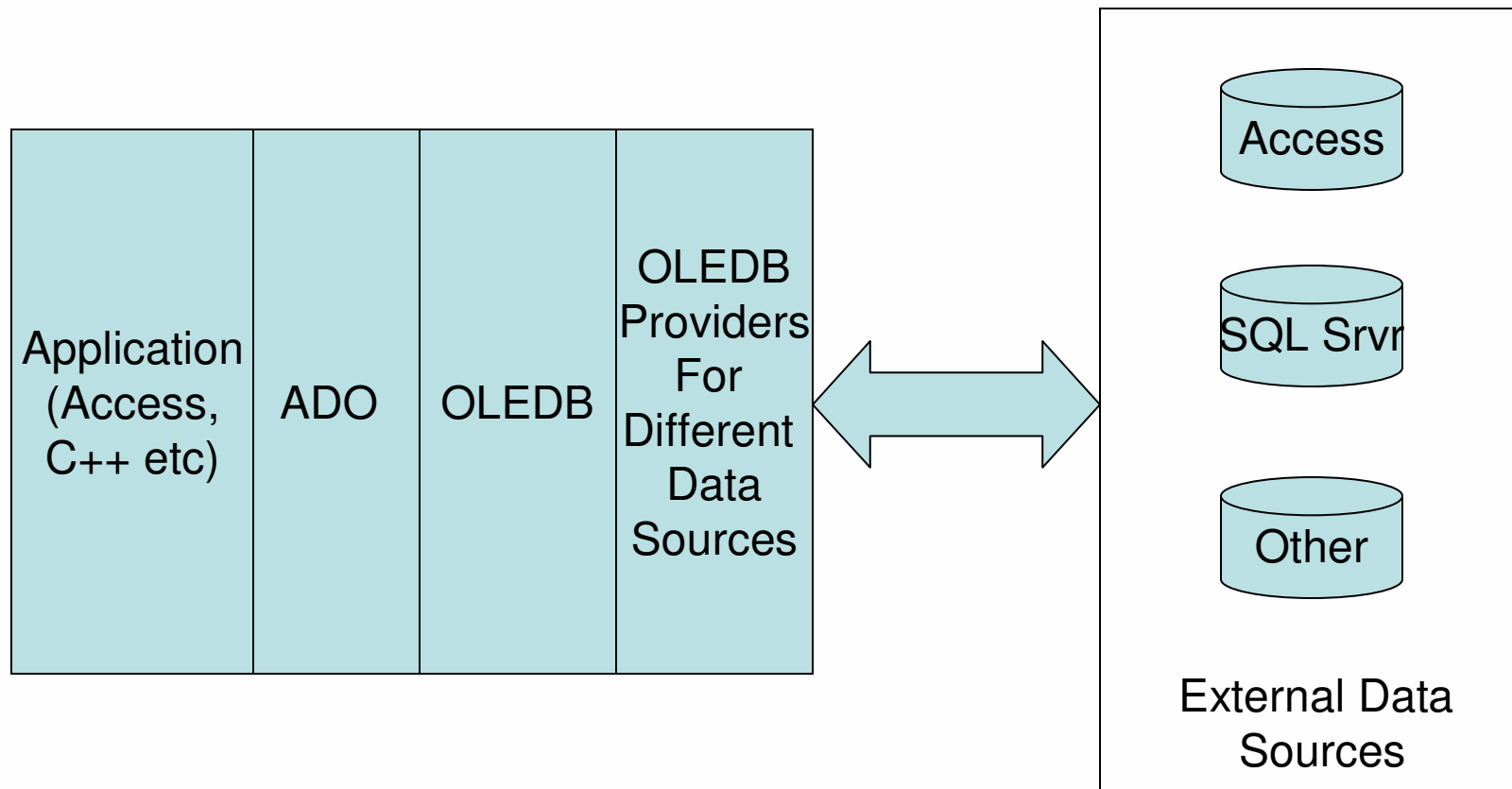


VBA ADO & MS Access

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Part - 1

- ADO – ActiveX Data Objects
- Used to connect to database from MS Windows platform
 - Access, SQL Server, Sybase, Oracle, files etc
- Replacement for earlier Libraries - DAO (Data Access Objects) and RDO
- ADO is a development kit for OLE DB
- OLE DB – Object Linking and Embedding Databases
 - Underlying Interface that provides access data sources like RDBMS, ISAM/VSAM, file based, e-mails etc

ADO Architecture



- Why ADO
 - We can access MS Access DB objects directly
 - In case of enterprise applications data needs to be accessed from external resources like
 - Other Access Database files
 - SQL Server
 - Sybase etc
 - ADO allows the access to any external database from within Access application

