Action Method Execution

Alex Wolf

www.alexwolfthoughts.com

The MVC Request Life Cycle

Request →

Routing

URL Routing Module
MVC Route Handler
MVCHandler

→

Controller Initialization

Controller Factory
Activator
Dependency Resolution

→

Action Execution

Model Binding

Action Filters
(Action Executing)

Action Execution

Action Filters
(Action Executed)

Action Result

←

Result Execution

Result Filter
(Result Executing)

Invoke Action Result

View →

View Engine

Find and
Render View

←

Result Execution

Result Filter
(Result Executed)

← Response
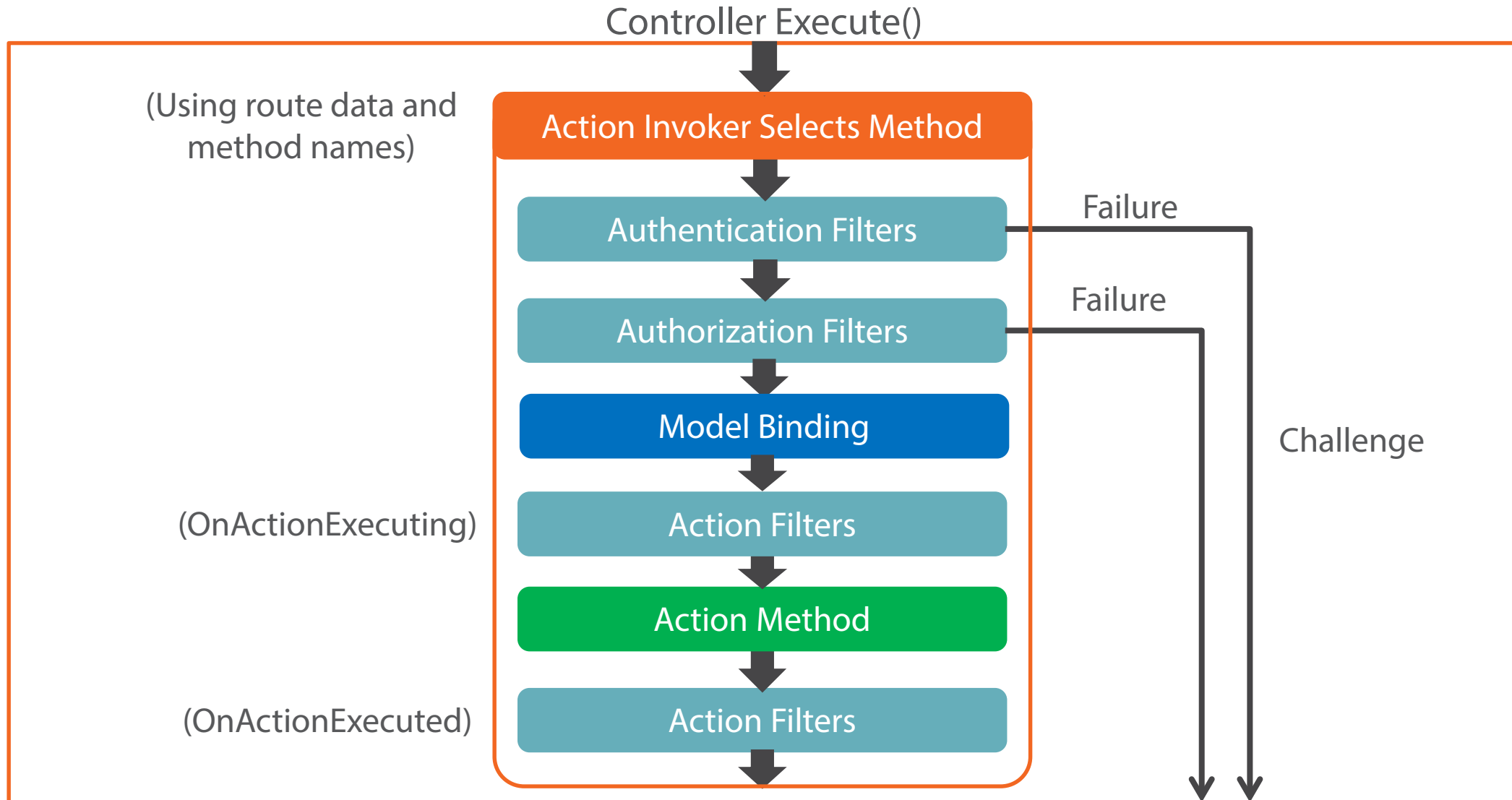
Other ActionResult →

Module Outline

- Action Methods and the Life Cycle

- Understanding the Action Invoker

- Making decisions with Action Selectors

