Assignment 5 : SQL Grouping and databse views

mysql> show databases ;

**+ +**

| Database |

**+ +**

| classicmodels |

| ecommerce\_011 |

| information\_schema |

| mysql |

| pccoe |

| performance\_schema |

| practice |

| record |

| sql\_intro |

| sql\_joins |

| student |

| studentmanagement |

| sub\_queries |

| subqueries |

| sys |

| triggers |

| vehical |

**+ +**

17 rows in set (0.00 sec)

Database Schema (Banking System)

mysql> create database Banking\_system\_011 ; Query OK, 1 row affected (0.02 sec)

mysql> use Banking\_system\_011 ; Database changed

Creating table Customers

mysql> create table customers (customer\_ID int primary key, name varchar(20), DOB date ,

-> city varchar(20), account\_type varchar(15)) ; Query OK, 0 rows affected (0.05 sec)

mysql> describe customers ;

**+ + + + + + +**

| Field | Type | ull | Key | Default | Extra |

**+ + + + + + +**

| customer\_ID | int | O | flRI | ULL | |

| name | varchar(20) | YES | | ULL | |

| DOB | date | YES | | ULL | |

| city | varchar(20) | YES | | ULL | |

| account\_type | varchar(15) | YES | | ULL | |

**+ + + + + + +**

5 rows in set (0.01 sec)

Creating table Branches

mysql> create table Branches (branch\_id int primary key, branch\_name varchar(50),

-> city varchar(25));

Query OK, 0 rows affected (0.05 sec)

mysql> describe Branches ;

**+ + + + + + +**

| Field | Type | ull | Key | Default | Extra |

**+ + + + + + +**

| branch\_id | int | O | flRI | ULL | |

| branch\_name | varchar(50) | YES | | ULL | |

| city | varchar(25) | YES | | ULL | |

**+ + + + + + +**

3 rows in set (0.00 sec)

Creating table mysql> create table Accounts (account\_id int primary key , customer\_id int,

-> balance decimal(15,2), account\_type varchar(15),branch\_id int ,

-> foreign key(customer\_ID) references customers(customer\_ID),

-> foreign key(branch\_id) references Branches (branch\_id)); Query OK, 0 rows affected (0.07 sec)

mysql> describe Accounts ;

**+ + + + + + +**

| Field | Type | ull | Key | Default | Extra |

**+ + + + + + +**

| account\_id | int | O | flRI | ULL | |

| customer\_id | int | YES | MUL | ULL | |

| balance | decimal(15,2) | YES | | ULL | |

| account\_type | varchar(15) | YES | | ULL | |

| branch\_id | int | YES | MUL | ULL | |

**+ + + + + + +**

5 rows in set (0.00 sec)

Creating table Transactions

mysql> create table Transactions (transaction\_id int primary key, account\_id int,

-> amount decimal(15,2), transaction\_type varchar(15), transaction\_date date,

-> foreign key (account\_id) references Accounts (account\_id)); Query OK, 0 rows affected (0.06 sec)

mysql> describe Transactions ;

**+ + + + + + +**

| Field | Type | ull | Key | Default | Extra |

**+ + + + + + +**

| transaction\_id | int | O | flRI | ULL | |

| account\_id | int | YES | MUL | ULL | |

| amount | decimal(15,2) | YES | | ULL | |

| transaction\_type | varchar(15) | YES | | ULL | |

| transaction\_date | date | YES | | ULL | |

**+ + + + + + +**

5 rows in set (0.00 sec)

Creating tables Loan

mysql> create table Loans (loan\_id int primary key, customer\_id int,

-> amount decimal(15,2), loan\_type varchar(20), status varchar(10),

-> foreign key (customer\_ID)references customers (customer\_ID)); Query OK, 0 rows affected (0.06 sec)

mysql> describe Loans ;

**+ + + + + + +**

| Field | Type | ull | Key | Default | Extra |

**+ + + + + + +**

| loan\_id | int | O | flRI | ULL | |

| customer\_id | int | YES | MUL | ULL | |

| amount | decimal(15,2) | YES | | ULL | |

| loan\_type | varchar(20) | YES | | ULL | |

| status | varchar(10) | YES | | ULL | |

**+ + + + + + +**

5 rows in set (0.00 sec)

mysql> insert into customers

-> values (1, 'flrasad Bange', '2025-05-12', 'jalna', 'Savings'),(2,

'Aarush Borkar ', '2025-08-25', 'jalna', 'Current'),

-> (3, 'Kaiwalya Ladekar', '2025-11-03', 'flune', 'Savings'),(4, 'Shreya Bhagat', '2025-06-17', 'flune', 'Current'),

