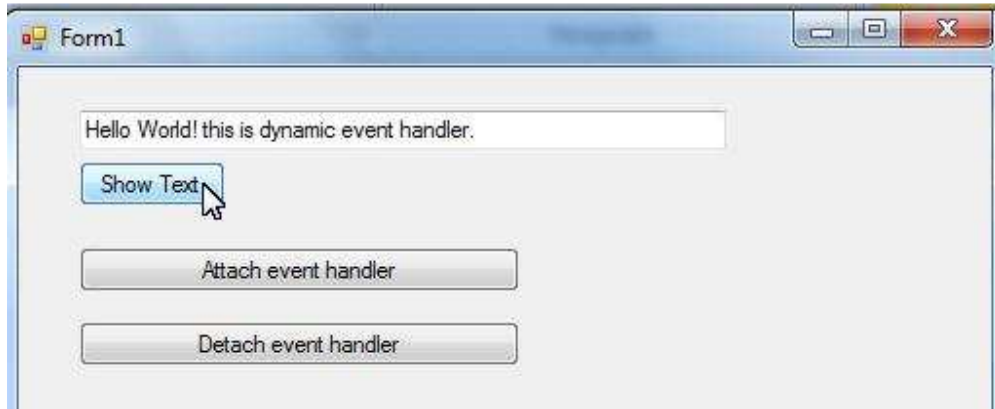


Nothing happens by clicking "Show Text" because the handler for "Show Text" button is created but not attached to the button.

Now click button "Attach event handler":



Clicking button "Attach event handler" attaches the event handler to button "Show Text". Now click button "Show Text". A text appears in the text box:



Detach Event Handler

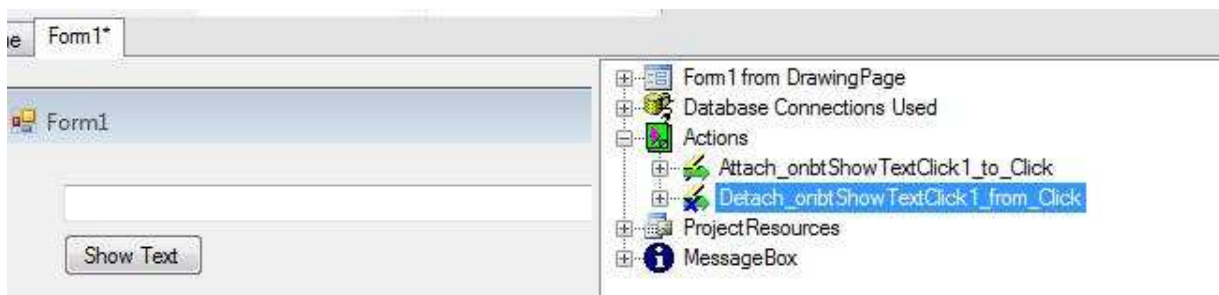
Attaching an event handler needs an action. Detaching an event handler also needs an action.

Create detach action

Right-click a handler attaching action; choose “Create detach action” to create a corresponding detach action:

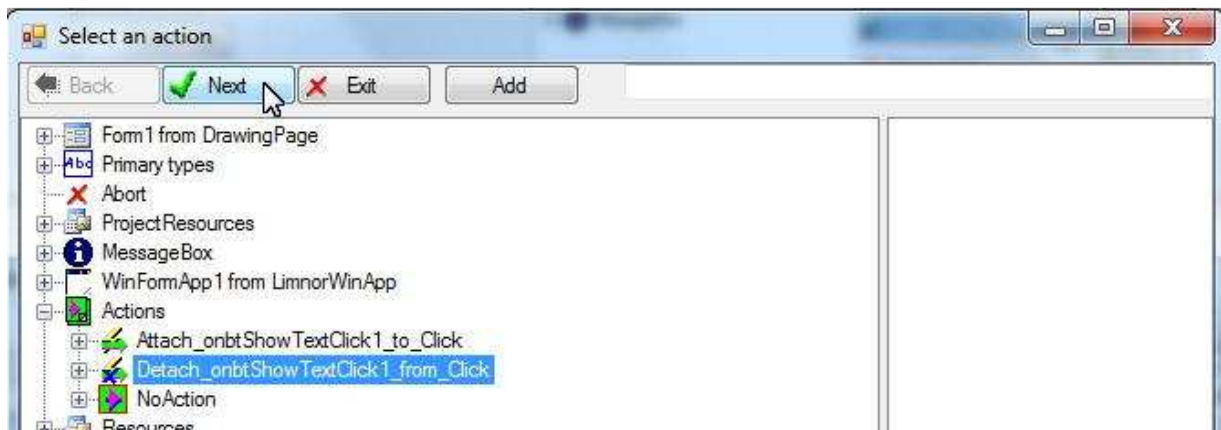
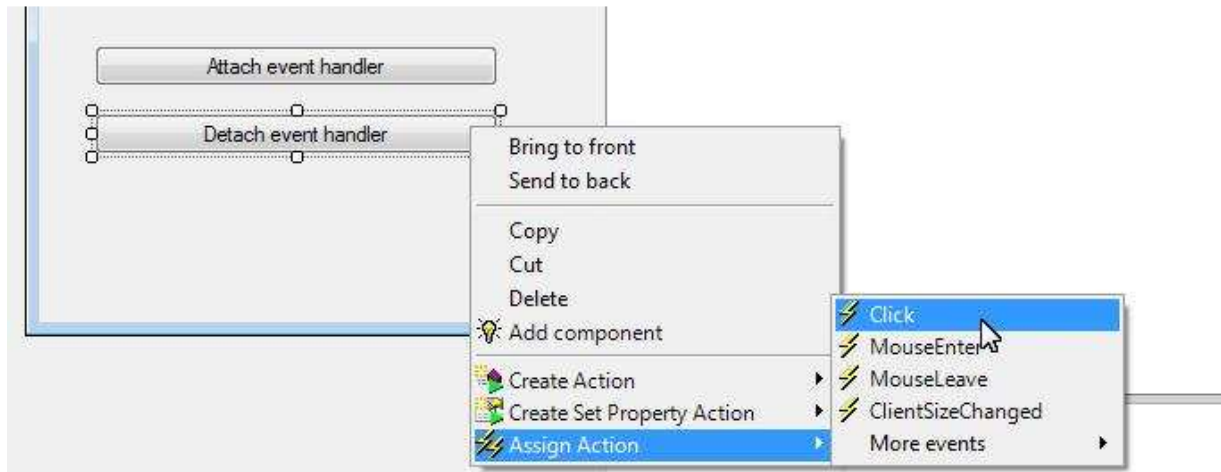


