**ANP-C7971**

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Database Design for

Bank Management System

**Bank management system**

A bank management system (BMS) is a software application designed to manage various banking operations and processes. It typically encompasses functionalities for handling customer accounts, transactions, loans, deposits, and withdrawals, as well as regulatory compliance and reporting.

The main aim of a BMS is typically to enhance efficiency, ensure security, and improve customer satisfaction in banking operations. A BMS can also provide analytical tools to review and approve compensation, budgets, and outflows.

**Features:**

1. Account management: Create, modify and delete the customer accounts.
2. Transaction management: Processing deposits, withdrawals, and transfers.
3. Loan management: Handling loan applications, approving loans like home loan or personal loans.
4. Customer Relationship Management: The system stores and manages customer information, including contact details, transaction history etc.

**Entities**:

* Bank
* Customer
* Employee
* Branch
* Loan
* Account
* Transaction
* Credit card

**Entity-Relationships:**

1. A bank can have multiple branches, which has one-to-many relationship, whereas each branch is associated with only one bank.
2. A customer can have multiple accounts, it has one-to-many relationship between the customer and account.
3. A customer can take out multiple loans, a one-to-many relationship between the CustomerandLoanentities**.**
4. A bank employee works at one branch, a branch can have multiple employees, so it is a many-to-one relationship between the employee and branch entities.
5. A bank employee manages multiple customer accounts, which has one-to-many relationship.
6. A customer can have multiple transactions, which has one-to-many relationship.
7. A credit card is related to a customer through a one-to-many relationship. Each customer can have multiple credit cards issued with their name.

Attributes are the fields of entities that refer to the characteristics or properties of entities within a database.

1. **Bank**

* Bank\_id
* Bank\_name
* Location

1. **Customer**

* Customer\_id
* customer\_name
* dob
* mobileno
* address
* account\_id
* bank\_id

1. **Employee**

* employee\_id
* employee\_name
* Branch\_id

1. **Branch**

* Branch\_id
* Branch\_name
* Branch\_address
* Bank\_id

1. **Loan**

* Loan\_id
* Loan\_type
* Issued\_amount
* Remaining\_amount
* interestRate
* customer\_id

1. **Account**

* Account\_id
* Account\_balance
* Account\_type
* employee\_id

1. **Transaction**

* Transaction\_id
* amount
* transaction\_type
* customer\_id

1. **Credit** **card**

* Credit \_card\_id
* Expiry\_date
* Card\_limit
* Customer\_id

**ENTITY RELATIONSHIP DIAGRAM – BANK MANAGEMENT SYSTEM**

**Branches**

**Have**

**Bank**

**Have**

Has

**Employees**

Have

**Takes**

**Customers**

**Have**

**Transactions**

**Account**

**Managess**

**Credit\_card**

**Loan**

