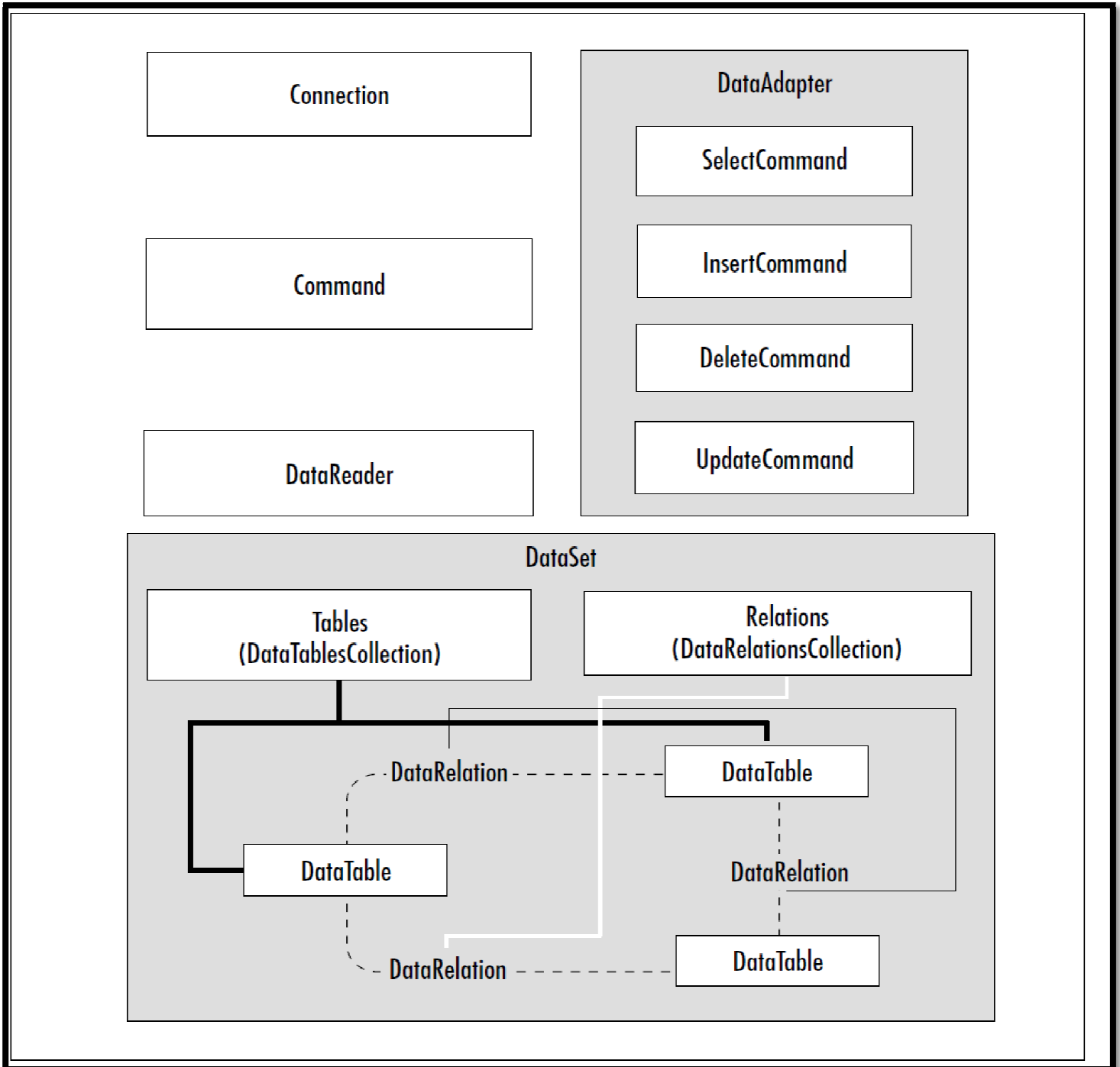


ADO.NET Programming

Advanced Programming Language (630501)
Fall 2011/2012 – Lecture Notes # 22

ADO.NET Objects Model



ADO.NET Programming

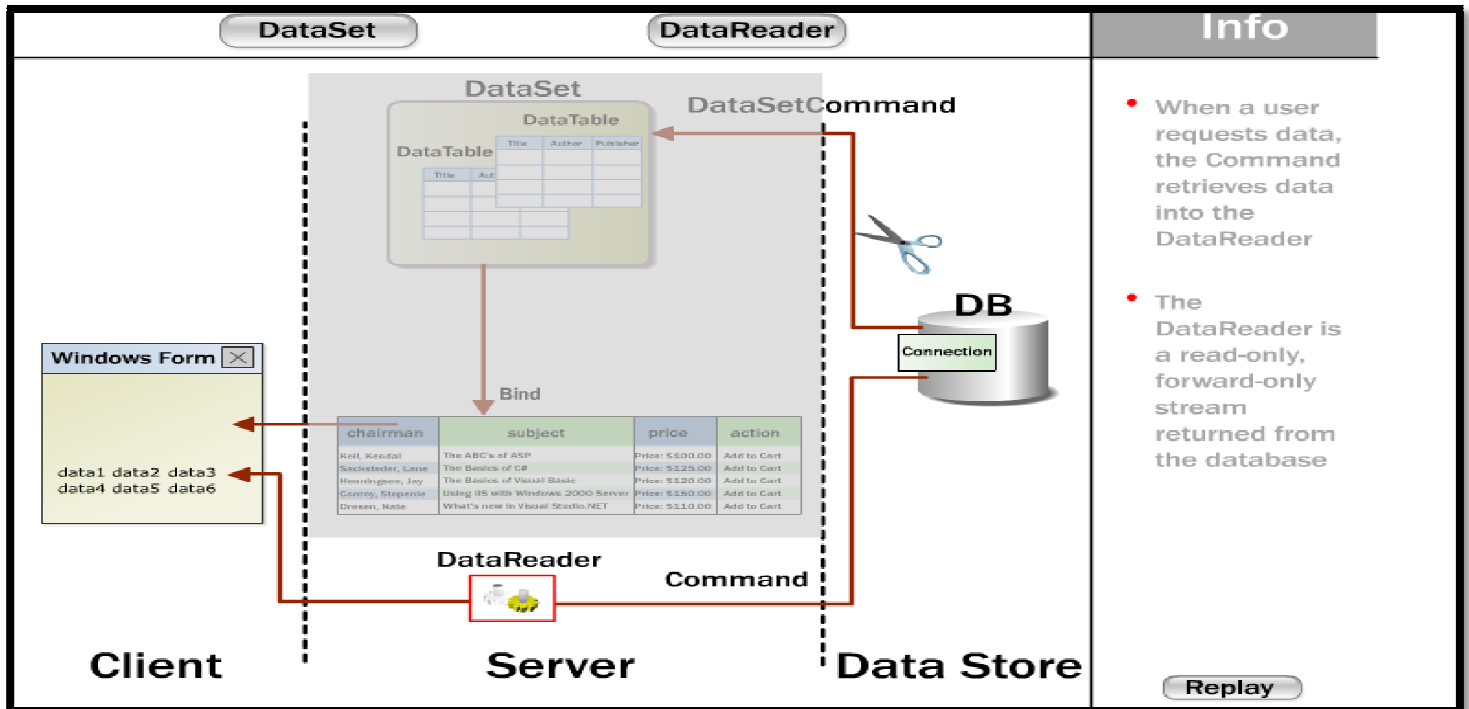
The ADO.NET Architecture

