

ASP. Net

ASP.NET is a web application framework developed and marketed by Microsoft to allow programmers to build dynamic web sites. It allows you to use a full featured programming language such as C# or VB.NET to build web applications easily.

- ASP.NET works on top of the HTTP protocol, and uses the HTTP commands and policies to set a browser-to-server bilateral communication and cooperation.
- ASP.NET is a part of Microsoft .Net platform. ASP.NET applications are compiled codes, written using the extensible and reusable components or objects present in .Net framework. These codes can use the entire hierarchy of classes in .Net framework.

The ASP.NET application codes can be written in any of the following languages:

- C#
- Visual Basic.Net
- Jscript
- J#

ASP.NET is used to produce interactive, data-driven web applications over the internet. It consists of a large number of controls such as text boxes, buttons, and labels for assembling, configuring, and manipulating code to create HTML pages.

ASP.NET Web Forms Model

- ASP.NET web forms extend the event-driven model of interaction to the web applications. The browser submits a web form to the web server and the server returns a full markup page or HTML page in response.
- All client side user activities are forwarded to the server for stateful processing. The server processes the output of the client actions and triggers the reactions.

HTTP is a stateless protocol. ASP.NET framework helps in storing the information regarding the state of the application, which consists of:

- Page state
- Session state

The page state is the state of the client, i.e., the content of various input fields in the web form. The session state is the collective information obtained from various pages the user visited and worked with, i.e., the overall session state.

The ASP.NET Component Model

The ASP.NET component model provides various building blocks of ASP.NET pages. Basically it is an object model, which describes:

- Server side counterparts of almost all HTML elements or tags, such as `<form>` and `<input>`.
- Server controls, which help in developing complex user-interface. For example, the Calendar control or the Gridview control.

ASP.NET is a technology, which works on the .Net framework that contains all web-related functionalities. The .Net framework is made of an object-oriented hierarchy. An ASP.NET web application is made of pages. When a user requests an ASP.NET page, the IIS delegates the processing of the page to the ASP.NET runtime system.

The ASP.NET runtime transforms the .aspx page into an instance of a class, which inherits from the base class page of the .Net framework. Therefore, each ASP.NET page is an object and all its components i.e., the server-side controls are also objects.

Button Controls

ASP.NET provides three types of button control:

Button : It displays text within a rectangular area.

Link Button : It displays text that looks like a hyperlink.

Image Button : It displays an image.

When a user clicks a button, two events are raised:
Click and Command.

Basic syntax of button control:

```
<asp:Button ID="Button1" runat="server"  
    onclick="Button1_Click" Text="Click" / >
```


Property

Description

Text

The text displayed on the button. This is for button And link button controls only.

ImageUrl

For image button control only. The image to be displayed for the button.

AlternateText

For image button control only. The text to be displayed if the browser cannot display the image.

CausesValidation

Determines whether page validation occurs when a user clicks the button. The default is true.

CommandName

A string value that is passed to the command event when a user clicks the button.

CommandArgument

A string value that is passed to the command event when a user clicks the button.

PostBackUrl

The URL of the page that is requested when the user clicks the button.

Text Boxes and Labels

Text box controls are typically used to accept input from the user. A text box control can accept one or more lines of text depending upon the settings of the TextMode attribute.

Label controls provide an easy way to display text which can be changed from one execution of a page to the next. If you want to display text that does not change, you use the literal text.

Basic syntax of text control:

```
<asp:TextBox ID="txtstate" runat="server"  
></asp:TextBox>
```

Property

Description

TextMode

Specifies the type of text box. SingleLine creates a standard text box, MultiLine creates a text box that accepts more than one line of text and the Password causes the characters that are entered to be masked. The default is SingleLine.

Text

The text content of the text box.

MaxLength

The maximum number of characters that can be entered into the text box.

Wrap

It determines whether or not text wraps automatically for multi-line text box; default is true.

ReadOnly

Determines whether the user can change the text in the box; default is false, i.e., the user can not change the text.

Columns

The width of the text box in characters. The actual width is determined based on the font that is used for the text entry.

Rows

The height of a multi-line text box in lines. The default value is 0, means a single line text box.

Check Boxes and Radio Buttons

A check box displays a single option that the user can either check or uncheck and radio buttons present a group of options from which the user can select just one option.

To create a group of radio buttons, you specify the same name for the `GroupName` attribute of each radio button in the group. If more than one group is required in a single form, then specify a different group name for each group.

If you want check box or radio button to be selected when the form is initially displayed, set its `Checked` attribute to true. If the `Checked` attribute is set to true for multiple radio buttons in a group, then only the last one is considered as true.

Basic syntax of check box:

```
<asp:CheckBox ID= "chkoption" runat=
  "Server"> </asp:CheckBox>
```

Basic syntax of
radio button:

```
<asp:RadioButton ID= "rdboption" runat=
  "Server"> </asp: RadioButton>
```

Common properties of check boxes and radio buttons:

Property

Description

Text

The text displayed next to the check box or radio button.

Checked

Specifies whether it is selected or not, default is false.

GroupName

Name of the group the control belongs to.

List Controls

- ASP.NET provides the following controls
- Drop-down list,
- List box,
- Radio button list,
- Check box list,
- Bulleted list.

These control let a user choose from one or more items from the list. List boxes and drop-down lists contain one or more list items. These lists can be loaded either by code or by the ListItemCollection editor.

Basic syntax of list box control:

```
<asp:ListBox ID="ListBox1" runat="server"  
  AutoPostBack="True"  
  OnSelectedIndexChanged="ListBox1_SelectedI  
ndexChanged"> </asp:ListBox>
```

Basic syntax of drop-down list control:

```
<asp:DropDownList ID="DropDownList1"  
  runat="server" AutoPostBack="True"  
  OnSelectedIndexChanged="DropDownList1_S  
electedIndexChanged"> </asp:DropDownList>
```