DBMS LAB 5

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TASK1

SCHEMA 1:

1. the view v2 essentially retrieves a list of books along with their titles and author names for books that are either not borrowed or have been borrowed and not returned on time.

When it is run a SELECT * FROM v2; query, it will return a list of books meeting the criteria described showing their book ID, title, and author name

2. The INSERT query provided attempts to insert a new row into the read_only_books view. However, views in most database systems, including MySQL, are typically read-only, meaning you cannot directly insert, update, or delete records through the view. These actions are generally reserved for modifying the underlying tables.

So, when you try to execute the INSERT query, it will likely result in an error, and the query will not work. The specific error message may vary depending on the database management system you are using, but it will typically inform you that you cannot perform an INSERT operation on a view

SCHEMA 2:

The function defined should be created without errors, and it calculates the total sales amount for a given product category. For p_category_id = 1, it will calculate the total sales amount for products in category 1 based on the data in the database. If there are no matching records, it will return 0.

So, there is no error in the provided function, and it should work as intended.

4. The procedure fun provided should be created without errors, and it updates the price of a product based on the input parameters. The procedure first checks if a product with the given p_product_id exists in the "products" table. If it finds a matching product, it updates its price to the new price specified by p_new_price. If no matching product is found, it raises an error using the SIGNAL statement with a custom error message "Product not found" and a MySQL error number of 1001.

The procedure is designed to handle cases where the product exists and where it doesn't exist, and it raises an error when the product is not found. The error will be handled by the database, and it won't cause the procedure to throw an error during creation.

So, the procedure fun should be created without errors, and when it is called with CALL fun(3, 200), it will update the price of the product with product_id 3 to 200 if that product exists, or it will raise the custom error message if the product doesn't exist.

5. The insert query in the code will not work. we cannot insert data directly into a view using an INSERT statement. Views are essentially virtual tables created based on the data from underlying tables, and they are read-only by default. If we attempt to insert data into a view, we'll encounter an error.

To add data, we should insert it into the underlying tables (categories and products in this case) that the view is based on, and the view will reflect the changes when queried.