- Influencing the request with Filters

- The Model Binding process

The Action Method Execution Process

Controller Execute()

(Using route data and
method names)

Action Invoker Selects Method

Authentication Filters — Failure

Authorization Filters — Failure

Model Binding

(OnActionExecuting)

Action Filters

Action Method

(OnActionExecuted)

Action Filters

Challenge

The Action Invoker

The IActionInvoker Interface

```
public interface IActionInvoker()
{
        bool InvokeAction(ControllerContext controllerContext, string actionName);
}
```

- MVC Framework provides the powerful ControllerActionInvoker

- Can customize default behavior using extension points

Action Method Selectors

Common Action Selectors
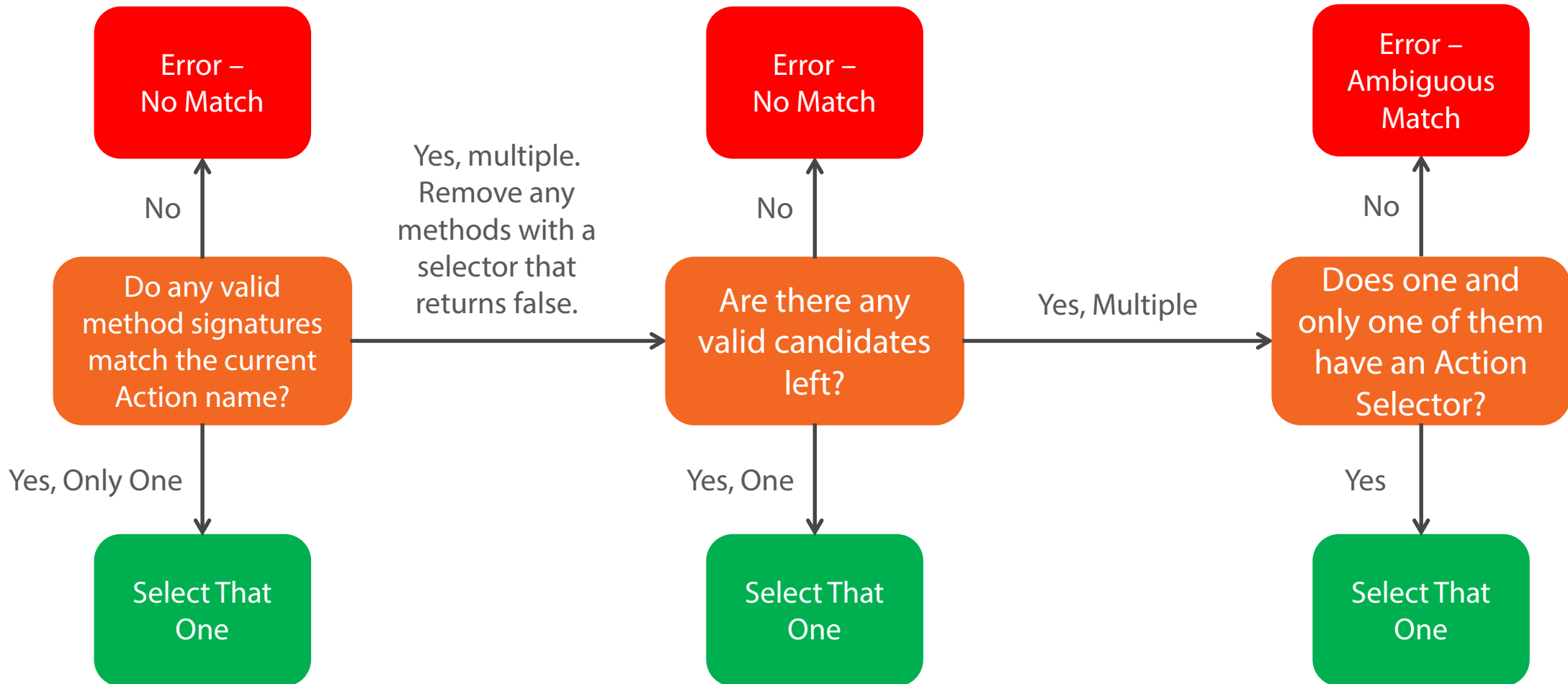
[HttpGet]

