SNOWFLAKE - Mini Project 4

1. Create a Database & Schema
    1. Database : TIMETRAVEL_DB
        1. Schema : TIMETRAVEL_DATA

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2. Create EMPLOYEE Table in the TIMETRAVEL _DATA schema
    1. Table:
        1. Database: TIMETRAVEL_DB
        2. Schema: TIMETRAVEL_DATA
        3. Name: EMPLOYEE
    2. Table structure

```
EMPLOYEE_ID STRING
FIRST_NAME STRING
LAST_NAME STRING
DEPARTMENT STRING
SALARY FLOAT
HIRE_DATE DATE
```

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3. Populate the Table
    1. Insert the below data in the above EMPLOYEE table by running the following insert statement

```
INSERT INTO TIMETRAVEL_DB.TIMETRAVEL_DATA.EMPLOYEE VALUES
('E1', 'John', 'Doe', 'Finance', 75000.50, '2020-01-15'),
('E2', 'Jane', 'Smith', 'HR', 68000.00, '2018-03-20'),
('E3', 'Alice', 'Johnson', 'IT', 92000.75, '2019-07-10'),
('E4', 'Bob', 'Williams', 'Sales', 58000.25, '2021-06-01'),
('E5', 'Charlie', 'Brown', 'Marketing', 72000.00, '2022-04-22'),
('E6', 'Emily', 'Davis', 'IT', 89000.10, '2017-11-12'),
('E7', 'Frank', 'Miller', 'Finance', 83000.30, '2016-09-05'),
('E8', 'Grace', 'Taylor', 'Sales', 61000.45, '2023-02-11'),
('E9', 'Hannah', 'Moore', 'HR', 67000.80, '2020-05-18'),
('E10', 'Jack', 'White', 'Marketing', 70000.90, '2019-12-25');
```

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4. View the Current Data in the EMPLOYEE table
    1. Retrieve all records to confirm the EMPLOYEE table's content by running the select query

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5. Simulate Data Deletion
    1. Delete EMPLOYEE_ID E2 and E7 record for the EMPLOYEE table to simulate accidental deletion by running a delete query.

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6. Verify the Deletion
    1. Check the EMPLOYEE table's content by running the select query to ensure the record is deleted.

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7. Fetch the QUERY_ID of the DELETE statement
    1. Fetch the QUERY_ID of the previous executed DELETE statement from the SNOWFLAKE QUERY_HISTORY table

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8. Recovering Deleted Data: Use Time Travel to Access Historical Data
    1. To retrieve the deleted record, query the EMPLOYEE table's state just before the deletion by using the time travel feature of snowflake.

9. Recover the Deleted Record
    1. To restore the deleted record, insert it back into the table by running the insert command

