Module 5: Performance

Lab: Performance Issues

Scenario

You are planning a database and need to decide on an indexing strategy. There are many rows in the database, but at the moment the number of different queries that will run is limited; you will revise the indexing when the database is in use.

Initially, you will plan indexing for data that is static and has no insert, updates, or deletes; you will then also consider the effects of large numbers of transactions.

Objectives

After completing this lab, you will be able to plan an indexing strategy.

Lab Setup

Estimated Time: 30 minutes

This is a paper-based lab and the virtual machines are only required to access supporting material.

Exercise 1: Designing for Efficient Queries

Scenario

You are planning a database and need to decide on an indexing strategy. There are many rows in the database, but at the moment the number of different queries that will run is limited; you will revise the indexing when the database is in use.

Initially, you will plan indexing for data that is static and has no insert, updates, or deletes, but you will then also consider the effects of large numbers of transactions.

The main tasks for this exercise are as follows:

1. Plan Indexes for Querying
2. Plan Indexes for Concurrency

Task 1: Plan Indexes for Querying

1. Ensure that the 10985C-MIA-DC and 10985C-MIA-SQL virtual machines are both running, and then log on to 10985C-MIA-SQL as **ADVENTUREWORKS\Student** with the password **Pa$$w0rd**.
2. In the **D:\Labfiles\Lab05\Starter** folder, double-click **DatabaseQueryDesign.docx**.
3. Plan which clustered and nonclustered indexes you would add to this design, based on the design of the tables and the common queries.
4. In the **D:\Labfiles\Lab05\Solution** folder, double-click **PossibleIndexStrategy.docx**.
5. Review and discuss any differences between your strategy and the proposed index strategy in the document.

Task 2: Plan Indexes for Concurrency

1. If the database in the design has handled many transactions, in addition to the listed queries, note the effects this could have on the transactions.
2. Note the effects this could have on the listed queries.
3. Note the changes that you might make to the index strategy to support transactions.

> **Results**: In this exercise, you created an index plan.