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DATABASE MANAGEMENT SYSTEM

ASSGNMENT NO.: 09

QUE 1) Need of SQL Views:

ANS: SQL Views are virtual tables that are based on the result of a SELECT query. They do not store the data themselves but provide a way to represent the result of a query as if it were a table. The key reasons for using SQL Views include:

1.Data Abstraction: Views help in abstracting the complex underlying data structures. Users can interact with the views without knowing the complexity of the tables involved.

2.Security: Views can be used to restrict access to certain columns or rows of a table. This allows for controlled access to sensitive information.

3.Simplifying Queries: Views simplify complex queries by encapsulating them into a single, easy-to-understand virtual table. This makes it easier for users to query the database.

4.Code Reusability: Views can be used to encapsulate frequently used queries. This promotes code reusability and reduces redundancy in the database.

5.Data Independence: Views provide a level of abstraction, making it possible to change the underlying table structure without affecting the applications using the views.

QUE 2) How to Implement and Use Views in MySQL:

ANS: Creating a View:

```
CREATE VIEW view_name AS
SELECT column1, column2, ...
FROM table_name
```

WHERE condition;

Example:

```
CREATE VIEW SitLibraryBooks AS
SELECT BookID, Title, Price
FROM Books
WHERE LibraryID = 'SIT' AND Price < 1000;
```

Using a View:

```
SELECT * FROM view_name;
```

Example:

```
SELECT * FROM SitLibraryBooks;
```

Updating a View:

```
CREATE OR REPLACE VIEW view_name AS
SELECT new_column1, new_column2, ...
FROM new_table_name
WHERE new_condition;
```

Example:

```
CREATE OR REPLACE VIEW SitLibraryBooks AS
SELECT BookID, Title, Price
FROM Books
WHERE LibraryID = 'SIT' AND Price < 800;
```

Dropping a View:

```
DROP VIEW view_name;
```

Example:

```
DROP VIEW SitLibraryBooks;
```

QUE 3) Write a View to Select All Books of SIT Library Whose Cost is Less Than 1000/-

ANS:

```
CREATE DATABASE LibraryManagement;
USE LibraryManagement;
```

```
-- Create Tables
CREATE TABLE Library (
LibraryID VARCHAR(10) PRIMARY KEY,
LibraryName VARCHAR(255) NOT NULL,
Location VARCHAR(255) NOT NULL
);
CREATE TABLE Books (
BookID INT PRIMARY KEY,
Title VARCHAR(255) NOT NULL,
Price DECIMAL(10, 2) NOT NULL,
LibraryID VARCHAR(10) REFERENCES Library(LibraryID)
);
-- Insert Values into Library Table
INSERT INTO Library (LibraryID, LibraryName, Location) VALUES
('SIT', 'SIT Library', 'Pune'),
('XYZ', 'XYZ Library', 'Mumbai'),
('ABC', 'ABC Library', 'Bangalore'),
('DEF', 'DEF Library', 'Chennai'),
('GHI', 'GHI Library', 'Delhi');
-- Insert Values into Books Table
INSERT INTO Books (BookID, Title, Price, LibraryID) VALUES
(1, 'Book1', 800, 'SIT'),
(2, 'Book2', 1200, 'XYZ'),
(3, 'Book3', 500, 'ABC'),
(4, 'Book4', 1500, 'DEF'),
(5, 'Book5', 700, 'SIT');
-- Create View
CREATE VIEW SitLibraryBooks AS
SELECT BookID, Title, Price
FROM Books
WHERE LibraryID = 'SIT' AND Price < 1000;
```

-- Query the View

SELECT * FROM SitLibraryBooks;

OUTPUT: