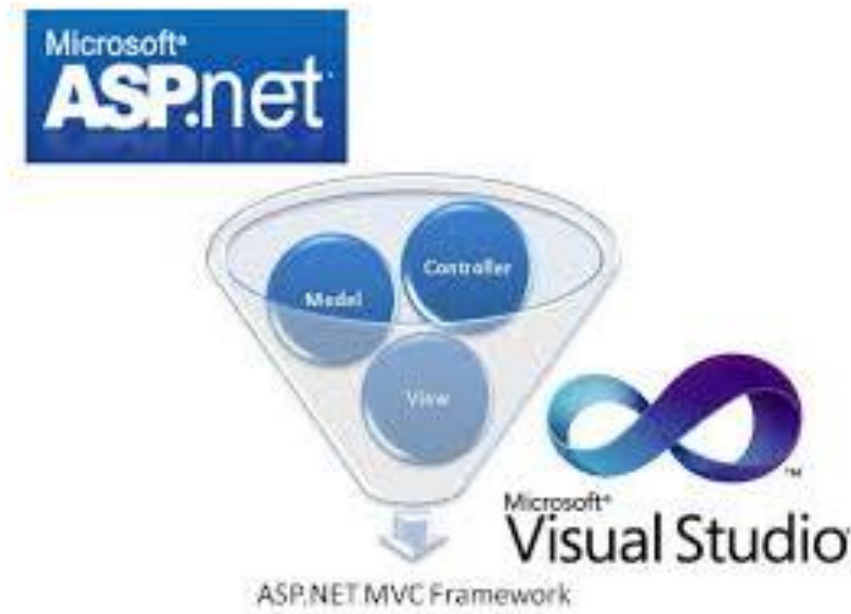# C#

7. ASP.NET MVC AND ASP.NET INFRASTRUCTURE

Output Caching

- [OutputCache] action filter

- Can also use on child actions

```
6 references
public class HomeController : Controller
{
    [OutputCache(Duration=60, VaryByParam="none")]
    1 reference | ⬥ 0/1 passing
    public ActionResult Index()
    {

        ViewBag.SmtpServer = ConfigurationManager.AppSettings["SmtpServer"];

        return View();
    }
}
```

Output Cache Settings

- VaryByParam
  - Vary by "none" to always cache the same content
  - Vary by "name" to cache for every value of name parameter
  - Vary by "*" to cache for every permutation of all parameters
- Location
  - Cache on server, client, client and server
- VaryByHeader
  - Vary on an HTTP header, like Accept-Language
- SqlDependency
  - Cache until data in a SQL Server table changes

C#

Cache Profiles

- Avoids repetition in cache attributes

- Easy to change during performance profiling

Web.config

```xml
<system.web>

    <caching>
        <outputCacheSettings>
            <outputCacheProfiles>
                <add name="short" duration="10"/>
                <add name="long" duration="60"/>
            </outputCacheProfiles>
        </outputCacheSettings>
    </caching>

    <customErrors mode="RemoteOnly" />
```

```csharp
6 references
public class HomeController : Controller
{
    [OutputCache(CacheProfile="long")]
    1 reference | 0/1 passing
    public ActionResult Index()
    {

        ViewBag.SmtpServer = ConfigurationManager.AppSettings["SmtpServer"];

        return View();
    }
```

Data Caching

- ASP.NET Cache API
  - Can access via HttpRuntime.Cache
  - Absolute and Sliding expirations
  - Cache dependencies on file system and SQL server data

Localization and Culture

- Thread.CurrentCulture property impacts formatting
  - Example: DateTime.Now.ToString()
- Thread.CurrentUICulture impacts resource loading
- ASP.NET can set cultures according to HTTP headers
  - **Accept-language header**
  - **Use <globalization> section in web.config**

