Session 3

Working with ASP.NET Page Models and Directives

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Session Overview

- Explain different page models
- List and describe various Web Forms directives

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Overview of Page Models

Inline Code/Single-File Page Model **(Classical Model)**

Code-Behind Model

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Differences Between Single-File Page/Code-behind Styles

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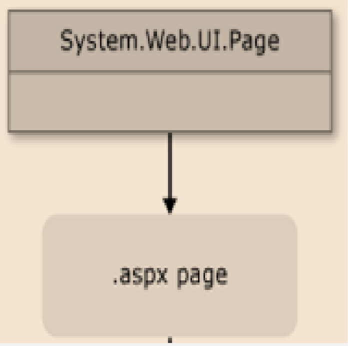


Single-File Page

1. Markup and script handling for events embedded within `<script>` tag are in same `.aspx` file.

2. The `.aspx` file derives from the Page class.

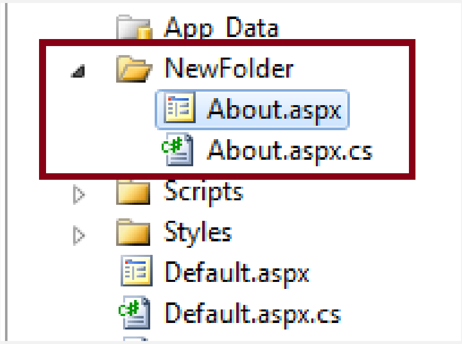
3. When page is published, source code is retained along with the Web Forms page. Code cannot be viewed; only results are rendered when the page runs.

Code-behind

1. Only HTML and front-end controls of the Web page are in `.aspx` file. Class files supporting events generated from front-end are either in `.aspx.vb` or `.aspx.cs` file.

2. The `.aspx` file derives from a separate class in which the code for the page is compiled.

3. All project class files (without the `.aspx` file) are compiled into a `.dll` file, which is passed on to the server without any source code. On receiving a request for a page, an instance of the `.dll` file is created and executed.



Overview of Page Models

- Inline Code/Single-File Page Model
- Code-Behind Model

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ASP.NET Web Forms Directives (1-11)

Different Types of Directives

Application Directive (Defines a set of attributes specific to an application)	*Syntax*	`<%@ Application attribute="value"[ attribute = "value"] %>`
	Attributes Used by the Directive	`Language, Inherits, Description, CodeBehind`
	Example	`<%@ Application Inherits="Program.object" Description="New Program" %>`

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ASP.NET Web Forms Directives (2-11)

Control Directive (Specifies the user specific controls used by the compiler and parser)	*Syntax*	`<%@ Control attribute="value" [ attribute = "value" ] %>`
	Attributes Used by the Directive	`ClassName, AutoEventWireup, Description, Inherits, Explicit, EnableViewState, Language, CodeFileBaseClass, Src, TargetSchema`
	Example	`<%@ Control Language="C#" EnableViewState="false" %>`

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ASP.NET Web Forms Directives (3-11)

Assembly Directive

(Comes into the picture while linking a user control, Web pages, or an application file)

Syntax	`<%@ Assembly Name="assembly1" %>`

Attributes Used by the Directive	`Src,`
	`Name`

Example	`<%@ Assembly Name=AssemblyNew" %>`
	`<%@ Assembly Src="Demo.cs" %>`

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ASP.NET Web Forms Directives (4-11)

Imports Directive

(Used to import the namespace to the Web page)

Syntax	`<%@ Import Namespace="value" %>`
Attributes Used by the Directive	`Namespace`
Example	`<%@ Import Namespace="System.Net" %>`

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ASP.NET Web Forms Directives (5-11)

Implements Directive (Expresses that the user control, the page, or master page is applied in the specified .NET framework)	*Syntax*	`<%@ Implements interface ="interface_name" %>`
	Attributes Used by the Directive	`Interface`
	Example	`<%@ Implements Interface="ProgrammingASPNET. IDataAccess " %>`

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ASP.NET Web Forms Directives (6-11)

MasterType Directive (Expresses that the user control, the page, or master page is applied in the specified .NET framework)	*Syntax*	`<%@ MasterType attribute="value" [ attribute = "value" ] %>`
	Attributes Used by the Directive	`TypeName, VirtualPath`
	Example	`<%@ MasterType VirtualPath="~/Templatesample.master " %>`

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ASP.NET Web Forms Directives (7-11)