-> (5, 'Mihir flatil', '2025-02-28', 'flune', 'Savings'),(6, 'Yuvraj Shembale', '2025-07-19', 'Mumbai', 'Current'),

-> (7, 'Aniket Damedhar', '2025-09-10', 'Mumbai', 'Savings'),(8, 'Dhruv flujari', '2025-04-05', 'flune', 'Current'),

-> (9, 'Anuj Ahire', '2025-12-14', 'jalna', 'Savings'),(10, 'flrathamesh Bhangari', '2025-07-12', 'sambhajinagar', 'Current'),

-> (11, 'Mihik shah', '2025-03-06', 'flune', 'Current'),(12, 'flrathamesh Mane', '2025-08-15', 'sambhajinagar', 'Current'),

-> (13, 'Janvee Ghadge', '2025-05-24', 'flune', 'Current'),(14, 'Sarvesh Todkar', '2025-01-01', 'Mumbai', 'Current'),

-> (15, 'Atharv Desai', '2025-04-14', 'flune', 'Current') ; Query OK, 15 rows affected (0.02 sec)

Records: 15 Duplicates: 0 Warnings: 0

mysql> select \* from customers ;

**+ + + + +**

**---+**

| customer\_ID | name | DOB | city | account\_type |

**+ + + + +**

**---+**

| 1 | flrasad Bange | 2025-05-12 | jalna | Savings

**|**

| 2 | Aarush Borkar | 2025-08-25 | jalna | Current

**|**

| 3 | Kaiwalya Ladekar | 2025-11-03 | flune | Savings

**|**

| 4 | Shreya Bhagat | 2025-06-17 | flune | Current

**|**

| 5 | Mihir flatil | 2025-02-28 | flune | Savings

**|**

| 6 | Yuvraj Shembale | 2025-07-19 | Mumbai | Current

**|**

| 7 | Aniket Damedhar | 2025-09-10 | Mumbai | Savings

**|**

| 8 | Dhruv flujari | 2025-04-05 | flune | Current

**|**

| 9 | Anuj Ahire | 2025-12-14 | jalna | Savings

**|**

| 10 | flrathamesh Bhangari | 2025-07-12 | sambhajinagar | Current

**|**

| 11 | Mihik shah | 2025-03-06 | flune | Current

**|**

| 12 | flrathamesh Mane | 2025-08-15 | sambhajinagar | Current

**|**

| 13 | Janvee Ghadge | 2025-05-24 | flune | Current

**|**

| 14 | Sarvesh Todkar | 2025-01-01 | Mumbai | Current

**|**

| 15 | Atharv Desai | 2025-04-14 | flune | Current

**|**

**+ + + + +**

**---+**

15 rows in set (0.00 sec)

mysql> insert into Branches

-> values (101, 'gdi Branch', 'flune'),(102, 'Akurdi Branch', 'flune'),

-> (103, 'Jalna Branch', 'jalna'),(104, 'Chinchwad Branch', 'flune'),

-> (105, 'flimpri Branch', 'flune'),(106, 'Mumbai CSMT Branch', 'mumbai'),

-> (107, 'Sambhajinagar Branch', 'Sambhajinagar'),(108, 'Bhosari Branch', 'flune'),

-> (109, 'Viman agar Branch', 'flune'),(110, 'Shivaji agar Branch', 'flune');

Query OK, 10 rows affected (0.02 sec) Records: 10 Duplicates: 0 Warnings: 0

mysql> select \* from Branches ;

