ASP.NET - SERVER SIDE

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We have studied the page life cycle and how a page contains various controls. The page itself is instantiated as a control object. All web forms are basically instances of the ASP.NET Page class. The page class has the following extremely useful properties that correspond to intrinsic objects:

- Session
- Application
- Cache
- Request
- Response
- Server
- User
- Trace

We will discuss each of these objects in due time. In this tutorial we will explore the Server object, the Request object, and the Response object.

Server Object

The Server object in Asp.NET is an instance of the System.Web.HttpServerUtility class. The HttpServerUtility class provides numerous properties and methods to perform various jobs.

Properties and Methods of the Server object

The methods and properties of the HttpServerUtility class are exposed through the intrinsic Server object provided by ASP.NET.

The following table provides a list of the properties:

Property	Description
MachineName	Name of server computer
ScriptTimeOut	Gets and sets the request time-out value in seconds.

The following table provides a list of some important methods:

Method	Description
CreateObject*String*	Creates an instance of the COM object identified by its ProgID *ProgrammaticID*.
CreateObject*Type*	Creates an instance of the COM object identified by its Type.
Equals*Object*	Determines whether the specified Object is equal to the current Object.
Execute*String*	Executes the handler for the specified virtual path in the context of the current request.
Execute*String*, *Boolean*	Executes the handler for the specified virtual path in the context of the current request and specifies whether to clear the QueryString and Form collections.

GetLastError	Returns the previous exception.
GetType	Gets the Type of the current instance.
HtmlEncode	Changes an ordinary string into a string with legal HTML characters.
HtmlDecode	Converts an Html string into an ordinary string.
ToString	Returns a String that represents the current Object.
Transfer*String*	For the current request, terminates execution of the current page and starts execution of a new page by using the specified URL path of the page.
UrlDecode	Converts an URL string into an ordinary string.
UrlEncodeToken	Works same as UrlEncode, but on a byte array that contains Base64-encoded data.
UrlDecodeToken	Works same as UrlDecode, but on a byte array that contains Base64-encoded data.
MapPath	Return the physical path that corresponds to a specified virtual file path on the server.
Transfer	Transfers execution to another web page in the current application.

Request Object

The request object is an instance of the System.Web.HttpRequest class. It represents the values and properties of the HTTP request that makes the page loading into the browser.

The information presented by this object is wrapped by the higher level abstractions *thewebcontrolmodel*. However, this object helps in checking some information such as the client browser and cookies.

Properties and Methods of the Request Object

The following table provides some noteworthy properties of the Request object:

Property	Description
AcceptTypes	Gets a string array of client-supported MIME accept types.
ApplicationPath	Gets the ASP.NET application's virtual application root path on the server.
Browser	Gets or sets information about the requesting client's browser capabilities.
ContentEncoding	Gets or sets the character set of the entity-body.
ContentLength	Specifies the length, in bytes, of content sent by the client.
ContentType	Gets or sets the MIME content type of the incoming request.
Cookies	Gets a collection of cookies sent by the client.
FilePath	Gets the virtual path of the current request.
Files	Gets the collection of files uploaded by the client, in multipart MIME format.

Form	Gets a collection of form variables.
Headers	Gets a collection of HTTP headers.
HttpMethod	Gets the HTTP data transfer method *suchasGET*, *POST*, *orHEAD* used by the client.
InputStream	Gets the contents of the incoming HTTP entity body.
IsSecureConnection	Gets a value indicating whether the HTTP connection uses secure sockets *thatis*, *HTTPS*.
QueryString	Gets the collection of HTTP query string variables.
RawUrl	Gets the raw URL of the current request.
RequestType	Gets or sets the HTTP data transfer method *GETorPOST* used by the client.
ServerVariables	Gets a collection of Web server variables.
TotalBytes	Gets the number of bytes in the current input stream.
Url	Gets information about the URL of the current request.
UrlReferrer	Gets information about the URL of the client's previous request that is linked to the current URL.
UserAgent	Gets the raw user agent string of the client browser.
UserHostAddress	Gets the IP host address of the remote client.
UserHostName	Gets the DNS name of the remote client.
UserLanguages	Gets a sorted string array of client language preferences.

The following table provides a list of some important methods:

Method	**Description**
BinaryRead	Performs a binary read of a specified number of bytes from the current input stream.
Equals*Object*	Determines whether the specified object is equal to the current object. *Inheritedfromobject*.
GetType	Gets the Type of the current instance.
MapImageCoordinates	Maps an incoming image-field form parameter to appropriate x-coordinate and y-coordinate values.
MapPath*String*	Maps the specified virtual path to a physical path.
SaveAs	Saves an HTTP request to disk.
ToString	Returns a String that represents the current object.
ValidateInput	Causes validation to occur for the collections accessed through the Cookies, Form, and QueryString properties.

Response Object

The Response object represents the server's response to the client request. It is an instance of the System.Web.HttpResponse class.

In ASP.NET, the response object does not play any vital role in sending HTML text to the client, because the server-side controls have nested, object oriented methods for rendering themselves.

However, the HttpResponse object still provides some important functionalities, like the cookie feature and the Redirect method. The Response.Redirect method allows transferring the user to another page, inside as well as outside the application. It requires a round trip.