Output Cache Directive **(Expresses that the user control, the page, or master page is applied in the specified .NET framework)**	*Syntax*	`<%@ OutputCache Duration="Seconds" Shared="True | False" VarByControl = "controlname" VarByHeader="header" VarByParam = "parameter" CacheProfile="profile name" ProviderName="provider name" Location=" Client | Server | None ServerAndClient | Any "%>`
	Attributes Used by the Directive	`Duration, VarByHeader, VarByParam, VarByCustom`
	Example	`<%@ OutputCache Duration="50" VarByParam="None" %>`

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ASP.NET Web Forms Directives (8-11)

Master Directive

(Utilized to state the page file as master file)

Syntax

```
<%@ MasterPage Language = "C#"
AutoEventWireUp="true"
CodeFile="SiteMaster.master.cs"
Inherits="SiteMaster" %>
```

Attributes Used by the Directive

```
ClassName, CodeFile,
AutoEventWireup, Debug,
EnableTheming,
Description, Language,
MasterPageFile
```

Example

```
<%@ Master Language="C#"
CodeFile="Master1.master.cs"
Inherits="MasterPage" %>
```

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ASP.NET Web Forms Directives (9-11)

Page Directive

(Explains the characteristics for a particular page for the compiler or parser)

Syntax

```
<%@ Page attribute="value" [
attribute="value" …. ] %>
```

Example

```
<%@Page Language="C#"
EnableViewState="True"
Description="Web Page" %>
```

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ASP.NET Web Forms Directives (10-11)

Reference Directive

(Used for pointing another page or control that is compiled to the current page)

Syntax	`<%@ Reference Page="Default.aspx" %>`

Attributes Used by the Directive	`Page,`
	`VirtualPath,`
	`Control`

Example	`<%@ Reference Control="MyEmployeeControl.aspx" %>`

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ASP.NET Web Forms Directives (11-11)

Register Directive

(Used for defining the custom control to the tag prefix developed by the user)

Syntax

```
<%@ Register tagprefix="tag1"
namespace="namespace"
assembly="assembly" %>

<%@ Register tagprefix="tag2"
tagname="tagname" src="pathname" %>
```

Attributes Used by the Directive

`Assembly, Src, TagName, TagPrefix`

Example

```
<%@ register tagprefix="uc1"
tagname = "EmployeeUserControl"
src="~/EmployeeUserControl.ascx" %>
```

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ASP.NET @Page Directive (1-4)

ASP.NET `@Page` Directive refers to page-specific attributes used by the ASP.NET page parser and compiler, which are included only in `.aspx` files.

Points to note when using the @Page directive

- `@Page` directive can be utilized specifically in Web Forms
- Only one `@Page` directive can be included per `.aspx` file
- Only one language attribute can be defined per `@Page` directive

