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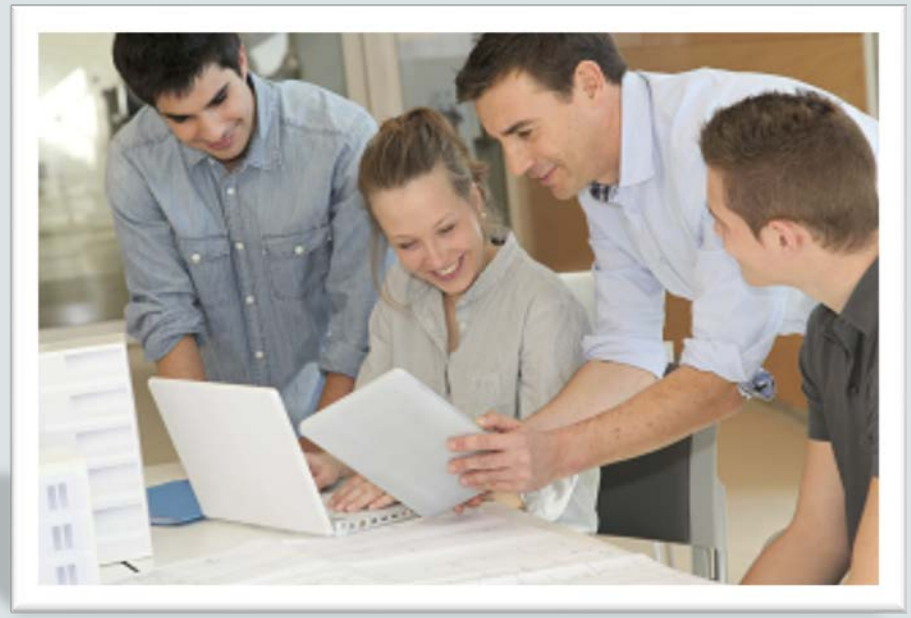
Database Programming with SQL

19-1
Testing



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Objectives

This lesson covers the following objectives:

- Develop and apply a strategy for testing that a database functions as designed

Purpose

- Most people, when they buy a car, wish to know that it is reliable and will not break down.
- So the manufacturers will put the car through a number of tests before it is available to be sold.
- The same is true of a database; before it is sold to a customer, it is tested to verify that it meets the business requirements.

Unit Testing

- If two things are tested at once and the test fails, it is difficult or impossible to work out what has caused the failure.
- So it is important to test only one thing at a time.
- This is commonly referred to as unit testing.

What Could Be Tested?

- When testing a database, a variety of things need to be tested.
- For example:
  - Columns should be tested that they contain the correct data type.
  - Columns should be tested that they can accommodate the largest amount of data that might be entered.
  - Constraints should be checked that they only constrain or limit data that they are supposed to—no more and no less.

What Should Be Tested?

- It is frequently unrealistic to test every column and every constraint in every table in a database if it is a large database.
- A random spread of tests, that check some columns and some constraints, should be carried out.

Designing Tests

- Before you carry out a test, you should have a good idea of what result you expect to see if the database is working as expected.
- This should be documented before you carry out the test in a table similar to the one shown:

Test Number	Date	Test Description	Input	Expected Output	Result/ Discrepancy	Action
22	19-Aug-2006	Confirm NOT NULL constraint on JOB_TITLE in JOBS table	`INSERT INTO jobs (job_id, job_title, min_salary, max_salary) VALUES (222,NULL,100, 200)`	Cannot insert NULL…		

Running Tests

- Once you have designed your test, you can run it and record your results.

Test Number	Date	Test Description	Input	Expected Output	Result/ Discrepancy	Action
22	19-Aug-2006	Confirm NOT NULL constraint on JOB_TITLE in JOBS table	`INSERT INTO jobs (job_id, job_title, min_salary, max_salary) VALUES (222,NULL,100, 200)`	Cannot insert NULL…	Cannot insert NULL…	None

Terminology

Key terms used in this lesson included:

- Testing
- Unit Testing

Summary

In this lesson, you should have learned how to:

- Develop and apply a strategy for testing that a database functions as designed


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