[Course Overview](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live" \t "psplayer)

[Course Overview](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live)

[Hello, everyone. My name is Marc Gilbert.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=0) [Welcome to this C# Design Patterns: State](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=9) [course here, at Pluralsight. I'm the owner](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=10.75) [and lead developer at Frivolous Twist,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=13.900000000000002) [LLC, for a small consultancy dedicated to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=15.700000000000006) [building games and applications for mobile](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=17.666666666666664) [platforms. Are you looking for a better](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=20.333333333333336) [way to manage state in your applications?](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=22.199999999999996) [Are your methods loaded with complex,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=24) [conditional logic making them hard to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=26.25) [follow and even harder to manage and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=28) [debug? In this course, C# Design Patterns:](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=30.5) [State, you'll learn a tried and true](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=32.71428571428571) [technique for making your code cleaner,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=34.71428571428571) [easier to maintain, and extremely](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=37) [extensible: the state design pattern.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=38.66666666666667) [You'll begin with a review of state,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=41) [learning what it is and the various ways](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=43) [it can be managed in your applications.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=45) [From there, you'll get a conceptual](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=47) [overview of the state design pattern.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=48.71428571428571) [You'll learn the principles that make it](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=51) [work, the components that make it up, and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=52.75) [the benefits it brings to you as a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=55.2) [developer and to all of your development](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=56.800000000000026) [projects. With this foundation laid,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=58.71428571428571) [you'll get hands-on. You'll build your own](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=60) [implementation of the pattern in Visual](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=63) [Studio and get to see these benefits](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=64.6) [firsthand. By the end of this course,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=66.69999999999997) [you'll have the knowledge and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=68) [understanding required to elegantly manage](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=70.14285714285715) [state in your C# development projects](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=71.99999999999999) [using the state design pattern. I hope](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=74) [you'll join me as we explore these](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=76.5) [concepts and more in the C# Design](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=78.25) [Pattern: State course here, at Pluralsight.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=e4909a83-31c4-4044-bdfe-152909a43788&clip=0&mode=live&start=83)

[The State Design Pattern](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live)

[Module Introduction](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live)

[Hello, I'm Marc Gilbert. Welcome to C#](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=0) [Design Patterns: State. State is one of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=5.5) [those concepts that's so ubiquitous and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=8.333333333333332) [intuitive that we seldom have to think](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=9.799999999999997) [about it. So before diving in, let's take](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=11.5) [a look at exactly what we mean when using](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=13.333333333333329) [the term state. At its most basic, state](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=15.333333333333329) [can be defined as the condition of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=17.25) [something variable. It's important to note](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=19.33333333333333) [that the term variable here is being used](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=21.33333333333333) [in its common linguistic sense, something](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=23.75) [changeable, and not referring to variables](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=25.5) [used in computer science or mathematics.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=27) [At some point early in our educations, we](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=30) [were all introduced to the common states](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=32.2) [of matter-- solid, liquid, and gas and we](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=33.60000000000002) [learned that the same substance can have](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=37.22222222222223) [different properties and behaviors based](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=38) [on its state, water flows, steam rises.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=39.875) [You get the picture. But we don't have to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=42) [go back that far. You're taking this](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=44.11111111111111) [course on some form of device, and that](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=46.00000000000001) [device needs to be connected to the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=48.400000000000006) [internet in order for you to access this](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=49.800000000000026) [content. Taking the exact same steps you](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=51.75) [took to get here on a disconnected device](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=52.857142857142875) [would result in some form of error.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=55) [Another way to put this is to say that](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=57) [your device can either be in a connected](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=58.63636363636362) [or a disconnected state, and your device](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=60.79999999999998) [will behave differently based on that](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=62.60000000000001) [state, either serving up content or](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=63.800000000000026) [displaying an error. As developers, we](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=65.875) [face questions of state all the time.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=67.89999999999999) [Let's say we're working on an order](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=70) [processing application. Is an order new,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=72.3333333333333) [processing, canceled, or complete? And we](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=74.5) [implement behaviors based on these states.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=76.75) [Can a user edit a canceled order, or can a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=79) [completed order be canceled? This is just](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=81.85714285714288) [one example. The types of objects in an](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=84.20000000000002) [application and their behaviors are](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=85.85714285714283) [virtually unlimited. But regardless of the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=87.33333333333331) [type of application you're developing,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=89.33333333333331) [you'll invariably face questions of state.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=91) [During this course, you'll be introduced](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=94) [to and implement a tried and true design](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=95.71428571428575) [pattern to apply to these challenges, the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=97.75) [state pattern. The state design pattern is](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=100.25) [one of 23 design patterns documented by](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=102.49999999999999) [the Gang of Four that describes how to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=104.5) [solve reoccurring design challenges.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=107) [Specifically, it addresses how an object](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=109) [can change its behavior when its internal](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=110.85714285714288) [state changes and how state-specific](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=113.20000000000002) [behaviors can be defined so that new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=115.28571428571429) [states can be added without altering the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=117.66666666666669) [behavior of existing states. These are](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=119.4) [fairly high-level challenges, and it's](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=121.4) [difficult based on these words alone to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=122.75) [see how solving them can benefit a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=125.14285714285714) [real-world application. Throughout this](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=126.66666666666667) [course, we'll be working with a demo](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=128.66666666666669) [project. The project models a simplified](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=129.85714285714283) [event booking application that allows](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=131.875) [users to register for and book a single](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=133.66666666666669) [upcoming event, and simulate some of the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=136.33333333333337) [behaviors you'd expect from this type of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=138.6666666666667) [system like the creation of bookings,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=140.71428571428567) [their submission, cancellation,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=142) [processing, and expiration. We'll begin](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=144) [implementing these behaviors in what we'll](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=146.39999999999998) [call an intuitive or naive approach, in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=148.00000000000003) [other words without implementing the state](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=150.25) [pattern, and fairly quickly encounter](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=151.75) [challenges related to state. With this](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=154) [concrete example in hand, we'll relate](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=156.66666666666669) [these challenges to the design challenges](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=158.5) [the state pattern was developed to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=160) [overcome. Then with a firm grasp of these](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=162.5714285714285) [problems, we'll dig into the state pattern](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=164.75) [itself, first from a conceptual level,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=166.71428571428567) [then by getting hands-on, implementing the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=168) [pattern in our demo application and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=169.85714285714283) [exploring the benefits. In the next clip,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=172.25) [you'll be introduced to the demo project](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=174.09090909090912) [that you'll be using throughout this course.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=0&mode=live&start=176)

[The Demo Project](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live)

[In this clip, you'll be introduced to the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=2.9741440000000003) [demo project you'll be using throughout](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=4.574144000000001) [this course. It was created in Visual](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=6.307477333333332) [Studio 2019 and is available in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=9.117001142857143) [Exercise files. You'll find the project in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=11.402715428571433) [a file called StateDesignPattern.zip. The](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=13.224144) [project models a simplified booking system](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=16.40271542857143) [for a single upcoming event. In it users](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=18.974144) [create a new registration or booking for](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=20.831286857142853) [an event. They then submit some](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=23.174143999999995) [information for processing. If the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=25.688429714285707) [processing is successful, the event is](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=27.374143999999998) [considered booked. If it fails, a new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=29.174143999999995) [booking is created and the process starts](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=31.224144) [over. When the date for the event passes,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=33.574144) [the booking will be closed. If this](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=35.974144) [happens when the order is booked, we can](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=38.224144) [assume that the user attended the event,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=39.640810666666674) [but it can also happen prior to the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=41.974144) [booking being submitted. Additionally, a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=44.15596218181819) [booking can be canceled by the user also](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=45.418588444444445) [resulting in the booking being closed, and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=47.40271542857143) [this can happen at any point in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=50.174144000000005) [process prior to the booking being closed.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=51.77414400000003) [If you haven't done so already, download](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=53.974144) [the demo project and open it in Visual](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=56.374144) [Studio. The project is a WPF application.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=59.57414399999999) [It contains a simple UI with the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=61.974144) [code-behind necessary to drive it. The](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=63.831286857142864) [project also contains some code to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=66.14081066666667) [simulate external processing. What it does](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=67.724144) [not contain is any of the business logic](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=70.51959854545456) [required to drive the booking process.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=71.974144) [That's going to be up to you. In the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=73.974144) [Solution Explorer, expand the folder](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=76.474144) [called Logic. It contains a file called](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=78.77414399999998) [Booking.cs. Open it now by double-clicking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=82.474144) [on the filename. The file contains a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=84.849144) [single public class called Booking. The](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=87.30747733333331) [Booking class contains some properties.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=89.474144) [The first named View is of the type](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=91.974144) [MainWindow. The class uses this reference](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=94.64081066666662) [to interact with the application's UI. The](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=95.974144) [remaining properties, Attendee,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=99.374144) [TicketCount, and BookingID, make up the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=100.57414400000002) [data for the booking. The class also](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=103.19636622222221) [contains some stubbed in methods. The](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=105.724144) [first three of these act as an interface](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=107.224144) [to the UI, and it's in these methods that](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=109.224144) [you'll be doing most of your work. The](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=111.224144) [purpose of the ProcessingComplete method](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=113.30747733333332) [will become clear when you implement it.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=114.974144) [And the final method, ShowState, is a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=116.974144) [convenience method used to display](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=119.3074773333333) [information about the booking in the UI.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=121.17414400000001) [You don't have to spend too much time](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=123.974144) [thinking about these mechanics. I](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=124.974144) [structured the project this way to provide](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=127.30747733333332) [a concrete environment in which to explore](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=129.37414399999997) [our topic. What's important to know is](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=131.30747733333337) [that the Booking class delegates any UI](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=133.08525511111114) [functions to the MainWindow of the app and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=134.87414400000003) [that the UI interacts with the Booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=137.19636622222222) [class through its public methods. Right](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=138.75192177777782) [now if you run the app, the interface is](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=141.25985828571427) [displayed but that's about it, but it's](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=144.099144) [all set up for you to begin your naive](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=146.19636622222222) [implementation of the booking process.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=147.83128685714283) [You'll be doing just that in the next clip.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=1&mode=live&start=149.974144)

[A Naive Approach to Managing State](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live)

[The best way to begin understanding the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=2.140400000000023) [state pattern is by understanding the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=4.473733333333357) [challenges that it was developed to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=5.940400000000024) [overcome. In the previous clip, you were](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=7.807066666666689) [introduced to a demo project for a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=9.711828571428596) [simplified event booking system. In this](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=11.80706666666669) [clip, you'll be taking a naive or](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=13.640400000000023) [non-state pattern approach to implementing](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=15.390400000000023) [this system. And you'll encounter some of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=16.640400000000025) [these challenges firsthand. Right now when](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=19.015400000000025) [the application runs, nothing much](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=21.14040000000002) [happens. If the user clicks the New](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=22.80706666666668) [Booking button, an instance of the Booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=24.640400000000025) [class is created. I put a breakpoint here](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=27.015400000000025) [so that you can see it happen, but that's](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=29.140400000000025) [it. Looking at our diagram, we're right at](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=30.80706666666669) [the start of the process with a new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=32.89040000000002) [booking. There are three things we want to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=34.89040000000002) [have happened when a booking is created.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=36.69595555555557) [We want to assign a booking ID, show the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=38.14040000000002) [status of the booking, and provide the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=40.80706666666669) [user some means of entering their](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=42.640400000000014) [information. Looking at the Booking class](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=44.64040000000002) [in Visual Studio, you'll see that it](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=47.01540000000002) [already contains a constructor. Currently,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=49.14040000000002) [it's just setting the view property of the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=50.39040000000002) [booking to an instance of the MainWindow](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=51.97373333333334) [being passed in as a parameter. We're](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=54.14040000000002) [using this reference to delegate any UI](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=56.39040000000002) [functions back to the MainWindow of the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=57.94040000000003) [app. Let's give the Booking a booking ID](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=59.85468571428573) [by typing BookingID, then setting it equal](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=62.94040000000001) [to the return of new Random() .Next, then](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=65.59494545454547) [display the status by calling ShowState](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=68.56897142857146) [and passing in a literal string New as the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=71.14040000000003) [argument. Then to enable data entry, call](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=73.8404) [View.ShowEntryPage. As you work through](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=78.42611428571428) [this exercise, don't worry if you don't](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=79.80706666666671) [understand the inner workings of each of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=81.80706666666667) [the Booking's behaviors. Our focus is not](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=83.4737333333334) [so much on how a booking executes a given](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=85.47373333333334) [behavior, but on managing its state as it](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=87.89040000000003) [works its way through the process. Make](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=89.89040000000003) [sure to save your work, then run the app.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=92.44040000000003) [Now when a user clicks on the New Booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=95.14040000000003) [button, a new booking is created](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=96.94040000000005) [displaying both its ID and its current](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=98.25151111111117) [status or state, and the user is provided](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=100.14040000000001) [a couple fields for entering their](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=102.39040000000003) [information. Looking back at the process,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=104.64040000000003) [there are three things that can happen at](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=107.14040000000003) [this point. The date for the event can](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=108.74040000000005) [pass at which point the booking is closed.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=110.85468571428578) [The user can cancel, also resulting in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=113.14040000000003) [booking being closed. Or the user can](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=115.2832571428572) [submit their information for processing.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=117.47373333333334) [When a booking is closed for any reason,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=119.14040000000003) [we simply want to display the booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=121.14040000000003) [state and provide the user with a reason](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=122.89040000000003) [the booking was closed. Back in Visual](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=125.04949090909089) [Studio, in the body of the Cancel method,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=126.95858181818183) [display the current state by typing](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=129.14040000000003) [ShowState, passing in the literal string](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=131.71182857142853) [Closed as the argument, then display the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=133.80706666666674) [reason the booking was closed by calling](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=135.89040000000003) [View.ShowStatusPage passing in a literal](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=138.47373333333334) [string Canceled by user as the argument.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=140.74040000000005) [Go ahead and copy these lines and then](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=143.14040000000003) [paste them into the body of the DatePassed](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=145.6858545454546) [method. Change the argument in the call to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=147.86767272727283) [View.ShowStatusPage to something like](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=150.76540000000003) [Booking expired. Cool. Now when we run the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=152.34040000000005) [app and create a new booking, if the user](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=155.04949090909096) [chooses to cancel the booking, the app](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=156.89040000000003) [displays the state of the booking as](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=158.74040000000005) [closed and displays the reason, Canceled](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=160.84040000000013) [by user. And if the date for the event](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=162.56897142857142) [passes, which we're simulating with a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=164.89040000000003) [button press, the status shows Closed and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=166.56897142857142) [the user is informed that the booking is](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=168.44040000000004) [expired. Everything seems to work, but](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=170.84040000000013) [there are some issues with this](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=172.51540000000003) [implementation. As things stand, a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=174.76540000000003) [canceled booking can expire or even be](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=176.47373333333337) [re-canceled, and an expired booking can](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=178.80706666666677) [also be canceled or re-expire. This brings](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=180.64040000000008) [us to our first issue of state. You'll](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=182.58484444444449) [recall that we define state as the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=184.47373333333337) [condition of something variable. Applying](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=186.8070666666667) [this definition to the current scenario,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=188.4261142857143) [you can say that so far a booking can be](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=190.14040000000003) [in one of two possible states, either new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=192.39040000000003) [or closed, and its behaviors need to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=194.64040000000003) [change based on the state. Only a new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=197.14039999999997) [booking or a booking in the new state can](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=198.6858545454546) [be canceled or expire. A common way to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=200.54040000000003) [address these types of issues in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=203.02928888888894) [absence of the state pattern is to use a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=204.71182857142858) [simple Boolean field. Back in the Booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=207.28325714285714) [class, add a new field of the type bool](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=208.94039999999998) [and call it isNew. Then in the constructor](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=211.80706666666677) [when the booking is being created, set](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=214.34040000000007) [isNew equal to true. In the Cancel method,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=216.54040000000003) [check to see if isNew is equal to true](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=219.14040000000003) [before executing the code. If it's not,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=221.14040000000003) [display an error letting the user know the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=224.6404) [booking cannot be canceled. But that's not](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=227.3626222222223) [enough. In the code block for the if](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=229.89040000000003) [statement, we also need to set isNew equal](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=231.01540000000003) [to false since the booking will be in a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=232.69595555555563) [closed state when it's canceled. We need](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=234.69595555555563) [to apply the same type of logic to the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=237.58484444444449) [DatePassed method only executing the code](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=239.64040000000003) [if isNew is equal to true and making sure](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=241.74040000000005) [to set isNew equal to false since the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=244.8070666666667) [event is closed when the date passes.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=246.8070666666667) [Cool. Now when we run the app, we see that](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=249.14040000000003) [a booking in the new state can be canceled](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=251.6404) [resulting in it being in a closed state](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=253.14040000000003) [where it cannot be re-canceled or expired](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=255.14040000000003) [when the date passes, and that a new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=257.1404) [booking can be expired again resulting in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=260.1404) [a closed state where it cannot expire](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=261.64040000000006) [again or be canceled. Using a bool to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=263.6404) [manage state in this way is a fairly](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=266.0292888888889) [common practice. And if these were our](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=267.74039999999997) [only requirements, we could stop here. In](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=269.5689714285714) [the next clip, we'll continue implementing](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=271.4261142857143) [the booking process using this naive](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=273.1404) [approach and see the effect it has on the readability and complexity of our code.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=2&mode=live&start=275.71182857142867)

