

APP301: Implement a Data Access Layer with Enterprise Library

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About Brian

- Chief Architect, IDesign Inc. (www.idesign.net)
- Microsoft Regional Director / MVP
- Writing
 - Data Binding with Windows Forms 2.0, Addison Wesley, January 2006
 - Smart Client Deployment with ClickOnce, Addison Wesley, Summer 2006
 - MSDN Magazine, MSDN Online, CoDe Magazine, The Server Side .NET, asp.netPRO, Visual Studio Magazine
- Speaking
 - Microsoft TechEd US, Europe, Malaysia, Visual Studio Connections, DevTeach, INETA Speakers Bureau, MSDN Webcasts
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Agenda

- Data Access Strategies
- Enterprise Library / DAAB Overview
- Integrating DAAB Into Your App
- Using DAAB



What Kind of Data Object?

- Raw DataSet
 - Rarely
- Typed DataSet
 - Windows Apps
 - Closed architecture Web services
 - Internal Web applications



What Kind of Data Object?

- **DataReader**
 - Avoid passing out of data layer
 - Use to populate custom business entity objects
- **Custom Business Entity Objects**
 - Open Web services
 - Internal/External Web applications
 - Windows applications



What Data Access Technology?

- **Raw ADO.NET**
 - Close to the metal
 - Repetitive / error prone coding
- **Table Adapters**
 - Typed DataSets Only
 - Can use raw parameters
- **Object Relational Mapping**
 - Third-party products
 - Future Microsoft solutions
 - Spin-your-own



What Data Access Technology?

- Enterprise Library Data Access Application Block (DAAB)
 - Thin wrapper over ADO.NET
 - Encapsulates common tasks / best practices
 - Simplify/reduce necessary code
 - Support multi-database / switching
 - No designer code generation



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Enterprise Library Overview

- Best Practice Implementation for common business application requirements
- Add-on to .NET Framework
- Evolution of common Microsoft Application Blocks



Enterprise Library Overview

- First release January 2005
- Current 1.1. release – June 2005
- Current 2.0 release – January 2006
 - Similar capabilities to June version
 - Takes advantage of .NET 2.0 features including System.Configuration, Security

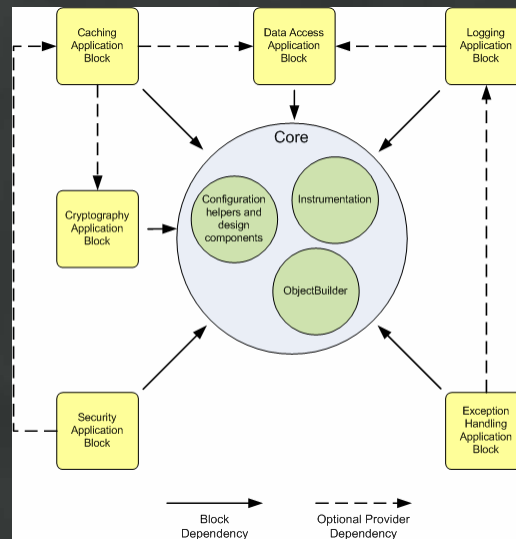


Enterprise Library 2.0 Overview

- **Blocks**
 - Caching
 - Cryptography
 - Data Access
 - Exception Handling
 - Logging
 - Security
 - Core functions:
 - Configuration
 - Instrumentation
 - ObjectBuilder



Enterprise Library 2.0 Overview



DAAB Overview

- Simplifies data access code
- Target SQL Server or Oracle
- Configuration driven
 - Non-config options in EntLib 2.0
- Supports:
 - Retrieve result sets
 - DataReader or (Typed) DataSet
 - Dynamic SQL Queries or Stored Procs
 - Execute SQL queries or stored procs that do not return rows
 - Update DB from DataSet
- Extensible / Customizable

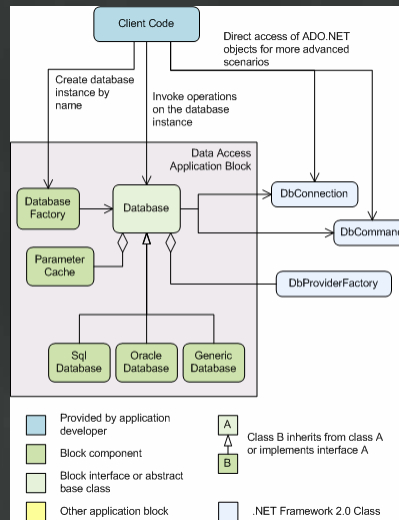


DAAB Overview

- Avoids coupling to data provider
 - DatabaseFactory
 - Abstract classes
 - Database
 - DbConnection
 - DbCommand
 - Interfaces
 - IDataReader
 - Data-source agnostic container
 - DataSet



DAAB Overview



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Integrating DAAB

- **Add References**
 - Data
 - Common
 - ObjectBuilder
- **Strong Naming**
 - Modify EntLib project settings (Signing)
 - Rebuild EntLib projects
- **Create Configuration Entries (optional)**
 - EntLib Configuration Tool



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Using DAAB

- **Create a Database object**
 - DatabaseFactory.CreateDatabase()
 - Driven by config
 - SqlDatabase/OracleDatabase constructor
- **Get a Command object**
 - GetStoredProcedureCommand
 - GetSqlStringCommand
- **Populate the Command object**
 - Parameters
- **Execute**



Designing a Data Access Layer

- **Encapsulate data source / schema specifics**
- **Partition data access components into functional areas**
- **Return business entities**
 - (Typed) DataSets or custom objects
- **Execute queries**
 - Connect – Execute - Disconnect



Summary

- DAAB a good choice for portable data access code
- Good performance
- Follows best practices
- Extensible / Customizable



Resources

- Enterprise Library Workspace, GotDotNet, <http://www.gotdotnet.com/workspaces/workspace.aspx?id=295a464a-6072-4e25-94e2-91be63527327>
- Data Points, Johnny Papa, MSDN Magazine, July, August, October 2005.
- Effective Use of The Microsoft Enterprise Library : Building Blocks for Creating Enterprise Applications and Services, Len Fenster, Addison Wesley June 2006

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