

**DEPARTMENT OF COMMERCE (CA)**  
**VISUAL BASIC (Semester-III)**  
**II M.COM (CA)                      Sub Code-18MCC32C**

**UNIT - IV**

**Databases: Data access SAGA, VB Database Tools, ADO Data Binding, Data Environment designer. Database Programming: ADO at work-setting up a connection, Processing data.**

**Database**

A database management system typically deals with storing, modifying, and extracting information from a database. It can also add, edit and delete records from the database. However, a DBMS can be very difficult to handle by ordinary people or businessmen who have no technological backgrounds.

**Data access SAGA**

Data access is a feature of Visual Basic that allows you to access and manipulate any database from Visual Basic. The database may be either MS-Access database or FoxPro database or it may also be any of the relational databases such as Oracle.

**Various ways of access databases**

**Data Access Objects (DAO)**

This is an object model that has a collection of objects using which you can access a database. This model gives complete control on the database. This model uses Jet Engine, which is the native database engine used by Visual Basic and MS-Access. This was the first model to be used in Visual Basic. Though it is possible to access any database using this, it is particularly suitable for MS-Access databases and not suitable for ODBC data sources such as Oracle and MS-SQL Server. So, Microsoft later introduced RDO.

**Remote Data Objects (RDO)**

These objects are only used to access ODBC data sources such as Oracle. These objects access databases that are on a remote machine (database server). This object model has less number of objects compared with DAO and is more suitable for accessing remote databases.

**ActiveX Data Objects (ADO)**

Microsoft has introduced a new object model called ActiveX Data Objects (ADO), which is based on ActiveX technology, for the first time in Visual Basic 6.0. This object model has very few objects and it is based on the OLE DB interface. OLE DB interface is a new interface (replacing ODBC and others), through which you can access data of all formats in the same

manner. ADO uses OLE DB providers to access the data. That means each database is accessed through an OLE DB provider. And ADO provides the programming framework to access OLE DB. ADO is also much easier to deal with.

## Visual Database Tools

The Visual Database Tools are a combination of design tools you can use to work with a data source. You can use them to create queries, design or modify a database structure, or update data. The tools are Database Diagram Designer, Table Designer, and Query and View Designer.

## ADO data binding

ADO data binding, you can bind controls on forms to fields in a database. In Visual Basic 6, you can bind a control to one of three ADO objects: ADO data environment.

## Data Environment designer

The Data Environment Designer seemed to show a lot of potential.



The Visual Basic 6.0 Data Environment Designer with Four Commands

- Provides a way to capture one or more OLE DB connection strings and automatically establishes appropriate connections at design and run time.
- Provides a way to easily author queries of all types at design time using an intuitive GUI.
- Persists these queries in a form that could be shared among an entire development team.
- Provides an interface to ADO that exposes underlying ADO Connection, Command, and Record set objects and their properties.
- Exposes an event interface to map to underlying ADO events and helps manage synchronous as well as asynchronous operations.
- Manages input, output, input/output, and return status arguments passed to stored, as well as ad hoc, procedures.
- Manages the construction of ADO Shape statements, and displays hierarchical data structures.

- Acts as a "data source" control so that bound controls can access the data returned from the queries without writing code.
- Supports intuitive drag-and-drop functionality to make it easy to set up bound control forms and reports based on the Data Environment data source object.

### **Database Programing**

There are several ways of connecting to a database, through data bound controls, DAO or ADO to enable this we need to create a following variable:

- Work space ADODB.Connection
- Database
- ADODB.Recordset
- Field ADODB.Field

### **ADO at Work**

Using ADO is quite simple and allows programmers to provide flexible database front ends to users that are reliable and include many features. Following are some of the key objects found in the ADO object model:

- Connection object
- Command object
- Record set object
- ADO using process

### **Processing Data**

- Connecting to a Database
- Opening a table/ query for viewing
- Change a record
  1. Edit record
  2. ADO Delete record

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