# **BANK ENTERPRISE**

**Team members:**

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**Entities:**

* **Branch**  : Contains Bank information such as Name, Assets and location etc.,
* **Employee :** Contains employee information such as SSN, Telephone number, start date etc.,
* **Emp\_dependent :** Contains information of dependents on employees such as their Name, relation, gender. It is a weak entity and depends on employee
* **Account :** Contains information about customers account number, balance and to which branch it belongs to.
* **Transaction :** Contains information regarding the amount of deposits, withdraws and date etc.,
* **Loan :** Contains information on loan taken by the customer, and the payments done.
* **Payments :** Keeps tract of the amount paid by the customer to clear the loan.
* **Customer :** Contains information of customers such as their Name, SSN, Address etc.,

**Relations :**

* **Branch maintain Accounts (1 : N)**  
  One Branch can have many Accounts but one Account can not belong to many Branches, so the relationship between Branch and Account is one to many relationship.
* **Branch offer Loans (1 : N)**  
  One Branch can have many Loans but one Loan can not belong to many Branches, so the relationship between Branch and Loan is one to many relationship.
* **Account held by Customers (M : N)**  
  One Customer can have more than one Accounts and also One Account can be held by one or more Customers, so the relationship between Account and Customers is many to many relationship.
* **Loan availed by Customer (M : N)**  
    
  One Customer can have more than one Loans and also One Loan can be availed by one or more Customers, so the relationship between Loan and Customers is many to many relationship.
* **Managed by :** Every customer is managed by a particular banker, who may act as a loan officer or personal banker for that customer.
* **Depends :**  employees has few dependents
* **Account transaction :** every customer does transactions and the information is taken by the account and keeps track of the balance

**Attributes of Each Entity:**

* **Branch :** B\_Name, Location, Assets

B\_Name is primary key for Branch Entity

* **Account :** Account\_no, Balance, B\_Name

Account\_no is primary key for Account entity

B\_Name is foreign key referred from Branch entity

* **Transaction :** Account\_no, trans\_id, Date\_tr, trans\_amount

trans\_id is the primary key for Transaction entity

Account\_no is the foreign key referred from Account entity

* **Customer :** Cust\_ssn, Name, Address, Street, Account\_no

Cust\_ssn is the primary key

Account\_no is the foreign key referred from Account entity

* **Loan** : loan\_id, Amount, loan\_payments, Account\_no

Loan\_id is the primary key for loan entity

Account\_no is the foreign key referred from Account entity

* **Payments :** loan\_id, payment\_id, Date, Amount

Payment\_id is the primary key for payments entity

Loan\_id is foreign key referred from Loan entity

* **Employee** : emp\_ssn, emp\_name, start\_date, mobile\_no, manager\_ssn, B\_name, ln\_of\_employement

Emp\_ssn is primary key for employee entity

B\_Name is foreign key referred from Branch entity

ln\_of\_employement is the derivrd attribute

mobile\_no is multivalued attribute

* **Emp\_dependent :** dep\_name, gender, Relationship, emp\_ssnEmp\_ssn is foreign key referred from employee entity

**Assumptions made while designing EER diagram:**

* Account entity is divided into distinct types.
* All the amounts deposited or withdrew, each savings account has an interest rate, and overdrafts are recorded for each checking account.
* The balance in Account is updated when a transaction is done.
* Customer entity has composite attributes First\_Name, Middle\_Name, Last\_Name, City and street.

**EER-to-Relational Mapping Choices:**

* Dependets ia weak entity, So it takes Emp\_ssn as foreign key referred from Employee
* Account\_no is unique for every customer and B\_name is a foreign key because, to know which branch the account belongs since an account can belong only to a particular branch.
* Transactions are identified by account\_no and trans\_id of a particular person and the balance gets updated.
* Loan\_id acts as primary key to identify the loans taken by a customer and account\_no acts as foreign key to identify no of loans a particular customer has.
* Loan Payments gets updated by keeping track of amount, loan\_id and payment\_id of a customer
* Cust\_ssn is primary key as it keeps record of particular customer, since every customer is managed by a particular banker, Emp\_ssn is used to know which employee is managing a particular customer.
* B\_name acts as foreign key in employee entity to know which branch do they belong to. It is primary key for branch entity.