Active Server Pages
Part I
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ASP - A Technology
• Dynamic and interactive web pages
• Executes on the web server
• Microsoft - Internet Information Server or Personal Web Server

ASP - definition
• HTML and scripting code mixed together
• No compiling
• Makes pages easier to update and maintain
• .asp extension
• Only HTML is sent to the browser, so any browser is compatible

Traditional

ASP

HTML vs. ASP
• HTML is a set of instructions that tells the browser how to arrange text and images.
• Browser interprets everything.
• Contained within < > delimiters
  ie. <title>HTML</title>
**HTML vs. ASP**

- ASP are instructions to the web server on how to create the page and send HTML.
- Server interprets the ASP code and sends it to the browser.
- Contained within `<% %>` delimiters.

**ASP vs. CGI**

- CGI runs a program to complete its task (creating dynamic pages).
- The results are sent back to the server from the program then to the browser (extra step).
- Must use a more complicated programming language.
- Complex to learn

**ASP vs. CGI**

- ASP is more simple and faster.
- It's one less step because the server processes the ASP code.
- Not a separate program, it's like a service.
- Does not use a complex programming language. It uses scripting.

**ASP - languages**

- Default language = VBScript
- JScript or VBScript can be used
- "Plug-ins" for other languages like Perl are available
- We will primarily use VBScript
- VBScript is generally easier to learn

**Client-side vs Server-side**

- ASP is server-side (executed on the server).
- Client-side and server-side scripts can be used in the same HTML page.
- The server goes through and processes the code from the HTML then sends all HTML.
- Some scripts are faster on the browser.

**Server-side Scripting**

- Users are not able to see the code.
- Two ways:
  1. `<% %>` delimiters
  2. `<script language=VBScript runat=server> <script>`
“Hello World” example

```html
<html>
<head></head>
<body>
  <% For x = 3 To 7 %>
  <font size=<% = x %>>Hello World!<br>
  <% Next %>
</body>
</html>
```

Date/Time example

```html
<html>
<head></head>
<body>
  The current time is <% =time %>.<p>
  The current date is <% =date %>.  
</body>
</html>
```

Click to see examples!

“Hello World” example

Date/Time example

Active Server Pages

Part II

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Variables

- Location in memory that is given a name
- “Containers” for information to be stored in
- A variable is empty until some form of information is put into it

Variables

- Teacher = “Dr. Chuck”
- NumberOfStudents = 20
- TA = “Jason Haase”
Variables in VBScript

- Length limit is 255 characters
- Variable names must begin with an alphabetical character
- No periods or spaces
- NOT case-sensitive unlike JScript or JavaScript
  - ie. counter = CoUnTeR

Variables in VBScript

- Known as “variants”
- A variant is a variable that can store any data type.
  - Integer, strings, etc.
  - Strings represented with “ “
  - ie. “ text ”

Variable examples

- Var1 = 1
- Var2 = 2
- Var3 = Var1 + Var2 = 3

- Var1 = “1”
- Var2 = “2”
- Var3 = Var1 + Var2 = 12

“Option Explicit” with Variables

- With “Option Explicit” every variable must be declared before use
  - <% Option Explicit %> 
- Variables are created using the “Dim” command
- An error occurs if Dim is not used with Option Explicit
- Good for large applications

Two Kinds of ASP Statements

- Action Statements
  - Complete a task; display an item
- Control Statements
  - Used to direct action statements

  - Large Groups
    - Code Structures
    - Control Structures

Control Statements

- 3 Types of control statements
  - Branching Structures
  - Looping Controls
  - Jumping Controls
Branching Structures

- Some kind of test where some code is run while other code is skipped
- If…Then…Else      End If
- Comparison Operators ( >, <, = )
- Virtual University main page example
- Select...Case       End Select

<html>
<head><title>If Then Example</title></head>
<body>
<% If Time >= #08:00:00 AM# And _ Time <= #05:00:00 PM# Then %>
<h1>Welcome, we are OPEN!</h1>
<% Else %>
<h1>Sorry, we are CLOSED!</h1>
<% End If %>
<h2>Thanks for visiting!</h2>
</body>
</html>

Looping Controls

- Same code can run multiple times
- It repeats code instead of skips it
- For…Next  (Hello World example)
- Do While…Loop

<html>
<head><title>Select...Case</title></head>
<body>
<% Number = 2 %>
<% Select Case Number %>
<% Number 1 %>
The number is one (1).
<% Number 2 %>
The number is two (2).
<% Number 3 %>
The number is three (3).
<% End Select %>
</body>
</html>

“Hello World” example

<html>
<head></head>
<body>
<% For x = 3 To 7 %>
<font size=<% = x %>>Hello World!</font><br >
<% Next %>
</body>
</html>

Do While...Loop example

<html>
<head></head>
<body>
<% count = 5 %>
<% Do While count > 0 %>
Current number is <% =count %>! <p>
<% count = count - 1 %>
<% Loop %>
</body>
</html>
Jumping Controls

- Pause code, jump to another piece then back again continuing where you left off
- Call - starts subprocedure, runs it, returns back
- Functions - Used to perform actions with code then return information back to the main stream of code

Click to see examples

If…Then example
For…Next example
Do While…Loop example

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Objects

- Properties - Characteristics that describe an object
- Methods - The tasks or actions that an object is able to perform
- Some require parameters

6 Active Server Objects

- Request - Gather info sent by the client
- Response - Send info from server to client after being processed
- Server - Basic functions in web server
- Application/Session - App functions not available with basic web server
- Object Content - Microsoft Transaction Server

“Request” Object

- Request.Form - Form collection stores values from the form elements sent to the web server via “post” method
- Request.Form("TextBoxName")
“Request” Object

