

## Pass Task 4.3. Web UI + AJAX

---

**1. AJAX.** AJAX is an abbreviation for **A**synchronous **J**avaScript and **X**ML. It is a web development technique to develop interactive applications on the web by using a set of technologies on the web. It allows partially update on web page content and avoid whole page refresh which effectively speedup web performance and user experience. In its implementation, Javascript, html, xml or json, css, Document Object Model or DOM and most importantly XMLHttpRequest object are all combined together to enable AJAX. In Web 2.0, AJAX plays vital role to enable smooth user experience, increase overall performance and facilitate advanced interaction on the web.

**2. ASP.NET + AJAX.** By default, in an ASPX page, all ASP.Net controls must be wrapped inside an ASP Form control. Then when a button is clicked for submit or an event causing a callback, this Form will be submitted to the server along with a View State data. This process will cause the whole page to be refreshed. ASP.Net has a few controls to support AJAX natively. To enable AJAX on an ASP.Net page, a ScriptManager and an UpdatePanel control are required. Firstly, a script manager enables the postback call from a submit button by using javascript.

```
<asp:ScriptManager ID="MainScriptManager" runat="server" />
```

Then controls inside the UpdatePanel will using this postback method in javascript to perform the form post event instead of submitting the whole page using the wrapping ASP Form control.

```
<asp:UpdatePanel ID="pnlHelloWorld" runat="server">
  <ContentTemplate>
    Let's say hi to
    <asp:TextBox runat="server" ID="txtName" />
    <asp:Button runat="server" ID="btnSayHello" OnClick="btnSayHello_Click"
Text="Say hello" />
    <asp:Label runat="server" ID="lblMessage" Text="" />
  </ContentTemplate>
</asp:UpdatePanel>
```

There are an extensive library that further supports AJAX and enrich the ASP.NET controls with AJAX feature. This library is *Ajax Control Toolkit* that is open source and free to use.

### ASP.NET MVC + AJAX

AJAX support and implementation in ASP.NET MVC is significantly different with ASP.NET. In ASP.NET MVC, each public method in a controller can be translated into a valid URL path responsible for the whole response content. This make the implementation of AJAX in ASP.NET MVC much more flexible than ASP.NET. There also an option to develop resource API specifically for AJAX using Web API technology in ASP.NET MVC. As Web API and ASP.NET MVC is developed on a same base library, these 2 technologies can be hosted on a same web server. What it means for web developers is that, they have a way to organize

resource paths so that AJAX requests can be all routed to a path with specific prefix such as: *domain.com/api/{controller}/{action}*, where the normal web pages can still be sourced from normal URL path such as *domain.com/{controller}/{action}*.

**References**

2016, *Microsoft Ajax Overview*, MSDN, Microsoft, viewed 14 Apr 2016, <<https://msdn.microsoft.com/en-us/library/bb398874.aspx>>

2016, *Ajax Control Toolkit*, DevExpress, viewed 14 Apr 2016, <<https://github.com/DevExpress/AjaxControlToolkit/wiki>>

2016, Web API Tutorials, ASP.NET, viewed 14 Apr 2016, <<http://www.asp.net/web-api>>