

# **SQL Assignment: Transactions and Procedures**

This report provides an analysis of SQL Server transactions and procedures using the AdventureWorks2019 database. It includes explanations, custom procedures, and test outputs.

## **Selected Transaction:**

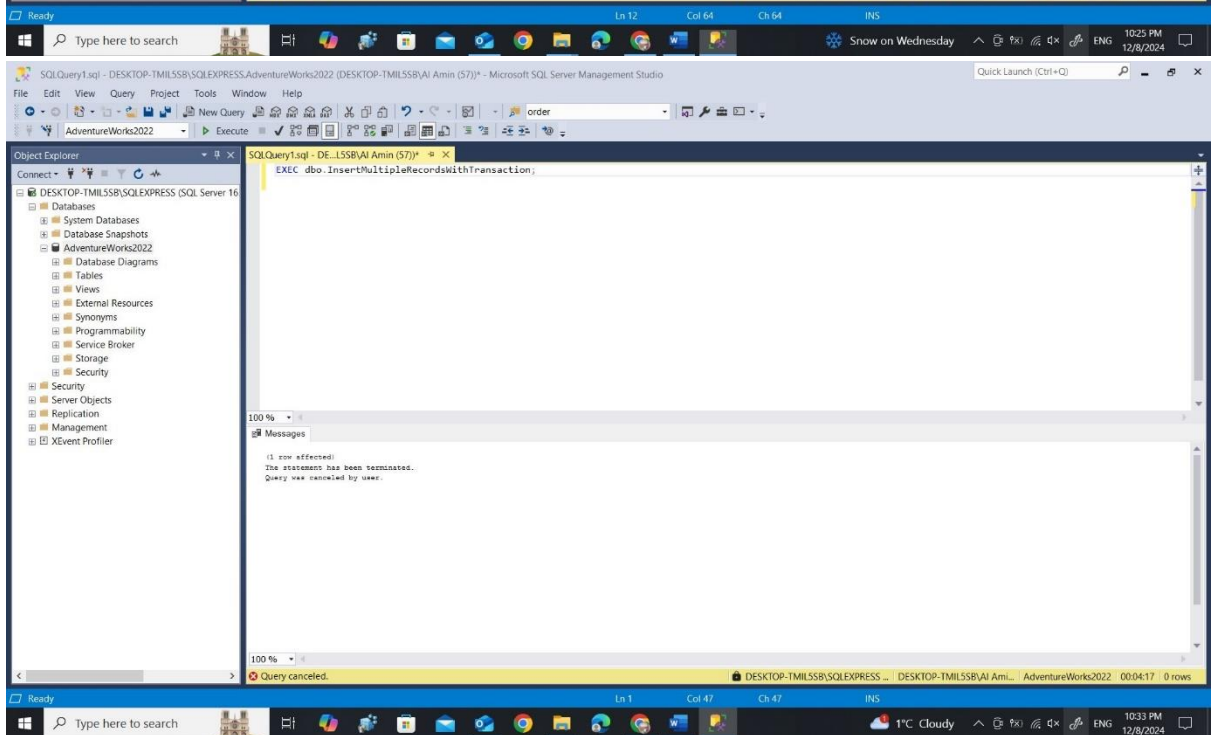
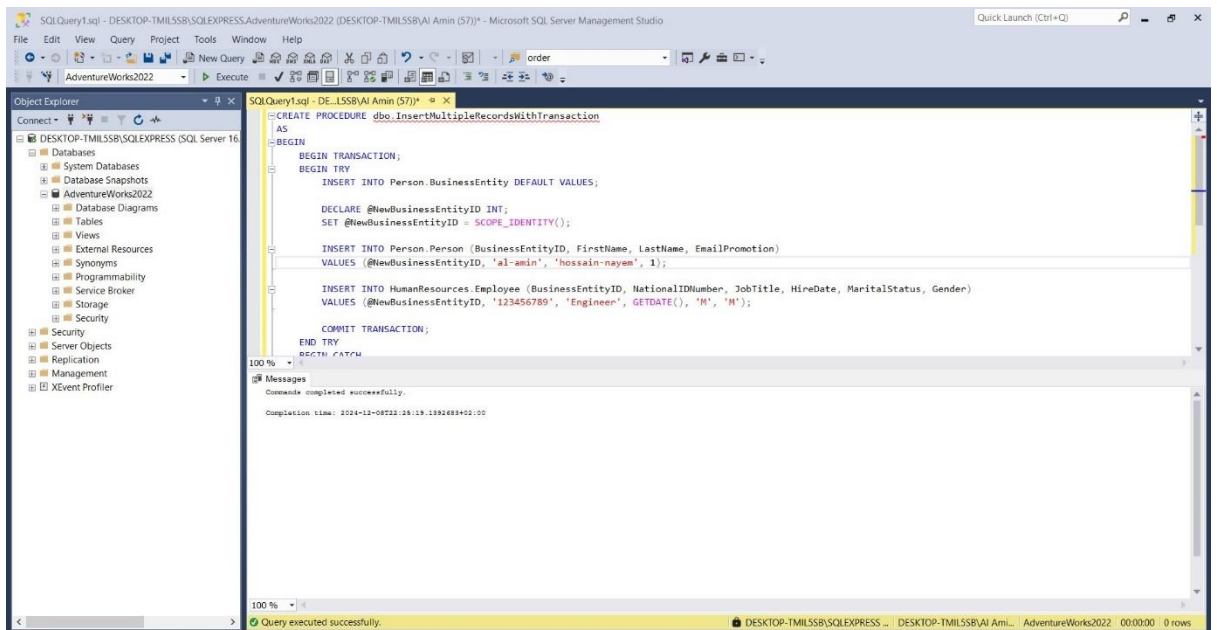
**Procedure:** usp\_UpdateEmployeeHireInfo .