1. web.config settings

```
<system.web>

<globalization culture="auto" uiCulture="auto"/>
```
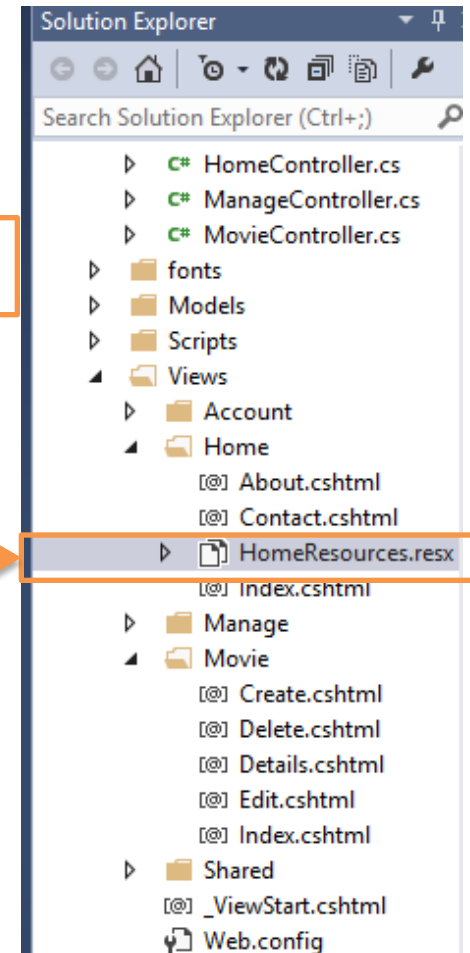
2. Display currency in view based on settings

```
@{
    var amount = 10.0m;
    var then = new DateTime(2002, 7, 9);
}

<div>
    @amount.ToString("c")
</div>
<div>
    @then.ToShortDateString()
</div>
```

Resources

- **a resource manager that provides convenient access to culture-specific resources at run time.**

- Resx files can store localized text and binary assets
    - Strings.resx will store default resources
    - Strings.es.resx will store resource for Spanish culture

- Resource manager will load appropriate file

- Visual studio generate strongly-type class
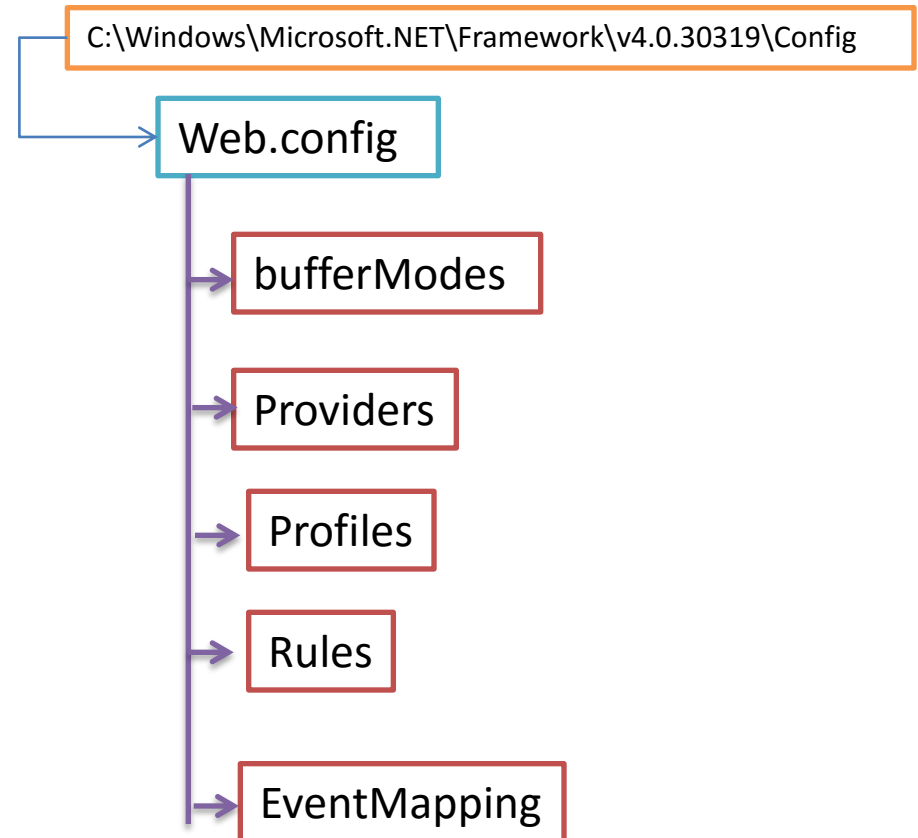
C#

LocalResource file
Specific to Home Controller

Solution Explorer

Search Solution Explorer (Ctrl+;)

