Bank Database Design

- ## Introduction:

  There are only two types of accounts at this time: Checking and Savings accounts. The provided column list should be separated into appropriate entities (tables) with relationships between these entities defined. The most efficient choices as far as your primary key constraints and foreign key constraints, and picked the appropriate data types for each of the columns.

- ## Project Goals:

  The goal of the project is to understand database entities in more depth and have practical experience of working with different objects of SQL.

Other Criteria

- When an employee opens an account, performs a transaction on or reactivates an account there must be a record of which employee performed the action.
- Every person who opens a savings account does not get the same rate.
- Because the bank charges an overdraft fee, a record must be maintained on any transaction that causes an account to go into overdraft.
- Extra error information is required to be stored when a transaction fails. The bank uses this information for fraud detection and to diagnose periodic problems within their networks and applications.
- Customers have a user logins to allow them to access all of their accounts. If a user fails a login attempt, for instance because they have forgotten their password, a record of that failed attempt needs to be kept.
- The information for checking and saving accounts is very similar to each other as are the transactions that update those accounts.
- More than one customer is allowed on each account, and any transaction record should reflect which customer made the transaction.

Column List

- DateOpened
- AccountStatus
- OpeningBalance
- CurrentBalance
- AccountID
- CustomerID
- OverdraftAccountID
- TransactionID
- FailedTransactionID
- TransactionTypeID
- TransactionTypeName
- TransactionAmt
- SavingsInterestRate
- TransactionDate
- TransactionAmount
- TransactionType
- OldBalance
- NewBalance
- CustomerFirstName
- CustomerMiddleInitial
- CustomerLastName
- CustomerAddress1
- CustomerAddress2
- City
- State
- Zipcode
- Email
- SSN
- UserLogin
- UserPassword
- UserSecurityQuestion
- UserSecurityQuestionAnswer
- HomePhone
- WorkPhone
- CellPhone
- ErrorLogID
- ErrorTime
- UserName
- FailedTransactionErrorID
- FailedTransactionXML
- FailedTransactionErrorTime
- EmployeeID
- EmployeeFirstName
- EmployeeMiddleInitial
- EmployeeLastName
- EmployeeIsManager
- AccountReactivationLogID
- ReactivationDate
- UserSecurityQuestion2
- UserSecurityQuestionAnswer2
- UserSecurityQuestion3
- UserSecurityQuestionAnswer3

Designed Entities

Categorized columns, * are Primary Keys

Account

*AccountID

CurrentBalance

AccountType

AccountStatus

Customer

*CustomerID

CustomerAddress1

CustomerAddress2

CustomerFirstName

CustomerLastName

CustomerMiddleInitial

City, State, Zipcode

Email

HomePhone, CellPhone

WorkPhone

SSN

UserSecurityQuestions

*UserSecurityQuestionID

UserSecurityQuestion

UserSecurityQuestion2

UserSecurityQuestion3

TransactionLog

*TransactionID

TransactionType

TransactionDate

DateOpened

ReactivationDate

TransactionAmount

TransactionAmt

NewBalance

OpeningBalance

OldBalance

Employee

*EmployeeID

EmployeeFirstName

EmployeeLastName

EmployeeMiddleInitial

EmployeeIsManager

UserLogins

*UserLogin

UserName

UserPassword

LoginErrorLog

*ErrorLogID

ErrorTime

SavingsInterestRates

*SavingsInterestRateID

SavingsInterestRate

TransactionType

*TransactionTypeID

TransactionTypeName

AccountReactivationLogID

UserSecurityAnswers

*UserAnswerID

UserSecurityQuestionAnswer

UserSecurityQuestionAnswer2

UserSecurityQuestionAnswer3

OverDraftLog

OverdraftAccountID

FailedTransactionLog

*FailedTransactionID

FailedTransactionXML, ErrorTime

FailedTransactionErrorType

*FailedTransactionErrorID

FailedTransactionErrorTime

Entity-Relationship Diagram