[Completing the Naive Approach](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live)

[In this clip, we'll continue the naive](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=2.1092889999999898) [implementation of the booking process and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=4.680717571428561) [take a closer look at the challenges the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=6.35928899999999) [state pattern was developed to overcome.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=8.537860428571419) [So far we've implemented logic for when](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=11.10928899999999) [the date passes or the user cancels a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=13.209288999999995) [booking and modified this logic using a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=15.77595566666666) [Boolean field. When a user cancels a new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=18.35928899999999) [booking or the date passes, it becomes](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=20.74565263636363) [closed and we let the user know it. But](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=22.70928899999999) [once a booking is closed, we prevent the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=25.275955666666658) [user from canceling it and ignore the fact](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=26.966431857142844) [that the date has passed for the event.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=29.10928899999999) [Let's take a look at the next step, the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=31.10928899999999) [submission. There are four things we need](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=33.80928899999997) [to implement. We want to update the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=35.60928899999999) [booking's data, display the status or](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=37.53786042857141) [state of the booking in the UI, submit the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=39.20019809090908) [booking for processing, and then handle](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=41.90928899999999) [the response. Back in the Booking class,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=44.309288999999985) [in the SubmitDetails method, we'll update](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=46.10928899999999) [the booking's data by setting the Attendee](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=48.509288999999995) [field of the booking to the attendee](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=50.10928899999999) [parameter being passed in from the UI.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=52.00928899999998) [We'll also set the TicketCount field equal](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=54.10928899999999) [to the ticketCount parameter. In a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=56.70928899999999) [real-world application, this information](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=59.60928899999999) [and more like credit card info, etc.,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=60.77595566666666) [would be submitted to some back-end system](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=63.10928899999999) [or REST API for processing. I've simulated](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=65.10928899999999) [this behavior using an asynchronous method](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=68.10928899999999) [in the static class. Asynchronous methods](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=70.10928899999999) [are well beyond the scope of this course](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=72.10928899999999) [and not really relevant to our topic, so](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=74.10928899999999) [don't focus too much on how this works.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=76.33151122222222) [We're just using it to simulate some form](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=78.10928899999999) [of external processing. First, we'll set](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=79.909289) [the cancelToken field equal to a new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=82.10928899999998) [CancellationTokenSource. We'll be using](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=85.50928899999997) [this to cancel a submitted or pending](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=86.609289) [booking. We'll then call](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=88.70928900000001) [StaticFunctions.ProcessBooking passing in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=91.35928899999999) [this as the first argument,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=92.68071757142857) [ProcessingComplete as the second, and the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=94.10928899999999) [cancelToken field as the third. Then we'll](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=98.68071757142857) [update the UI by calling ShowState passing](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=100.85928899999999) [in the literal string Pending as the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=103.33151122222222) [argument and calling View.ShowStatusPage](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=104.88706677777782) [passing in Processing Booking. The call to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=108.10928899999999) [StaticFunctions Processing Booking is our](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=111.10928899999998) [simulated external call. We'll come back](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=112.909289) [to this in a moment. First, let's take a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=114.48428899999999) [look at where we are in the process. The](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=116.10928899999999) [first thing to notice is that only a new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=118.30928899999999) [booking can be submitted, at which point](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=120.22040011111113) [the booking is no longer new or closed.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=122.20019809090907) [It's been submitted for processing, and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=125.10928899999999) [we're kind of on hold pending a response.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=126.44262233333332) [So we've introduced a new state, let's](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=129.109289) [call it pending. If that response is](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=130.609289) [successful, the booking is considered](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=132.90928899999994) [booked. If it fails, the process starts](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=134.709289) [over and we're back in the new state.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=136.82357471428566) [While pending, the user can cancel the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=139.109289) [booking resulting in it being closed. To](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=140.859289) [make sure that only a new booking can be](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=143.29110718181818) [submitted, we can check the value of the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=144.92747081818186) [isNew field, and only if it is true will](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=146.6648445555556) [we submit the information. We also have to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=149.01837990909095) [set the value of isNew to false. Looking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=151.2001980909091) [at the call to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=153.609289) [StaticFunctions.ProcessBooking, the second](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=155.609289) [argument is ProcessingComplete. This is](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=156.909289) [the method that will be called when our](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=158.609289) [simulated processing completes. Let's take](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=160.909289) [a look. The external function returns a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=162.609289) [processing result. If it's a success, we](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=165.25214614285707) [update the UI showing that the booking is](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=167.359289) [booked and telling the user to enjoy the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=169.7759556666667) [event. If it fails, we display an error,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=171.859289) [then reinitialize the booking. Then we](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=174.109289) [update the UI indicating that the booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=176.77595566666668) [is in a new state and provide the user the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=178.484289) [means to reenter their information. And if](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=180.60928900000005) [the user cancels, we again update the UI](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=182.709289) [to indicate that the booking is closed and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=185.109289) [inform the user that the process was](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=187.33151122222222) [canceled. The external process will return](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=188.88706677777782) [a success or fail result without any](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=190.60928900000005) [interaction, but we need to inform it that](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=193.4426223333333) [the user canceled. Looking at the Cancel](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=196.20928900000007) [method, it currently only cancels a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=197.90928899999994) [booking if isNew is true indicating that](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=199.60928900000005) [it's in the new state. We now need a way](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=201.68071757142854) [to cancel a pending booking. We can do](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=204.10928899999993) [this by creating another Boolean field,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=206.10928900000002) [let's call it isPending. Then back in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=208.109289) [SubmitDetails method, we need to set](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=210.44262233333336) [isPending to true. With the field created](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=212.2521461428571) [and set, we can use it to cancel a pending](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=214.44262233333336) [booking. We'll do this in the Cancel](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=216.88706677777782) [method by typing else if (isPending ==](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=218.82357471428566) [true), and then calling](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=220.82357471428566) [cancelToken.Cancel. But that's not enough,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=223.359289) [we also have to return to the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=225.109289) [ProcessingComplete method and set](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=227.4426223333334) [isPending back to false. Now when the app](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=229.109289) [is running and a new booking is submitted,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=231.77595566666662) [the app informs the user that the booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=233.109289) [is in a pending state and that the booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=235.484289) [is being processed, and the user can](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=237.2521461428571) [cancel a pending booking resulting in it](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=239.109289) [being closed. If a new booking is](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=241.309289) [submitted, its state is change to pending.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=243.7759556666667) [And if the processing fails, an error is](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=245.109289) [displayed, and when the user okays it, the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=247.859289) [booking returns to the new state, or does](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=249.409289) [it? If we enter some information and try](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=251.8092890000001) [to submit the booking now, it doesn't](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=253.68071757142854) [work. We need to return to the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=255.77595566666668) [ProcessingComplete method, and if the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=258.359289) [processing fails, we need to set isNew](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=259.70928899999996) [equal to true. This will solve the issue,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=261.359289) [but I'm quickly becoming disenchanted with](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=264.109289) [this approach. We've only implemented](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=265.609289) [three fairly simple behaviors, and the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=267.3950032857143) [code in our method is already getting](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=269.55373344444445) [pretty long and hard to follow. More](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=271.109289) [importantly, it seems that each time we](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=272.609289) [add a requirement, it affects work we've](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=274.44262233333336) [already completed. That said, it's fairly](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=276.44262233333325) [common to come across this style of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=277.90928899999994) [coding. So let's soldier on and finish the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=279.82357471428566) [implementation. I'll have more to say](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=282.734289) [about the issues with this approach once](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=284.0183799090909) [we've wrapped it up. As things stand, when](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=285.309289) [a user submits a new booking, the booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=287.30928900000004) [is submitted and considered pending. If](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=289.68071757142854) [processing is successful, we tell them to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=291.609289) [enjoy the event, and the booking is](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=293.68071757142866) [considered booked. Looking at our diagram,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=296.109289) [we're at this point in the process.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=298.109289) [Processing is successful, and the booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=299.109289) [is considered booked. If the date passes](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=302.10928899999993) [at this point, we can assume the user](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=303.68071757142866) [attended the event, and we'll just tell](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=305.359289) [them we hope they enjoyed it. If the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=306.90928899999994) [booked event is canceled, we probably want](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=308.7759556666666) [to tell them to expect a refund since it's](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=310.70928899999996) [already gone through processing. Right now](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=313.109289) [the Booking class has no way to know that](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=315.50928899999997) [the event has been booked. As you may have](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=317.2759556666667) [guessed, we can remedy this by creating](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=318.90928899999994) [yet another Boolean field, this time](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=321.109289) [calling it isBooked. Then in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=322.90928899999994) [ProcessingComplete method, if the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=325.90928900000006) [ProcessingResult is successful, we'll need](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=327.90928899999994) [to set isBooked equal to true. Then in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=329.609289) [DatePassed method, we need to add an else](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=332.3092889999999) [if statement checking to see if isBooked](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=334.609289) [is true. If it is, we can call ShowState](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=336.5378604285714) [again passing in Closed as the argument.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=338.859289) [Then we'll call View.ShowStatusPage](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=341.109289) [passing in We hope you enjoyed the event.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=343.109289) [And we better remember to set isBooked](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=345.109289) [back to false. In the Cancel method, we](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=347.20928900000007) [need to add yet another else if statement](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=349.3315112222222) [also checking to see if isBooked is true.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=351.109289) [And if it is, we'll call ShowState again](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=354.109289) [passing in Closed as the argument, then](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=356.109289) [call View.ShowStatusPage passing in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=358.7759556666667) [something like Booking canceled: Expect a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=360.7759556666666) [refund. Then here too we'll want to set](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=362.7759556666665) [isBooked back to false. Awesome! That](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=365.01837990909075) [completes our naive approach to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=366.7759556666666) [implementing the booking process. In the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=368.50928899999997) [next clip, we'll take a moment to discuss](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=370.609289) [the shortcomings of this approach, than](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=372.68071757142854) [take a deep dive into the state design pattern.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=3&mode=live&start=375.109289)

