

Developing Cross-Platform Web Apps With Blazor

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v1.0

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Module 7: Forms and Validation

Module Overview

Module 7: Forms and Validation

Section 1: Forms

Lesson: Overview

Forms

- The EditForm component is Blazor's approach to managing user-input in a way that makes it easy to perform validation and represent validity state to the user
- Although it is possible to create forms using the standard `<form>` HTML element, its recommend to use the EditForm component because of the additional features it provides

The Form Model

- **The key feature to the EditForm is its Model parameter.** This parameter provides the component with a context it can work with to enable user-interface binding and determine whether or not the user's input is valid

```
@page "/"
```

```
<EditForm Model= Person>  
    <input type="submit" value="Submit" class="btn btn-primary" />  
</EditForm>
```

```
@code
```

```
{
```

```
    Person Person = new Person();
```

```
}
```

Detecting Form Submission

- When the **user clicks the Submit button**, the **EditForm** will trigger its **OnSubmit** event. You can use this event in the code to handle any business logic

```
@page "/"
```

```
<h1>Status: @Status</h1>
<EditForm Model= Person OnSubmit= FormSubmitted>
    <input type="submit" value="Submit" class="btn btn-primary" />
</EditForm>
```

```
@code
```

```
{
```

```
    string Status = "Not submitted";
```

```
    Person Person = new Person();
```

```
    void FormSubmitted()
```

```
    {
```

```
        Status = "Form submitted";
```

```
        // Post data to the server, etc
```