drag and drop each component into their appropriate spot below

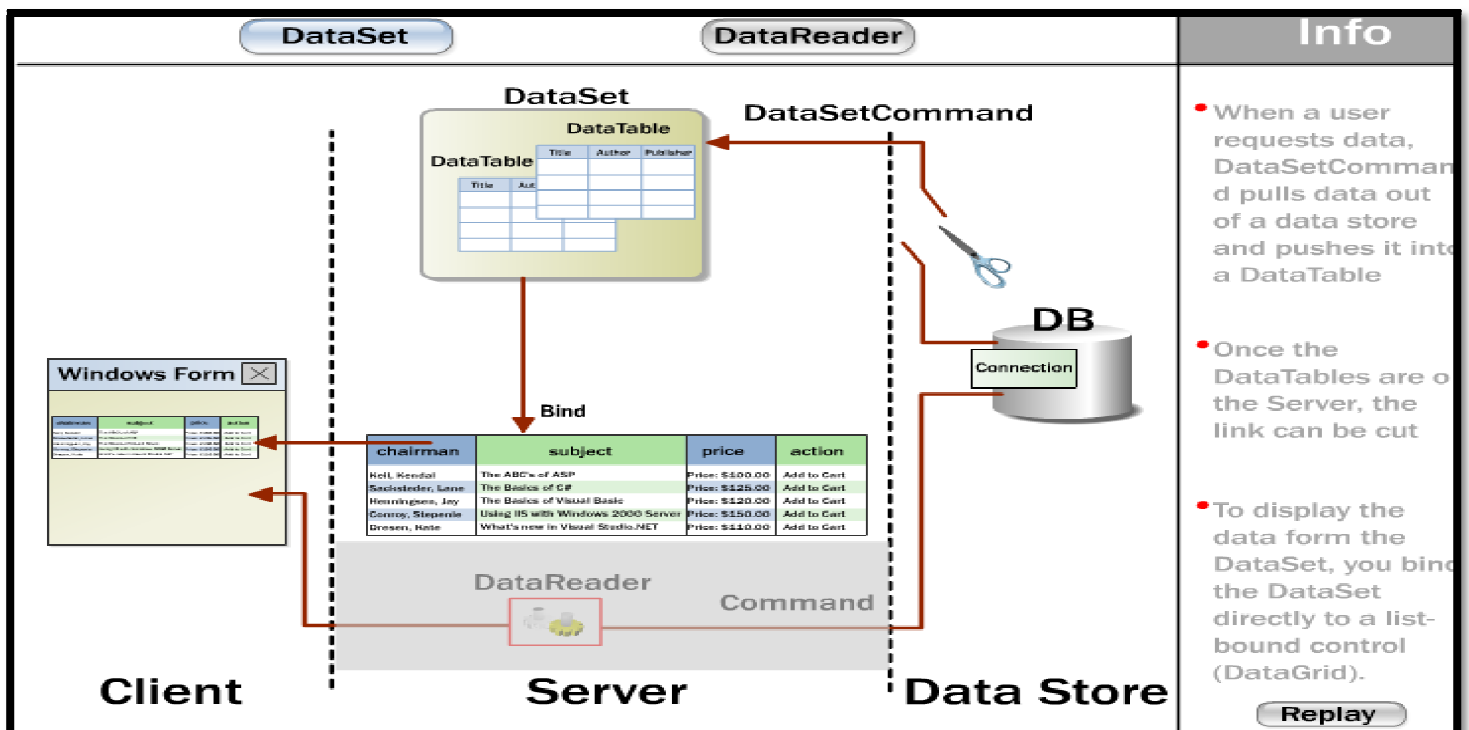
The diagram displays several components for an ADO.NET application: a yellow box for 'SQL Data Adapter', a 'Windows Form' window with a text box, a blue cylinder for 'SQL Server 2000', a 'Data Source' label, a 'DataSet' window with a grid and 'data table' label, a 'DataGrid' window, and a 'Select and Connect Commands' label. A 'Fill' label is also present. Below these is a sequence of five empty light blue boxes connected by red arrows, with 'Reset' and 'Reveal' buttons at the bottom right.