[Why Use the State Design Pattern?](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live)

[For the remainder of this course, we'll be](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=2.040444999999949) [taking a deep dive into the state design](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=4.5858995454544935) [pattern. You'll recall that the state](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=6.767717727272673) [design pattern was developed to overcome](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=8.469016428571377) [two primary design challenges, how can an](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=10.540444999999949) [object change its behavior when its](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=12.897587857142808) [internal state changes, and how](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=14.84044499999995) [state-specific behaviors can be defined in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=16.64044499999995) [a way that states can be added without](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=18.440444999999954) [altering the behaviors of existing states.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=19.897587857142803) [Let's take a look at just one of the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=23.04044499999995) [behaviors in our naive implementation,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=24.840444999999942) [canceling a booking. It actually meets the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=26.754730714285657) [first of these challenges. When a booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=29.04044499999995) [is in the new state, canceling updates the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=30.79044499999995) [UI and informs the user. When it's in a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=33.16544499999995) [pending state, the Cancel method of the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=35.707111666666606) [cancelToken is called, and the booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=37.91544499999995) [continues to behave differently if it's](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=39.8975878571428) [booked or ultimately closed. So the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=42.04044499999995) [booking definitely changes behavior when](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=44.70711166666662) [its internal state changes. But in order](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=46.44044499999995) [to accommodate each of the states, we had](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=48.70711166666661) [to change the behavior itself. We created](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=50.61187357142852) [Boolean fields to track the different](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=52.70711166666662) [states, then had to interrogate these](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=54.707111666666634) [fields using a chain of conditional](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=56.70711166666663) [statements that increased in complexity](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=57.87377833333327) [each time a state was added. On top of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=59.24044499999994) [that, we had to manage the value of these](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=61.73275269230765) [fields, digging through our code to find](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=63.80967576923075) [exactly where they should be set true or](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=65.7547307142857) [false affecting not only the method we](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=67.79044499999995) [happen to be working on, but potentially](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=69.13135409090907) [several methods throughout the code. And](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=70.89758785714281) [that's one of the biggest issues I have](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=73.32615928571424) [with this approach. The more states that](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=75.44044499999995) [we have, the more interdependent their](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=76.70711166666663) [behaviors become. We end up spending more](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=79.04044499999995) [time managing and checking the values of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=81.46901642857141) [these fields than we do coding up the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=83.46901642857141) [behaviors that are meant to manage. And as](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=85.54044499999995) [you've seen, this becomes more of an issue](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=87.54044499999995) [with each state that we add, resulting in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=89.54044499999995) [code that's not only hard to debug, but](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=91.4848894444444) [difficult to work with in general. To be](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=93.32615928571424) [fair, we could refactor the code to make](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=95.54044499999995) [it a little easier to work with, but](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=97.26266722222218) [that's kind of the point as well. Do you](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=98.29044499999995) [really want to revisit working code every](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=100.54044499999995) [time a requirement changes and a new state](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=102.44044499999995) [is added or a behavior is altered? Even](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=105.13135409090901) [worse, what if you're working on a team](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=107.26266722222218) [and one member changes the behavior](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=109.04044499999995) [they're tasked to work on only to break](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=110.04044499999995) [one or more behaviors belonging to someone](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=111.89758785714282) [else? It happens. No matter how you look](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=113.79044499999995) [at it, managing state in this way is bound](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=115.75473071428564) [to cost you precious hours. By answering](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=118.61187357142853) [the second of our design challenges, how](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=120.54044499999995) [state-specific behaviors can be defined so](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=122.37377833333328) [that states can be added without altering](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=124.41544499999995) [the behavior of existing states, the state](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=127.04044499999995) [design pattern minimizes conditional](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=128.89758785714278) [complexity, allowing you to manage state](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=130.61187357142845) [without the need for Boolean fields and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=132.29044499999995) [countless if or else statements, resulting](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=134.37377833333332) [in code that's more modular, easier to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=136.54044499999995) [read and maintain, less difficult to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=139.84044499999996) [debug, and considerably more extensible.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=141.79044499999995) [You'll see how it does this and begin](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=144.04044499999995) [applying the pattern to our booking process in the next clip.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=4&mode=live&start=146.44044499999993)

[The State Design Pattern](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live)