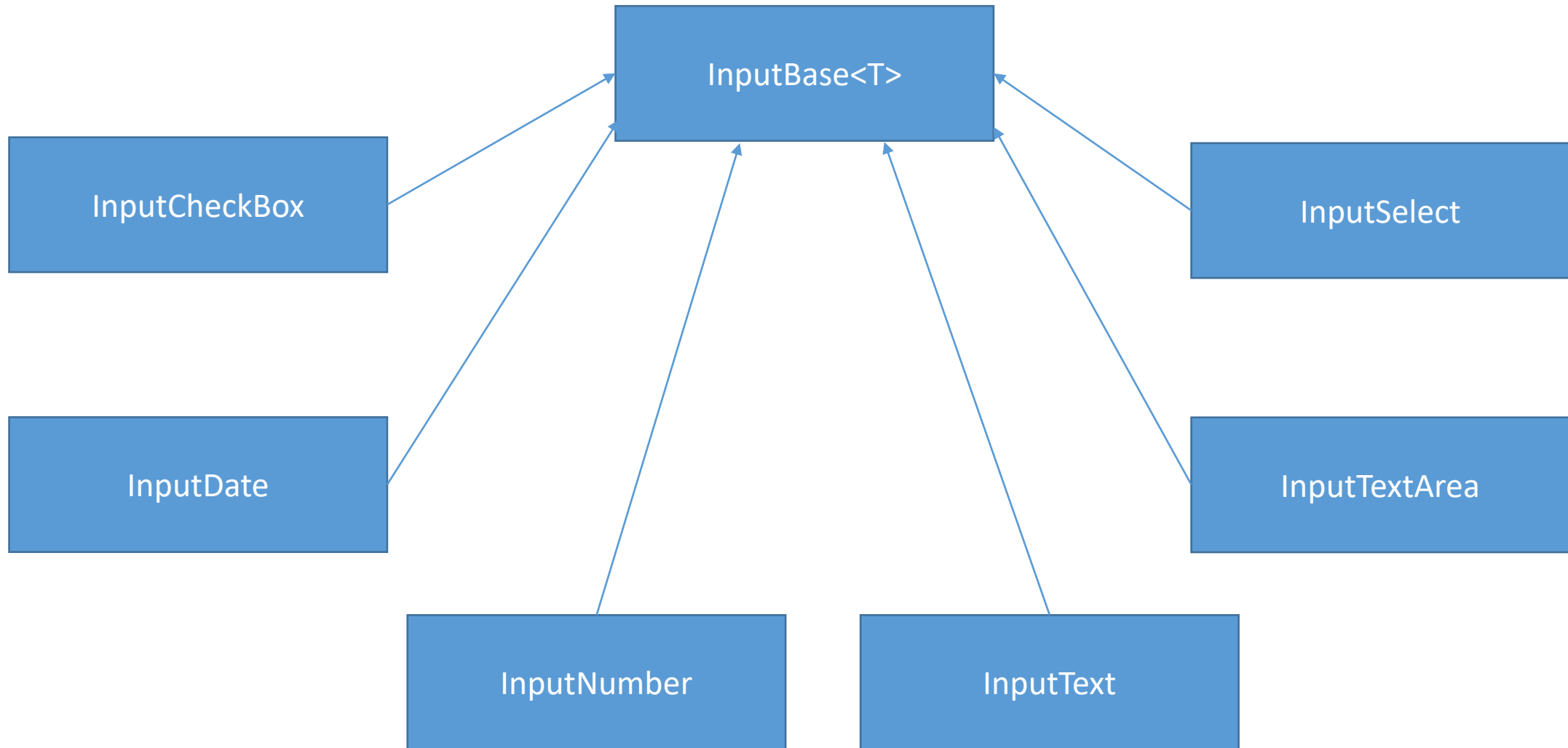
```
    }
```

```
}
```


Editing Form Data

- Because the EditForm component renders a standard <form> HTML element, it is actually possible to use standard HTML form elements such as <input> and <select> within our mark-up
- But as with the EditForm component it is recommended using the various **Blazor input controls**, because they **come with additional functionality such as validation**
- There is a **standard collection of input components** available in Blazor, all **descended from the base class InputBase<T>**

Editing Form Data



InputCheckbox

- The InputCheckbox component binds a Boolean property to an HTML <input> element with type="checkbox". This component does not allow binding to a nullable property
- **<InputCheckbox @bind-Value=FormData.SomeBooleanProperty />**

InputDate

- The InputDate component binds a DateTime property to an HTML <input> element with type="date". This component will bind to a nullable property, however, not all browsers provide the ability to specify a null value on an input element of this type
- **<InputDate @bind-Value=FormData.SomeDateTimeProperty
ParsingErrorMessage="Must be a date" />**

InputNumber

- The InputNumber component binds any kind of C# numerical property to an HTML <input> element with type="number"
- If the value entered cannot be parsed into the target property type the input will be considered invalid and will not update the Model with the value
- When the target property is nullable, an invalid input will be considered null and the text in the input will be cleared
- **<InputNumber @bind-Value=FormData.SomeIntegerProperty
ParsingErrorMessage="Must be an integer value" />**
- **<InputNumber @bind-Value=FormData.SomeDecimalProperty
ParsingErrorMessage="Must be a decimal value" />**

InputText

- The InputText component binds a string property to an HTML <input> element with no type specified. This enables specifying any of the available input types such as password, color, or one of the other options as specified in the W3 standards
- **<InputText @bind-Value=FormData.SomeStringProperty />**

InputTextArea

- The InputTextArea component binds a string property to an HTML <textarea> element
- **<InputTextArea @bind-Value=FormData.SomeMultiLineStringProperty />**

InputSelect

- The InputSelect component binds a property of any kind to an HTML <select> element. Blazor will automatically select the correct <option> based on the value of the property
- **<InputSelect @bind-Value=FormData.SomeSelectProperty>**
 - <option value="Pending">Pending</option>**
 - <option value="Active">Active</option>**
 - <option value="Suspended">Suspended</option>****</InputSelect>**

Demo: Forms

Module 7: Forms and Validation

Section 2: Validation

Lesson: Overview

Validation

- The **DataAnnotationsValidator** is the standard validator type in Blazor
- Adding this component within an EditForm component will enable form validation based on .NET attributes descended from `System.ComponentModel.DataAnnotations.ValidationAttribute`

Displaying Validation Error Messages

- Validation **error messages can be displayed to the user in two ways**
 - Add a **ValidationSummary** to show a comprehensive **list of all errors** in the form
 - Use the **ValidationMessage** component to display **error messages for a specific input** on the form
- These components are not mutually exclusive, so it is possible to use both at the same time

ValidationSummary

- The ValidationSummary component can simply be dropped into an EditForm into the mark-up; no additional parameters are required at all