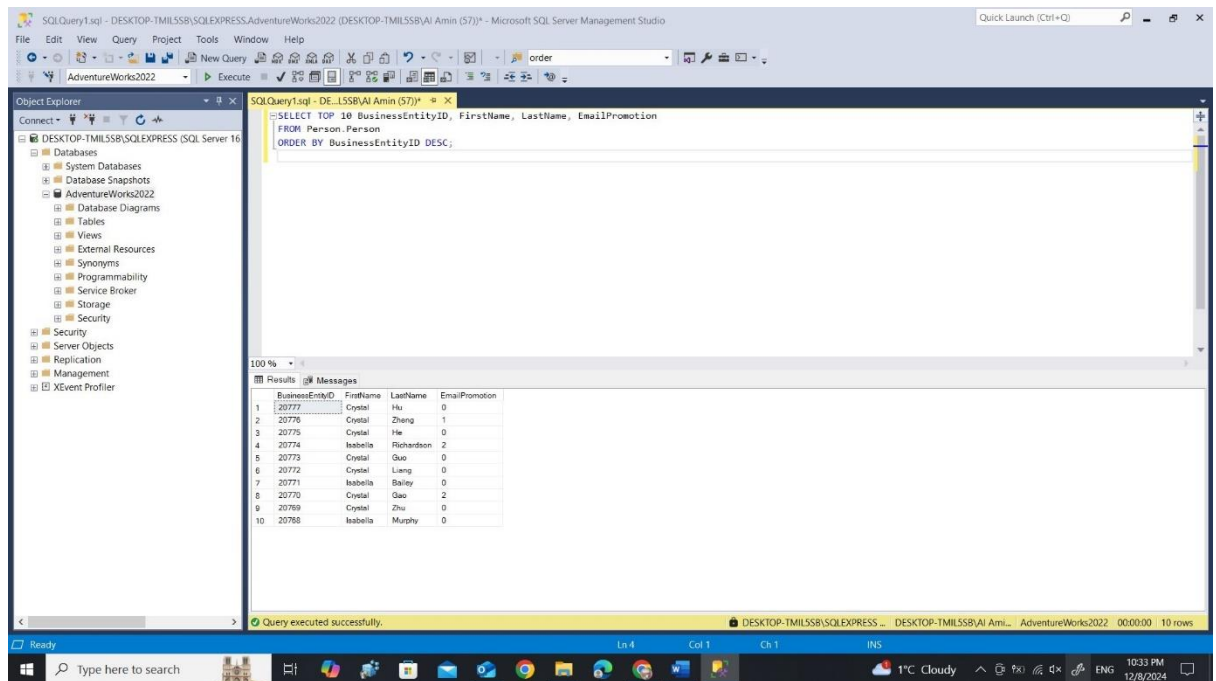
This transaction updates an employee's hiring information.

