

# C# Events, Delegates and Lambdas

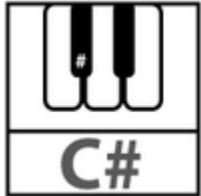
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# Pre-Req Classes



## C# Fundamentals - Part 1

This course is designed to give you everything you need to become a productive C# developer on the .NET platform

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Duration: 6h 17m

Level: Beginner

**The Role of  
Events, Delegates  
and Event  
Handlers**

**Creating  
Delegates, Events  
and EventArgs**

**Handling Events**

**Lambdas,  
Action<T> and  
Func<T,TResult>**

# The Role of Events, Delegates and Event Handlers

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**The Role of  
Events**

**The Role of  
Delegates**

**The Role of  
Event  
Handlers**



Event Handler

Event Args

Event Raiser

Delegate

# The Role of Events



Event Raiser





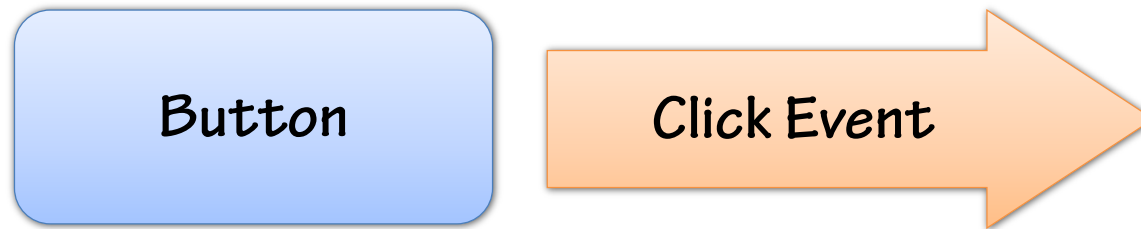
# What is an Event?

- Events are notifications
- Play a central role in the .NET framework
- Provide a way to trigger notifications from end users or from objects



# The Role of Events

- Events signal the occurrence of an action/notification



- Objects that raise events don't need to explicitly know the object that will handle the event
- Events pass EventArgs (event data)

# The Role of Delegates





Delegate

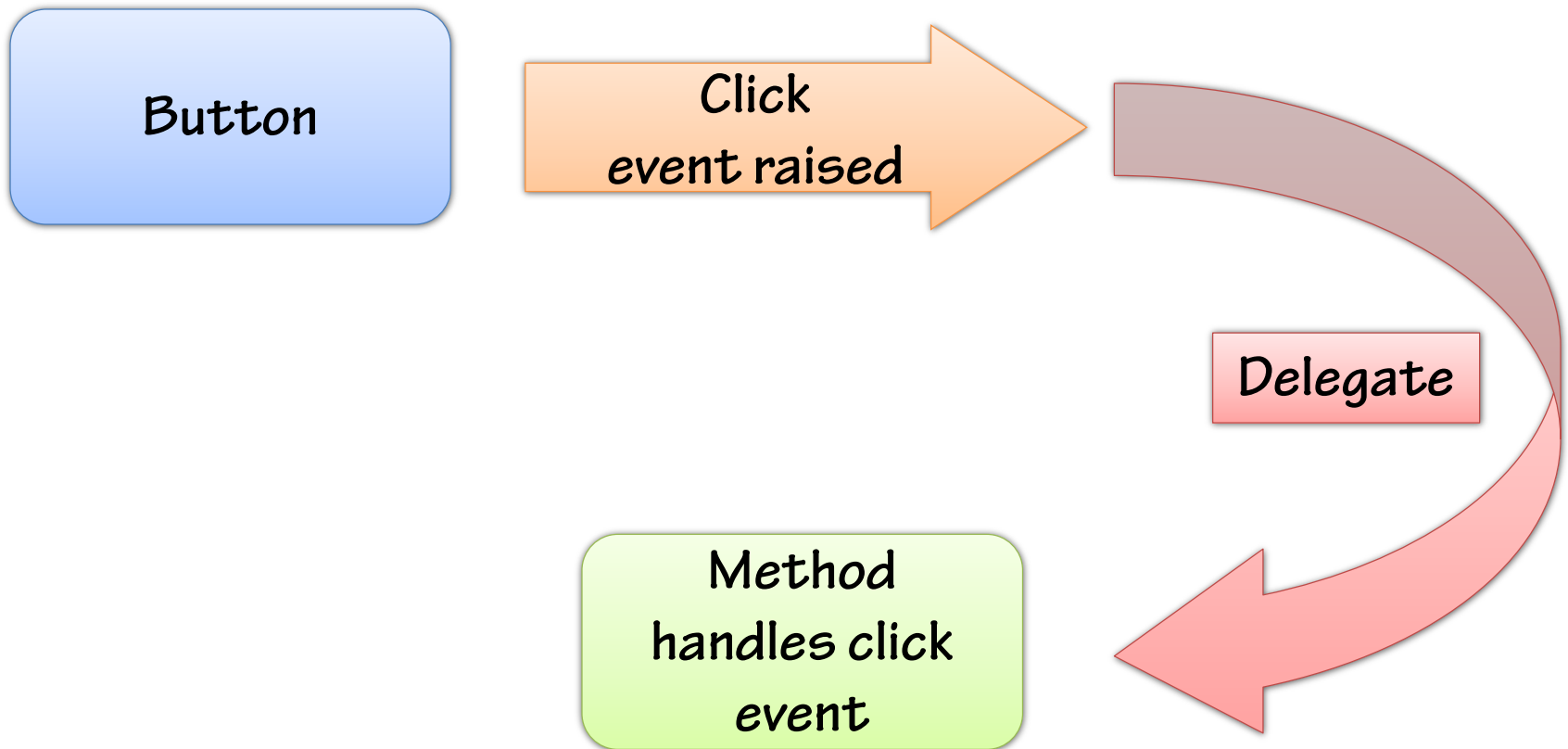
# What is a Delegate?