ValidationMessage

- As the ValidationMessage component displays error messages for a single field, it requires specifying the identity of the field
- To ensure that the parameter's value is never incorrect (even when refactoring property names on the Person class) Blazor requires specifying an Expression when identifying the field
- The parameter, named For, is defined on the ValidationMessage as follows:

[Parameter]

```
public Expression<Func<T>> For { get; set; }
```

ValidationMessage

- This means to specify the identity of the field you should use a lambda expression, which can be presented either “quoted”, or wrapped in @(...)
- Quoted form
 - `<ValidationMessage For="() => Person.Name"/>`
- Razor expression form
 - `<ValidationMessage For=@(() => Person.Name)/>`
- Both forms are equivalent. The quoted form is easier to read, whereas the razor expression makes it more obvious to other developers that you are defining an expression rather than a string

ValidationMessage

- The Name field is required.
- Age must be between 18 and 80.

Name

The Name field is required.

Age

Age must be between 18 and 80.

Save

```
<DataAnnotationsValidator/>
```

```
<ValidationSummary/>
```

```
<div class="form-group">
```

```
<label for="Name">Name</label>
```

```
<InputText @bind-Value=Person.Name class="form-
```

```
<ValidationMessage For="() => Person.Name"/>
```

```
</div>
```

```
<div class="form-group">
```

```
<label for="Age">Age</label>
```

```
<InputNumber @bind-Value=Person.Age class="form-
```

```
<ValidationMessage For=@(() => Person.Age) />
```

```
</div>
```

```
<input type="submit" class="btn btn-primary" valu
```

```
</EditForm>
```


Demo: Validation

Module 7: Forms and Validation

Section 2: Validation

Lesson: Handling Form Submission

Handling Form Submission

- When rendering an EditForm component, Blazor will output an HTML `<form>` element
- Since this is a standard web control, you can provide the user with the ability to submit the form by adding an `<input>` with `type="submit"`
- Blazor will intercept form submission events and route them back through to the razor view. There are three events on an EditForm related to form submission:
 - OnValidSubmit
 - OnInvalidSubmit
 - OnSubmit
- **Each of these events pass an EditContext as a parameter**, which you can use to determine the status of the user's input

Handling Form Submission

- You can use none of these events or one of these events
 - OnValidSubmit
 - OnInvalidSubmit
 - OnSubmit
- The only situation where you can use two events is when you set OnValidSubmit and OnInvalidSubmit together. Neither of those two events can be consumed if OnSubmit is set

OnValidSubmit / OnInvalidSubmit

- The OnValidSubmit event is executed when the form passes validation
- The OnInvalidSubmit event is executed when the form fails validation

OnSubmit

- The OnSubmit event is executed when the form is submitted, regardless of whether the form passes validation or not
- It is possible to check the validity status of the form by executing `editContext.Validate()`, which returns true if the form is valid or false if it is invalid (has validation errors)

Enable The Submit Button Based On Form Validation

- To enable and disable the submit button based on form validation:
 - Use the form's `EditContext` to assign the model when the component is initialized
 - Validate the form in the context's `OnFieldChanged` callback to enable and disable the submit button
 - Unhook the event handler in the `Dispose` method
- Note: `Model` parameter is not used when explicitly passing the `EditContext`

Demo: Handling Form Submission

Custom Validation

- There are a lot of validation attributes provided with the Annotations library, but sometimes a new rule emerges that is not supported
- For these kinds of rules, we must create a custom attribute and apply it to our model class
- Steps to create custom validation
 - Create a class that inherits from the `ValidationAttribute` abstract class, which is the base class for the validation attributes
 - Create properties which we can set from the model class when calling this attribute
 - After the property creation, we have to override the `IsValid` method that accepts two parameters. The `value` parameter will hold the value the user enters in the input field. The `validationContext` parameter describes the context in which we perform the validation

Demo: Dynamic Form Validation

Module Summary

- In this module, you learned about:
 - Forms
 - Editing Forms Data
 - Validation
 - Handling Form Submission



Lab 7: Forms and Validation



References

- [Microsoft Docs](#)
- [Blazor University](#)