A detach-action is created:

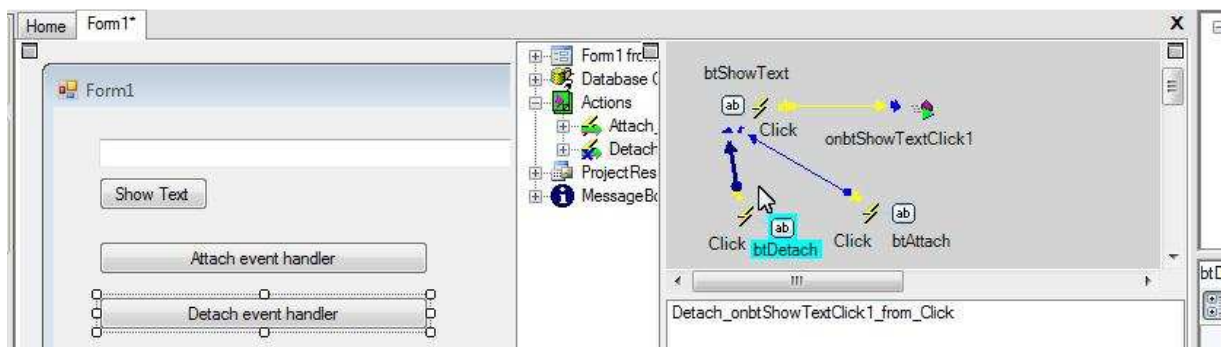


Execute detach action

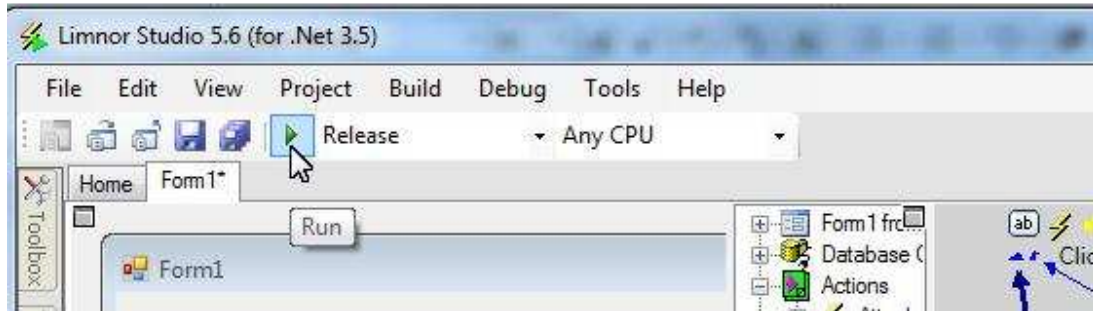
Your program should choose right moments to detach dynamic event handlers from events. For this sample, we simply do it when the user clicks a button:



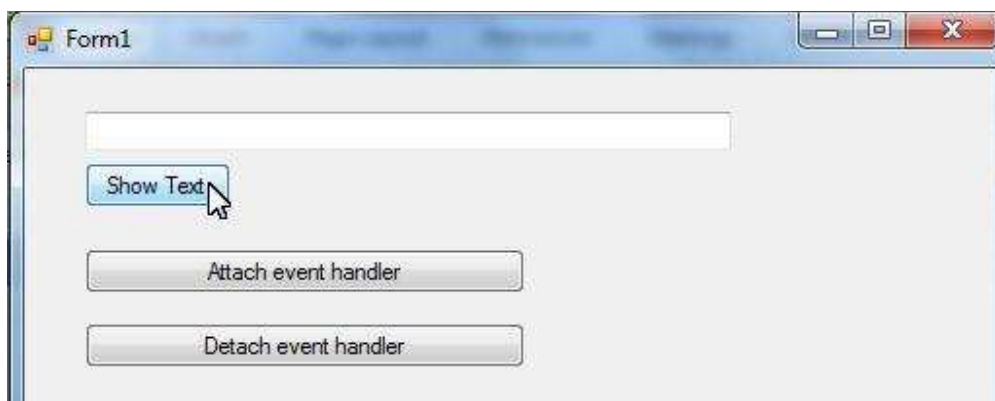
The detach-action is assigned to the button:



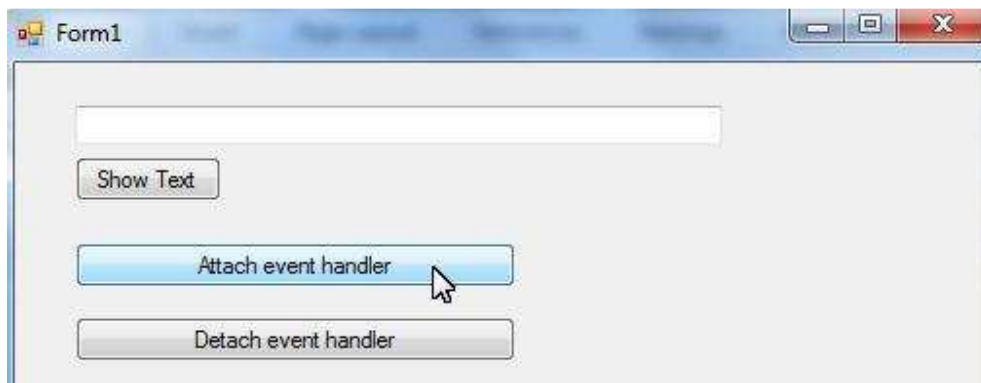
Run the project:



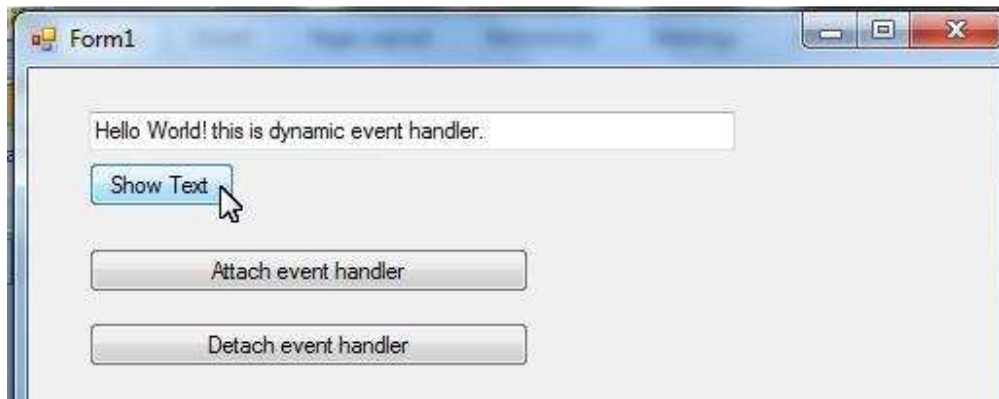
The form appears. Click button "Show Text". Nothing happens.



Click "Attach event handler":

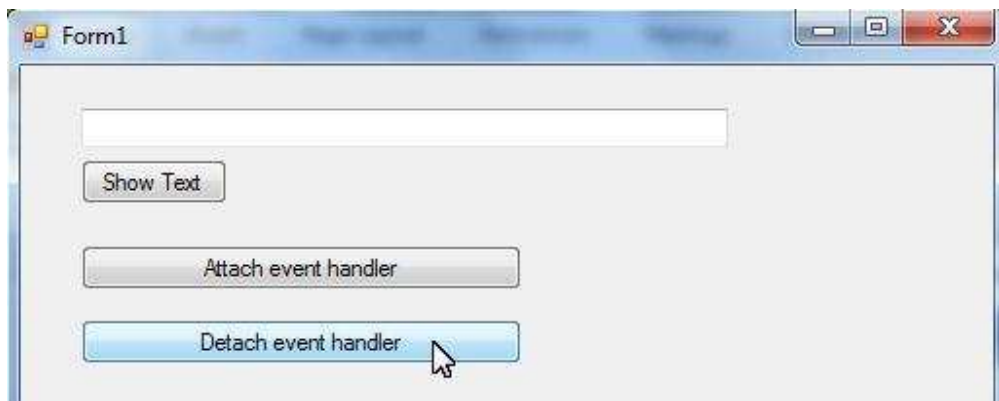


Click "Show Text" again. A text appears in the text box:



Note that you may modify the text on the text box. You may click "Show Text" and whatever you put in the text box will be erased and replaced with the text the event handler sets.

Now clear the text box and click button "Detach event handler":



Now click button "Show Text". Nothing happens this time because the event handler was detached from button "Show Text":