[HttpPost]

[AcceptVerbs]

[ActionName]

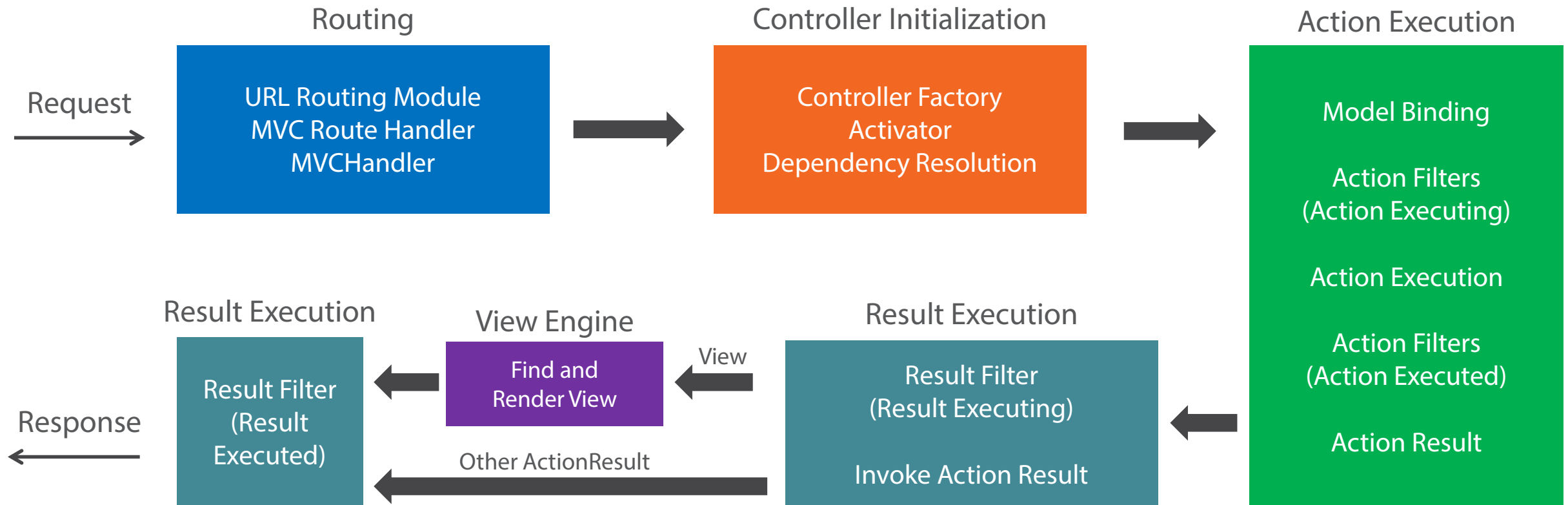[NonAction]

[Custom]

