



.NET Core: Developing Cross-Platform Web Apps with ASP.NET Core – Workshop*PLUS*

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v3.0

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Module 7: Validation

Module Overview

Module 7: Validation

Section 1: Validation Fundamentals

Lesson: Overview

What is Validation?

Validation

- Validating user inputs and enforcing business rules/logic is a core requirement of most web applications
- Server-side validation
 - Should be done with or without client-side validation
 - Model Validation with Data Annotations
- Client-side validation
 - Unobtrusive validation
 - Extending
 - Remote
- “Don’t Repeat Yourself”

Data Annotations

- The attribute is declared on the server-side property via metadata
- Built-in validation attributes

Attribute	Description
CompareAttribute	Compares the value of two model properties. Validation succeeds if they are equal
RemoteAttribute	Leverages jQuery Validate to call an action on the server to perform server-side validation with AJAX
RequiredAttribute	Indicates that a value is required
RangeAttribute	Indicates the numeric range constraints for the field value
RegularExpressionAttribute	A data field value must match the specified
StringLengthAttribute	Specifies the maximum string length

Range Attribute

Example: Range Attribute in Model Metadata

```
[Range(1, 5)]  
public int Rating { get; set; }
```

Range Attribute Rendered Output

- Example: HTML rendered in View with jQuery unobtrusive validation attributes

```
<input class="text-box single-line" data-val="true" data-val-  
number="The field Rating must be a number." data-val-range="The  
field Rating must be between 1 and 5." data-val-range-max="5"  
data-val-range-min="1" data-val-required="The Rating field is  
required." id="Rating" name="Rating" type="number" value="" />
```

- Example: HTML rendered script references

```
<environment names="Development">  
  <script src="~/lib/jquery-validation/dist/jquery.validate.js"></script>  
  <script src="~/lib/jquery-validation-unobtrusive/jquery.validate.unobtrusive.js"></script>  
</environment>  
<environment names="Staging,Production">  
  <script src="https://ajax.aspnetcdn.com/ajax/jquery.validate/1.14.0/jquery.validate.min.js"  
    asp-fallback-src="~/lib/jquery-validation/dist/jquery.validate.min.js"  
    asp-fallback-test="window.jQuery && window.jQuery.validator">  
  </script>
```

Data Annotations & ModelState

```
[HttpPost]
public ActionResult Edit(Game game)
{
    if (ModelState.IsValid)
    {
        db.Entry(game).State = EntityState.Modified;
        db.SaveChanges();
        return RedirectToAction("Index");
    }
    return View(game);
}
```

```
[HttpPost]
public ActionResult Create(Game game)
{
    if (ModelState.IsValid)
    {
        try
        {
            db.Games.Add(game);
            db.SaveChanges();
            return RedirectToAction("Index");
        }
        catch (DbUpdateException ex)
        {
            ModelState.AddModelError("", ex.Message);
        }
    }

    return View(game);
}
```

```
[HttpPost]
public ActionResult Create(Game game)
{
    if (ModelState.IsValid)
    {
        db.Games.Add(game);
        db.SaveChanges();
        return RedirectToAction("Index");
    }
    return View(game);
}
```

Validation

- ValidationMessage
- ValidationSummary

```
@Html.ValidationMessageFor(model => model.Rating)
```

```
@Html.ValidationMessage("GameName", "some message")
```

```
@Html.ValidationSummary()
```

```
<span asp-validation-for="Rating" class="text-danger"></span>
```

```
<div asp-validation-summary="ValidationSummary.All" class="text-danger"></div>
```

Remote Attribute

```
public class Person
{
    public int Rating { get; set; }

    [Required(ErrorMessage = "Please enter your first name")]
    public string FirstName { get; set; }

    [Required]
    [DataType(DataType.EmailAddress)]
    [Remote("ValidateEmailAddress", "Home")]
    public string Email { get; set; }
}
```

```
public IActionResult ValidateEmailAddress(string email)
{
    bool result = email == "wael.kdouh@microsoft.com";
    return Json(result ?
        "true" : string.Format("an account for address {0} already exists.",
email));
}
```

Validation != Security

- Include List

```
// include list
[HttpPost]
public ActionResult Edit([Bind(Include = "GameName")]
Game game)
{
    // ...
}
```

- Bind against interface

```
[HttpPost]
public ActionResult Create(Game game)
{
    if (TryUpdateModel<IGameModel>(game))
    {
```

- Use ViewModel (Model-View-ViewModel (MVVM))

```
[HttpPost]
public ActionResult Create(GameViewModel game)
{
```

Client-side Validation

- Built-in jQuery validation methods

Validation Method	Description
<code>minlength(length)</code> Returns: Boolean	Makes the element require a given minimum length
<code>maxlength(length)</code> Returns: Boolean	Makes the element require a given maximum length
<code>min(value)</code> Returns: Boolean	Makes the element require a given minimum
<code>max(value)</code> Returns: Boolean	Makes the element require a given maximum
<code>email()</code> Returns: Boolean	Makes the element require a valid email
<code>url()</code> Returns: Boolean	Makes the element require a valid URL
<code>dateISO()</code> Returns: Boolean	Makes the element require a ISO date
<code>number()</code> Returns: Boolean	Makes the element require a decimal number
<code>digits()</code> Returns: Boolean	Makes the element require digits only
<code>creditcard()</code> Returns: Boolean	Makes the element require a creditcard number
<code>accept(extension)</code> Returns: Boolean	Makes the element require a certain file extension
<code>equalTo(other)</code> Returns: Boolean	Is Equal To

DataType Attribute

- Use **DataType** Attribute to leverage the existing jQuery validators, or add them to custom client validation rules by name

```
[DataType(DataType.CreditCard)]  
public string CreditCard { get; set; }  
  
[DataType(DataType.EmailAddress)]  
public string Email { get; set; }  
  
[DataType(DataType.Url)]  
public string Url { get; set; }
```


Handling Validation Errors in Web API

- Web API does not automatically return an error to the client when validation fails
- Use the controller action to check for model state, and respond appropriately through HTTP.

```
[HttpPost]
public void CreateTodoItem([FromBody] TodoItem item)
{
    if (!ModelState.IsValid)
    {
        HttpContext.Response.StatusCode = 400;
    }
}
```

Demo: Validation

Module Summary

- In this module, you learned about:
 - Validation
 - Data Annotations
 - Client-Side and Server Side Validation
 - Validation != Security



Lab: Validation in ASP.NET MVC