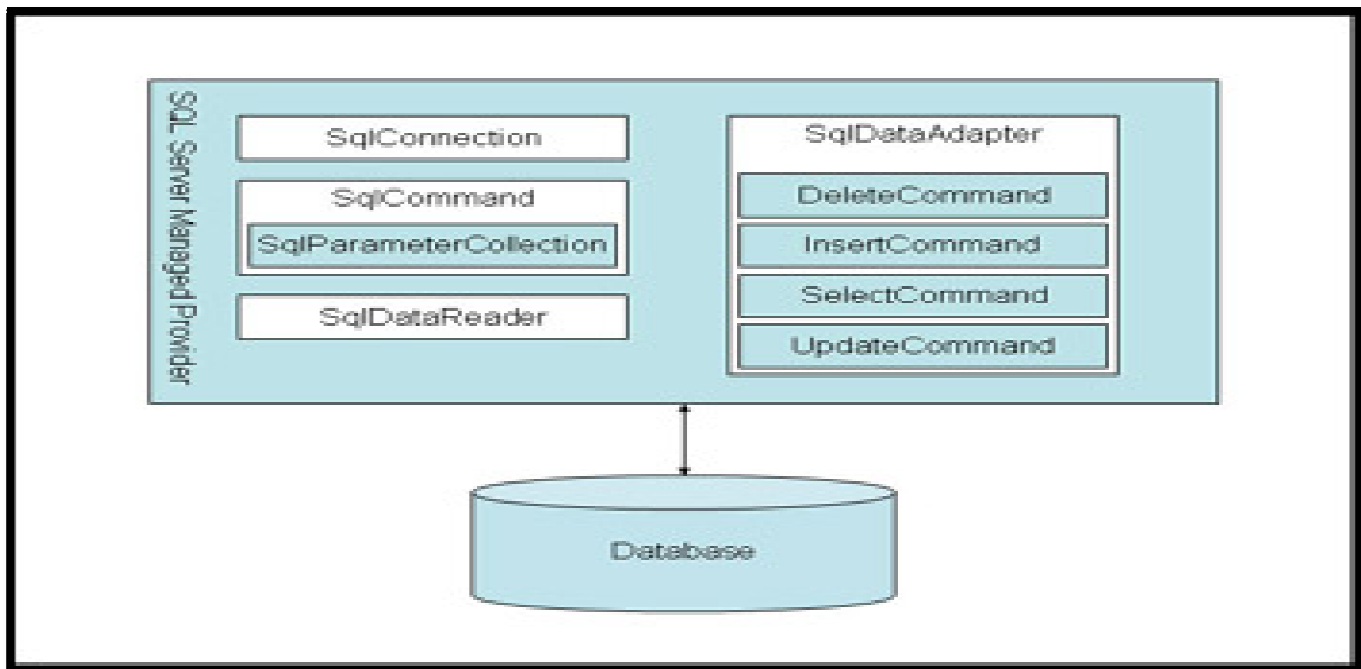
The completed diagram shows the data flow: 'SQL Server 2000' (Data Source) connects to 'SQL Data Adapter' (Select and Connect Commands), which fills a 'DataSet' (data table) using 'Fill'. The 'DataSet' is then displayed in a 'DataGrid', which is connected to a 'Windows Form'.

DataReader object



DataSet Object



SQL Server Data Base

- The **SqlConnection** class is used to establish a *connection to a SQL Server database*. The SqlConnection class is used for *opening* connections, *setting* or *retrieving* properties of a connection, or handling connection-related events.
- The **SqlCommand** class is used to *execute SQL statements* or *stored procedures* against a SQL Server database. The SqlCommand class (and its OLE DB equivalent, the OleDbCommand class) can execute statements or stored procedures that do not return values, or that return single values, XML, or datareaders.
- The **SqlDataReader** class provides *forward-only, read-only access* to a set of rows returned from a SQL Server database. Datareaders (including both the SqlDataReader and OleDbDataReader) provide high-performance access to read-only data and are the best choice for accessing data to be displayed in ASP.NET.
- The **SqlDataAdapter** class is used as a *bridge* between the *DataSet* class and *SQL Server*. You can use the SqlDataAdapter class to *create* a dataset from a given SQL statement or stored procedure represented by a SqlCommand instance, to *update* the back-end SQL Server database based on the contents of a dataset, or to *insert* rows into or *delete* rows from a SQL Server database. The *OleDbAdapter* class performs the same tasks for OLE DB datasources.