- C# HomeController.cs
- C# ManageController.cs
- C# MovieController.cs
- fonts
- Models
- Scripts
- Views
    - Account
    - Home
        - [@] About.cshtml
        - [@] Contact.cshtml
        - HomeResources.resx
        - [@] Index.cshtml
    - Manage
    - Movie
        - [@] Create.cshtml
        - [@] Delete.cshtml
        - [@] Details.cshtml
        - [@] Edit.cshtml
        - [@] Index.cshtml
    - Shared
    - [@] _ViewStart.cshtml
    - Web.config

C#

Resources

Diagnostics

- Logging Options
  - ASP.NET Health Monitoring
  - Log4net(http://logging.apache.org/log4net/)
  - Elmah(http://code.google.com/p/elmah)
  - P&P Application Logging Block

```
C:\Windows\Microsoft.NET\Framework\v4.0.30319\Config
```

Web.config
- bufferModes
- Providers
- Profiles
- Rules
- EventMapping
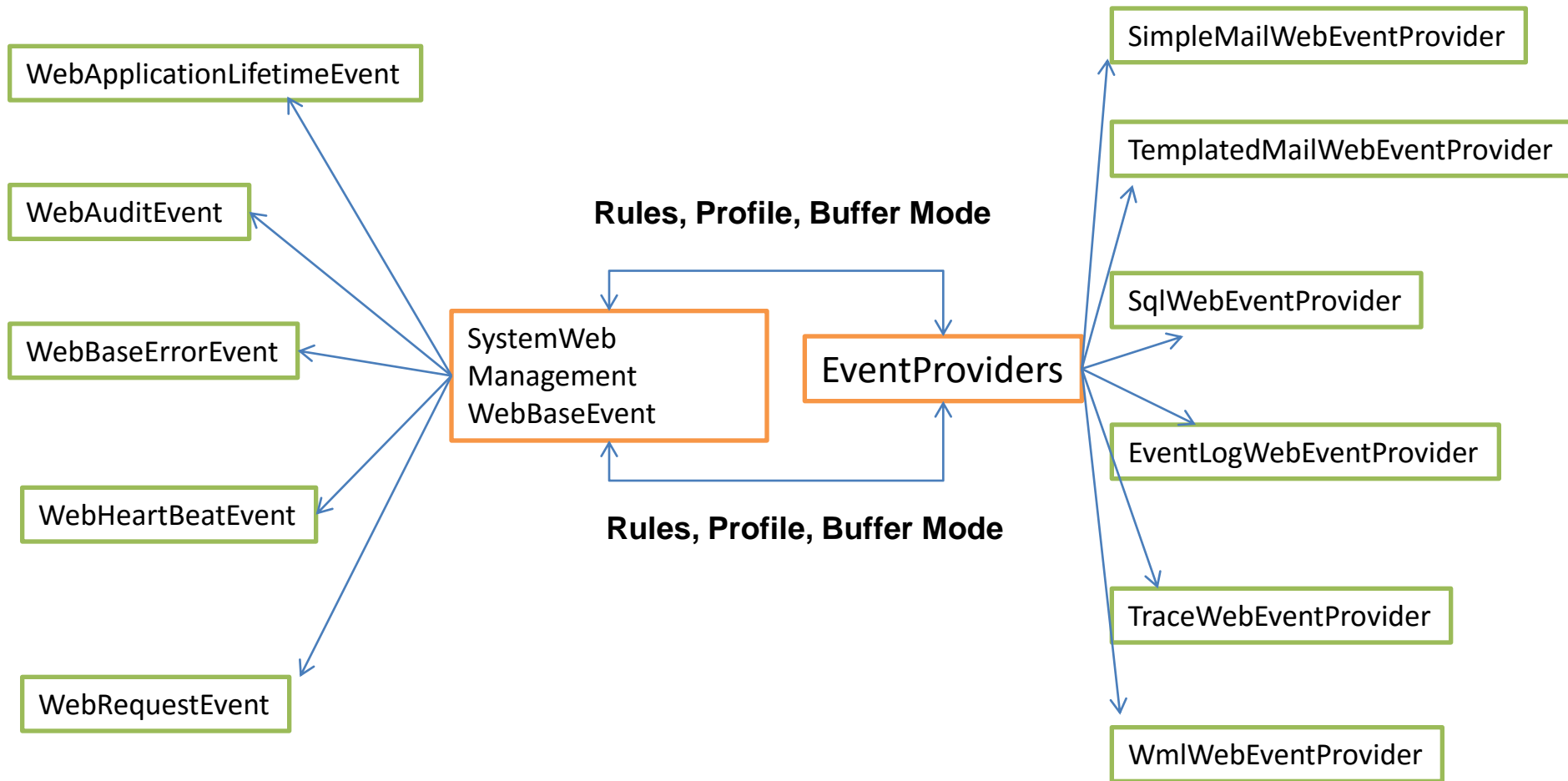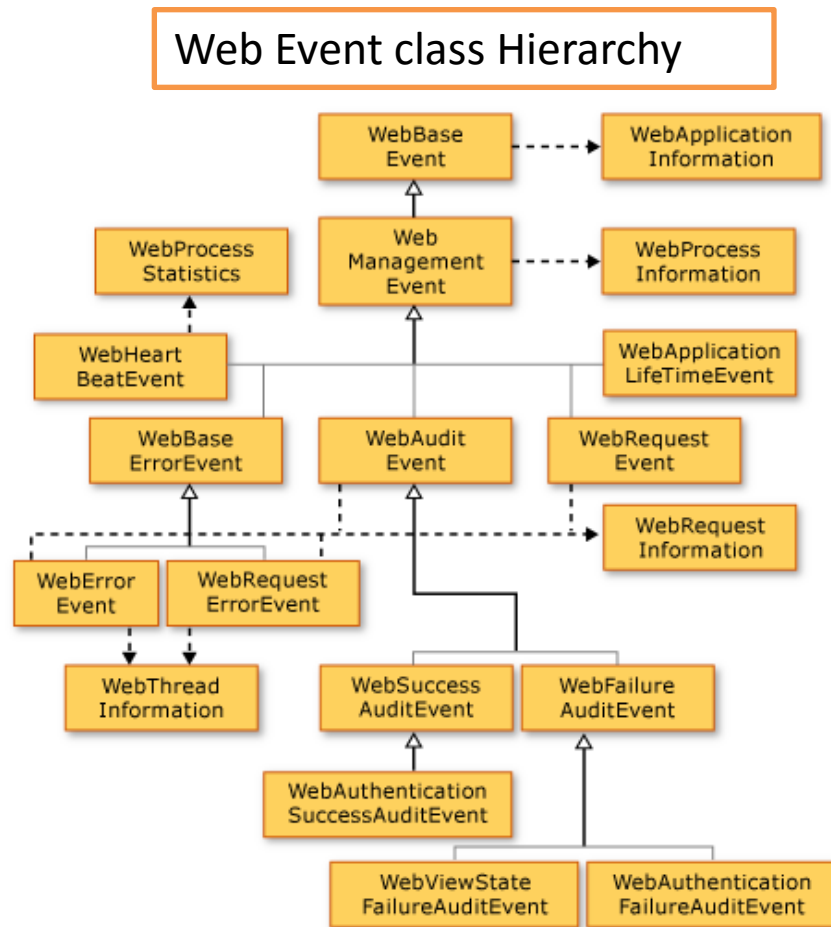
ASP.NET Health Monitoring

- Monitor the performance of an application to make sure that it is healthy.

- Rapidly diagnose applications or systems that are failing.

- Appraise significant events during the life cycle of an application.

- Monitor live ASP.NET applications, individually or across a Web farm.

- Log events that do not necessarily relate to errors in an ASP.NET application.

Web Event class Hierarchy

WebBase Event

WebApplication Information

WebProcess Statistics

Web Management Event

WebProcess Information

WebHeart BeatEvent

WebApplication LifeTimeEvent

WebBase ErrorEvent

WebAudit Event

WebRequest Event

WebRequest Information

WebError Event

WebRequest ErrorEvent

WebThread Information

WebSuccess AuditEvent

WebFailure AuditEvent

WebAuthentication SuccessAuditEvent

WebViewState FailureAuditEvent

WebAuthentication FailureAuditEvent

Src: https://msdn.microsoft.com/en-us/library/bb398933.aspx

Summary

- In this section we have covered
  - Caching
  - Performance management
  - internationalisation