Selecting an Action Method

Working with Action Selectors

```csharp
[HttpGet]
public ActionResult Register()
{
    return View();
}

[HttpPost]
public ActionResult Register(RegistrationInfo personalInfo)
{
    return View(personalInfo);
}
```
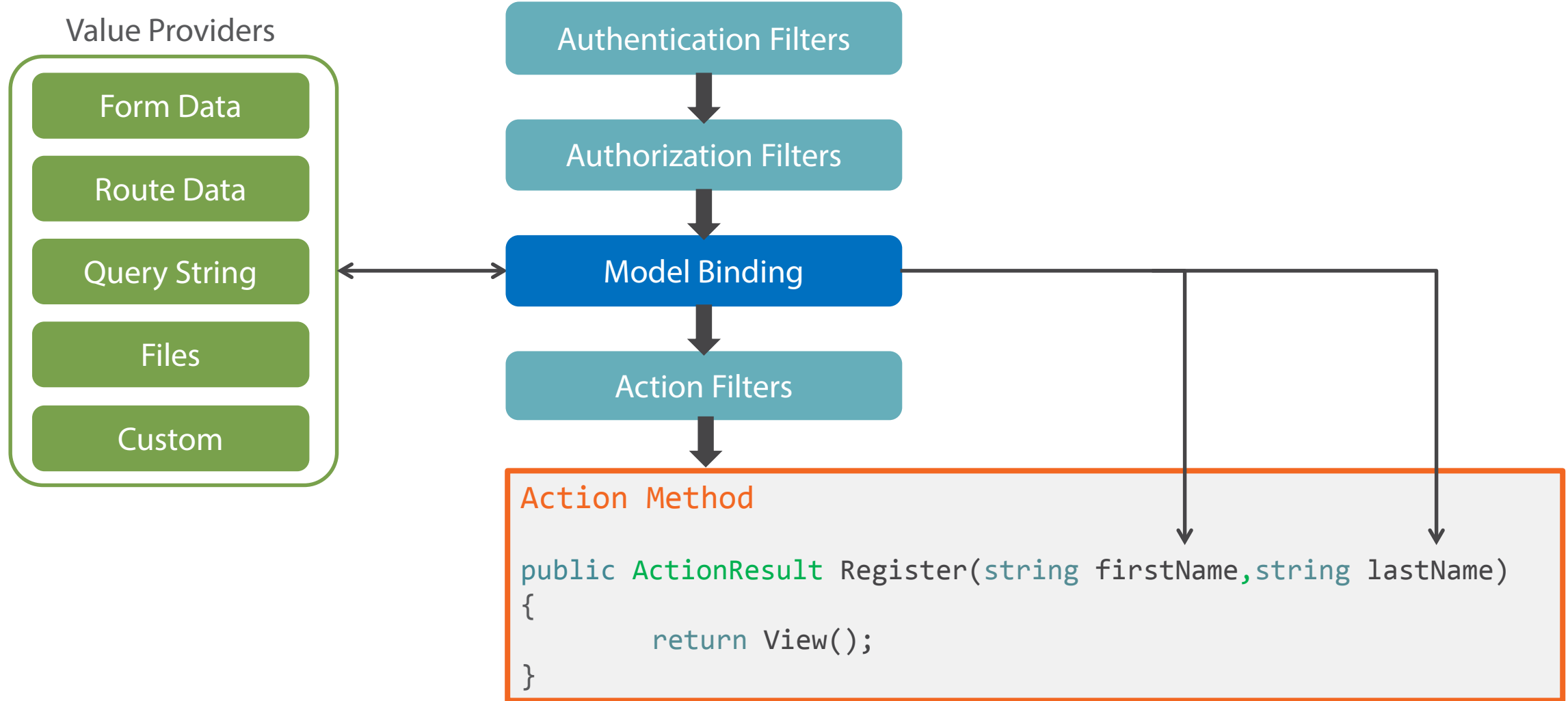
Influencing the MVC Request Life Cycle