**+ + + +**

| branch\_id | branch\_name | city |

**+ + + +**

| 101 | gdi Branch | flune |

| 102 | Akurdi Branch | flune |

| 103 | Jalna Branch | jalna |

| 104 | Chinchwad Branch | flune |

| 105 | flimpri Branch | flune |

| 106 | Mumbai CSMT Branch | mumbai |

| 107 | Sambhajinagar Branch | Sambhajinagar |

| 108 | Bhosari Branch | flune |

| 109 | Viman agar Branch | flune |

| 110 | Shivaji agar Branch | flune |

**+ + + +**

10 rows in set (0.00 sec)

mysql> insert into Accounts

-> values (201, 1, 500000.75, 'Savings', 103),(202, 2, 300000.00,

'Current', 103),

|  |  |  |
| --- | --- | --- |
| **-> 104),** | **(203,** | **3, 75000.50, 'Savings', 103),(204, 4, 250000.00, 'Current',** |
| **-> 106),** | **(205,** | **5, 135000.25, 'Savings', 105),(206, 6, 180000.75, 'Current',** |
| **-> 107),** | **(207,** | **7, 65000.60, 'Savings', 106),(208, 8, 220000.40, 'Current',** |
| **-> 110),** | **(209,** | **9, 47000.90, 'Savings', 109),(210, 10, 195000.80, 'Current',** |
| **-> 110),** | **(211,** | **11, 195000.80, 'Current', 103),(212, 12, 195000.80, 'Current',** |
| **-> 110),** | **(213,** | **13, 195000.80, 'Current', 106),(214, 14, 195000.80, 'Current',** |
| **->** | **(215,** | **15, 195000.80, 'Current', 107);** |

Query OK, 15 rows affected (0.02 sec) Records: 15 Duplicates: 0 Warnings: 0

mysql> select \* from Accounts ;

**+ + + + + +**

| account\_id | customer\_id | balance | account\_type | branch\_id |

**+ + + + + +**

| 201 | 1 | 500000.75 | Savings | 103 |

| 202 | 2 | 300000.00 | Current | 103 |

| 203 | 3 | 75000.50 | Savings | 103 |

| 204 | 4 | 250000.00 | Current | 104 |

| 205 | 5 | 135000.25 | Savings | 105 |

| 206 | 6 | 180000.75 | Current | 106 |

| 207 | 7 | 65000.60 | Savings | 106 |

| 208 | 8 | 220000.40 | Current | 107 |

| 209 | 9 | 47000.90 | Savings | 109 |

| 210 | 10 | 195000.80 | Current | 110 |

| 211 | 11 | 195000.80 | Current | 103 |

| 212 | 12 | 195000.80 | Current | 110 |

| 213 | 13 | 195000.80 | Current | 106 |

| 214 | 14 | 195000.80 | Current | 110 |

| 215 | 15 | 195000.80 | Current | 107 |

**+ + + + + +**

15 rows in set (0.00 sec)

mysql> insert into Transactions

-> values (301, 201, 115000.00, 'Deposit', '2025-02-11'),(302, 202,

15000.50, 'Withdrawal', '2025-02-10'),

-> (303, 203, 10000.00, 'Deposit', '2025-02-09'),(304, 204, 7500.25,

'Withdrawal', '2025-02-04'),

-> (305, 205, 20000.75, 'Deposit', '2025-02-05'),(306, 206, 5000.00,

'Withdrawal', '2025-02-12'),

-> (307, 207, 12000.60, 'Deposit', '2025-02-07'),(308, 208, 25000.40,

'Withdrawal', '2025-02-08'),

-> (309, 209, 8000.90, 'Deposit', '2025-02-09'),(310, 210, 50000.80,

'Withdrawal', '2025-02-10'),

-> (311, 211, 70000.80, 'Deposit', '2025-05-11'),(312, 212, 6000.80,

'Withdrawal', '2025-04-16'),

-> (313, 213, 110000.80, 'Withdrawal', '2025-09-24'),(314, 214, 30000.80,

'Deposit', '2025-05-06'),

-> (315, 215, 12000.80, 'Deposit', '2025-03-27');

Query OK, 15 rows affected (0.02 sec) Records: 15 Duplicates: 0 Warnings: 0

mysql> select \* from Transactions ;

**+ + + + +**

**---+**

| transaction\_id | account\_id | amount | transaction\_type | transaction\_date |

**+ + + + +**

**---+**

| 301 | 201 | 115000.00 | Deposit | 2025-02-11

**|**

| 302 | 202 | 15000.50 | Withdrawal | 2025-02-10

**|**

| 303 | 203 | 10000.00 | Deposit | 2025-02-09

**|**

| 304 | 204 | 7500.25 | Withdrawal | 2025-02-04

**|**

| 305 | 205 | 20000.75 | Deposit | 2025-02-05

**|**

| 306 | 206 | 5000.00 | Withdrawal | 2025-02-12

**|**

| 307 | 207 | 12000.60 | Deposit | 2025-02-07

**|**

| 308 | 208 | 25000.40 | Withdrawal | 2025-02-08

**|**

| 309 | 209 | 8000.90 | Deposit | 2025-02-09

**|**

| 310 | 210 | 50000.80 | Withdrawal | 2025-02-10

**|**

| 311 | 211 | 70000.80 | Deposit | 2025-05-11

**|**

| 312 | 212 | 6000.80 | Withdrawal | 2025-04-16

**|**

| 313 | 213 | 110000.80 | Withdrawal | 2025-09-24

**|**

| 314 | 214 | 30000.80 | Deposit | 2025-05-06

**|**

| 315 | 215 | 12000.80 | Deposit | 2025-03-27

**|**

**+ + + + +**

**---+**

15 rows in set (0.00 sec)

mysql> insert into Loans

-> values (401, 1, 500000.00, 'Car Loan', 'Approved'),(402, 2, 300000.50,

'Car Loan', 'flending'),

-> (403, 3, 150000.75, 'flersonal Loan', 'Approved'),(404, 4, 250000.00,

'Home Loan', 'Rejected'),

-> (405, 5, 1000000.25, 'Home Loan', 'Approved'),(406, 6, 450000.00,

'flersonal Loan', 'flending'),

-> (407, 7, 350000.60, 'Car Loan', 'Approved'),(408, 8, 600000.40, 'Home

Loan', 'Approved'),

-> (409, 9, 200000.90, 'flersonal Loan', 'flending'),(411, 10, 220000.80, 'Car Loan', 'Approved'),

-> (412, 11, 620000.80, 'Home Loan', 'Rejected'),(413, 12, 70000.80,

'Home Loan', 'Rejected'),

-> (414, 13, 60000.80, 'flersonal Loan', 'flending'),(415, 14, 850000.80, 'Home Loan', 'Rejected'),

-> (416, 15, 30000.80, 'flersonal Loan', 'flending'); Query OK, 15 rows affected (0.02 sec)

Records: 15 Duplicates: 0 Warnings: 0 mysql> select \* from Loans ;

**+ + + + + +**

| loan\_id | customer\_id | amount | loan\_type | status |

**+ + + + + +**

| 401 | 1 | 500000.00 | Car Loan | Approved |

| 402 | 2 | 300000.50 | Car Loan | flending |

| 403 | 3 | 150000.75 | flersonal Loan | Approved |

| 404 | 4 | 250000.00 | Home Loan | Rejected |

| 405 | 5 | 1000000.25 | Home Loan | Approved |

| 406 | 6 | 450000.00 | flersonal Loan | flending |

| 407 | 7 | 350000.60 | Car Loan | Approved |

| 408 | 8 | 600000.40 | Home Loan | Approved |

| 409 | 9 | 200000.90 | flersonal Loan | flending |

| 411 | 10 | 220000.80 | Car Loan | Approved |

| 412 | 11 | 620000.80 | Home Loan | Rejected |

| 413 | 12 | 70000.80 | Home Loan | Rejected |

| 414 | 13 | 60000.80 | flersonal Loan | flending |

| 415 | 14 | 850000.80 | Home Loan | Rejected |

| 416 | 15 | 30000.80 | flersonal Loan | flending |

**+ + + + + +**

15 rows in set (0.00 sec)

1. **Retrieve the total balance for each account type.**

mysql> select account\_type, sum(balance) as total\_balance

-> from accounts

-> group by account\_type;

**+ + +**

| account\_type | total\_balance |

**+ + +**

| Savings | 822003.00 |

| Current | 2120005.95 |

**+ + +**

2 rows in set (0.01 sec)

1. **Count the number of accounts in each branch. mysql> select branch\_id, count(account\_id) as total\_accounts**

**-> from accounts**

**-> group by branch\_id;**

**+ + +**

**| branch\_id | total\_accounts |**

**+ + +**

**| 103 | 4 |**

**| 104 | 1 |**

**| 105 | 1 |**

**| 106 | 3 |**

**| 107 | 2 |**

**| 109 | 1 |**

**| 110 | 3 |**

**+ + +**

**7 rows in set (0.00 sec)**

1. **3. Find the number of customers in each city.**

**mysql> select city, count(customer\_id) as total\_customers**

**-> from customers**

**-> group by city;**

**+ + +**

**| city | total\_customers |**

**+ + +**

**| jalna | 3 |**

**| flune | 7 |**

**| Mumbai | 3 |**

**| sambhajinagar | 2 |**

**+ + +**

**4 rows in set (0.00 sec)**

1. **Show the number of loans approved per loan type. mysql> select loan\_type, count(loan\_id) as approved\_loans**

**-> from loans**

**-> where status = 'Approved'**

**-> group by loan\_type;**

**+ + +**

**| loan\_type | approved\_loans |**

**+ + +**

**| Car Loan | 3 |**

**| flersonal Loan | 1 |**

**| Home Loan | 2 |**

**+ + +**

**3 rows in set (0.00 sec)**

1. **Find the total number of transactions for each transaction type.**

**mysql> select transaction\_type, count(transaction\_id) as total\_transactions**

**-> from transactions**

**-> group by transaction\_type;**

**+ + +**

**| transaction\_type | total\_transactions |**

**+ + +**

**| Deposit | 8 |**

**| Withdrawal | 7 |**

**+ + +**

**2 rows in set (0.00 sec)**

1. **Show the customers who do not have a loan**

mysql> select \* from customers

-> where customer\_id not in (select customer\_id from loans); Empty set (0.00 sec)

7 **Retrieve customers who have accounts in more than one branch.**

**mysql> select customer\_id**

**-> from accounts**

**-> group by customer\_id**

**-> having count(distinct branch\_id) > 1; Empty set (0.01 sec)**

1. **Find all accounts that have not had any deposits in the last**

**3 months.**

**mysql> select account\_id**

**-> from accounts**

**-> where account\_id not in**

**-> (select account\_id from transactions**

**-> where transaction\_type = 'Deposit'**

**-> and transaction\_date >= date\_sub(curdate(), interval 3 month));**

**+** **+**

**| account\_id |**

**+** **+**

|  |  |
| --- | --- |
| **|** | **202 |** |
| **|** | **204 |** |
| **|** | **206 |** |
| **|** | **208 |** |
| **|** | **210 |** |
| **|** | **212 |** |
| **|** | **213 |** |

**+** **+**

**7 rows in set (0.00 sec)**

1. **Display the account types where the total balance is below**

**₹25,000.**

**mysql> select account\_type**

**-> from accounts**

**-> group by account\_type**

**-> having sum(balance) < 25000; Empty set (0.00 sec)**

1. **Find the total balance per account type where the balance is above ₹50,000.**

**mysql> select account\_type, sum(balance) as total\_balance**

**-> from accounts**

**-> group by account\_type**

**-> having total\_balance > 50000;**

**+--------------+** **+**

**| account\_type | total\_balance |**

**+--------------+** **+**

**| Savings | 822003.00 |**

**| Current | 2120005.95 |**

**+--------------+** **+**

**2 rows in set (0.01 sec)**

1. **Retrieve the count of transactions made on dates where more than 5 transactions occurred.**

mysql> select transaction\_date, count(transaction\_id) as total\_transactions

-> from transactions

-> group by transaction\_date

-> having total\_transactions > 5;

**Empty set (0.00 sec)**

1. **Find the top 3 transaction days with the highest total transaction amount.**

**mysql> select transaction\_date, sum(amount) as total\_amount**

**-> from transactions**

**-> group by transaction\_date**

**-> order by total\_amount desc**

**-> limit 3;**

**+------------------+** **+**

**| transaction\_date | total\_amount |**

**+------------------+** **+**

|  |  |  |
| --- | --- | --- |
| **| 2025-02-11** | **|** | **115000.00 |** |
| **| 2025-09-24** | **|** | **110000.80 |** |
| **| 2025-05-11** | **|** | **70000.80 |** |

**+------------------+** **+**

**3 rows in set (0.00 sec)**

1. **Find customers who have a loan but no account in the bank.**

**mysql> select \* from customers**

**-> where customer\_id in (select customer\_id from loans)**

**-> and customer\_id not in (select customer\_id from accounts); Empty set (0.01 sec)**