**ADO.NET ASSIGNMENT**

**QUES1:** Describe all the data provider objects with sample code.

**Solution:**

**4 data provider objects are as follows:-**

1. **Connection- T**he Connection Object is Handling the part of physical communication between the application and the Data Source. Depends on the parameter specified in the Connection String , [ADO.NET](http://vb.net-informations.com/ado.net/ado.net-architecture.htm) Connection Object connect to the specified Database and open a connection between the application and the Database . When the connection is established , SQL Commands may be executed, with the help of the Connection Object, to retrieve or manipulate data in the Database. Once the Database activity is over , Connection should be closed and release the resources.
2. **Data Adapter-**The DataAdapter can perform Select , Insert , Update and Delete SQL operations in the Data Source. The Insert , Update and Delete SQL operations , we are using the continuation of the Select command perform by the DataAdapter. That is the DataAdapter uses the Select statements to fill a DataSet and use the other three SQL commands (Insert, Update, delete) to transmit changes back to the Database.
3. **Data Reader-** The DataReader cannot be created directly from code, they created only by calling the ExecuteReader method of a Command Object.DataReader Object provides a connection oriented data access to the data Sources. A Connection Object can contain only one DataReader at a time and the connection in the DataReader remains open and cannot be used for any other purpose while data is being accessed. When started to read from a DataReader it should always be open and positioned prior to the first record.
4. **Command-**The Command Object required an instance of a Connection Object for executing the SQL statements. That is, for retrieving data or execute an SQL statement against a Data Source , you have to create a Connection Object and open a connection to the Data Source, and assign the open connection to the connection property of the Command Object.

**QUES2:** Display the data into 3 tables from database using connection string in web.config with connection pooling and use Connected and disconnected architecture both.

**Solution: In git repository**

**QUES3:** Create sample program to implement all the sqlcommands viz. ExecuteReader, ExecuteNonQuery and ExecuteScalar

**Solution:In git Repository**

**QUES4:** What are the two architecure in ado .net for connection create a connection, implement both architecure and show the difference

**Solution:**

**2 architechure in ado.net are as follows:-**

1. **Connection Oriented Data Access Architecture -**In this the application makes a connection to the Data Source and then interact with it through SQL requests using the same connection. In this case the application stays connected to the database system even when it is not using any Database Operations.
2. **Disconnection Oriented Data Access Architecture-** In this the DataSet is the central component. A DataSet is an in-memory data store that can hold multiple tables at the same time. DataSets only hold data and do not interact with a Data Source. One of the key characteristics of the DataSet is that it has no knowledge of the underlying Data Source that might have been used to populate it

**In git Repository**

**QUES5:** Create a program to handle SQL injection attack using stored procedure with 2 or more parameters.

**Solution: In git Repository**

**QUES6:** Implement all the ACID properties with proper transaction and exception handling

**Solution:**

**In git Repository**

**QUES7:** Describe how to improve system performance with the use of database caching and disconnected architecure(show data based on caching)

**Solution: In git Repository**

**QUES8:** What are the difference between DataReader, DataAdapter and DataSet?

**Solution:**

1. **Data Adapter-**The DataAdapter can perform Select , Insert , Update and Delete SQL operations in the Data Source. The Insert , Update and Delete SQL operations , we are using the continuation of the Select command perform by the DataAdapter. That is the DataAdapter uses the Select statements to fill a DataSet and use the other three SQL commands (Insert, Update, delete) to transmit changes back to the Database.
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3. **Data Set:** It is independent of provider. The **DataSet** is a memory-resident representation of data that provides a consistent relational programming model regardless of the data source. It can be used with multiple and differing data sources, with XML data, or to manage data local to the application.

**QUES9:** What are the methods of XML dataset objects

**Solution:Methods are as follows:-**

1. **GetXML();**
2. **ReadXML();**
3. **WriteXML();**
4. **WriteXMLSchema();**
5. **InferXMLSchema();**
6. **GetXMLSchema();**
7. **ReadXMLSchema();**

**QUES10:** Handle the connection properly and descibe the various ways to handle the database connection.

**Solution:There are 2 ways in which database connection can be handles:-**

1. Using try catch finally block
2. By putting the code in “using” block