

# Requirements of Bank System Database

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## *Requirements of the Bank System Database*

■ The **Customer Management System** is composed of several **Customers**, each with a unique identifier (**Customer\_ID**). Each **Customer** includes first name (**First\_Name**), last name (**Last\_Name**), a unique national identifier (**National\_ID**), multiple phone numbers (**Phone**), an email address (**Email**), gender (**Gender**), age (**Age**), and an associated account ID (**Account\_ID**). Each **Customer** must have at least one associated account.

■ The system tracks **Accounts** linked to **Customers**. Each **Account** has a unique identifier (**Account\_ID**), balance (**Balance**), date opened (**Date\_Opened**), and account status (**Status** - Active, Closed, Dormant). An **Account** must be associated with a **Customer**. One **Account** can have multiple transactions and can also have more than one loan.

■ The database stores information about **Loans**. Each **Loan** has a unique identifier (**Loan\_ID**), amount (**Amount**), payment status (**Status\_of\_Payment**), and start date (**Start\_Date**). Every **Loan** transaction must have an officer handling it, and each **Loan** must be

associated with an **Account**. Each **Loan** may also have associated payments.

■ **Payments** are recorded in the system. Each **Payment** has a payment date (**Payment\_Date**) and payment amount (**Payment\_Amount**). Each **Payment** must be associated with a **Loan**.

■ The system maintains records for **Employees**. Each **Employee** has a first name (**First\_Name**), last name (**Last\_Name**), phone number (Phone), address (**Address**), credit card information (**Credit\_Card**), status (**Status**), job type (**Job\_Type**), salary (**Salary**), and hired date (**Hired\_Date**). There are three types of **Employees**: Accountants, Loan Officers, and Technical Support. An **Employee** may have a supervisor, and a **Supervisor** may oversee multiple **Employees**.

■ **Accountants** are a specific type of **Employee**. Each **Accountant** has a typing speed (**Typing\_Speed**) and is responsible for handling monetary transactions. **Accountants** can conduct multiple transactions.

■ **Loan Officers** are responsible for approving loans. Each **Loan Officer** has a count of loans and is authorized to allow accounts to take loans. **Loan Officers** can also authorize loans for multiple accounts.

■ The database also tracks **Technical Support** personnel. Each **Technical Support** employee records the number of problems solved (**Problems\_Solved**).

■ The system stores information about **Transactions**. Each **Transaction** has a unique identifier (**Transaction\_ID**), transaction type (**Transaction\_Type** - Deposit, Withdraw, Transfer), date (**Date**), and description (**Description**). Each **Transaction** must be processed by an **Accountant** and must be linked to an **Account**.

■ The database manages **Credit Cards** associated with **Customers**. Each Credit Card has a credit card number (**Card\_Number**), password (**Password**), owner's name (**Owner\_Name**), and owner's ID (**Owner\_ID**). A **Customer** may have multiple **Credit Cards**.

# ERD



