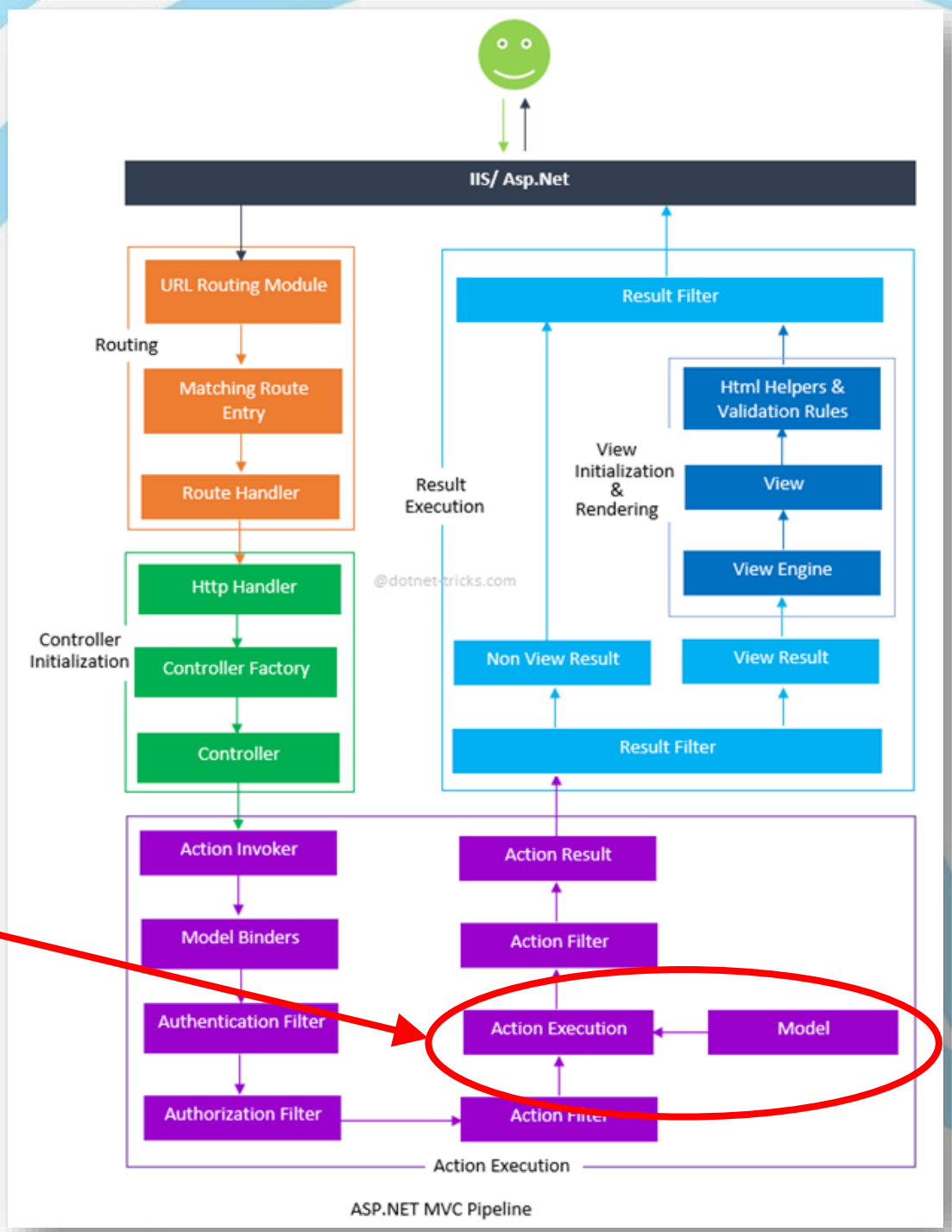
Module 3 Day 9

Form Validation

What makes an application?

- Program Data
  - ✓ Variables & .NET Data Types
  - ✓ Arrays
  - ✓ More Collections (list, dictionary, stack, queue)
  - ✓ Classes and objects (OOP)
- Program Logic
  - ✓ Statements and expressions
  - ✓ Conditional logic (if)
  - ✓ Repeating logic (for, foreach, do, while)
  - ✓ Methods (functions / procedures)
  - ✓ Classes and objects (OOP)
  - ❖ Frameworks (MVC)
- Input / Output
  - User
    - ✓ Console read / write
    - ✓ HTML / CSS
    - ❑ Front-end frameworks (HTML / CSS / JavaScript)
  - Storage
    - ✓ File I/O
    - ✓ Relational database
    - ❑ APIs

The "Pipeline"



You are here

TempData

- Similar to Session data, but stores data for this and next request
- Access it like you access ViewData
- Store:

```
TempData["myKey"] = "myValue";
```

- Retrieve:

```
string theData = (string)TempData["myKey"];
```

- Often used in conjunction with Redirects to "pass" data
- Example: Add City

Form Data Validation

- Client-side validation
  - Ensures data sent to server is good; if not, no data is sent
  - Tells the user there is an issue before data is sent to the server
  - Implemented using HTML5 controls and/or JavaScript
  - Provides a good user experience, **nice to have**
  - Can be bypassed
- Server-side validation
  - Implemented on server, after data is sent
  - Last layer of protection for the data, **must have**
  - Cannot be bypassed

Server-side Data Validation

- Model
  - Model defines the “rules” for valid data
  - [Attributes] are used to declare the rules
- The MVC Framework validates the data
  - Data is validated before the Controller is called
  - Validation can also be called when needed
- View
  - Accepts user data
  - Shows validation messages to the user
- Controller
  - Checks the status of validation and determines what to do
  - E.g., if validation errors exist, then re-display the view,
  - Else, update the database

Validation – The Model – Data Annotations

- [CreditCard]: Validates that the property has a credit card format
- [Compare]: Validates that two properties in a model match
- [EmailAddress]: Validates that the property has an email format
- [Phone]: Validates that the property has a telephone number format
- [Range]: Validates that the property value falls within a specified range
- [RegularExpression]: Validates that the property value matches a specified regular expression
- [Required]: Validates that the field is not null.
- [StringLength]: Validates that a string property value doesn't exceed a specified length limit
- [Url]: Validates that the property has a URL format
- [DataType(DataType.Date]) - DataType.EmailAddress, DataType.Password
- https://docs.microsoft.com/en-us/dotnet/api/system.componentmodel.dataannotations?view=netcore-2.2
- https://docs.microsoft.com/en-us/aspnet/core/tutorials/first-mvc-app/validation?view=aspnetcore-2.2

Validation – The View – Tag Helpers

- <input asp-for="Name" />

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Validation – The Controller

- Framework validates and sets the Model State
- Controller must check Model State before acting
- If the Controller changes the model, TryValidateModel(theModel) can be called.

```
[HttpPost]
[ValidateAntiForgeryToken]
public IActionResult New(Movie movie)
{
    // See if there are errors
    if (!ModelState.IsValid)
    {
        // Display the New View again
        // with the errors
        return View(movie);
    }

    // otherwise save the movie
    movieDal.Create(movie);
    return RedirectToAction("Success");
}
```