- Request.QueryString - Extra information that is passed to the web server appended to the URL
- Name/Value format after question mark
- http://www.cal.msu.edu/egr124/url.asp?name=Chuck

“Request” Object

- Request.ServerVariables - Holds all of the HTTP headers in addition to extra information about the server and requesting client browser
- Used to be informative
- “remote_user” and “http_user_agent”

“Response” Object

- Send information back to the browser
- Opposite to the Request Object
- Response.Write - allows the web server to print something like text to the browser that is still within the delimiters
- <%=Var1 %> is the same as
- <%=Response.Write Var1 %>
"Response" Object

- Response.Buffer - A way of manually controlling the HTML output stream
- By default, buffering is turned off
- `<% Response.Buffer = true %>` turns it on
- Must be inserted in page before any HTML is written

"Response" Object

- Response.End - Sends the output and stops the script
- Can only be used in conjunction with Response.Buffer = true
- Any instructions after it are not processed

"Server" Object

- One method of the "server" object is "CreateObject"
- "CreateObject" - allows you to make an instance of a component
- Components are ActiveX controls that come with the web server (added features)

"Server" Object

- Create an instance of an object using the "set" statement with Server.CreateObject
- Set ObjName = Server.CreateObject("ClassName. ComponentName")
- Set ObjAd = Server.CreateObject("MSWC. AdRotator")

Ad Rotator Component

- Rotates ads on each page load
- Takes a list of images and it cycles through them with a given time
- Each image can have a different hyperlink

Object examples

http://www.cal.msu.edu/egr124/url.asp?name=Chuck
Try changing the name at the end! Then reload the page and see the change!

Request Example
http://www.cal.msu.edu/egr124/browser.asp
Active Server Pages  
Part III

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Guest Book

- guest.html
- gfproc.asp
- gfinfo.txt
- list.asp
- list2.asp

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guest.html

<html>
<head><title>Guest Form</title></head>
<body>
<h1>Guest Form</h1>
<p>Hello and welcome to my guest form. Thanks for visiting my page. Please fill out the form so I know that you have been here!</p>
<form method="post" action="gfproc.asp">
First Name: <input type="text" size="30" name="first"><p>
Last Name: <input type="text" size="30" name="last"><p>
Email Address: <input type="text" size="50" name="email"><p>
<input type="submit" name="Submit" value="Submit This Info"><p>
</form>
</body>
</html>

---

guest.html

Last Name: <input type="text" size="30" name="last"><p>
Email Address: <input type="text" size="50" name="email"><p>
<input type="submit" name="Submit" value="Submit This Info"><p>

Or <a href="list2.asp">check this out!</a>!
</body>
</html>

---

gfproc.asp

<% Option Explicit %>
<% Response.Buffer = true %>
<html>
<head><title>Guest Form</title></head>
<body>
<h1>Guest Form</h1>
<form method="post" action="gfproc.asp">
First Name: <input type="text" size="30" name="first"><p>
Last Name: <input type="text" size="30" name="last"><p>
Email Address: <input type="text" size="50" name="email"><p>
<input type="submit" name="Submit" value="Submit This Info"><p>
</form>

Dim Fileproc, Infofile
Set Fileproc = CreateObject("Scripting.FileSystemObject")
Set Infofile = Fileproc.OpenTextFile("c:\inetpub\wwwroot\eg\124\gfinfo.txt", 8, true)
Infofile.WriteLine Request.Form("first")
Infofile.WriteLine Request.Form("last")
Infofile.WriteLine Request.Form("email")
Infofile.Close

<%=Request.Form("first") %> , the information you submitted has been saved to file.<p>
See other <a href="list.asp"> guests</a> who have signed in!
</p><p>Or <a href="list2.asp">check this out!</a> out!</p>
</body>
</html>
**gfinfo.txt**

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Jason
Haase
haasejas@pilot.msu.edu

**list.asp**

```html
<% Option Explicit %>
<html>
<head><title>Guest List</title></head>
<body>
<h1>Guest List</h1><p>
Here is a listing of my guests that have already visited here!</p>
<% Dim Fileproc, Infofile, first, last, email
Set Fileproc = CreateObject("Scripting.FileSystemObject")
Set Infofile = Fileproc.OpenTextFile("c:\Inetpub\wwwroot\egr124\gfinfo.txt", 1)
Do while not Infofile.AtEndOfStream
  first = Infofile.ReadLine
  last = Infofile.ReadLine
  email = Infofile.ReadLine
  Response.Write first & "  
  Response.Write last & "<br>"
loop
Infofile.Close
%>
</body>
</html>
```

**list.asp**

```asp
Response.Write email & "<p>"
loop
Infofile.Close
%
</body>
</html>
```

**list2.asp**

```asp
Do while not Infofile.AtEndOfStream
  first = Infofile.ReadLine
  last = Infofile.ReadLine
  email = Infofile.ReadLine
  Response.Write first & "  
  Response.Write last & "<br>
  Response.Write email & "&lt;a href=" & "mailto:"
  Response.Write email & ">" & "&lt;/a&gt; & "&lt;p>" 
loop
Infofile.Close %>
</body>
</html>
```

**Guest Book**

- guest.html
- gfinfo.txt
- list.asp
- list2.asp
Additional Sites

- [www.activeserverpages.com](http://www.activeserverpages.com)
- [www.aspsite.com](http://www.aspsite.com)
- [www.aspalliance.com](http://www.aspalliance.com)
- [www.genusa.com/asp](http://www.genusa.com/asp)
- [www.asphole.com](http://www.asphole.com)
- [www.serverobjects.com](http://www.serverobjects.com)