- **Purpose:** Ensures data consistency by grouping multiple update operations into a single transaction.
- **Rollback Scenario:** If the employee ID does not exist or a constraint is violated, all updates are rolled back.
- **Commit Scenario:** All changes are saved to the database only if all operations are successfully executed.

## **Procedure with Transaction:**

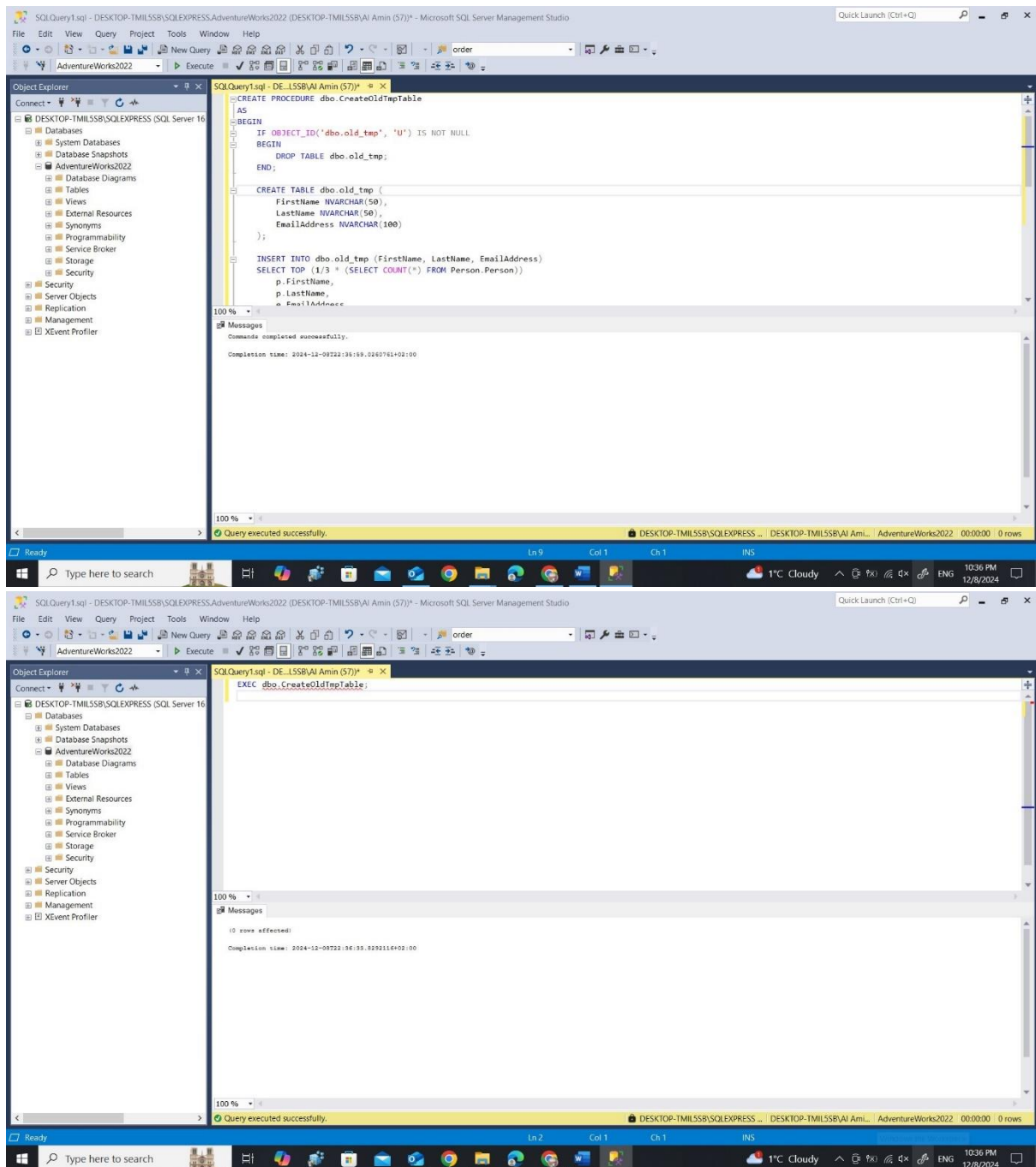
- ❖ **Procedure Name:** InsertMultipleRecordsWithTransaction
- ❖ **Description:** This procedure uses a transaction to insert two related records into Person.Person and HumanResources.Employee. If any insert fails, the entire transaction is rolled back to ensure data integrity.





