Database Tutorials

Hello everyone… welcome to database tutorials. These are going to be very basic tutorials about using the database to create simple applications, hope you enjoy it. If you have any notes about it, please send them to **notes@mka-soft.com.** Finally if you find these tutorials are useful, it would be nice from you to send a small donation via PayPal to **donation@mka-soft.com**.

The work with this tutorial started on 2011-FEBREWARY-07.

Reading Data

This tutorial is about reading the information stored in database tables without the use of wizard. The steps needed to perform such operation is as follows:

1- Open database connection: The last tutorial covered opening a database connection. You need to open a database connection before you can do any operation against the database.

2- Create a command: commands are used to perform any operation against the database such as insert, update, delete, or getting the data.

3- Read the data and process it: when you want to read the information from a database you need to access the data row by row. To do this you need to use what is called a DataReader. The DataReader allows you to read from a single row at a time, and allows you to move to next row if needed.

Now consider the following code (replace the path of your database file to make it work):

```
' open a connection to the database
Dim Conn As New OleDb.OleDbConnection("Provider=Microsoft.ACE.OLEDB.12.0;Data
Source=DatabaseFilePath")
Conn.Open()
```

This is the first part, and here the connection is opened

```
' open a transaction object, this will be convered next tutorial
Dim Trans As OleDb.OleDbTransaction
Trans = Conn.BeginTransaction
```

Ignore the Transaction here, it will be covered in the next tutorial.

```
' define the command, which allows you to read, write or update the db
Dim Cmd As New OleDb.OleDbCommand

' define the text, this specifies how to get the data.
Cmd.CommandText = "select * from employees"
```

Here define the command text which is an SQL statement that tells the database how to get the data. In this case you want to get the information of the employees table.

```
' assign the connections
Cmd.Connection = Conn
```

Tell the command which connection to use, i.e. what database should be used.

```
' assign the transaction
Cmd.Transaction = Trans
```

Transactions are covered in next tutorial, so just write the code as it is.

```
' execute the command
Dim MyReader As OleDb.OleDbDataReader

MyReader = Cmd.ExecuteReader
```

Execute the command, and now MyReader is ready to provide you with the result row by row.

```
' this loop allows you to check every row
Do While MyReader.Read
    MsgBox(MyReader.Item("ID") & "-" & MyReader.Item("NME"))
Loop
```

Loop on every row, MyRead.Read will return true is there is a row to read, and will return false if there is no row to read. So the loop means: Keep showing a message box while there are rows to be read from the result of the sql statement.

Since the MyReader object moves a row at a time, you need to get the information of a row. Use the Item property to get the value of a specific column. For example:

A=MyReader.Item("*ColumnName*")

 will return the value of that specific column. You can also use a number to specify the location of the column, for example:

A=MyReader.Item(7)

Which will return the value of the 7th column.

```
MyReader.Close()
Conn.Close()
```

This last part will close the DataReader and Connection object. So the whole code should be:

```
' open a connection to the database
Dim Conn As New OleDb.OleDbConnection("Provider=Microsoft.ACE.OLEDB.12.0;Data
Source=DatabasePath")
Conn.Open()

' open a transaction object
Dim Trans As OleDb.OleDbTransaction
Trans = Conn.BeginTransaction

' define the command, which allows you to read, write or update the db
Dim Cmd As New OleDb.OleDbCommand

' define the text
Cmd.CommandText = "select * from employees"

' assign the connections
Cmd.Connection = Conn

' assign the transaction
Cmd.Transaction = Trans

' execute the command
Dim MyReader As OleDb.OleDbDataReader

MyReader = Cmd.ExecuteReader

' this loop allows you to check every row
Do While MyReader.Read
    MsgBox(MyReader.Item("ID") & "-" & MyReader.Item("NME"))
Loop

MyReader.Close()
Conn.Close()
```

This could be written in more compact form as follows (in this example, the result are displayed in a datagridview):

```
DataGridView1.Rows.Clear()

Dim Conn = New OleDb.OleDbConnection("Provider=Microsoft.ACE.OLEDB.12.0;Data
Source=DatabasePath")
Conn.Open()

Dim CMD As New OleDb.OleDbCommand("select * from employees", Conn,
Conn.BeginTransaction)

Dim DR = CMD.ExecuteReader

Do While DR.Read

    Dim V1 = DR.Item("ID")
    Dim V2 = DR.Item("NME")

    DataGridView1.Rows.Add(V1, V2)

Loop

DR.Close()
Conn.Close()
```

Try modifying this code and reading data from other tables. It should not be that hard. So this will be all for today. If you have questions or notes, send them to notes@mka-soft.com.

Thank you.

mkaatr