TASK 2

6) Imagine you are a curator at the gallery, and you want to keep a close eye on the status of the artworks displayed in your gallery. You've created a view called `ArtworkDetails` that provides comprehensive information about each artwork, including its ID, description, artist's name, artist's ID, artist's location, gallery ID, gallery name, gallery location, and an availability status indicating whether the artwork has been ordered or not. How would you use this view to identify which artworks in your gallery have not yet been ordered, helping you decide which ones to promote more actively to potential customers?

```
PES2UG21CS315>
PES2UG21CS315>CREATE VIEW ArtworkDetails AS
    -> SELECT
    ->     a.art_id,
    ->     a.art_description,
    ->     art.f_name AS artist_first_name,
    ->     art.l_name AS artist_last_name,
    ->     a.artist_id,
    ->     art.location,
    ->     g.g_id,
    ->     g.g_name,
    ->     g.g_location,
    ->     a.availability,
    ->     p.order_id
    -> FROM
    ->     art AS a
    ->     JOIN artist AS art ON a.artist_id = art.artist_id
    ->     JOIN gallery AS g ON a.gallery_id = g.g_id
    ->     LEFT OUTER JOIN purchase AS p ON a.art_id = p.art_id;
Query OK, 0 rows affected (0.03 sec)
```

```
PES2UG21CS315>select * from ArtworkDetails;
+--------+-----------------------------------------------------------------------------+------------------+-----------------+-----------+------------+-----------+
| art_id | art_description                                                             | artist_first_name | artist_last_name | artist_id | location   | g_id | g_name                        | g_location | availability | order_id |
+--------+-----------------------------------------------------------------------------+------------------+-----------------+-----------+------------+-----------+
| ART001 | A serene painting capturing the beauty of the sunset at a tranquil beach.   | Guru             | Dev             | A001      | Bengaluru  | G002 | Bengaluru Chitra Kala Parishat | Bengaluru  | YES          | ORD001   |
| ART002 | A stunning photograph showcasing the citys skyline at night.               | Karan            | Desai           | A002      | Magaluru   | G003 | Mysuru Art Haven               | Mysuru     | YES          | ORD008   |
| ART003 | A sculpture that represents the harmony between nature and human creation.  | Karan            | Desai           | A002      | Magaluru   | G003 | Mysuru Art Haven               | Mysuru     | YES          | ORD002   |
| ART004 | A sculpture depicting the remnants of ancient architectural wonders.        | Mahesh           | Joshi           | A003      | Mysuru     | G004 | Hubli Art Center               | Hubli      | YES          | NULL     |
| ART005 | A beautiful painting capturing the breathtaking view of mountains and valleys. | Manikantan     | Murugan         | A004      | Bengaluru  | G005 | Belgaum Art Gallery            | Belgaum    | YES          | ORD003   |
| ART006 | A painting that showcases the elegance of various flowers in a garden.      | Manikantan       | Murugan         | A004      | Bengaluru  | G005 | Belgaum Art Gallery            | Belgaum    | YES          | ORD010   |
| ART007 | A photograph capturing the serene atmosphere of a forest during dawn.       | Jaya             | Lalitha         | A005      | Mysuru     | G006 | Mangaluru Art Studio           | Mangaluru  | YES          | ORD004   |
| ART008 | A photograph reflecting the urban landscape in a calm lake.                 | Hema             | Malini          | A006      | Belagavi   | G007 | Gulbarga Sculpture Park        | Gulbarga   | YES          | NULL     |
| ART009 | A digital artwork that portrays a dreamlike fantasy world.                  | Stev             | Garcia          | A007      | Bengaluru  | G008 | Udupi Digital Art Showcase     | Udupi      | YES          | ORD005   |
| ART010 | An illustration showcasing various imaginative wonders.                     | Darmendra        | Naik            | A008      | Shivamogga | G009 | Bidar Illustration Gallery     | Bidar      | YES          | NULL     |
| ART011 | Printed landscapes that depict the beauty of different locations.           | Lata             | paramesh        | A009      | Huballi    | G010 | Dharwad Printmaking Workshop   | Dharwad    | YES          | ORD006   |
| ART012 | A painting that captures the delightful essence of Davangere.               | Ravi             | Ragavan         | A010      | Dharawada  | G011 | Davangere Art Studio           | Davangere  | YES          | NULL     |
| ART013 | A photograph capturing the blissful moments in Bengaluru.                   | Mahadev          | Mani            | A011      | Davangere  | G002 | Bengaluru Chitra Kala Parishat | Bengaluru  | YES          | ORD007   |
+--------+-----------------------------------------------------------------------------+------------------+-----------------+-----------+------------+-----------+
13 rows in set (0.01 sec)
```

```
PES2UG21CS315>
PES2UG21CS315>SELECT art_id,order_id from artworkDetails where order_id is NULL;
+--------+----------+
| art_id | order_id |
+--------+----------+
| ART004 | NULL     |
| ART008 | NULL     |
| ART010 | NULL     |
| ART012 | NULL     |
+--------+----------+
4 rows in set (0.00 sec)

PES2UG21CS315>
```

7) In the thriving art community of your city, there's a buzz around a specific artwork with the art ID 'ART007.' This artwork has recently been purchased, and art enthusiasts are eager to know more about it. As the art gallery's database administrator, you decide to create a stored procedure to provide detailed information about this specific artwork, including the : the Artwork ID (art_id), the full name of the artist (artist_name), the Order ID (order_id), the payment amount (payment_amount), the full name of the customer (customer_name), the customer's location (customer_location), the artist's location (artist_location), and a brief description of the artwork (art_description).please write an SQL query to obtain comprehensive information about the artwork with the art ID 'ART007'.Your procedure should take art_id as input and gives respective answer and attach screenshot of procedure and output of procedure for respective art_id.

```
PES2UG21CS315>DELIMITER $$
PES2UG21CS315>
PES2UG21CS315>CREATE PROCEDURE GetArtworkDetails(IN art_id VARCHAR(10))
    -> BEGIN
    ->     SELECT
    ->         a.art_id,
    ->         CONCAT(art.f_name, ' ', art.l_name) AS artist_name,
    ->         p.order_id AS payment_order_id,
    ->         pay.amount AS payment_amount,
    ->         CONCAT(cust.f_name, ' ', cust.l_name) AS customer_name,
    ->         cust.location AS customer_location,
    ->         art.location AS artist_location,
    ->         a.art_description
    ->     FROM
    ->         art AS a
    ->         NATURAL JOIN artist AS art
    ->         LEFT JOIN purchase AS p ON a.art_id = p.art_id
    ->         LEFT JOIN payment AS pay ON p.order_id = pay.order_id
    ->         LEFT JOIN customer AS cust ON p.cust_id = cust.cust_id
    ->     WHERE a.art_id = art_id;
    -> END$$
Query OK, 0 rows affected (0.01 sec)
```

```
PES2UG21CS315>DELIMITER ;
PES2UG21CS315>CALL GetArtworkDetails('ART007');
+--------+--------------+-----------------+----------------+--------------+------------------+----------------+-----------------------------------------
-----------------------------+
| art_id | artist_name  | payment_order_id | payment_amount | customer_name | customer_location | artist_location | art_description
                             |
+--------+--------------+-----------------+----------------+--------------+------------------+----------------+-----------------------------------------
-----------------------------+
| ART007 | Jaya Lalitha | ORD004           |           1250 | Amit Kumar    | Bangaluru         | Mysuru          | A photograph capturing the serene atmosp
here of a forest during dawn. |
+--------+--------------+-----------------+----------------+--------------+------------------+----------------+-----------------------------------------
-----------------------------+
1 row in set (0.00 sec)

Query OK, 0 rows affected (0.01 sec)
```

