

Lecture 05

Project: C#, ASP, .NET

Friday, January 13, 2006

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C# - Outline

- Hello World
- Properties (getters/setters)
- Enums
- Partial classes
- Dataset: DataTable, DataRow
- Connecting to a database

<http://www.ecma-international.org/activities/Languages/Introduction%20to%20Csharp.pdf>

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C# - Highlights

- C# = C++.Syntax + Java.Semantics
- It is a “safe” language (like Java)
- Can be embedded in Webpages
- Can access a database
 - Complex, but you should see the predecessors !

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Hello World

```
using System;  
  
class Hello {  
    static void Main() {  
        Console.WriteLine("Hello world");  
    }  
}
```

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Properties: Getters and Setters

```
public class Point {  
    private int x;  
    private string c;  
  
    public int position {  
        get { return x; }  
        set { x = value; c = "red"; }  
    }  
  
    public string color {  
        get { return c; }  
        set { c = value; x++; }  
    }  
}
```

```
Point uvw = new point();
```

```
uvw.position = 55;  
uvw.color = "green";  
uvw.position = uvw.position * 2;  
if (uvw.color == "green")...
```

Indexers

```
public class Stuff {  
    private int x[];  
  
    public int this[int i] {  
        get { x[2*i+1]=0; return x[2*i]; }  
        set { x[2*i] = value; x[2*i+1]=1; }  
    }  
}
```

```
Stuff uvw = new Stuff();
```

```
uvw[12] = 55;  
uvw[99] = uvw[12]*7 + 2;
```

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Enum

```
enum Color: byte {  
    Red = 1,  
    Green = 2,  
    Blue = 4,  
    Black = 0,  
    White = Red | Green | Blue,  
}
```

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Partial Classes

- Some fields defined in file 1
- Other fields defined in file 2
- Why ?
Nathan creates file 1, you create file 2

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Dataset

Dataset:

- DataTable
- DataRow

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DataSet

```
DataSet myLocalDB = new DataSet();  
.....  
..... /* create inside a table called "books" */  
..... /* now use "books" */  
  
DataTable x = myLocalDB.Tables["books"]  
  
foreach (DataRow y in x.Rows) {  
    if (y["title"] == "Harry Potter") y["price"]++;  
}
```

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Connecting to a Database

- Create or edit web.config file
 - Specify iisqlsrv, user, password
 - Give a 'name'
- Create a SqlConnection
 - refer to 'name'
- Create a SqlDataAdapter
 - embed SQL query string
- Execute the Fill() method to run query and store answers in a datarow

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Connecting to a Database

```
SqlConnection c = new SqlConnection( ... "name" ... );  
  
string q = "select distinct year from products where price < 100";  
  
SqlDataAdapter a = new SqlDataAdapter(q, c);  
  
DataSet myLocalDB = new DataSet();  
  
a.Fill(myLocalDB, "years");
```

SQL = a string !!!
"impedance mismatch"

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