# Validating Data and Reporting Validation Errors

**Kevin Dockx**

Architect

@KevinDockx https://www.kevindockx.com

# Coming Up

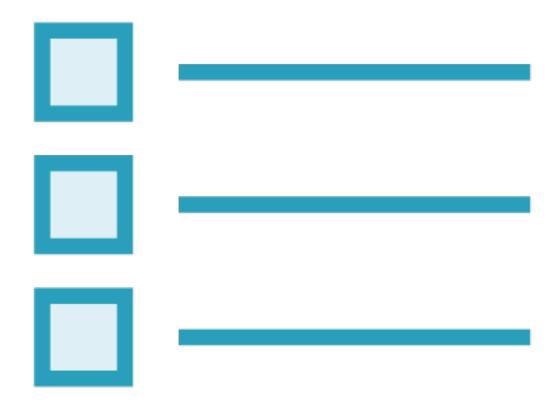**Working with validation in a RESTful world**

**Reporting validation problems**

– Problem details RFC

# Working with Validation in a RESTful World

**Defining validation rules**

**Checking validation rules**

**Reporting validation errors**

# Working with Validation in a RESTful World



**Defining validation rules**

# Defining Validation Rules

**In ASP.NET Core rules are defined through**

- Data annotations (built-in or custom)
- `IValidatableObject`

**Focus on input validation**

# Working with Validation in a RESTful World

**Defining validation rules**

**Checking validation rules**

# Checking Validation Rules

`ModelState`

- A dictionary containing both the state of the model, and model binding validation
- Contains a collection of error messages for each property value submitted

`ModelState.IsValid()`

# Working with Validation in a RESTful World

**Defining validation rules**

**Checking validation rules**

**Reporting validation errors**

# Reporting Validation Errors

**Response status should be 422 – Unprocessable entity**

**Response body should contain validation errors**

  – Problem details RFC

Demo

Validating input with data annotations

# Validation and the ApiController Attribute

**When a controller is annotated with the** `[ApiController]` **attribute it will automatically return a 400 Bad Request on validation errors**

# Demo

**Customizing error messages**

# Reporting Validation Errors

**Problem details for HTTP APIs RFC (https://tools.ietf.org/html/rfc7807)**

- Defines common error formats for those applications that need one
- Allows identifying distinct problem types specific to API needs

# Reporting Validation Errors

```
Content-Type: application/problem+json

{
    "errors": {
        "title": [
            "The title shouldn't have more than 100 characters."
        ]    },
    "type": "https://tools.ietf.org/html/rfc7231#section-6.5.1",
    "title": "One or more validation errors occurred.",
    "status": 400,
    "traceId": "00-f303f218c960a22c1d820b6478b4af5f-fd233fa633c4709e-00"
}
```

# Reporting Validation Errors

```
Content-Type: application/problem+json

{
    "errors": {
        "title": [
            "The title shouldn't have more than 100 characters."
        ]    },
    "type": "https://tools.ietf.org/html/rfc7231#section-6.5.1",
    "title": "One or more validation errors occurred.",
    "status": 400,
    "traceId": "00-f303f218c960a22c1d820b6478b4af5f-fd233fa633c4709e-00"
}
```
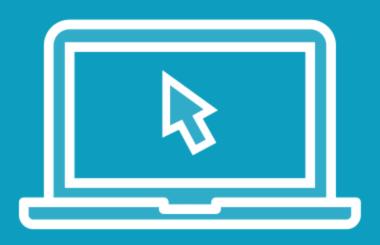
# Reporting Validation Errors

```
Content-Type: application/problem+json

{
    "errors": {
        "title": [
            "The title shouldn't have more than 100 characters."
        ]    },
    "type": "https://tools.ietf.org/html/rfc7231#section-6.5.1",
    "title": "One or more validation errors occurred.",
    "status": 400,
    "traceId": "00-f303f218c960a22c1d820b6478b4af5f-fd233fa633c4709e-00"
}
```

# Reporting Validation Errors

```
Content-Type: application/problem+json

{
    "errors": {
        "title": [
            "The title shouldn't have more than 100 characters."
        ]    },
    "type": "https://tools.ietf.org/html/rfc7231#section-6.5.1",
    "title": "One or more validation errors occurred.",
    "status": 400,
    "traceId": "00-f303f218c960a22c1d820b6478b4af5f-fd233fa633c4709e-00"
}
```

