

Active Server Pages Arrays, Useful Objects and Procedures

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Arrays

- Need to declare with **Dim**:

`Dim x(10)` ← *x is an array with elements 0 through 10*

`Dim board(7,7)` ← *board is a 2-D array with elements 8 rows and 8 columns*

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Array Element Access

Use `()`, not `[]`!

```
Dim i,x(10)
```

```
For i=0 to 10
```

```
    x(i) = i
```

```
Next
```

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2-D Access

```
Dim i,j,board(2,2)
For i=0 to 2
  For j=0 to 2
    board(i,j)=0
  Next
Next
```

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ReDim

- You can change the *dimension* of an array:

```
Dim x
ReDim x(100)
ReDim x(25,25)
```

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Collections

- Associative Array – the index can be a number or a string.
- Supported by a **Scripting.Dictionary** object
 - access to the collection is via an object.

```
Dim c
Set c = CreateObject("Scripting.Dictionary")
```

Use **set** whenever you assign an object to a variable!

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Dictionary Objects Properties & Methods

- **Count**: number of elements in the collection.
- **Items**: returns array of all items (values)
- **Keys**: returns array of all keys (indicies)
- **Item(key)** : returns an item (looks up key)
- **Remove(key)** : removes one key/value pair.

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Dictionary Example

```
Dim grades
Set grades=CreateObject("Scripting.Dictionary")
grades.Add "HW1",85
grades.Add "HW2",100
grades.Add "Test",91
%>
<H3>Your Grades</H3>
<TABLE>
<TR><TH>HW1</TH><TD><%=grades.Item("HW1")%></TD></TR>
<TR><TH>HW2</TH><TD><%=grades.Item("HW2")%></TD></TR>
<TR><TH>Test</TH><TD><%=grades.Item("Test")%></TD></TR>
</TABLE>
```

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VBScript ASP Objects

- **Err**
- **Request, Response**
- **Session, Application**
- **FileSystemObject**
- **RegExp, Match, Matches**

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The **Request** Object

- Provides information about the request

```
Request.cookie("cookieName")
```

```
Request.form("fieldName")
```

or just use

```
Request("fieldName")
```

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The **Response** Object

- Used to modify the HTTP response

```
Response.Cookie("cname") = value
```

```
Response.Write("something")
```

```
Response.Redirect("http://foo.com")
```

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The **FileSystem** Object

- Access to Drives, Folders and Files (on the web server machine).
- Copy, move, create, delete files and folders.
- Write and Read Files.

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The **RegExp** Object

- Regular Expressions
 - **Match()**
 - **Replace()**
- Language used to describe patterns is pretty much the same as in Perl.
- OO Interface is a bit harder to use (requires more code).

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VBScript Built-in Functions

- Lots of functions:
 - Math
 - Formatting (currency, numbers, etc.)
 - Dates
 - Strings

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Random Numbers in VBScript

- Functions: **rnd()** and **Randomize()**

Randomize()

answer = Int(1000*Rnd()+1)

↑
an integer in the range 1-1000 inclusive

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Subroutines

- Subroutines don't return anything.

```
Sub subname(param1,param2,...)  
  ...statements...  
  Exit Sub  
  ...statements...  
End Sub
```

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Example

```
Sub H3(txt)  
  Response.Write("<H3>")  
  Response.Write(txt)  
  Response.Write("</H3>")  
End Sub  
  
H3("Hello World")  
Call H3("I have been called")
```

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Functions

- Functions return something
- No return statement, instead set the *function name* to a value.

```
Function funcname(param1,...)  
  ...statements...  
  Exit Function  
  ...statements...  
  funcname = something  
End Function
```

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Function Example

```
Function MakeTag(tag,txt)
  Dim s
  s = "<" & tag & ">"
  s = s & txt
  s = s & "</" & tag & ">"
  MakeTag = s
End Function

Response.Write(MakeTag("H4","Hello"))
```

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ASP Example: Number Guessing Game

- Need to keep state of the game
- Session variables:
 - `Session("answer")` *the right number*
 - `Session("remaining")` *guesses left*
 - `Session(0)` *first guess*
 - `Session(1)` *second guess*
- New Game: form field named "newgame"

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ASP Subroutines

- **NewGame** *creates a new game*
- **BadGuess** *guess was wrong*
- **ShowGuesses** *displays the guesses*

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Issues

- Using Session variables all over the code can lead to sore fingers:

```
If Session("answer") = Request("newguess") Then ...
```

- One approach:
 - create variables for each session/request variable and initialize at the top of the document.
 - update all session variables that might change at the bottom of the document.

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```
<%@ Language=VBScript %>  
<% Option Explicit %>  
<%  
' copy session variables to regular  
' variables and force to Int  
  
Dim i,answer,newguess,remaining  
answer = Int( Session("answer") )  
newguess = Int( Request("newguess") )  
remaining = Int( Session("remaining") )
```

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NewGame Subroutine

- Create random number [1-1000]
- Set the number of guesses remaining to 10
- Print out some stuff about new game starting...

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ShowGuesses Subroutine

- Display the guesses and indicate whether each is too low or too high.

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```
Sub ShowGuesses %>
<H3>Guesses</H3>
<TABLE BORDER=1><TR><TD>Too Low</TD><TD>Too High</TD></TR>
<TR><TD><%
For i=0 to 10-remaining-1
  If (Session(i)>answer) Then
    Response.Write(Session(i) & "<BR>")
  End If
Next
Response.Write("</TD><TD>")
For i=0 to 10-remaining-1
  If (Session(i)>answer) Then
    Response.Write(Session(i) & "<BR>")
  End If
Next %>
</TD></TR></TABLE><%
End Sub
```

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The Main code

- Check for new game.
- If the guess is right, they win
- Guess is wrong, call badguess
- Send back form used to submit guesses
- Update session variables

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```

If Session("answer")=0 Or Request("newgame") Then
    NewGame()
ElseIf newguess = answer Then
    Response.Write("<H3>" & newguess)
    Response.Write(" is Right! You Win!</H3>")
    NewGame()
Else
    BadGuess()
End If
%>
<FORM ACTION=hw3.asp METHOD=GET>
Your Guess: <INPUT TYPE=TEXT NAME=newguess>
</FORM>
<A HREF=hw3.asp?newgame=1>New Game</A>

<% 'Update all Session variables!
Session("remaining")=remaining
Session("answer") = answer
%>

```

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