[So far you've been introduced to the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=1.877000999999931) [challenges the state pattern was developed](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=3.627000999999931) [to overcome and experienced some of these](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=5.3055724285713595) [challenges firsthand. You'll now be](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=8.019858142857075) [introduced to the state design pattern](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=9.777000999999933) [itself and see how it addresses these](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=11.577000999999937) [challenges. It does so by encapsulating](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=13.59128671428565) [state-specific behaviors within separate](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=16.019858142857075) [state objects. A class then delegates the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=17.877000999999932) [execution of its behaviors to one of the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=20.543667666666593) [state objects at a given time instead of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=23.077000999999935) [implementing state-specific behaviors](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=25.877000999999932) [itself. There are three main components to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=27.377000999999932) [the pattern, the context, an abstract](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=29.377000999999932) [state, and any number of concrete states.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=32.27700099999993) [The context is a class which maintains an](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=34.87700099999993) [instance of a concrete state as its](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=37.27700099999993) [current state. The abstract state is an](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=40.07700099999992) [abstract class that defines an interface](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=42.30557242857135) [encapsulating all state-specific](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=43.87700099999993) [behaviors. And a concrete state is a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=46.12700099999993) [subclass of the abstract state that](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=49.05881918181813) [implements behaviors specific to a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=51.12700099999993) [particular state of the context. Looked at](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=52.73414385714279) [another way, we have the context, an](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=55.62700099999993) [abstract state, and any number of concrete](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=58.210334333333265) [states. The concrete states derive from](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=60.543667666666614) [the abstract state implementing the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=62.75200099999993) [interfaces defined in it. The context](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=64.87700099999994) [maintains a reference to one of the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=67.27700099999994) [concrete states as its current state via](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=69.07700099999992) [the abstract state base class. And that's](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=71.21033433333326) [all there is to it. It's not a complicated](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=73.44842957142852) [pattern to implement, but it does force](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=76.0198581428571) [you to take a different approach to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=77.67700099999995) [structuring your code. And you do so by](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=79.12700099999994) [identifying the states your object can be](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=81.54366766666658) [in, the conditions for transitioning](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=84.44842957142852) [between these states, and the state of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=86.59128671428566) [your object when it's initialized or its](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=89.21033433333325) [initial state. Let's do this now for the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=91.87700099999994) [booking process. Our simplified booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=94.37700099999994) [process can be in one of four possible](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=96.37700099999994) [states. It's either new, closed, pending,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=98.62700099999994) [or booked. When in the new state and the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=102.44842957142848) [date for the event passes, it transitions](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=105.04366766666664) [to the closed state. A new booking will](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=106.5436676666666) [also transition to the closed state if the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=108.67700099999995) [user cancels. If information is submitted](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=110.87700099999994) [for processing, it transitions from the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=113.21033433333325) [new state to pending. If that processing](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=115.37700099999994) [is successful, it transitions from pending](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=117.47700099999994) [to the booked state. If it fails, it](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=119.37700099999994) [transitions from pending back to the new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=122.0198581428571) [state. And if the user cancels, it](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=123.67700099999995) [transitions to closed. When in the booked](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=126.12700099999994) [state, the date for the event can pass or](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=127.67700099999995) [the user can cancel, both of which will](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=130.0770009999999) [result in the booking transitioning to the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=131.87700099999992) [closed state. And since a booking starts](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=134.07700099999994) [in a new state, new is the initial state](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=135.98811211111106) [for the booking. You'll recall that in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=138.75200099999992) [looking at how the state design pattern](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=140.67700099999988) [addresses issues of state, that an object](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=141.87700099999992) [delegates execution of state-specific](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=145.07700099999994) [behaviors to one state object at a time.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=146.5436676666666) [Because of this, we can respond to the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=149.87700099999992) [date passing for an event when the booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=151.44842957142848) [is in the booked state without the need to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=153.25200099999992) [check if it's in the new state. And we can](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=154.96791009090904) [respond to the exact same condition while](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=157.5436676666666) [in the new state without first checking to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=159.12700099999992) [make sure that it's not booked or in any](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=161.01985814285706) [other state for that matter. Since a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=163.00200099999992) [booking can be in only one state at a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=165.21033433333324) [time, there will never be a need to test](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=166.71033433333315) [to see if it's in another state; it's](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=168.87700099999992) [simply not possible under this design. And](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=170.30557242857134) [while it may sound like a limitation, it's](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=173.12700099999992) [this built-in restriction that makes the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=175.12700099999992) [state design pattern so powerful allowing](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=177.00200099999992) [you as a developer to focus only on what](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=179.12700099999992) [should happen within a state without](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=181.44842957142848) [simultaneously worrying about how it may](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=183.37700099999992) [affect any other states regardless of how](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=185.30557242857134) [many you have. There's a lot going on in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=187.37700099999992) [this diagram. We'll be breaking it down a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=190.37700099999992) [piece at a time as you work through the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=191.4770009999999) [demo. You'll get started doing just that](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=193.54366766666664) [in the next clip when we jump from the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=195.07700099999985) [conceptual to the practical and begin](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=197.54366766666664) [implementing the state design pattern in C#.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=5&mode=live&start=200.87700099999992)

[The Abstract State](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live)

[So far you've been introduced to the state](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=2.8664789999998175) [pattern at the conceptual level. In this](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=4.644256777777596) [clip, you'll begin putting that knowledge](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=6.666478999999818) [to use and begin implementing the state](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=8.466478999999815) [pattern in the demo project. Before diving](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=10.533145666666487) [into code, let's spend a few moments](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=12.866478999999817) [looking at the mechanical components of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=14.866478999999817) [the pattern. You'll recall that there are](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=17.116478999999817) [three main components to the state design](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=19.116478999999817) [pattern, the context, an abstract state,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=21.46647899999981) [and any number of concrete states. The](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=23.866478999999817) [context is a class which maintains an](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=26.1521932857141) [instance of a concrete state as its](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=28.166478999999818) [current state. It also provides the means](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=30.266478999999823) [for setting or changing its state. The](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=32.86647899999982) [abstract state is an abstract class that](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=35.152193285714105) [defines an interface encapsulating all of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=37.26647899999982) [the state-specific behaviors. And concrete](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=40.06647899999982) [states are subclasses of the abstract](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=42.66647899999982) [state that implement behaviors specific to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=44.723621857142675) [a particular state of the context. The](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=46.61647899999982) [context interacts with these concrete](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=49.29505042857125) [states through the interface defined in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=51.437907571428404) [the abstract base state. Back in the demo](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=53.5331456666665) [project, in the Logic folder, there's a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=56.19981233333316) [file called BookingContext.cs. You can](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=59.466478999999815) [probably guess from the name that this](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=62.15219328571411) [will act as the context in our state](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=63.43790757142839) [pattern implementation. Go ahead and open](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=66.06647899999983) [it up. Currently, this class is in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=68.19981233333313) [same state as the Booking class at the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=70.36647899999981) [beginning of the naive implementation. It](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=72.58076471428556) [contains the same fields, some](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=75.06647899999982) [initialization in its constructor, the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=76.46647899999981) [stubbed-in methods for the booking's](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=79.29505042857124) [behaviors, and the same ShowState helper](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=81.4379075714284) [method for interacting with the UI. The](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=82.69981233333317) [rest again is up to you. We need to make](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=85.29505042857124) [some minor changes to the UI code so that](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=88.59375172727256) [it can interact with the context. In the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=90.61647899999981) [UI folder, navigate to the code-behind](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=93.36647899999981) [file for the MainWindow, MainWindow.xaml](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=95.36647899999981) [.cs. It holds a reference to our old](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=98.36647899999981) [Booking class in a field called booking.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=101.42203455555541) [Change the type of this declaration from](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=103.86647899999981) [Booking to BookingContext. Then in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=106.36647899999981) [btnCreate\_Click method, set the booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=109.6664789999998) [field from a new Booking to a new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=111.99147899999981) [BookingContext. That should be all we](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=115.36647899999981) [need. Make sure to save the file. Since](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=116.69981233333317) [the BookingContext class will act as the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=119.36647899999981) [context for the state pattern, it needs to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=121.75536788888873) [maintain a reference to a concrete](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=123.36647899999983) [implementation of an abstract base state](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=125.36647899999981) [as its current state. Let's create one](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=127.53314566666646) [now. In the Solution Explorer, right-click](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=129.61647899999983) [on the Logic folder, then select Add,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=131.46647899999982) [Class from the context menu, then call the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=135.36647899999983) [new class BookingState. This class will be](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=139.36647899999983) [both public and abstract, so we need to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=142.36647899999983) [add those modifiers to its declaration.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=145.46647899999985) [Abstract classes cannot be instantiated](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=147.86647899999983) [directly. They're used as a base for other](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=149.53314566666654) [classes. You can think of an abstract](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=152.49147899999983) [class as a kind of prototype or template](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=154.36647899999983) [for the classes that derive from it. In](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=156.5331456666665) [the body of the class, declare a public](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=159.03314566666648) [abstract void and call it EnterState, and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=160.86647899999986) [have it take one parameter of the type](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=163.08870122222206) [BookingContext called booking, then finish](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=164.86647899999983) [the declaration with a semicolon. Notice](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=167.72362185714266) [that the method has no implementation. By](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=170.1521932857141) [declaring the method abstract, we're](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=172.26647899999983) [indicating that the method must be](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=174.11647899999983) [overridden by the classes that derive from](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=175.61647899999983) [the BookingState class, the concrete](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=177.86647899999988) [states, and cannot be implemented in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=179.5331456666665) [base class itself. If working with](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=181.86647899999988) [abstract methods is new to you, don't](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=183.4119335454544) [worry, things will become clear as you put](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=184.6846608181817) [them to use. For now, declare another](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=186.9664789999999) [abstract void called Cancel. It too will](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=189.36647899999983) [take a single parameter of the type](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=191.72362185714266) [BookingContext called booking and be](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=193.86647899999986) [followed by a semicolon. We'll create](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=195.19981233333314) [another abstract void called DatePassed](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=196.72362185714266) [also taking a parameter of the type](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=198.86647899999983) [BookingContext called booking. And,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=200.86647899999983) [finally, add one more public abstract void](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=203.11647899999983) [called EnterDetails. This one will take](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=204.86647899999983) [three parameters, the first of the type](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=207.53314566666646) [BookingContext called booking, the second](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=210.36647899999983) [of the type string called attendee, and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=212.36647899999983) [the third of the type int called](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=214.19981233333317) [ticketCount. Remember that the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=216.53314566666657) [BookingContext class is acting as the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=218.06647899999984) [context for the state pattern. By passing](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=219.75536788888874) [it as a parameter to these methods, we're](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=221.31092344444428) [providing the concrete implementations of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=223.1521932857141) [state a reference to this context. These](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=224.5807647142855) [methods make up the interface for our](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=228.16647899999984) [abstract state, and it's through this](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=230.26647899999992) [interface that the context will interact](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=231.86647899999983) [with the concrete states. You'll be coding](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=233.5331456666665) [up these concrete states and begin seeing](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=235.72362185714266) [how this interaction works in the next clip.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=6&mode=live&start=237.72362185714266)

