# Homework Assignment #4

Due Monday, November 15[h.]

The place to start when implementing the server side of a web service is the domain model. This assignment is to model and implement the "domain model" for the Northwind Web Service. You will need to design the domain model using UML, then implement it in C#. No Web Services code is involved. You should also write a console based test program to demontrate the domain model. You domain model needs to represent all the underlying tables pictured below. It should also support methods for

- Listing all categories.
- Listing all products for a given category.
- Listing customers.
- Listing employees.
- Listing all orders.
- Placing an order.

You can either really attach to the Northwind database (Access or SQL server) or you can implement your own internal data structures to simulate the database.

## You will need to turn in:

- A UML diagram of your domain model. Use Visio, VisualUML, or the UML tool of your choice. ArgoUML is available free at http://argouml.tigris.org/. Drawing by hand and scanning is also fine. The UML doesn't have to be perfect/validatable.
- The C# code for your domain model
- A console client to demontrate the domain model. It should at least place a new order, then list the orders to show that one was placed.

## Criteria for success:

Your domain model should be consistent, exhibit all the required functionality, and match your UML diagram. The console application should show the required functionality of the domain model.

Please zip up the project files and mail the completed assignment to webservices@cauldwell.net with a subject line beginning with **[WSA – assignment 4]**.

The Database:

**Employees**

| PK | EmployeeID |
|----|------------|
| I1 | **LastName** |
|    | **FirstName** |
|    | Title |
|    | TitleOfCourtesy |
|    | BirthDate |
|    | HireDate |
|    | Address |
|    | City |
|    | Region |
| I2 | PostalCode |
|    | Country |
|    | HomePhone |
|    | Extension |
|    | Photo |
|    | Notes |
| FK1 | ReportsTo |
|    | PhotoPath |

**Customers**

| PK | CustomerID |
|----|------------|
| I2 | **CompanyName** |
|    | ContactName |
|    | ContactTitle |
|    | Address |
| I1 | City |
| I4 | Region |
| I3 | PostalCode |
|    | Country |
|    | Phone |
|    | Fax |

**Suppliers**

| PK | SupplierID |
|----|------------|
| I1 | **CompanyName** |
|    | ContactName |
|    | ContactTitle |
|    | Address |
|    | City |
|    | Region |
| I2 | PostalCode |
|    | Country |
|    | Phone |
|    | Fax |
|    | HomePage |

**Categories**

| PK | CategoryID |
|----|------------|
| I1 | **CategoryName** |
|    | Description |
|    | Picture |

**Products**

| PK | ProductID |
|----|------------|
| I3 | **ProductName** |
| FK2,I4,I5 | SupplierID |
| FK1,I2,I1 | CategoryID |
|    | QuantityPerUnit |
|    | UnitPrice |
|    | UnitsInStock |
|    | UnitsOnOrder |
|    | ReorderLevel |
|    | **Discontinued** |

**Orders**

| PK | OrderID |
|----|------------|
| FK1,I1,I2 | CustomerID |
| FK2,I4,I3 | EmployeeID |
| I5 | OrderDate |
|    | RequiredDate |
| I6 | ShippedDate |
| FK3,I7 | ShipVia |
|    | Freight |
|    | ShipName |
|    | ShipAddress |
|    | ShipCity |
|    | ShipRegion |
| I8 | ShipPostalCode |
|    | ShipCountry |

**Shippers**

| PK | ShipperID |
|----|------------|
|    | **CompanyName** |
|    | Phone |

**Order Details**

| PK,FK1,I2,I1 | OrderID |
|--------------|---------|
| PK,FK2,I4,I3 | ProductID |
|    | **UnitPrice** |
|    | **Quantity** |
|    | **Discount** |