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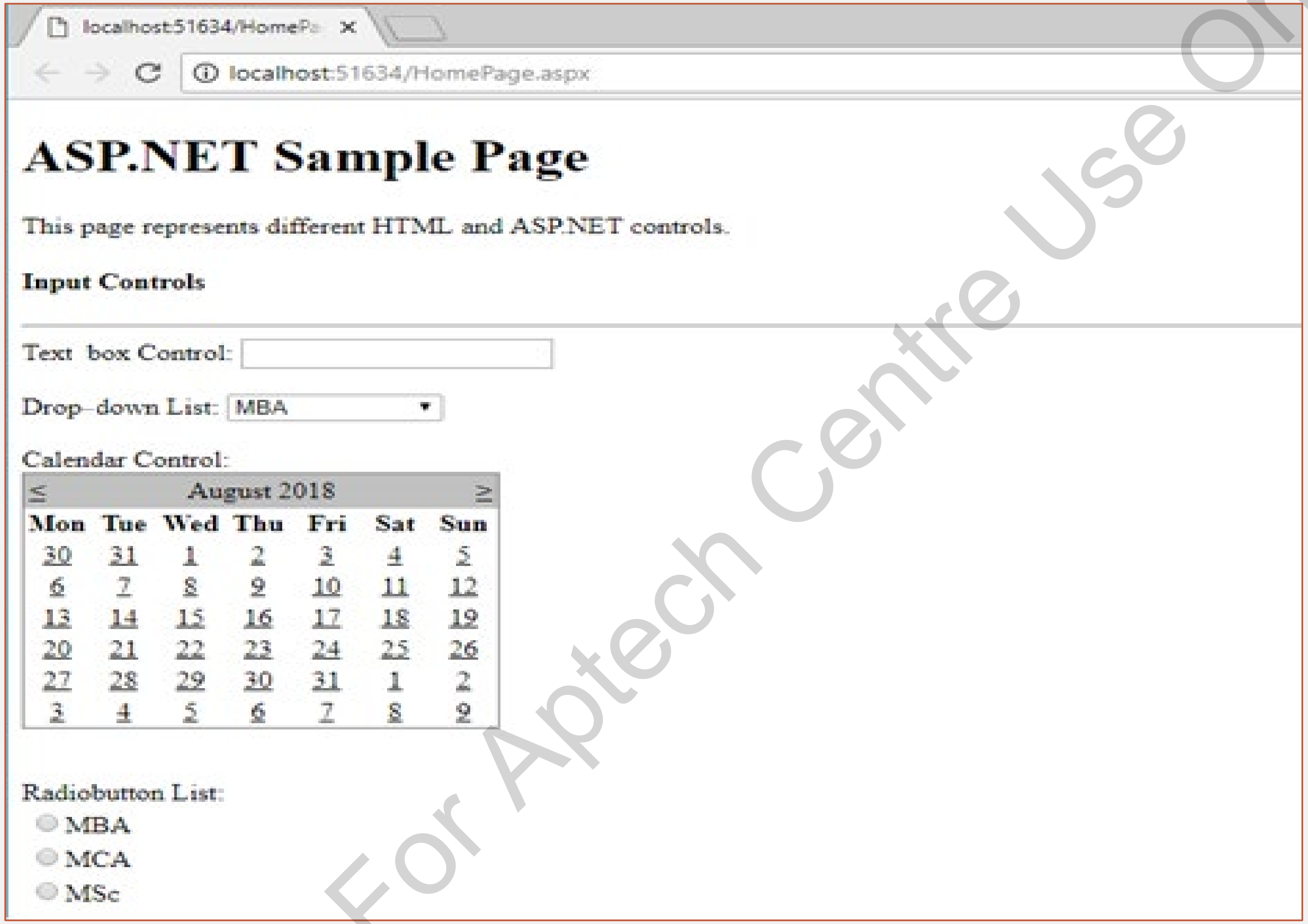
ASP.NET @Page Directive (4-4)



ASP.NET Sample Page

This page represents different HTML and ASP.NET controls.

Input Controls

Text box Control:

Drop-down List: MBA

Calendar Control:

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Mon	Tue	Wed	Thu	Fri	Sat	Sun
30	31	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2
3	4	5	6	7	8	9

Radiobutton List:

○ MBA
○ MCA
○ MSc

ASP.NET Sample Web Page with ASP.NET Controls

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ASP.NET Master Page (1-3)

- Delivers a template, to apply a consistent appearance and behavior for pages or group of pages in the Web application.
- Specifies placeholders for the content, which can be superseded by individual pages.
- Also, supports dynamic content.

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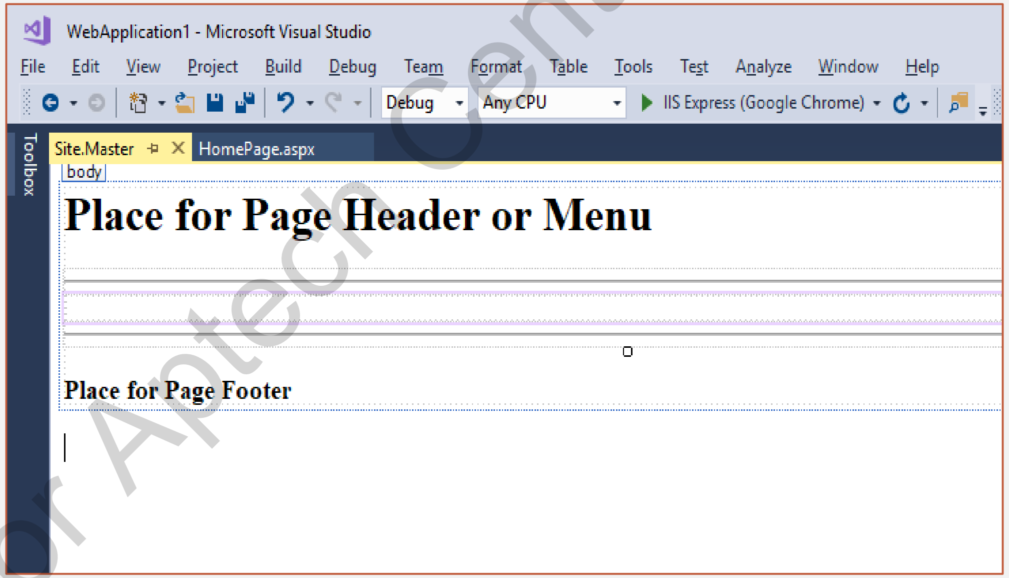