[Concrete States](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live)

[In this clip, you'll continue implementing](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=2.9594459999997635) [the state design pattern by creating the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=5.159445999999764) [booking's concrete states. Previously, we](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=7.4594459999997635) [determined that a booking can be in one of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=9.626112666666431) [four possible states. It's either new,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=12.209445999999764) [closed, pending, or booked. Each of these](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=14.673731714285477) [will be represented in code as a concrete](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=17.70944599999976) [state, which as we discussed is a concrete](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=20.08444599999976) [implementation of an abstract state, in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=22.70944599999976) [our case the BookingState class. So you'll](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=24.45944599999976) [be creating four new classes, one for each](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=27.53087457142833) [of these states. Back in Visual Studio,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=29.959445999999758) [right-click on the Logic folder and then](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=32.292779333333094) [select Add Class from the context menu.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=34.62611266666644) [Call the new class NewState. Then to save](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=36.959445999999765) [yourself some time, repeat the process for](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=40.45944599999976) [the three remaining states, calling the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=42.459445999999765) [next one ClosedState, the next](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=45.709445999999765) [PendingState, then name the last one](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=50.084445999999765) [BookedState. With that done, tab over to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=53.459445999999765) [the NewState code file. The NewState class](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=56.35944599999976) [will derive from BookingState since it's](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=59.24516028571406) [to be an implementation of this abstract](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=61.292779333333094) [base class. Notice that the class name](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=63.15944599999976) [NewState is underlined in red. By hovering](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=65.95944599999979) [over it with your cursor, Visual Studio](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=68.53087457142834) [gives you a nice little tool tip informing](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=70.40389044444422) [you that NewState does not implement the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=72.38801742857119) [abstract members of its base,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=75.38801742857119) [BookingState. It even lists the members](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=77.53087457142834) [that need to be implemented. You'll recall](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=79.45944599999974) [that we declared those methods as](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=81.62611266666642) [abstract, meaning that any class that](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=83.62611266666639) [derives from BookingState must implement](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=85.20944599999976) [those methods, including this one. You can](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=86.81658885714262) [have Visual Studio stub out the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=89.53087457142834) [implementations of these methods for you](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=91.24516028571405) [by right-clicking and selecting Quick](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=92.95944599999976) [Actions and Refactoring, implement](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=94.45944599999976) [abstract interface from the context menu.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=96.38801742857119) [Notice that Visual Studio has stubbed in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=98.95944599999976) [an override for each of the four methods](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=101.29277933333306) [declared in the BookingState class. Let's](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=102.95944599999976) [delete the boilerplate throws from each of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=105.35944599999976) [these implementations. Make sure to save](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=108.15944599999978) [your work, then repeat the process for](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=109.62611266666644) [each of the remaining state classes, the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=111.38801742857119) [ClosedState, the PendingState, and the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=116.45944599999976) [BookedState. At this point, you have all](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=127.95944599999976) [of the components required to implement](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=131.75944599999983) [the booking process using the state design](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=133.35944599999974) [pattern. You have a context, the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=135.55944599999978) [BookingContext class, an abstract state,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=138.10230314285684) [BookingState, and four concrete states,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=140.45944599999976) [NewState, ClosedState, PendingState, and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=142.95944599999976) [BookedState, each of them deriving from](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=146.95944599999976) [BookingState. Awesome. All that's left now](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=149.62611266666647) [is to implement these classes and see them](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=151.84833488888867) [in action. You'll be doing just that in the next clip.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=7&mode=live&start=153.55944599999972)

[Context and State](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live)

[In this clip, you'll explore the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=3.015767999999691) [relationship between context and state in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=4.730053714285405) [the state design pattern. At this point,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=6.682434666666356) [you created an abstract state, the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=8.76576799999969) [BookingState class, and four](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=10.682434666666357) [implementations of this base as concrete](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=12.682434666666358) [states. We also identified the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=14.682434666666362) [BookingContext class as the context for](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=17.015767999999692) [this implementation of the pattern. It's](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=19.34910133333302) [time to get these pieces working together](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=21.265767999999692) [by fully implementing the context.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=23.015767999999692) [Recalling the description, we know that in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=26.015767999999692) [order for a class to act as the context,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=27.938844923076612) [it needs to maintain an instance of a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=30.015767999999692) [concrete state as its current state. So](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=31.765767999999692) [that's a good place to start. In the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=34.30148228571397) [BookingContext class, we'll declare a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=37.01576799999969) [private field of the type BookingState and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=39.015767999999696) [call it currentState. With this field](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=41.51576799999969) [created, we'll declare a public void and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=43.76576799999969) [call it TransitionToState, then have it](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=46.682434666666346) [take one parameter of the type](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=49.015767999999696) [BookingState called state. Then in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=51.015767999999696) [body of the method, we'll set currentState](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=52.87291085714254) [equal to the value of the state parameter](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=54.87291085714254) [being passed in. And with the currentState](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=57.73005371428541) [set, we'll call its EnterState method by](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=59.8157679999997) [typing currentState.EnterState passing in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=63.01576799999969) [this as the argument. And as the name](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=65.68243466666635) [implies, you'll use this method when](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=68.34910133333301) [transitioning from state to state. In the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=70.34910133333302) [first line, you're simply setting the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=72.5157679999997) [currentState field to the instance of a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=74.34910133333301) [concrete state being passed in as a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=76.44433942857115) [parameter. In the next, you're calling the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=78.68243466666634) [EnterState method of that concrete state.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=80.5157679999997) [Each concrete state uses the EnterState](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=83.0157679999997) [method for any code to be executed when](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=85.58719657142828) [the state is first entered. The keyword](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=87.7657679999997) [this represents the current instance of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=89.58719657142828) [the BookingContext class giving the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=91.5157679999997) [currentState a reference to the context to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=93.4157679999997) [use in the method. Cool! So now the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=95.34910133333301) [context has a way to both store and set](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=97.44433942857111) [its current state. Let's make use of it](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=99.8907679999997) [now in the constructor by calling](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=102.12687911111084) [TransitionToState, passing in a new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=104.34910133333304) [instance of the NewState class as the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=105.81576799999971) [argument since the NewState is the initial](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=107.73005371428545) [state of the process. Now when the process](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=109.81576799999968) [starts, the currentState of the context](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=112.21576799999968) [will be set to an instance of the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=114.0157679999997) [NewState, and the NewState's EnterState](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=115.79354577777752) [method will be called. In the body of the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=117.5157679999997) [SubmitDetails method, call](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=120.44433942857115) [currentState.EnterDetails, passing in this](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=122.5157679999997) [as the first argument, attendee as the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=124.87291085714257) [second, and ticketCount as the third. Then](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=127.01576799999968) [in the body of the Cancel method, call](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=129.2657679999997) [currentState.Cancel passing in this as the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=132.0157679999997) [argument. And in the DatePassed method,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=134.6824346666664) [call currentState.DatePassed also passing](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=136.0157679999997) [in this as the argument. Now when the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=138.58719657142825) [DatePassed method is called, instead of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=140.87291085714253) [implementing any of the booking's](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=142.7657679999997) [behaviors here in the context, the call is](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=144.6407679999997) [being passed to a method in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=146.83394981818154) [currentState. In other words, the context,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=148.7430407272725) [BookingContext, is delegating the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=150.6824346666664) [responsibility for handling the DatePassed](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=152.5157679999997) [method and any state-specific behaviors](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=154.61576799999972) [associated with it to an instance of a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=156.73005371428536) [concrete state, its currentState. And the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=159.6824346666664) [same is true of both the SubmitDetails and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=161.30148228571397) [Cancel methods. Instead of executing any](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=163.2157679999997) [behavioral code like updating the UI or](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=166.0157679999997) [submitting user information here on the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=168.2657679999997) [context, we're calling methods in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=169.7657679999997) [currentState, delegating to it the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=172.5157679999997) [responsibility for executing whatever code](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=174.61576799999972) [makes sense to that specific state. With](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=176.34910133333307) [this done, the BookingContext class is a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=178.5157679999997) [fully implemented context for our state](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=181.41576799999967) [pattern implementation. It maintains a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=183.81576799999968) [reference to a concrete instance of the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=185.7657679999997) [BookingState in a field called](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=187.7657679999997) [currentState, provides a means for setting](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=189.6407679999997) [currentState in its TransitionToState](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=191.6824346666664) [method, sets the initial state of the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=193.5157679999997) [process in its constructor, and it](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=196.41576799999973) [interacts with the currentState via](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=198.349101333333) [methods defined in the abstract state, the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=199.4443394285711) [BookingState base class. With the context](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=202.5157679999997) [complete, all of the pieces of our state](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=204.7657679999997) [pattern implementation are in place.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=207.5157679999997) [You'll be putting these pieces to work in the next clip.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=8&mode=live&start=210.0157679999997)

