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Advanced Data Management PA

Part A:

Summarize one real-world business report that can be created from the attached Data Sets and Associated Dictionaries.

With the given database and tables, there are many opportunities for real world business that could be implemented. In this scenario, this report will be looking at how many sales employees have in a given period of time. This information can be useful as businesses can see which employees have the highest performance and can establish an employee rewards program to incentivize more sales or acknowledge our best employees.

A1: Data used

The data needed to compile this report will be the staff data and the rental data as the rental information for each employee is what will be needed to determine which employees have the highest performance. Another contributing piece of information could be the store data as well as the number of staff present at each store could correlate to rental sales.

A2: Identify specific tables

The specific tables needed from the data set to create the detail and summary reports are the Store, Rental, Address, and Staff tables. The data from these tables based off of the ER diagram will provide enough information to make educated decisions on moving forward within the stores.

A3: Identify specific fields for detailed and summary reports

In order to create a detailed report on number of rentals per store it will need:

Rental ID, Staff ID, Rental Date from Rental table

Email, First_name, and Last_Name from Staff table

As for the summary report, it will only need:

Employee full name and total rentals

A4: Identify transformation field

A field in the detailed report that will be transformed is the employee first name and last name. These will be combined into one name using concatenation to provide better readability for managers and stakeholders.

A5: Business uses of information

The detailed report is beneficial for business as it gives business professionals a detailed insight as to exactly how many movie rentals along with which movies are sold by specific employees at any given time. This will help create the rewards incentive for employees as mentioned before or another application could be to give the proper accreditation to employees with the highest numbers and recognize their hard work.

The summary report is just as beneficial as it provides a quick and to the point representation of how many sales employees have between two dates without any redundant data which will help make quick decisions moving forward.

A6: Refresh frequency

To get the most out of the data from these reports, they should be refreshed a minimum of once a month but no later than once every business quarter in order to remain relevance to stakeholders so that they can make the necessary changes to policies and maintain the highest level of profit.

F1: when to run refresh

As stated above in the summary, the refresh function should be used a minimum of once a month or at least once every business quarter. In order to do this, an admin would implement a time parameter with the query inside for once every thirty days or so to activate the trigger and run the Full_Refresh procedure. This will automate the reports and have them ready whenever they are needed.

Final Code and Sources

Part B and C SQL Code

```
    -- Part B Create Tables to query.
This will create a place to store our needed values

CREATE TABLE Detailed_Report (
        Rental_ID               INT,
        Rental_Date             DATE,
        Staff_ID                INT,
        First_Name              VARCHAR(30),
        Last_Name               VARCHAR(30),
        Email                   VARCHAR(30)
);


CREATE TABLE Summary_Report (
        Rental_Count            INT,
        Staff_Full_Name         VARCHAR(60)
);



     -- Part C Insert Raw Data Into Detailed Table
The newly formed tables will be populated with the database data

INSERT INTO Detailed_Report (Rental_ID, Rental_Date, Staff_ID,
                             First_Name, Last_Name, Email)

SELECT rental_id, rental_date, staff.staff_id, first_name, last_name, email
FROM rental
INNER JOIN staff ON rental.staff_id = staff.staff_id;

--Result Query
SELECT * FROM Detailed_Report;
```

Part D and E SQL Code

```
          --Part D Create transformation function
This function will give our summary table easier readability and popuate it

CREATE FUNCTION Summary_Report_Transform()
        RETURNS TRIGGER
        LANGUAGE plpgsql
        AS $$
BEGIN

INSERT INTO Summary_Report (

        SELECT COUNT(Staff_ID),CONCAT(First_Name, ' ', Last_Name) AS Staff_Full_Name
        FROM Detailed_Report
        GROUP BY Staff_Full_Name
);

RETURN NEW;
END; $$


        --Part E Create Trigger
The trigger is used to update our summary whenever new data is inserted

CREATE TRIGGER Refresh_Summary_Report
        AFTER INSERT ON Detailed_Report
        FOR EACH STATEMENT
EXECUTE PROCEDURE Summary_Report_Transform();
```

Part F SQL Code

```
      --Part F Create refresh proedure
Refresh procedure will refresh both tables with the new data after triggerec

CREATE PROCEDURE Full_Refresh()
        LANGUAGE plpgsql
        AS $$
BEGIN
--Clear old values
DELETE FROM Detailed_Report;
DELETE FROM Summary_Report;
-- Insert new values on update
INSERT INTO Detailed_Report (Rental_ID, Rental_Date, Staff_ID,
                             First_Name, Last_Name, Email)

SELECT rental_id, rental_date, staff.staff_id, first_name, last_name, email
FROM rental
INNER JOIN staff ON rental.staff_id = staff.staff_id;

END; $$

   --Run refresh function at given intervals in summary

CALL Full_Refresh();
SELECT * FROM Detailed_Report;
SELECT * FROM Summary_Report;
```

Web sources - Record the web sources you used to acquire data or segments of third-party code to support the application if applicable.

-No web sources were used to acquire data or segments of third-party code to support the application.

Sources - Acknowledge sources, using in-text citations and references, for content that is quoted, paraphrased, or summarized.

-No content has been quoted, summarized, or paraphrased in this project.