10. Verify the Recovery
    1. Query the EMPLOYEE table again to confirm the record is restored.

Solution:

```
-- ############################################################
-- ###### (1) Create a Database & Schema
-- ############################################################

-- SET ROLE AND WAREHOUSE:
USE ROLE ACCOUNTADMIN;
USE WAREHOUSE COMPUTE_WH;

-- CREATE DATABASE AND SCHEMA:
CREATE DATABASE TIMETRAVEL_DB;
CREATE SCHEMA TIMETRAVEL_DATA;
```

```
-- ######################################################################
-- ##### (2) Create EMPLOYEE Table in the TIMETRAVEL_DATA schema
-- ######################################################################

-- CREATE TABLE:
CREATE OR REPLACE TABLE TIMETRAVEL_DB.TIMETRAVEL_DATA.EMPLOYEE
    (EMPLOYEE_ID STRING,
    FIRST_NAME STRING,
    LAST_NAME STRING,
    DEPARTMENT STRING,
    SALARY FLOAT,
    HIRE_DATE DATE);

SELECT * FROM TIMETRAVEL_DB.TIMETRAVEL_DATA.EMPLOYEE;
```

```
-- ######################################################################
-- ##### (3) Populate the Table
-- ######################################################################

-- INSERT POULATED DATA
INSERT INTO TIMETRAVEL_DB.TIMETRAVEL_DATA.EMPLOYEE VALUES
    ('E1', 'John', 'Doe', 'Finance', 75000.50, '2020-01-15'),
    ('E2', 'Jane', 'Smith', 'HR', 68000.00, '2018-03-20'),
    ('E3', 'Alice', 'Johnson', 'IT', 92000.75, '2019-07-10'),
    ('E4', 'Bob', 'Williams', 'Sales', 58000.25, '2021-06-01'),
    ('E5', 'Charlie', 'Brown', 'Marketing', 72000.00, '2022-04-22'),
    ('E6', 'Emily', 'Davis', 'IT', 89000.10, '2017-11-12'),
    ('E7', 'Frank', 'Miller', 'Finance', 83000.30, '2016-09-05'),
    ('E8', 'Grace', 'Taylor', 'Sales', 61000.45, '2023-02-11'),
    ('E9', 'Hannah', 'Moore', 'HR', 67000.80, '2020-05-18'),
    ('E10', 'Jack', 'White', 'Marketing', 70000.90, '2019-12-25');
```

```
-- ##########################################################################
-- ##### (4) View the Current Data in the EMPLOYEE table
-- ##########################################################################

SELECT * FROM TIMETRAVEL_DB.TIMETRAVEL_DATA.EMPLOYEE;
```

```
-- ##########################################################################
-- ##### (5) Simulate Data Deletion
-- ##########################################################################

-- DELETE TWO RECORDS FROM THE TABLE:
DELETE FROM TIMETRAVEL_DB.TIMETRAVEL_DATA.EMPLOYEE
WHERE EMPLOYEE_ID IN ('E2', 'E7');
```

```
-- ##########################################################################
-- ##### (6) Verify the Deletion
-- ##########################################################################
-- MAKE SURE THAT TWO RECORDS ARE DELETED:
SELECT * FROM TIMETRAVEL_DB.TIMETRAVEL_DATA.EMPLOYEE;
```

```
-- ##########################################################################
-- ##### (7) Fetch the QUERY_ID of the DELETE statement
-- ##########################################################################
-- FETCH THE QUERY_ID FROM THE SNOWFLAKE MONITORING --> QUERY_HISTORY TABLE:
QUERY_ID: '01bf46a8-0000-34f9-005b-d88b0007c076';
```

```
-- ##########################################################################
-- ##### (8) RECOVERING DELETED DATA USING TIME TRAVEL
-- ##########################################################################

-- RECOVERING DELETED DATA USING TIME TRAVELL BEFORE FEATURE, BEFORE DELETION:

SELECT * FROM TIMETRAVEL_DB.TIMETRAVEL_DATA.EMPLOYEE BEFORE (STATEMENT => '01bf46a8-
0000-34f9-005b-d88b0007c076');
```

```
-- ##########################################################################
-- ##### (9) RECOVER THE DELETED RECORDS
-- ##########################################################################

-- INSERT THE DELETED RECORDS BACK INTO THE TABLE:
INSERT INTO TIMETRAVEL_DB.TIMETRAVEL_DATA.EMPLOYEE
SELECT S.*
FROM TIMETRAVEL_DB.TIMETRAVEL_DATA.EMPLOYEE BEFORE (STATEMENT => '01bf46a8-0000-
34f9-005b-d88b0007c076') S
LEFT JOIN TIMETRAVEL_DB.TIMETRAVEL_DATA.EMPLOYEE T
USING(EMPLOYEE_ID)
WHERE T.EMPLOYEE_ID IS NULL;
```

```
-- ##########################################################################
-- ##### (10) Verify the Recovery
-- ##########################################################################
SELECT * FROM TIMETRAVEL_DB.TIMETRAVEL_DATA.EMPLOYEE;
```