

REVIEW LESSON

MTA Course: Software Development Fundamentals

Lesson name: Software Development Fundamentals 6.3

Topic: Understand database connection methods (One 50-minute class period)

File name: SoftDevFund_RL_6.3

Lesson Objective:

6.3: Understand database connection methods. *This objective may include but is not limited to:* connecting to various types of data stores such as flat file; XML file; in-memory object; resource optimization.

Preparation Details

Prerequisite student experiences and knowledge

This MTA Certification Exam Review lesson is written for students who have learned about Web design and Web application programming. Students who do not have the prerequisite knowledge and experiences cited in the objective will find additional learning opportunities using resources such as those listed in the Microsoft® resources and Web Links at the end of this review lesson.

Students should have experience with analyzing data to create a relational database and creating tables, forms, and reports. They should also be familiar with the normalization process, query commands, and database connection methods.

Instructor preparation activities

For this lesson, you will need a computer with Microsoft Office 2007® attached to a liquid crystal display (LCD) projector to display and review the attached Microsoft PowerPoint® document.

Resources, software, and additional files needed for this lesson:

- Office (preferably 2007)
- LCD projector
- SoftDevFund_6.3_PPT

Teaching Guide**Essential Vocabulary:**

data source—an ODBC data structure that identifies a database and the Database Management System (DBMS) that processes it

OLE DB—*Object Linking and Embedding, Database*, sometimes written as OLEDB or OLE-DB; an application programming interface (API) designed by Microsoft for accessing different types of data stored in a uniform manner.

ActiveX[®] Data Objects (ADO)—a language-neutral object model that exposes data raised by an underlying OLE DB provider. The most commonly used OLE DB provider is the OLE DB provider for ODBC drivers, which exposes ODBC data sources to ADO.

ODBC—Object Database Connectivity; a standard by which application programs can access and process Structured Query Language (SQL) databases.

Lesson Sequence**Activating prior knowledge/lesson staging (10 minutes)**

1. Talk to the students about how they would access data in a database.

Lesson activity (30 minutes)

1. Using the SoftDevFund_PPT_6.3 PowerPoint presentation, walk the students through the **concepts for this lesson**.
2. Review the links below and discuss how each lesson allows access to a database for various types of programming such as websites, Visual Basic[®] programs, C# programs, etc.

Assessment/lesson reflection (10 minutes)

1. On the last page of the PowerPoint presentation, there are several database connection diagrams. Use these to discuss various types of applications that require data access and what type of connection they require.

Microsoft resources and Web links

Using ADO

[http://msdn.microsoft.com/en-us/library/cc161165\(v=MSDN.10\).aspx](http://msdn.microsoft.com/en-us/library/cc161165(v=MSDN.10).aspx)

Web Server Control

[http://msdn.microsoft.com/en-us/library/8e5545e1\(VS.80\).aspx](http://msdn.microsoft.com/en-us/library/8e5545e1(VS.80).aspx)

SQL

<http://msdn.microsoft.com/en-us/library/bb643224.aspx>

ASP, ADO, and Visual Basic

<http://support.microsoft.com/kb/308278>

UDT—User-Defined Data

<http://msdn.microsoft.com/en-us/library/ms131080.aspx>

Additional activities (homework or enrichment):

- None

Suggested best practices:

- Have students work in pairs for the student activity. Try to pair students with mixed ability so they can learn from each other and practice working in teams.