WebApplication1 - Microsoft Visual Studio
File Edit View Project Build Debug Team Format Table Tools Test Analyze Window Help
Debug
Any CPU
IIS Express (Google Chrome)
Toolbox
Site.Master
HomePage.aspx
body

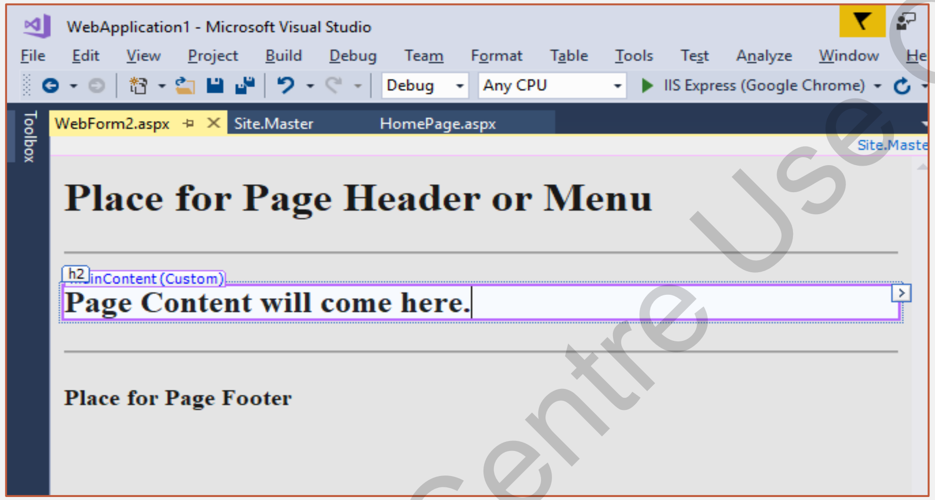
Place for Page Header or Menu

Place for Page Footer

Master Page Design View

ASP.NET Master Page (3-3)

Content Page Design View

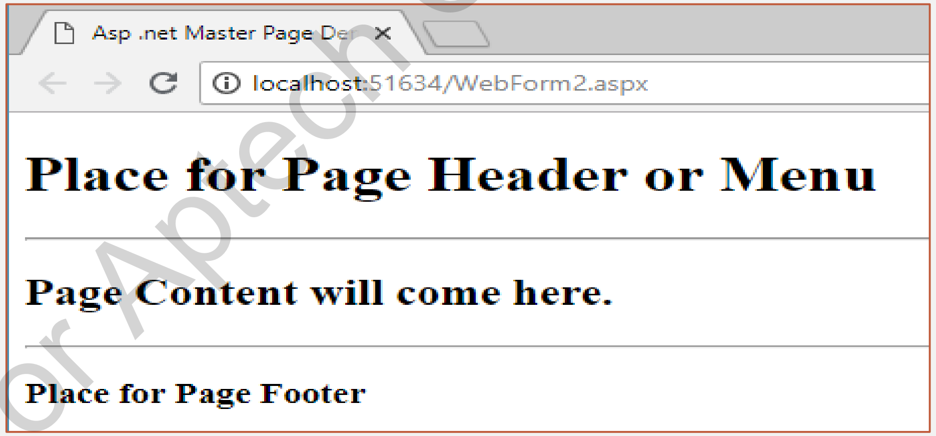


Place for Page Header or Menu

Page Content will come here.

Place for Page Footer

Content Page Output with Master Page



Place for Page Header or Menu

Page Content will come here.