8) In the world of online art purchases, there's a loyal customer named Emily. She has been collecting various artworks from different artists. Emily is curious to know her total spending on art purchases from our gallery. She wants to find out the total purchase amount she has made over the years. Using the 'GetTotalPurchaseAmount' function, please help Emily retrieve this information by providing a query that takes her customer ID as input and returns the total amount she has spent on art purchases. How much has Emily invested in building her impressive art collection? Find the output for customer with id A002?

```
PES2UG21CS315>DELIMITER $$
PES2UG21CS315>
PES2UG21CS315>CREATE FUNCTION GetTotalPurchaseAmount(cust_id VARCHAR(10)) RETURNS DECIMAL
    -> DETERMINISTIC
    -> READS SQL DATA
    -> BEGIN
    ->     DECLARE TotalAmount DECIMAL;
    ->     SELECT SUM(pay.amount) INTO TotalAmount
    ->     FROM purchase AS p
    ->     NATURAL JOIN payment AS pay
    ->     WHERE p.cust_id = cust_id;
    ->     RETURN TotalAmount;
    -> END$$;
Query OK, 0 rows affected (0.01 sec)
```

```
PES2UG21CS315>SELECT GetTotalPurchaseAmount('A002') AS TotalAmountSpentByEmily;
+---------------------------+
| TotalAmountSpentByEmily |
+---------------------------+
|                      NULL |
+---------------------------+
1 row in set (0.01 sec)
```

There is no customer with ID ‘A002’

```
PES2UG21CS315>select * from customer;
+---------+--------+----------+------------+--------------+-----------+
| cust_id | f_name | l_name   | contact_no | password     | location  |
+---------+--------+----------+------------+--------------+-----------+
| C002    | Amit   | Kumar    | 9876543210 | custpassword | Bangaluru |
| C003    | Rajesh | Sharma   | 8765432109 | customer123  | Mysuru    |
| C004    | Priya  | Patel    | 7654321098 | securepass   | Hubli     |
| C005    | Sneha  | Singh    | 6543210987 | mypassword   | Belgaum   |
| C006    | Ramesh | Gowda    | 5432109876 | pass123      | Mangaluru |
| C007    | Kavita | Reddy    | 4321098765 | customerpass | Gulbarga  |
| C008    | Arjun  | Raj      | 3210987654 | password321  | Bidar     |
| C009    | Anita  | Naidu    | 2109876543 | mypassword   | Udupi     |
| C010    | Vijay  | Kulkarni | 1098765432 | password321  | Davangere |
+---------+--------+----------+------------+--------------+-----------+
9 rows in set (0.00 sec)
```

So I changed the Customer ID TO ‘C002’

```
PES2UG21CS315>SELECT GetTotalPurchaseAmount('C002') AS TotalAmountSpentByEmily;
+--------------------------+
| TotalAmountSpentByEmily |
+--------------------------+
|                     6500 |
+--------------------------+
1 row in set (0.00 sec)
```