Routing

Request →

URL Routing Module MVC Route Handler MVCHandler

→

Controller Initialization

Controller Factory Activator Dependency Resolution

→

Action Execution

Model Binding Action Filters (Action Executing) Action Execution Action Filters (Action Executed) Action Result

Result Execution

Result Filter (Result Executed)

Response ←

View Engine

Find and Render View

← **View**

Result Execution

Result Filter (Result Executing) Invoke Action Result

←

Other ActionResult

Creating Custom Action Selectors

```csharp
public class CustomSelector : ActionMethodSelectorAttribute
{
        public override bool IsValidForRequest(ControllerContext controllerContext,
        MethodInfo methodInfo)}
}
```

The Model Binding Process

Value Providers

- Form Data
- Route Data
- Query String
- Files
- Custom

Authentication Filters

Authorization Filters

Model Binding

Action Filters

```
Action Method

public ActionResult Register(string firstName, string lastName)
{
        return View();
}
```

The IModelBinder Interface

```
public interface IModelBinder
{
        public object BindModel(ControllerContext controllerContext,
        ModelBindingContext bindingContext)}
}
```
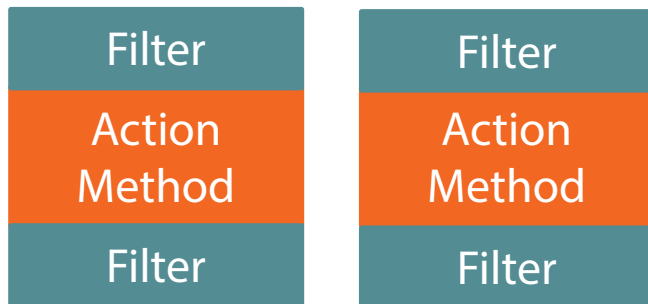
Filter Types
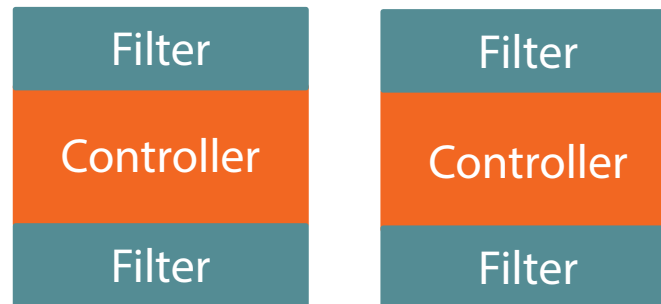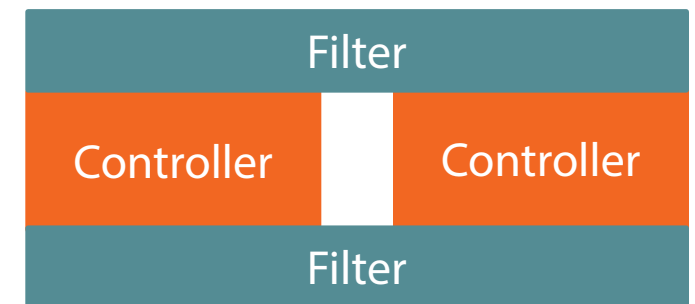
The Filter Execution Process

