

Module 4: Relationships

Demonstration: Implementing Referential Integrity by Using a Foreign Key

Objectives

In this demonstration, you will see how to:

- Implement foreign key constraints.
- Implement cascading referential integrity.

Demonstration Steps

1. Start the 10985C-MIA-DC and 10985C-MIA-SQL virtual machines, and then log on to 10985C-MIA-SQL as **ADVENTUREWORKS\Student** with the password **Pa\$\$w0rd**.
2. In the **D:\Demofiles\Mod04** folder, run **Setup.cmd** as Administrator.
3. Open **Microsoft SQL Server Management Studio** and then connect to the **MIA-SQL** instance of the database engine by using **Windows Authentication**.
4. On the **File** menu, point to **Open**, click **File**, browse to **D:\Demofiles\Mod04**, click **Referential Integrity.sql**, and then click **Open**.
5. In the query window, under the comment *Create a database and change database context*, select the Transact-SQL statements and then click **Execute**.
6. In the query window, under the comment *Create Customers table with a primary key constraint and four rows*, review the Transact-SQL statements, select the Transact-SQL statements, and then click **Execute**.
7. In the query window, under the comment *Create a table with a foreign key constraint*, review the Transact-SQL statement, select the Transact-SQL statement, and then click **Execute**.
8. In the query window, under the comment *Test foreign key constraint by adding an order with a valid CustomerID value*, review the Transact-SQL statements, select the Transact-SQL statements, and then click **Execute**.
9. Note that the statement completes successfully.
10. In the query window, under the comment *Add an order with an invalid CustomerID value*, review the Transact-SQL statement, select the Transact-SQL statement, and then click **Execute**.
11. In the Results pane, review the message that states that the insert statement conflicted with the foreign key constraint.
12. In the query window, under the comment *Update a CustomerID value in Customers that has no matching value in Orders*, review the Transact-SQL statement, select the Transact-SQL statement, and then click **Execute**.
13. Note that the statement completes successfully.

14. In the query window, under the comment *Update a CustomerID value in Customers that has a matching value in Orders*, review the Transact-SQL statement, select the Transact-SQL statement, and then click **Execute**.
15. In the **Results** pane, review the message that states that the update statement conflicted with the constraint.
16. In the query window, under the comment *Drop foreign key and add new foreign key that specifies cascading referential integrity*, review the Transact-SQL statements, select the Transact-SQL statements, and then click **Execute**.
17. In the query window, under the comment *Test cascading referential integrity*, review the Transact-SQL statement, select the Transact-SQL statement, and then click **Execute**.
18. In the **Results** pane, review the results, noting that the row in the **Orders** table was successfully updated.
19. Close SQL Server Management Studio without saving changes.

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