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Course: Data Structures and Algorithms ll

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

With the provided data sets and associated dictionaries, we can have multiple business reports that could be created, one of them is the likelihood of a customer to rent a movie where they have seen a good actor in a good movie, knowing which actors appear the most in the movies the customers rent the most, the store can get more movies where those actors appear, raising the interest of the customers and increasing the odds to rent more movies and making more profits.

A1. **Describe the data used for the report.**

The data used for this real-world business report would be the rental information as well as the film, and the actors of those films, the rental information will be used as the main point to know what film was rented, that way the store will be able to know which films were rented the most, with the film’s actor(s) from those movies, the store will use that information to help them know which films they should purchase so there’ll be a higher chance for customers to rent movies.

A2**. Identify two or more specific tables from the given dataset that will provide the data necessary for the detailed and the summary sections of the report.**

The tables that would be needed for this report will be the rental, inventory, actor\_film and actor table, all of those will give us all the information to see which films were sold the most and who were the actors, and then the store should know what to purchase.

A3. **Identify the specific fields that will be included in the detailed and the summary sections of the report.**

The following specific fields will be included in the detailed section:

RENTAL\_ID

RENTAL\_DATE

INVENTORY\_ID

ACTOR\_ID

FIRST\_NAME

LAST\_NAME

And for the summary section:

ACTOR\_ID

ACTOR\_NAME

A4. **Identify one field in the detailed section that will require a custom transformation and explain why it should be transformed.**

One field that needs to be transformed is the FIRST\_NAME and LAST\_NAME fields of the actor’s table, it will be a great idea to transform the FIRST\_NAME and LAST\_NAME field of the actor’s table into one so we can have the full name of the actor in one field, making that new field more readable for the stakeholders.

A5. **Explain the different business uses of the detailed and the summary sections of the report.**

This report should be refreshed at least every 1-24 months, after reviewing which films were purchased the most and the actors involved in them, we can collect our data on which films we should acquire to increase our odds that a customer will rent a film instead of getting out of the store empty-handed.

A6. **Explain how frequently your report should be refreshed to remain relevant to stakeholders.**

This report should be refreshed every 1-24 months, that’s enough time to spot new patterns on which actor(s) are the most popular in the area.

F1. **Explain how the stored procedure can be run on a schedule to ensure data freshness**

The stored procedure can be run whenever it is needed, the old information will be present which will not provide the business with up to date data, before analyzing the data, the procedure will update the data for both detailed and summary table to ensure data freshness.

**Query Report**

**Code to create the tables:** This SQLcode will create the detailed and summary table.

-- Section B: creating the detailed table

DROP TABLE IF EXISTS detailed, summary;

CREATE TABLE IF NOT EXISTS detailed(

rental\_id INTEGER,

rental\_date DATE,

inventory\_id INTEGER,

actor\_id INTEGER,

actor\_name VARCHAR,

actor\_last\_name VARCHAR

);

--to view empty detailed table

select \* from detailed;

--Creating summary table

CREATE TABLE IF NOT EXISTS summary(

actor\_id INTEGER,

actor\_name varchar

);

--view empty summary table

SELECT \* FROM summary;

**SQL Query:** This code will query the necessary data we’ll need to populate our detailed and summary table

--Section C starts here

--Extract of raw data from sqlda

INSERT INTO detailed(

rental\_id,

rental\_date,

inventory\_id,

actor\_id,

actor\_name,

actor\_last\_name

)

SELECT r.rental\_id, r.rental\_date,

i.inventory\_id,fa.actor\_id, ac.first\_name, ac.last\_name

FROM rental as r

INNER JOIN inventory as i ON r.inventory\_id = i.inventory\_id

INNER JOIN film\_actor as fa ON i.film\_id = fa.film\_id

INNER JOIN actor as ac ON fa.actor\_id = ac.actor\_id;

select \* from detailed;

--CREATING FUNCTION

--UPDATING THE SUMMARY TABLE AND CREATING OUR TRIGGER

CREATE OR REPLACE FUNCTION function\_trig()

RETURNS TRIGGER AS

$BODY$

BEGIN

DELETE FROM summary;

INSERT INTO summary(

SELECT

actor\_id,

concat\_ws(' ', actor\_name, actor\_last\_name) AS actor\_name –Section D

FROM detailed

);

RETURN new;

END

$BODY$

LANGUAGE plpgsql;

**SQL Trigger:** This SQL code will execute the trigger function every time we insert or update our detailed table.

--This will trigger everytime we insert a value on the

--detailed's table

CREATE TRIGGER trig

AFTER INSERT ON detailed

FOR EACH STATEMENT

EXECUTE PROCEDURE function\_trig();

select \* from summary;

**SQL Stored Procedure:** Here we create the SQL Code of our procedure

--Section F starts here

--Creating our procedure

CREATE OR REPLACE PROCEDURE table\_refresh()

AS $BODY$

BEGIN

DELETE FROM detailed;

INSERT INTO detailed(

rental\_id,

rental\_date,

inventory\_id,

actor\_id,

actor\_name,

actor\_last\_name

)

SELECT r.rental\_id, r.rental\_date,

i.inventory\_id,fa.actor\_id, ac.first\_name, ac.last\_name

FROM rental as r

INNER JOIN inventory as i ON r.inventory\_id = i.inventory\_id

INNER JOIN film\_actor as fa ON i.film\_id = fa.film\_id

INNER JOIN actor as ac ON fa.actor\_id = ac.actor\_id;

END

$BODY$

LANGUAGE plpgsql;

--Calling the procedure

CALL table\_refresh();

--Seeing the results

SELECT \* FROM summary;

SELECT \* FROM detailed;