**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.A computer screen with text

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**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.

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**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.A computer screen with a white background

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**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.