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D191 Advanced Data Management
Task 1

Part A. Summarize one real-world business report

The customers are the heart of businesses; they keep businesses open. A business report of which customers most frequently return could be useful in gaining more loyal customers. Having happy customers might bring about more business. There could be a customer reward program used from the information about which customers return to the dvd rental stores the most. Giving customers encouragement to continue renting movies will ensure better business. Keeping track of which customers rent often and rewarding them for doing so will encourage new customers to do be more frequent.

A.1 Describe the data used for the report

This report would use data about the customer and rental information. The customer data would be used to see information such as the name and anything that would help the company identify who is returning to the store. Rental information could be used to see how many rentals a customer is taking and how often.

A.2 Identify two or more specific tables from the given dataset

There would be two data tables from the given dataset. The first table would be the Customer table. The second table would be the dvd rental table.

A.3 Identify the specific fields that will be included in the detailed and the summary sections of the report

The detailed section of the report would include:

Customer ID, Customer First Name, Customer Last Name, Email, Rental ID, and Rental date

The summary section of the report would include:

Customer First Name, Customer Last Name, and Email

A.4 Identify one field in the detailed section that will require a custom transformation

One section that requires a custom transformation is the first and last name sections. The two sections can be put together to make it easier to read and find a customers name.

A.5 Explain the different business uses of the detailed and the summary sections of the report

The use of the detailed section is to have the information regarding (find synonym) the rental sales. The business could use this to see the rental habits of the customers.

The summary section shows information needed about the customer. This information could be used to determine who the most frequent customers are and make business decisions on what to do with that information.

A.6 Explain how frequently your report should be refreshed to remain relevant to stakeholders

The report should be refreshed at least once a month to get fresh results of who the most frequent customers were during the month.

Part B. Write a SQL code that creates the tables to hold your report sections

```
CREATE TABLE detailed (  
    customer_id int,  
    first_name varchar (50),  
    last_name varchar (50),  
    email varchar (100),  
    rental_id int,  
    rental_date timestamp  
);  
  
CREATE TABLE summary (  
    customer_name varchar (100),  
    email varchar (100),  
    customer_count int  
);
```

-- creates tables to store information for the detailed and summary sections of the report

Part C. Write a SQL query that will extract the raw data needed for the Detailed section

```
INSERT INTO detailed (customer_id, first_name, last_name, email, rental_id, rental_date)
SELECT c.customer_id, c.first_name, c.last_name, c.email, r.rental_id, r.rental_date
FROM rental AS r
INNER JOIN customer AS c ON c.customer_id = r.customer_id;
```

-- populates the customer and rental information into the detailed table

```
SELECT * FROM detailed;
```

-- verifies data accuracy

Part D. Write code for function(s)

```
CREATE FUNCTION refresh_summary_function()
RETURNS TRIGGER
LANGUAGE plpgsql
AS $$
BEGIN
```

```
DELETE FROM summary;
```

```
INSERT INTO summary (
```

```
    SELECT customer_id,
           CONCAT (first_name, 'last_name) AS full_name,
           email,
           COUNT(customer_id)
    FROM detailed
    GROUP BY customer_id, full_name, email
    HAVING COUNT(customer_id) >30
    ORDER BY COUNT(customer_id) DESC
    LIMIT 100
```

```
);
```

```
RETURN NEW;
```

```
END; $$;
```

-- clears the information in the summary table and loads it with new information from the detailed table

Part E. Write a SQL code that creates a trigger on the detailed table

```
CREATE TRIGGER refresh_summary_table
AFTER INSERT ON detailed
FOR EACH STATEMENT
EXECUTE PROCEDURE refresh_summary_function();
```

-- creates trigger to update summary table with new information once its added in the detail table

Part F. Create a stored procedure

-- The stored procedure can be run once a month at the end of the month

-- This procedure can be ran by creating a trigger to call the procedure once a month

```
CREATE PROCEDURE refresh_tables()
LANGUAGE plpgsql
AS $$
BEGIN
```

```
DELETE FROM detailed;
```

```
INSERT INTO detailed (customer_id, first_name, last_name, email, rental_id, rental_date)
SELECT c.customer_id, c.first_name, c.last_name, c.email, r.rental_id, r.rental_date
FROM rental AS r
INNER JOIN customer AS c ON c.customer_id = r.customer_id;
```

```
END; $$
```

-- clears and regenerates data in detailed and summary tables

```
CALL refresh_tables();
```

-- calls stored procedure

```
SELECT * FROM detailed;
```

```
SELECT * FROM summary;
```

-- to view results

Part H. Record the web sources

I didn't use any web sources aside from the provided database for this project.

Part I. Acknowledge sources

I didn't use any outside sources so I don't have any citations or references.