Properties and Methods of the Response Object

The following table provides some noteworthy properties of the Response object:

Property	Description
Buffer	Gets or sets a value indicating whether to buffer the output and send it after the complete response is finished processing.
BufferOutput	Gets or sets a value indicating whether to buffer the output and send it after the complete page is finished processing.
Charset	Gets or sets the HTTP character set of the output stream.
ContentEncoding	Gets or sets the HTTP character set of the output stream.
ContentType	Gets or sets the HTTP MIME type of the output stream.
Cookies	Gets the response cookie collection.
Expires	Gets or sets the number of minutes before a page cached on a browser expires.
ExpiresAbsolute	Gets or sets the absolute date and time at which to remove cached information from the cache.
HeaderEncoding	Gets or sets an encoding object that represents the encoding for the current header output stream.
Headers	Gets the collection of response headers.
IsClientConnected	Gets a value indicating whether the client is still connected to the server.
Output	Enables output of text to the outgoing HTTP response stream.
OutputStream	Enables binary output to the outgoing HTTP content body.
RedirectLocation	Gets or sets the value of the Http Location header.
Status	Sets the status line that is returned to the client.
StatusCode	Gets or sets the HTTP status code of the output returned to the client.
StatusDescription	Gets or sets the HTTP status string of the output returned to the client.
SubStatusCode	Gets or sets a value qualifying the status code of the response.
SuppressContent	Gets or sets a value indicating whether to send HTTP content to the client.

The following table provides a list of some important methods:

Method	Description
AddHeader	Adds an HTTP header to the output stream. AddHeader is provided for compatibility with earlier versions of ASP.
AppendCookie	Infrastructure adds an HTTP cookie to the intrinsic cookie collection.
AppendHeader	Adds an HTTP header to the output stream.
AppendToLog	Adds custom log information to the InterNET Information Services *IIS* log file.
BinaryWrite	Writes a string of binary characters to the HTTP output stream.
ClearContent	Clears all content output from the buffer stream.
Close	Closes the socket connection to a client.
End	Sends all currently buffered output to the client, stops execution of the page, and raises the EndRequest event.
Equals*Object*	Determines whether the specified object is equal to the current object.
Flush	Sends all currently buffered output to the client.
GetType	Gets the Type of the current instance.
Pics	Appends a HTTP PICS-Label header to the output stream.
Redirect*String*	Redirects a request to a new URL and specifies the new URL.
Redirect*String*, *Boolean*	Redirects a client to a new URL. Specifies the new URL and whether execution of the current page should terminate.
SetCookie	Updates an existing cookie in the cookie collection.
ToString	Returns a String that represents the current Object.
TransmitFile*String*	Writes the specified file directly to an HTTP response output stream, without buffering it in memory.
Write*Char*	Writes a character to an HTTP response output stream.
Write*Object*	Writes an object to an HTTP response stream.
Write*String*	Writes a string to an HTTP response output stream.
WriteFile*String*	Writes the contents of the specified file directly to an HTTP response output stream as a file block.
WriteFile*String*, *Boolean*	Writes the contents of the specified file directly to an HTTP response output stream as a memory block.

Example

The following simple example has a text box control where the user can enter name, a button to send the information to the server, and a label control to display the URL of the client computer.

The content file:

```
<%@ Page Language="C#" AutoEventWireup="true" CodeBehind="Default.aspx.cs"
   Inherits="server_side._Default" %>
```

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml" >

   <head runat="server">
      <title>Untitled Page</title>
   </head>

   <body>
      <form >
         <div>

            Enter your name:
            <br />
            <asp:TextBox ID="TextBox1" runat="server"></asp:TextBox>
            <asp:Button ID="Button1" runat="server" OnClick="Button1_Click" Text="Submit"
/>
            <br />
            <asp:Label ID="Label1" runat="server"/>

         </div>
      </form>
   </body>

</html>
```

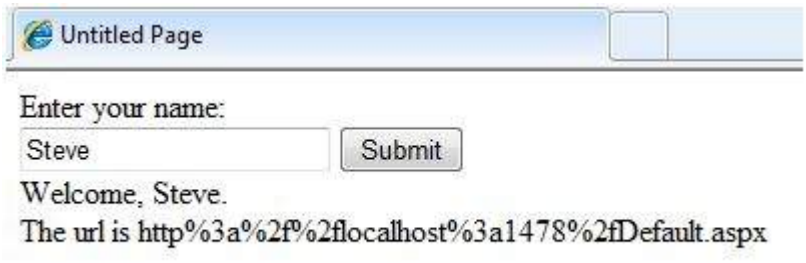
The code behind Button1_Click:

```
protected void Button1_Click(object sender, EventArgs e) {

   if (!String.IsNullOrEmpty(TextBox1.Text)) {

      // Access the HttpServerUtility methods through
      // the intrinsic Server object.
      Label1.Text = "Welcome, " + Server.HtmlEncode(TextBox1.Text) + ". <br/> The url is
" + Server.UrlEncode(Request.Url.ToString())
   }
}
```

Run the page to see the following result:



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