9) In the context of a thriving art gallery, you have been tasked with creating a database query to provide insights into the purchasing habits of their valued customers. You've developed a stored procedure, 'GetCustomerPurchaseDetails,' which offers a comprehensive view of each customer's name, location, total purchase amount, and a list of art IDs they've purchased. This information is vital for the gallery's marketing team to tailor promotional offers. Can you demonstrate how to use this procedure to generate a report of customer purchase details, highlighting those who have made significant art acquisitions? You need to use the function which you created in previous question for total purchase amount.

```
PES2UG21CS315>
PES2UG21CS315>CREATE PROCEDURE GetCustomerPurchaseDetails()
    -> BEGIN
    ->     -- Create a temporary table to store customer purchase details
    ->     CREATE TEMPORARY TABLE CustomerPurchaseDetails (
    ->         customer_id VARCHAR(10),
    ->         customer_name VARCHAR(100),
    ->         customer_location VARCHAR(50),
    ->         total_purchase_amount DECIMAL,
    ->         purchased_art_ids TEXT
    ->     );
    ->
    ->     -- Select and return customer purchase details (without cursor and loop)
    ->     INSERT INTO CustomerPurchaseDetails (customer_id, customer_name, customer_location, total_purchase_amount, purchased_art_ids)
    ->     SELECT
    ->         c.cust_id,
    ->         CONCAT(c.f_name, ' ', c.l_name) AS customer_name,
    ->         c.location AS customer_location,
    ->         GetTotalPurchaseAmount(c.cust_id) AS total_amount,
    ->         (SELECT GROUP_CONCAT(art_id SEPARATOR ', ') FROM purchase WHERE cust_id = c.cust_id) AS purchased_art_ids
    ->     FROM customer AS c;
    ->
    ->     -- Select and return customer purchase details
    ->     SELECT * FROM CustomerPurchaseDetails;
    ->
    ->     -- Drop the temporary table
    ->     DROP TEMPORARY TABLE CustomerPurchaseDetails;
    -> END$$
Query OK, 0 rows affected (0.01 sec)
```

```
PES2UG21CS315>
PES2UG21CS315>CALL GetCustomerPurchaseDetails();
+-------------+---------------+------------------+----------------------+-------------------------------+
| customer_id | customer_name | customer_location | total_purchase_amount | purchased_art_ids             |
+-------------+---------------+------------------+----------------------+-------------------------------+
| C002        | Amit Kumar    | Bangaluru        |                 6500 | ART001, ART007, ART013, ART006 |
| C003        | Rajesh Sharma | Mysuru           |                  750 | ART003                        |
| C004        | Priya Patel   | Hubli            |                 1000 | ART005                        |
| C005        | Sneha Singh   | Belgaum          |                 NULL | NULL                          |
| C006        | Ramesh Gowda  | Mangaluru        |                 1500 | ART009                        |
| C007        | Kavita Reddy  | Gulbarga         |                 1750 | ART011                        |
| C008        | Arjun Raj     | Bidar            |                 NULL | NULL                          |
| C009        | Anita Naidu   | Udupi            |                 2250 | ART002                        |
| C010        | Vijay Kulkarni | Davangere       |                 NULL | NULL                          |
+-------------+---------------+------------------+----------------------+-------------------------------+
9 rows in set (0.03 sec)

Query OK, 0 rows affected (0.05 sec)
```

10) In the dynamic world of art appreciation, the gallery management is keen on recognizing the impact of each artwork. They want to understand the cumulative number of days an artwork has spent being showcased across various exhibitions. For this purpose, you've been assigned the task of creating a function. This function, named `GetArtExhibitionDays`, takes an art ID as input and returns the total number of days the artwork has been exhibited.Execute the function for 'ART003' to unveil the intriguing story of its exhibition journey.

```
PES2UG21CS315>DELIMITER $$
PES2UG21CS315>
PES2UG21CS315>CREATE FUNCTION GetArtExhibitionDays(art_id VARCHAR(10)) RETURNS INT
    -> BEGIN
    ->     DECLARE total_days INT;
    ->
    ->
    ->     SELECT SUM(DATEDIFF(e.e_date, e.s_date)) INTO total_days
    ->     FROM exhibition AS e
    ->     JOIN exhibited AS ex ON e.ex_id = ex.ex_id
    ->     WHERE ex.art_id = art_id;
    ->     IF total_days IS NULL THEN
    ->         SET total_days = 0;
    ->     END IF;
    ->
    ->     RETURN total_days;
    -> END$$
Query OK, 0 rows affected (0.01 sec)
```

```
PES2UG21CS315>
PES2UG21CS315>DELIMITER ;
PES2UG21CS315>SELECT GetArtExhibitionDays('ART003');
+--------------------------------+
| GetArtExhibitionDays('ART003') |
+--------------------------------+
|                             29 |
+--------------------------------+
1 row in set (0.01 sec)
```

THANK YOU 😊