# Reporting Validation Errors

```
Content-Type: application/problem+json

{
   "errors": {
       "title": [
           "The title shouldn't have more than 100 characters."
       ]    },
    "type": "https://tools.ietf.org/html/rfc7231#section-6.5.1",
    "title": "One or more validation errors occurred.",
    "status": 422,
    "detail": "See the errors property for details.",
    "instance": "/api/authors/2902b665-1190-4c70-9915-b9c2d7680450/courses",
    "extensions": {
       "traceId": "0HLO3MNBSPFI2:00000001"
}}
```

# Reporting Validation Errors

```
Content-Type: application/problem+json

{
    "errors": {
        "title": [
            "The title shouldn't have more than 100 characters."
        ]    },
    "type": "https://tools.ietf.org/html/rfc7231#section-6.5.1",
    "title": "One or more validation errors occurred.",
    "status": 422,
    "detail": "See the errors property for details.",
    "instance": "/api/authors/2902b665-1190-4c70-9915-b9c2d7680450/courses",
    "extensions": {
        "traceId": "0HLO3MNBSPFI2:00000001"
}}
```

# Reporting Validation Errors

```
Content-Type: application/problem+json

{
   "errors": {
       "title": [
           "The title shouldn't have more than 100 characters."
       ]    },
    "type": "https://tools.ietf.org/html/rfc7231#section-6.5.1",
    "title": "One or more validation errors occurred.",
    "status": 422,
    "detail": "See the errors property for details.",
    "instance": "/api/authors/2902b665-1190-4c70-9915-b9c2d7680450/courses",
    "extensions": {
        "traceId": "0HLO3MNBSPFI2:00000001"
}}
```
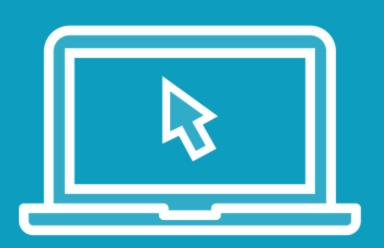
# Reporting Validation Errors

```
Content-Type: application/problem+json

{
   "errors": {
       "title": [
           "The title shouldn't have more than 100 characters."
       ]   },
   "type": "https://tools.ietf.org/html/rfc7231#section-6.5.1",
   "title": "One or more validation errors occurred.",
   "status": 422,
   "detail": "See the errors property for details.",
   "instance": "/api/authors/2902b665-1190-4c70-9915-b9c2d7680450/courses",
   "extensions": {
       "traceId": "0HLO3MNBSPFI2:00000001"
}}
```
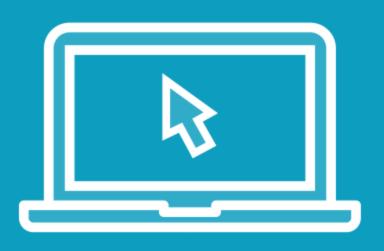
# Demo

**Customizing validation error responses**
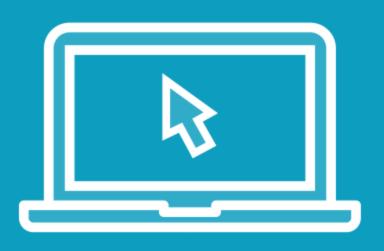
Demo

Validating input when updating a resource with PUT

# Demo

**Class-level input validation with** `IValidatableObject`

# Demo

**Class-level input validation with a custom attribute**
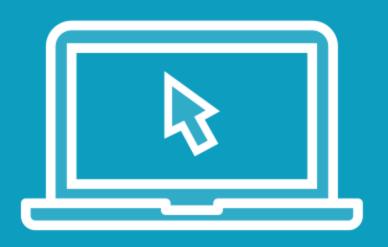
# Demo

**Validating input when updating a resource with PATCH**

# Demo

**Returning validation problems from controller actions**

Demo

**Validating input when upserting with PATCH**

Summary

**Define the rules**

- Data annotations

- `IValidatableObject`

**Check the rules**

- `ModelState.IsValid()`

- Automated thanks to `[ApiController]`

**Report errors**

- 422 Unprocessable entity

- Problem details RFC

# Up Next:
# Supporting Filtering and Searching