Using Access DB

- Access DB (mdb) can be accessed using Jet DB Provider
- Key ADO Objects
 - Connection – provides the connection to data source
 - Command – provides methods to execute database commands (query etc)
 - Recordset – provides the access to command results

Connecting Data Source



- ADODB.Connection object provides the connection

```
Dim dbcon As ADODB.Connection
Set dbcon = New ADODB.Connection
dbcon.ConnectionString = "Provider=Microsoft.Jet.OLEDB.4.0;" &
    "Data Source= c:\my documents\DB1.mdb"

dbcon.Open
Rem perform db ops
dbcon.Close
Set dbcon = Nothing
```

Working with Recordset



- Recordset is used to work with objects of Datasources like Tables, StoredProcedures etc
- Recordset uses Connection object to connect and retrieve the data
- Result dataset is accessed via special object called CURSOR

- Object that controls the Data record navigation, data updates and tracking of user changes
- Types
 - Client Side – Cursor Object is created on Client machine (adUseClient)
 - Server Side – Default – Cursor object is created on Server (adUseServer)
- Set *CursorLocation* property on *Recordset* object
 - rs.CursorLocation = adUserClient

- Server Side – Default – Object is created on Server
 - Object is created at server
 - Reduces the data transfer there by network traffic
 - Improves Application (client) performance and memory needs
 - Flip side - Overhead on server resources as all cursors for all users are created on server

Client Side Cursor

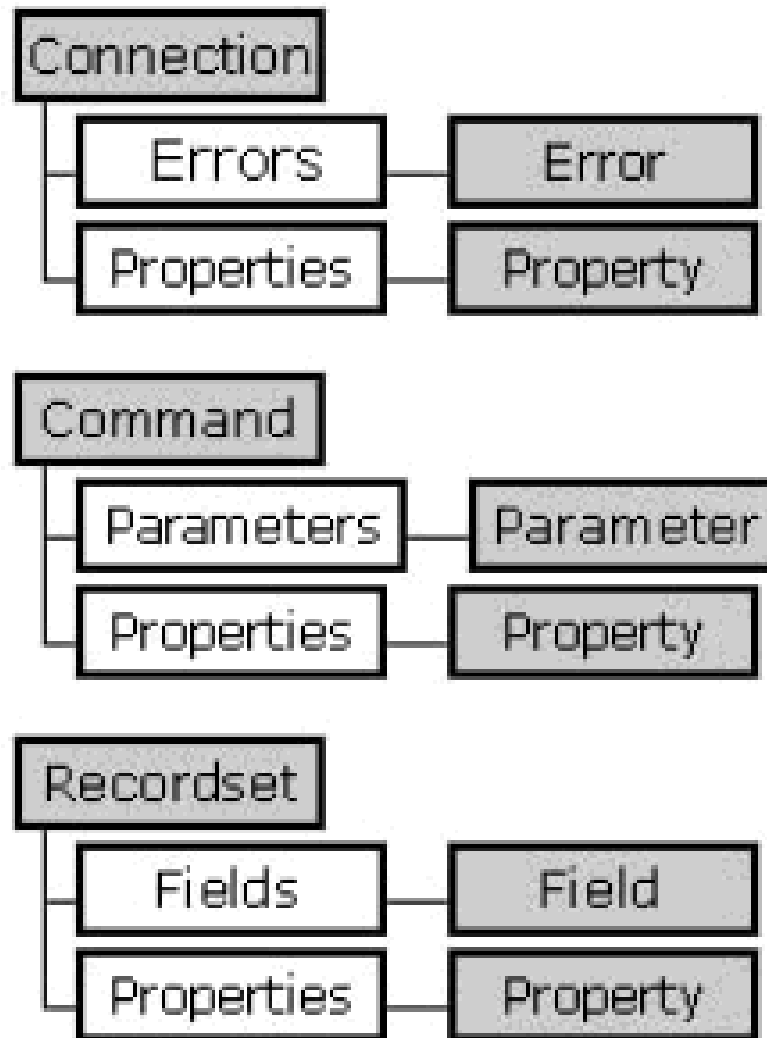
- Object is created at Client
- All query data transferred to the client there by additional network traffic
- Improves Application performance in subsequent data acces
- Reduces overhead on server resources as cursors are created on client machines

- Provider is the database driver
- It's a bridge between ADO and actual underlying database
- Access files can be accessed using
 - Microsoft Jet OLEDB
- *Provider* property of *Connection* object is set with appropriate driver name
 - Eg: Provider = Microsoft.Access.OLEDB.10.0
- CurrentProject.Connection object can be used to set the properties (from within MS Access)

Data Link

- Data Link is property file that contains the database connection info
- Ends with extension “.UDL”
- Can be edited using Data Link tool

ADO Object Model



Recordset

- Recordset is a ADO object that provides access to actual data and manipulation of data record by record