[Implementing the Pattern](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live)

[In this clip, you'll implement the booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=2.9494679999996443) [process using the state design pattern. In](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=4.699467999999644) [the previous clip, you coded up the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=8.199467999999644) [BookingContext class so that the process](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=10.28280133333298) [transitions to the new state when it](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=12.549467999999646) [begins, making new the initial state for](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=14.663753714285363) [the pattern. So let's start here. You'll](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=16.449467999999644) [recall that there are a few behaviors that](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=19.199467999999644) [need to be performed when entering this](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=21.171690222221866) [state. We need to assign a booking ID,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=22.727245777777416) [display the booking status or state, and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=24.949467999999644) [provide a means for entering data. And](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=28.23518228571393) [while in the new state, users will be able](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=30.116134666666312) [to submit their information, at which](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=31.949467999999644) [point the booking transitions from the new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=33.61613466666631) [to the pending state. With the NewState](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=35.806610857142495) [code file opened in Visual Studio,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=37.94946799999965) [navigate to the EnterState method, then](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=39.94946799999964) [set the booking's booking ID by typing](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=42.282801333332976) [booking.BookingID = new Random() .Next.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=45.37803942857107) [Then display the state of the booking by](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=48.94946799999964) [typing booking.ShowState passing in New as](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=50.5050235555552) [the argument. And, finally, enable data](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=53.83835688888854) [entry by calling booking.View](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=55.74946799999965) [.ShowEntryPage. Then in the EnterDetails](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=58.94946799999964) [method, set booking.Attendee equal to the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=61.549467999999635) [attendee parameter and booking.TicketCount](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=64.80661085714249) [to the ticketCount parameter. This code](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=66.94946799999964) [should look familiar. These are the same](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=69.74946799999965) [exact calls you used in the naive](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=71.61613466666633) [implementation, only now we're calling](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=73.61613466666628) [them via a reference to the context, the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=75.0403770909087) [BookingContext class, instead of in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=77.39391244444408) [context itself. Finally, we'll transition](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=80.06057911111074) [to the pending state by calling](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=81.80661085714252) [booking.TransitionToState passing in a new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=84.94946799999964) [instance of the PendingState as the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=86.74946799999965) [argument. When in the new state, the date](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=88.61613466666628) [for an event can pass, at which point the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=91.23518228571392) [booking will transition to the closed](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=92.74946799999965) [state, or the user can cancel also](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=94.61613466666628) [resulting in a transition to the closed](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=96.28280133333297) [state. When entering this state, the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=98.61613466666627) [application displays the state in the UI,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=100.32446799999964) [and it also displays the reason the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=102.94946799999964) [booking was closed. Back in Visual Studio,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=104.34946799999966) [this time with the ClosedState code file](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=106.94946799999964) [open, we'll give the ClosedState a field](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=109.57446799999964) [of the type string called reasonClosed.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=110.94946799999964) [And since a booking can be closed for](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=113.94946799999964) [multiple reasons, let's give it a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=116.34946799999962) [constructor taking one parameter also of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=117.94946799999964) [the type string called reason. Then in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=119.8066108571425) [body of the constructor, we'll set](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=122.80661085714252) [reasonClosed equal to reason. With that](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=124.6161346666663) [done, navigate to the body of the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=126.6161346666663) [EnterState method, then call](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=128.44946799999965) [booking.ShowState passing in the literal](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=130.28280133333297) [string Closed as the argument to display](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=132.28280133333303) [the booking status and booking.View](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=134.74946799999967) [.ShowStatusPage passing in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=137.28280133333297) [reasonClosed field as the argument to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=139.07446799999965) [display the reason. At this point the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=141.44946799999965) [ClosedState is technically fully](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=143.7494679999996) [implemented. A closed booking cannot be](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=145.44946799999965) [canceled and should not respond to the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=147.61613466666637) [date passing for an event, and we](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=149.04037709090878) [certainly don't want the user entering](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=150.3939124444441) [data. We could leave the methods for these](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=151.72724577777748) [events empty, and the ClosedState will](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=154.28280133333305) [simply ignore them, and that's acceptable,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=156.09232514285677) [but let's be nice and display an error. In](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=157.94946799999965) [the Cancel method, call booking.View](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=160.52089657142824) [.ShowError, passing in something like](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=163.37803942857116) [Invalid action for the state as the first](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=165.28280133333303) [argument, and Closed Booking Error as the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=167.69946799999965) [second. Then copy this call and paste it](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=169.66375371428532) [into the body of the DatePassed and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=172.04946799999973) [EnterDetails methods. Save the file, then](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=174.28280133333303) [switch back over to the NewState code](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=176.282801333333) [file. In the Cancel method, call](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=178.6161346666664) [booking.TransitionToState passing in a new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=181.94946799999965) [ClosedState, entering the literal string](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=184.54946799999968) [Booking Canceled as the argument for its](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=186.28280133333303) [constructor. Then in the DatePassed](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=189.44946799999965) [method, call booking.TransitionToState](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=191.54946799999968) [also passing in a new ClosedState, only](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=193.94946799999965) [this time pass the literal string Booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=196.23518228571393) [Expired to its constructor. Awesome! At](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=198.54946799999965) [this point, you've completed the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=202.23518228571393) [implementation of both the new and closed](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=203.66375371428532) [states and the transitions between them.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=204.8066108571425) [You've also coded the transition from the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=206.94946799999965) [new state to pending when the user submits](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=209.28280133333297) [their data. When entering the pending](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=211.28280133333303) [state, we need to display the status of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=213.54946799999968) [the booking to the user, and submit the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=215.11613466666626) [booking to some external system for](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=216.69946799999965) [processing. We also need to handle the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=218.61613466666637) [response from that system while in this](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=220.74946799999972) [state. If the response is successful, we](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=222.69946799999965) [transition to the booked state. If it](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=225.282801333333) [fails, we transition back to the new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=227.54946799999968) [state. And if the user cancels, we](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=229.64946799999976) [transition to closed. With the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=231.9494679999997) [PendingState code file opened in Visual](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=233.3939124444441) [Studio, add a using directive for](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=234.72724577777748) [System.Threading, and add a new field of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=238.28280133333294) [the type CancellationTokenSource called](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=240.9494679999997) [cancelToken to the class. Navigate to the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=242.34946799999966) [EnterState method, then set cancelToken](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=245.74946799999964) [equal to a new CancellationTokenSource.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=248.44946799999965) [Just like in the naive implementation,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=250.94946799999965) [we'll use this field to inform the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=252.94946799999965) [external system that the user has](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=254.50502355555525) [canceled. Then we'll update the UI by](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=256.54946799999965) [calling booking.ShowState passing in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=259.1994679999996) [Pending as the argument and booking.View](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=260.61613466666626) [.ShowStatusPage passing in Processing](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=263.9494679999996) [Booking to keep the user informed.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=265.94946799999957) [Finally, we'll pass the booking to our](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=267.9494679999996) [simulated external process by calling](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=269.7494679999996) [StaticFunctions.ProcessBooking passing](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=272.9494679999996) [booking as the first argument,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=274.28280133333294) [ProcessingComplete as the second, and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=275.9494679999996) [cancelToken as the third. You'll recall](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=279.3494679999996) [from the previous implementation that the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=281.61613466666626) [second argument is the name of the method](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=283.3494679999996) [the external process calls when it's](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=284.9494679999996) [completed. Let's code it up now by](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=287.5208965714283) [declaring a public void called](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=289.14946799999956) [ProcessingComplete that takes one argument](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=290.4494679999996) [of the type BookingContext called booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=292.9494679999996) [and another of the type ProcessingResult](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=294.9494679999996) [called result. Then in the body of the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=297.9494679999996) [method, we'll add a switch statement to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=299.80661085714263) [evaluate the ProcessingResult. If the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=301.4494679999996) [booking is a success, we'll call](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=303.61613466666626) [booking.TransitionToState, passing in a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=306.282801333333) [new BookedState as the argument. If the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=308.0744679999996) [processing fails, we'll display an error,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=310.6994679999996) [then call booking.TransitionToState](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=312.9494679999996) [passing in a new NewState as the argument.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=314.9494679999996) [And if the user cancels, we'll call](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=317.9494679999996) [booking.TransitionToState passing in a new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=320.282801333333) [ClosedState with the literal string](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=322.54946799999954) [Processing Canceled as its argument. That](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=323.9494679999996) [should be all we need to handle the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=326.1161346666663) [response from our external process. Scroll](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=328.0744679999996) [back up to the Cancel method. It's here](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=330.2351822857139) [that we'll let the external process know](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=332.3939124444441) [that the user has canceled. And just as](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=333.9494679999996) [before, we'll do that by calling the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=335.6994679999996) [Cancel method of the cancelToken field. At](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=337.4494679999996) [this point, you fully implemented the new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=340.28280133333294) [state and all of its transitions, the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=342.61613466666614) [closed state and the pending state and all](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=345.2351822857139) [of its transitions, leaving just one more](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=347.7494679999996) [state to code up, the booked state. Two](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=349.4494679999996) [things need to happen when we enter this](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=352.1494679999996) [state, we need to display the state in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=353.7494679999995) [UI and tell the user to enjoy the event.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=355.72724577777745) [We also need transitions for when the date](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=357.9494679999996) [for the event passes or the user cancels](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=360.9494679999996) [the booking. With the BookedState code](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=363.2828013333329) [file opened in Visual Studio, navigate to](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=365.2828013333329) [the EnterState method, then display the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=367.7494679999996) [current state by calling booking.ShowState](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=370.0744679999996) [passing in Booked as the argument. Then](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=371.9494679999996) [call booking.View .ShowStatusPage passing](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=374.9494679999996) [in the literal string Enjoy the Event as](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=378.1494679999996) [its argument. With that done, scroll up](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=380.2828013333329) [into the Cancel method, then call](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=382.6161346666662) [booking.TransitionToState passing in a new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=385.282801333333) [ClosedState with something like Booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=387.54946799999954) [canceled, Expect a refund as its argument.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=389.54946799999954) [And in the DatePassed method, call](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=391.9494679999996) [booking.TransitionToState also passing in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=394.9494679999996) [a new ClosedState using the literal string](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=396.94946799999957) [We hope you enjoyed the event as its](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=398.9494679999996) [argument. And that's it. We'll test it out](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=401.61613466666614) [and review your work as we close out the module and the course in the next clip.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=9&mode=live&start=403.4494679999996)

