

REVIEW LESSON 6.2

MTA Course: Software Development Fundamentals

Lesson name: Software Development Fundamentals 6.2

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

File name: SoftDevFund_RL_6.2

Lesson Objective:

6.2: Understand database query methods. *This objective may include but is not limited to:* structured query language (SQL), creating and accessing stored procedures, updating data, selecting data

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 need additional learning opportunities.

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

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

Teaching Guide

Essential Vocabulary:

function—a command that returns a single value written in the command set of Structured Query Language (SQL).

built-in function—returns a single value calculated from values in a column, such as COUNT, AVG, SUM, MIN, and MAX.

user-defined function—compact, user-written SQL code, which can accept parameters and return either a value or a table.

stored procedure—a precompiled group of SQL statements written by users and saved to the database.

SELECT—the most used SQL command for selecting the data from the database.

DISTINCT—returns only distinct (unique) values.

WHERE—specifies which rows to retrieve.

ORDER BY—specifies an order in which to return the rows.

INSERT INTO—inserts a new row into the table given a list of column values.

DELETE—removes a row from a table or it can remove the entire table.

UPDATE...SET—updates the column values for a particular row in a table or all column values in the table.

Lesson Sequence

Activating prior knowledge/lesson staging (10 minutes)

1. The primary focus of this review will be about SQL functions and procedures for using the information/data in databases. Can you name any SQL functions? (Students should be able to identify at least three or four, such as COUNT, MIN, MAX, and AVG)
2. Ask students to think of a scenario where a different, unique procedure would be useful for accessing or using the information in a database. (Students should brainstorm on ideas for creating procedures, such as a procedure to retrieve all the customer names from the customer table in a database. They might need prompting with ideas for a sample database and problem scenario.)

Lesson activity (30 minutes)

1. Using the SoftDevFund_PPT_6.2 PowerPoint presentation, review the concepts for this lesson (approximately 7–10 minutes).
2. Distribute Student Activity SoftDevFund_SA_6.2.
3. This activity assesses student understanding at multiple cognitive levels:
 - Analyze and evaluate a given problem (retrieve and update data from the prior activity).
4. Review student answers and provide them with correct solutions if needed.

Assessment/lesson reflection (10 minutes)

1. Ask the students to review the activity from the beginning of class to verify their understanding of the topics from this lesson.

Suggested best practices:

- Assign students to work in pairs for the student activity. Pair students with varying abilities to encourage them to learn from each other and to practice working in teams.