1. Database schema (database = nusbank)
   1. **Users** Table

|  |  |  |
| --- | --- | --- |
| Field | datatype | Description |
| user\_id | INT | User Unique number (PRIMARY KEY) |
| name | VARCHAR(50) | User name |
| mail | VARCHAR(50) | User email |
| mobile | VARCHAR(50) | User mobile |
| nric | VARCHAR(50) | User national IC |

* 1. **Accounts** Table

|  |  |  |
| --- | --- | --- |
| Field | Datatype | Description |
| user\_id | INT | User Unique number (FOREIGN KEY) |
| acct\_type | VARCHAR(25) | Type of account (saving/checking/creditcard) |
| acct\_number | BIGINT | Account number |
| balance | DECIMAL(10,2) | Account balance |
| date\_created | DATETIME | Date created |
| max\_limit | DECIMAL(10,2) | Widrawal limit |

* 1. **Transactions** Table

|  |  |  |
| --- | --- | --- |
| Field | Datatype | Description |
| acct\_number | BIGINT | Account number (FOREIGN KEY) |
| id | BIGINT | Transaction id |
| date | DATETIME | Transaction date |
| type | VARCHAR(50) | Transaction type (grocery/food/utility/retail/etc) |
| amount | DECIMAL(0,2) | Transacted amount |

* 1. **Messages** Table

|  |  |  |
| --- | --- | --- |
| Field | Type | Description |
| user\_id | INT | User unique id (FOREIGN KEY) |
| id | INT | Message Id |
| date | DATETIME | Date message composed |
| remark | TEXT | Message detail max 65535 chars |

1. Populate data
2. Query to find
   1. Spending pattern
   2. Monthly average spending for each user
   3. Most frequent transaction type
   4. Customer who have highest and lowest balance
3. Find user who had the most transaction (all transaction type) for each month

Sql

* CREATE DATABASE nusbank;
* USE nusbank;
* CREATE TABLE users (user\_id INT, name VARCHAR(50), mail VARCHAR(50), mobile VARCHAR(50), nric VARCHAR(50));
* CREATE TABLE accounts (user\_id INT, acct\_type INT, acct\_number INT, balance DECIMAL(10,2), date\_created DATE, max\_limit DECIMAL(10,2));
* CREATE TABLE transactions (acct\_number INT, id INT, date DATETIME, type INT, amount DECIMAL(10,2));
* CREATE TABLE messages (user\_id INT, id INT, date DATETIME, remark TEXT);

mysql> SHOW VARIABLES LIKE "secure\_file\_priv";

+------------------+------------------------------------------------+

| Variable\_name | Value |

+------------------+------------------------------------------------+

| secure\_file\_priv | C:\ProgramData\MySQL\MySQL Server 8.0\Uploads\ |

+------------------+------------------------------------------------+

1 row in set (0.00 sec)

Import csv file

LOAD DATA INFILE "E:\downloads\users.csv"

INTO TABLE nusbank.users

COLUMNS TERMINATED BY ‘,’

OPTIONALLY ENCLOSED BY ‘"’

ESCAPED BY ‘"’

LINES TERMINATED BY ‘\n’

LOAD DATA INFILE "C:/ProgramData/MySQL/MySQL Server 8.0/Uploads/users.csv"

-> INTO TABLE nusbank.users

-> COLUMNS TERMINATED BY `,`

-> ESCAPED BY '"'

-> LINES TERMINATED BY '\n'

-> ;