[Module Conclusion](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live)

[In this clip, you'll complete the module](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=2.2782679999996907) [and the course with a review of your work](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=4.378267999999689) [and the state design pattern. At this](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=6.914631636363326) [point, you've successfully completed a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=8.94493466666636) [state design pattern implementation of the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=10.722712444444136) [demo project. You modeled a simplified](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=13.389379111110804) [booking process by identifying the states](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=15.611601333333027) [a booking can be in-- new, closed,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=17.167156888888577) [pending, or booked-- and implementing the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=19.478267999999694) [transitions between these states. Let's](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=22.563982285713973) [run the application and test it out. The](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=24.52826799999969) [process starts with the booking in the new](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=26.578267999999692) [state. When in the new state, a booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=28.978267999999698) [can be canceled resulting in it being in a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=30.678267999999687) [closed state, the date for the event can](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=32.77826799999969) [pass also resulting in the booking being](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=34.9925537142854) [in a closed state, or the user can submit](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=36.47826799999971) [information resulting in the booking being](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=38.94493466666637) [in a pending state. A booking in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=40.3893791111108) [closed state cannot be submitted,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=43.27826799999969) [canceled, nor will it respond to the date](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=45.77826799999969) [for the event passing. A pending booking](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=48.187358909090605) [that returns successful will result in the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=50.2782679999997) [booking being booked, and a pending](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=52.42112514285683) [booking that fails processing will display](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=54.135410857142546) [an error then transition to the new state.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=55.878267999999686) [A pending booking will not respond to the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=58.27826799999969) [date for the event passing, but a pending](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=60.56398228571398) [booking can be canceled resulting in it](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=62.135410857142546) [being closed. And, finally, a booking in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=64.4782679999997) [the booked state can be canceled in which](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=66.52826799999968) [case it transitions to the closed state,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=68.11160133333304) [and we tell the user to expect a refund,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=70.27826799999968) [or the date for a booked event can pass](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=72.27826799999968) [where we also transition to the closed](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=74.27826799999968) [state and tell the user we hope they](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=76.02826799999968) [enjoyed the event. Awesome! Everything](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=78.37826799999966) [works great. And you managed the behavior](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=80.27826799999968) [of each of these states without resorting](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=81.77826799999967) [to Boolean fields and the conditional](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=83.67826799999969) [complexity of the naive approach. By using](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=85.40326799999968) [the state design pattern, you have code](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=87.94493466666634) [that's more modular, is easier to read and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=90.27826799999967) [maintain, is less difficult to debug, and](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=92.94493466666633) [since the logic for each state is](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=95.56398228571398) [maintained in its own class, much easier](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=97.44493466666636) [to extend. New states can be added or the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=99.27826799999968) [behaviors of existing states changed](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=101.84969657142827) [without the need to refactor the completed](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=103.27826799999968) [code of other states. As you can imagine,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=105.94493466666634) [I'm a fan of this state design pattern,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=108.27826799999968) [but it wouldn't be fair to close this](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=110.27826799999968) [course without at least mentioning some of](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=112.05604577777751) [the potential drawbacks. First of all,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=114.27826799999966) [they take some time to set up. This might](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=115.8782679999997) [not truly be a disadvantage as you get](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=117.84969657142827) [that time back and then some down the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=119.7782679999997) [road, but it is something to consider.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=121.11160133333307) [There are more moving parts. You completed](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=123.27826799999968) [the naive implementation in a single](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=125.94493466666634) [class, whereas the state pattern](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=127.94493466666631) [implementation of the same behaviors](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=129.8782679999997) [required six. This isn't a bad thing in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=131.61160133333306) [itself, but it has the potential of making](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=133.13541085714252) [your code more resource-intensive and in](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=134.94493466666637) [extreme cases can negatively impact](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=137.02826799999968) [performance. I've yet to run into a](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=138.90326799999968) [performance problem as a result of using](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=140.77826799999968) [the pattern, but the potential is there,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=141.99255371428538) [and it's certainly something you should be](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=144.27826799999968) [aware of. All things considered, the state](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=145.83382355555528) [design pattern is a great addition to your](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=147.70683942857107) [developer's toolkit. So if you have](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=149.77826799999968) [objects in your apps that have easily](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=151.27826799999968) [identifiable states and the code in your](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=153.4782679999997) [method is starting to look like spaghetti,](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=155.11160133333297) [the state design pattern may be just the](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=157.27826799999968) [tool you're looking for. I sincerely hope](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=159.27826799999968) [you enjoyed this course and that you're](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=161.13541085714252) [inspired to apply what you've learned to your own applications. Thank you.](https://app.pluralsight.com/player?course=c-sharp-design-patterns-state&author=marc-gilbert&name=db2cb1bd-8444-485c-b4cb-2be617939c57&clip=10&mode=live&start=162.77826799999966)