Place for Page Footer

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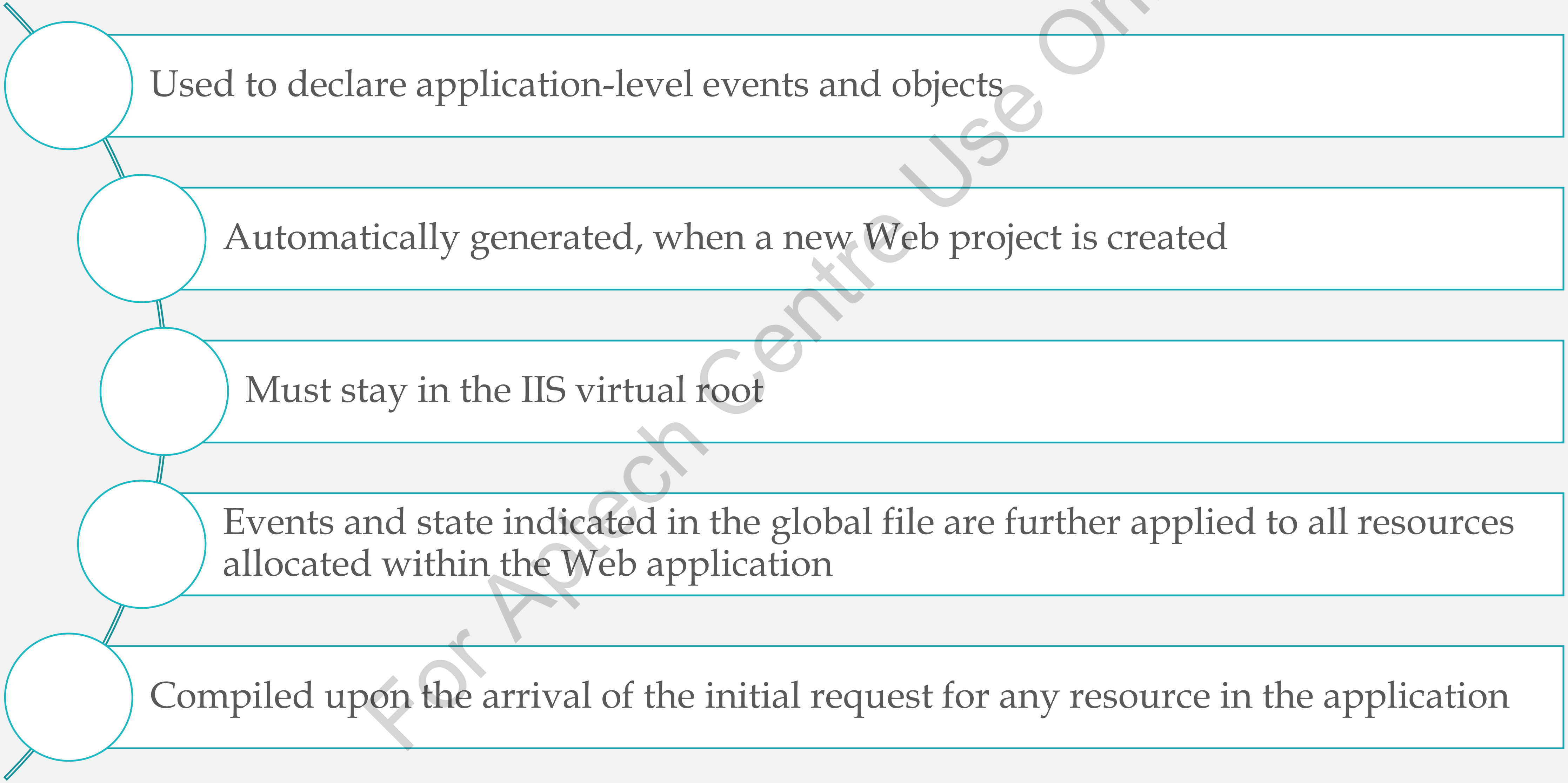
Global.asax



- Used to declare application-level events and objects
- Automatically generated, when a new Web project is created
- Must stay in the IIS virtual root
- Events and state indicated in the global file are further applied to all resources allocated within the Web application
- Compiled upon the arrival of the initial request for any resource in the application

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Application Directives

- Positioned at the top of the Global.asax file
- Provide information that is used to compile the global file.
- There are three application directives defined, namely:

Application

Assembly

Import

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Summary

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- ASP.NET supports two coding styles, Single-page model and Code-behind model.
- In a single-file page model, a mark-up of a Web Form page as well as its programming code are in the same .aspx file whereas in the code-behind model they are in different files.
- ASP.NET directives are guidelines for indicating optional settings such as registering a page language and custom control.
- In general, each ASP.NET page begins with the @ Page directive and can be used only in Web Forms.
- Master pages are used for creating a consistent look and behavior for all pages or a group of pages in the Web application.