Authentication Filters

↓

Authorization Filters

↓

Model Binding

↓

Action Filters

↓

Action Method

↓

Action Filters

Execution Order

	Filter
1	Filter
2	Filter
3	Filter

Action Method

3	Filter
2	Filter
1	Filter

OnActionExecuting

OnActionExecuted
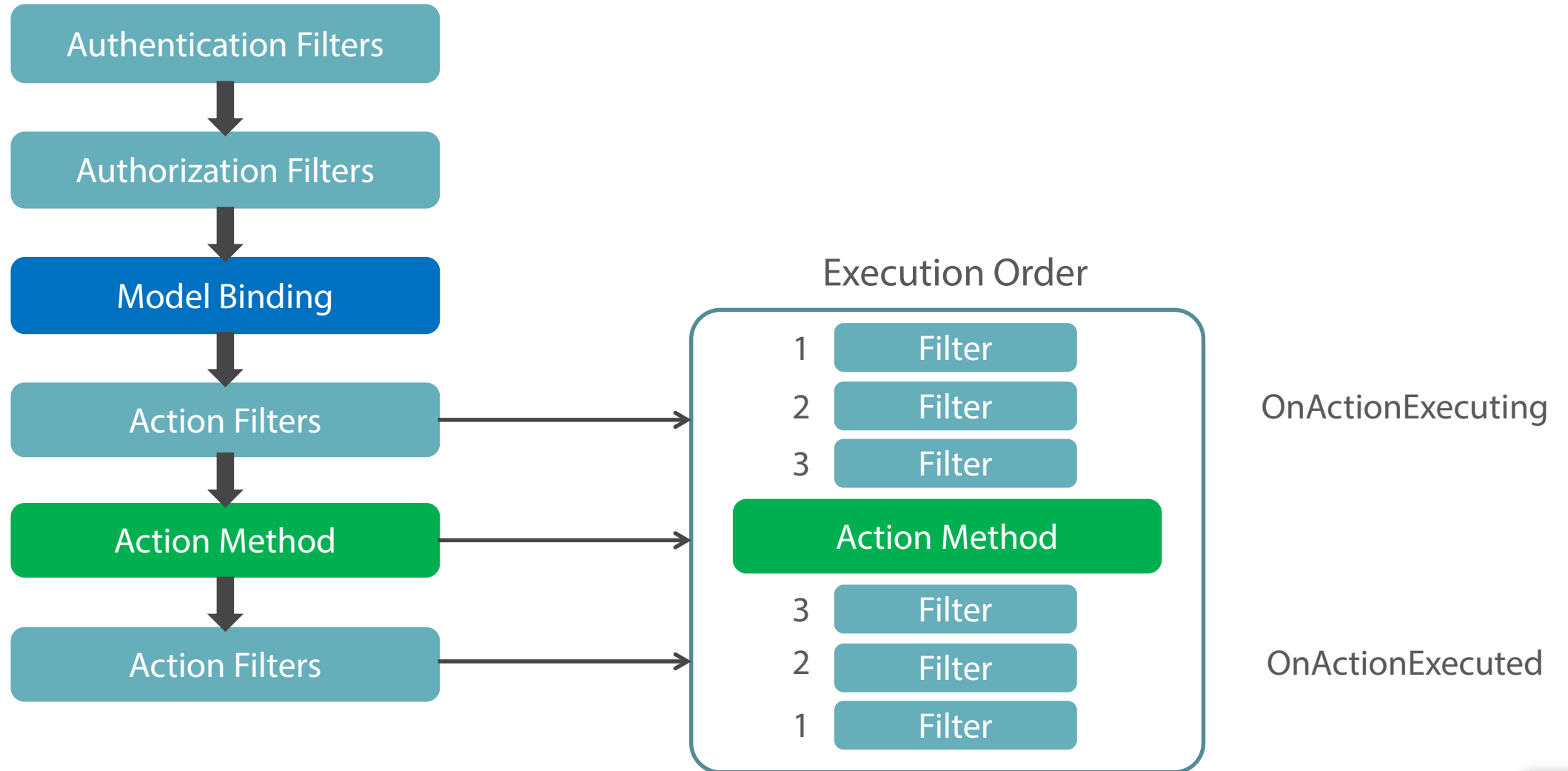
Summary

- Controller uses the Action Invoker to find and execute Action Methods

- Invoker selects a method based on name and Action Selectors

- Filters can inject security logic and other custom code

- Model Binder populates Action Method parameters for the Action Invoker