**DesiPay SQL Project Report**

**1. Project Overview**

**Project Name: DesiPay**

DesiPay is a digital payment system that allows users to send and receive money, manage bank accounts, pay bills, and earn cashback rewards. The system includes users, banks, transactions, merchants, bill payments, support tickets, and cashback rewards to create a seamless financial ecosystem.

**2. Database Schema**

**Entities & Relationships:**

* **Users:** Stores user details like name, phone, email, UPI ID, and KYC status.
* **Banks:** Contains bank details such as name and IFSC code.
* **User Bank Accounts:** Links users to banks and manages account balances.
* **Transactions:** Records money transfers between users.
* **Bill Payments:** Tracks bill payments made by users.
* **Cashback Rewards:** Manages cashback, discounts, and vouchers.
* **Support Tickets:** Handles user-reported issues.

**3. SQL Queries**

**Basic Queries**

**1. Retrieve all users' details**

SELECT \* FROM Users;

**2. Get the total number of users**

SELECT COUNT(\*) AS total\_users FROM Users;

**3. Find users with a verified KYC**

SELECT \* FROM Users WHERE kyc = 'Verified';

**4. List all unique bank names**

SELECT DISTINCT bank\_name FROM Banks;

**5. Fetch a user’s bank details**

SELECT u.name, b.bank\_name, uba.account\_number, uba.balance

FROM Users u

JOIN UserBankAccounts uba ON u.user\_id = uba.user\_id

JOIN Banks b ON uba.bank\_id = b.bank\_id

WHERE u.user\_id = 3;

**Intermediate Queries**

**6. Get total transaction amount for a user**

SELECT sender\_id, SUM(amount) AS total\_sent

FROM Transactions

WHERE sender\_id = 5 AND transaction\_status = 'Completed'

GROUP BY sender\_id;

**7. Find failed transactions**

SELECT \* FROM Transactions WHERE transaction\_status = 'Failed';

**8. Find the top 3 users with the highest account balance**

SELECT u.name, uba.balance

FROM Users u

JOIN UserBankAccounts uba ON u.user\_id = uba.user\_id

ORDER BY uba.balance DESC

LIMIT 3;

**9. Get the number of transactions per user**

SELECT sender\_id, COUNT(\*) AS total\_transactions

FROM Transactions

GROUP BY sender\_id;

**10. Find pending bill payments**

SELECT \* FROM BillPayments WHERE status = 'Pending';

**11. Get merchants by business type**

SELECT business\_type, COUNT(\*) AS total\_merchants

FROM Merchants

GROUP BY business\_type;

**12. Find users who have never made a transaction**

SELECT u.user\_id, u.name

FROM Users u

LEFT JOIN Transactions t ON u.user\_id = t.sender\_id

WHERE t.sender\_id IS NULL;

**13. Get total cashback earned by each user**

SELECT user\_id, SUM(reward\_amount) AS total\_cashback

FROM CashbackRewards

WHERE reward\_type = 'Cashback' AND status = 'Credited'

GROUP BY user\_id;

**14. Find the last 5 transactions of a user**

SELECT \* FROM Transactions

WHERE sender\_id = 2

ORDER BY transaction\_date DESC

LIMIT 5;

**15. Find users with more than one bank account**

SELECT user\_id, COUNT(account\_id) AS total\_accounts

FROM UserBankAccounts

GROUP BY user\_id

HAVING COUNT(account\_id) > 1;

**Aggregate Function Queries**

**16. Get the total balance across all user bank accounts**

SELECT SUM(balance) AS total\_balance FROM UserBankAccounts;

**17. Get the average balance per user**

SELECT AVG(balance) AS avg\_balance FROM UserBankAccounts;

**18. Find the highest cashback received per user**

SELECT user\_id, MAX(reward\_amount) AS highest\_cashback

FROM CashbackRewards

WHERE status = 'Credited'

GROUP BY user\_id;

19. Find users who have made more than 5 transactions

SELECT sender\_id, COUNT(transaction\_id) AS total\_transactions

FROM Transactions

GROUP BY sender\_id

HAVING COUNT(transaction\_id) > 5;

**20. Get users with a total transaction amount greater than ₹10,000**

SELECT sender\_id, SUM(amount) AS total\_spent

FROM Transactions

GROUP BY sender\_id

HAVING SUM(amount) > 10000**;**

**4. Conclusion**

DesiPay provides a robust database structure for managing digital transactions, user accounts, bill payments, and rewards. The queries demonstrated above help in data analysis, transaction tracking, and system monitoring, ensuring a smooth digital payment experience. The project can be further enhanced with additional reporting features, fraud detection, and AI-powered transaction insights.

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