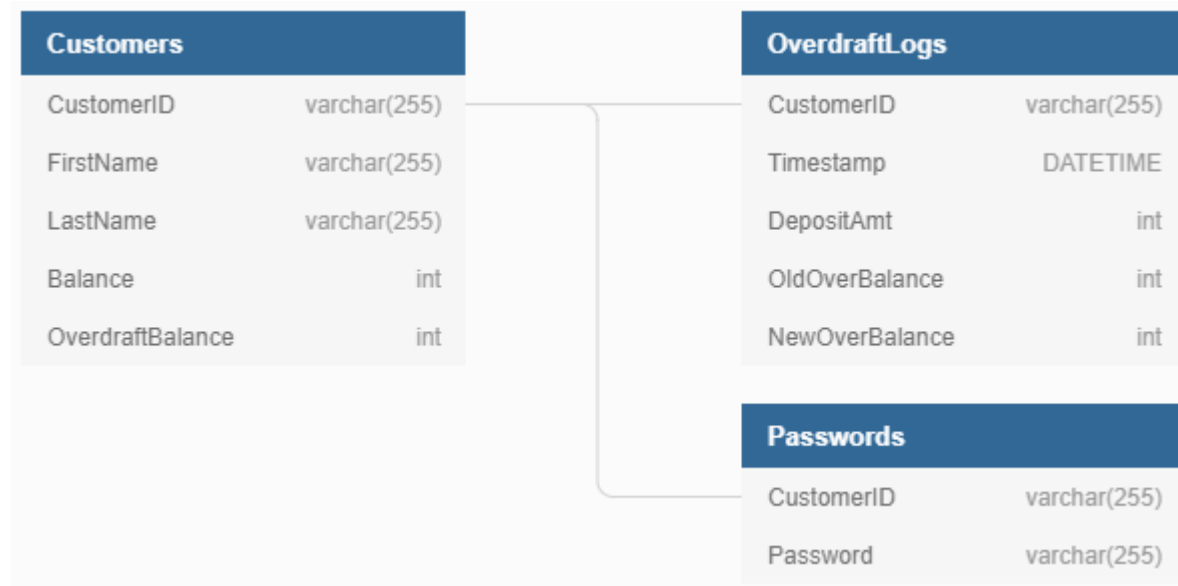


Testudo Bank Database Schema Documentation

Owner: Adithya Solai (adithyasolai7@gmail.com)

Schema Diagram

The Testudo Bank application uses a **MySQL** database with the following schema:



Schema Definition

Customers Table

- CustomerID is a primary key for the Customers table because it uniquely identifies each row in the table since each Customer is only given one row entry in this table.
- CustomerID can be used as a foreign key in the OverdraftLogs and Passwords table.

OverdraftLogs Table

- CustomerID is not a primary key in the OverdraftLogs table since each row in that table represents a single time a customer paid back some (or all) of their overdraft balance.
 - The same CustomerID can be in numerous rows in the OverdraftLogs table since customers can pay back their overdraft balance over multiple payments.
- The DATETIME data type used for Timestamp is in the form YYYY-MM-DD hh:mm:ss . Therefore, the Timestamp column can not capture instances where multiple repayments are made within the same second.
- Since Timestamp is granular only up to seconds and it is possible for a customer to make 2 repayments within the same second, the **candidate key** of this table is CustomerID, Timestamp, NewOverBalance .
 - A **candidate key** is the minimal group of columns needed to uniquely identify every row in a table.
 - The DepositAmt of two repayments occurring within the same second could be the same, so we don't gain anything from including this column in our candidate key.
 - The NewOverBalance must be different after each time a customer makes a re-payment, so this can be used to distinguish payments made within the same second.
 - **This forces us to enforce that any deposits made must be > 0 to avoid the same NewOverBalance in two re-payments made within the same second.**
- OverdraftBalance starts at 0 for all customers, and is updated once a customer withdraws beyond their balance.

Passwords Table

- CustomerID is a primary key in the Passwords table since each customer can only have 1 password at a time.