## Procedure to Create old\_tmp Table:

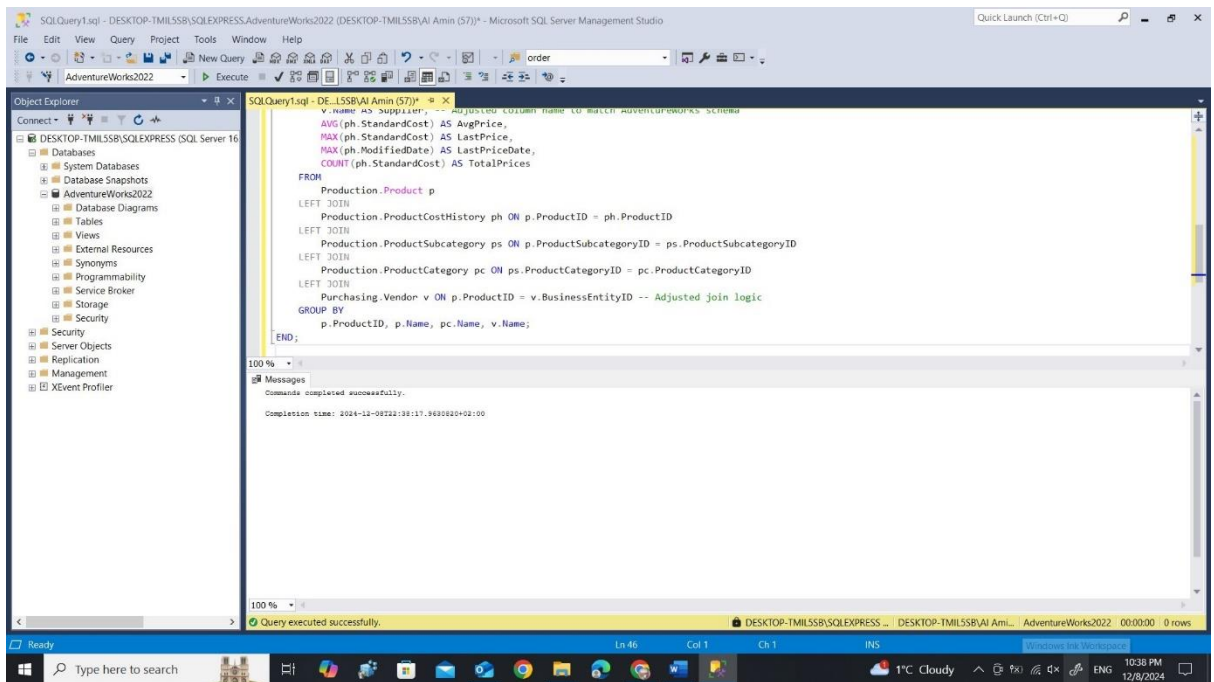
- ❖ **Procedure Name:** CreateOldTmpTable
- ❖ **Description:** This procedure creates an old\_tmp table to store 1/3 of the users with the oldest password modification dates. The table is dropped if it already exists.