- A delegate is a specialized class often called a “Function Pointer”
- The glue/pipeline between an event and an event handler
- Based on a MulticastDelegate base class

# Delegates are a Pipeline



# The Role of Delegates



# The Role of Event Handlers





Event Handler

EventArgs



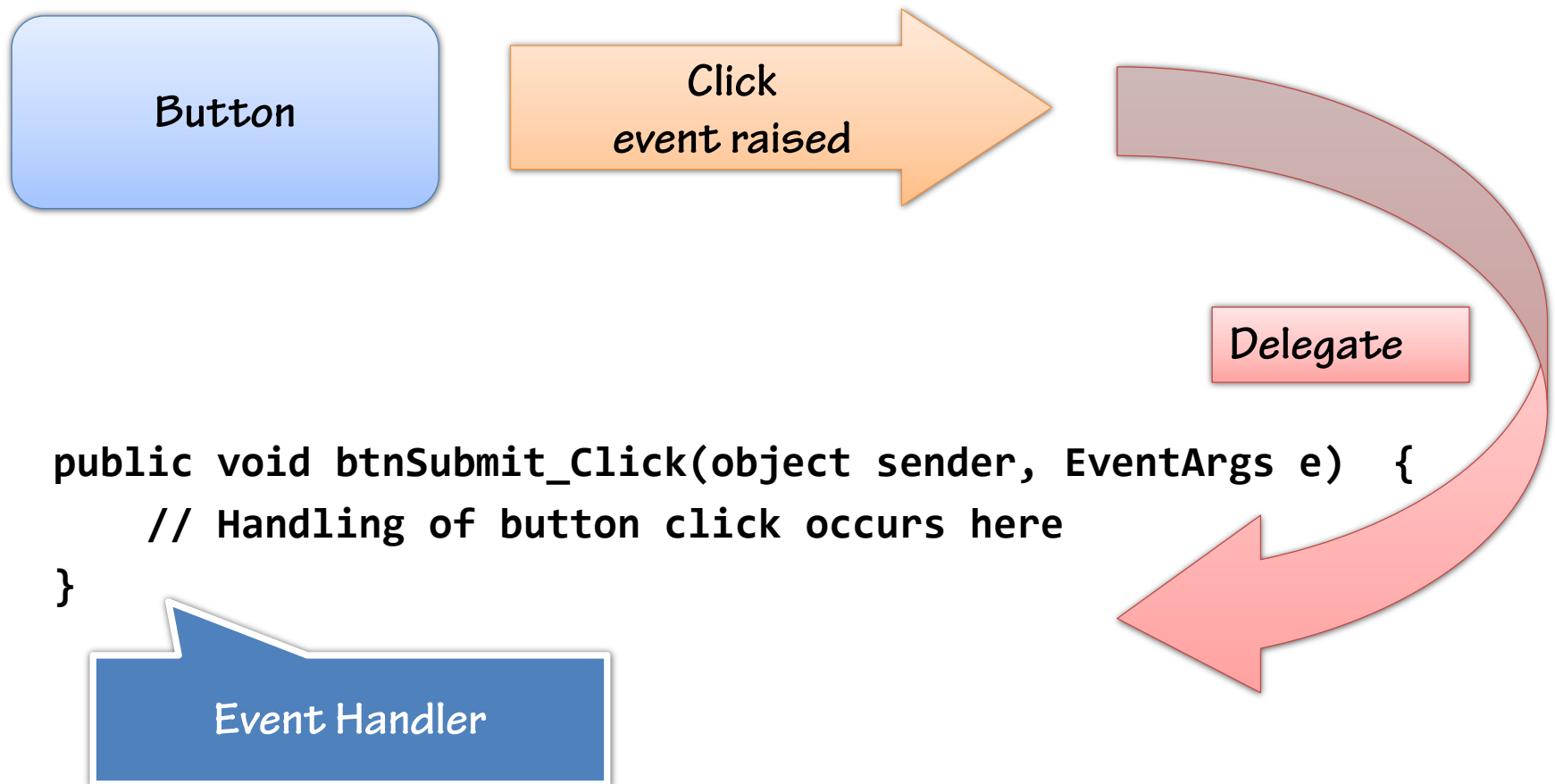
# What is an Event Handler?

- Event handler is responsible for receiving and processing data from a delegate
- Normally receives two parameters:
  - Sender
  - EventArgs
- EventArgs responsible for encapsulating event data



# The Role of Event Handlers

An event handler is responsible for accessing data passed by a delegate:



# Summary

- The .NET framework relies heavily on events and delegates
- Events provide notifications and send data using EventArgs
- Delegates act as the glue/pipeline between events and event handlers
- Event Handlers receive and process EventArgs data