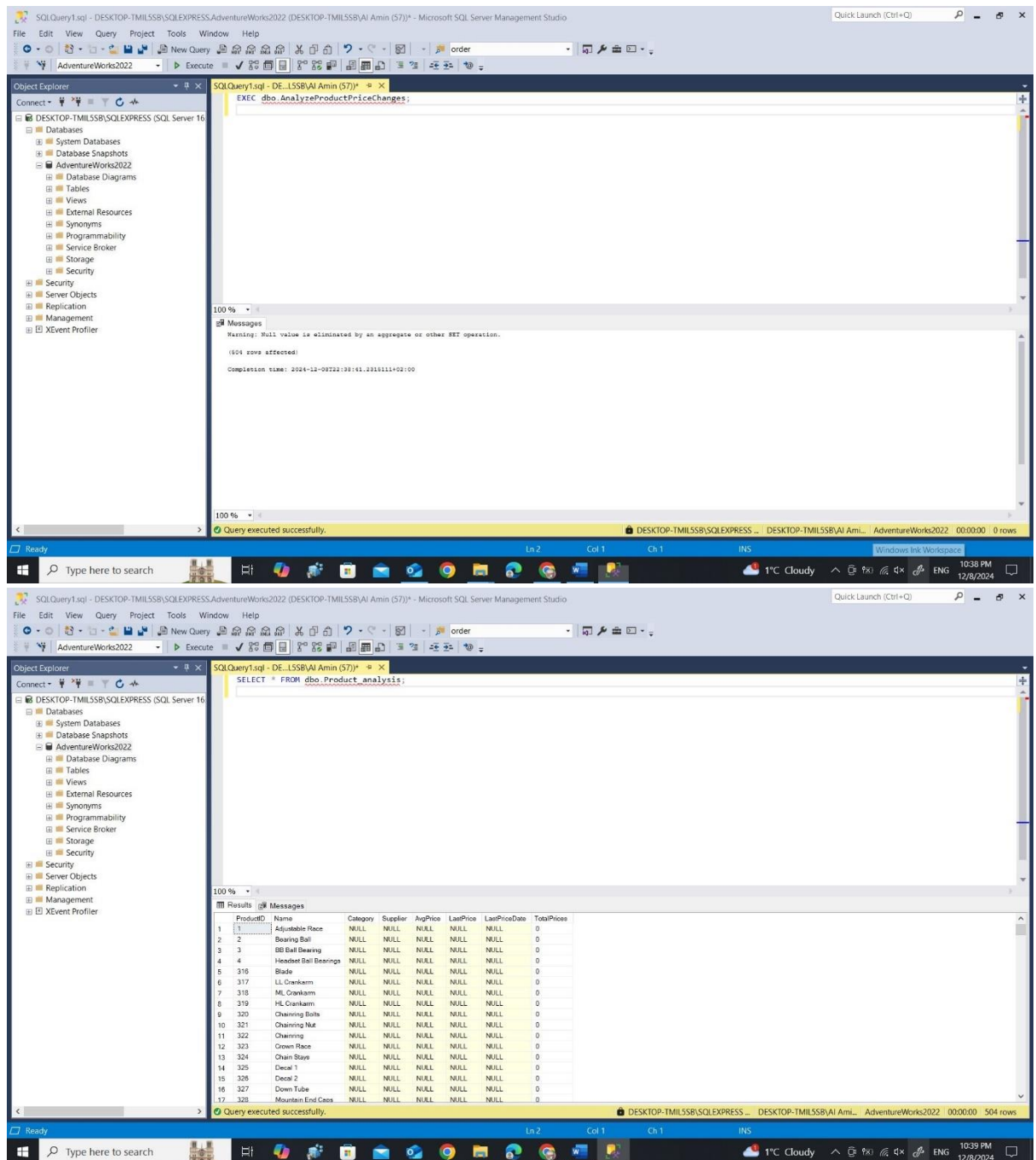


## Procedure for Product Price Analysis:

- ❖ **Procedure Name:** AnalyzeProductPriceChanges
- ❖ **Description:** This procedure analyzes product price history and stores data in a new table Product\_analysis. It includes details such as the product ID, name,

category, supplier, average price, last price, and total number of prices.





## Summary

- Transactions were analyzed for their role in ensuring database consistency and error handling.
- Three custom procedures were created:

- A transaction with two inserts and rollback functionality.
- A procedure to create and populate the old\_tmp table with users having the oldest passwords.
- A procedure to analyse product price changes and generate a summary table.

All procedures were tested, and screenshots of results were included in the report.