Task No:- 1. Entity Relationship Diagram

Date :- 29/7/25

Aim: To design an Entity-Relationship Diagram for a Banking Management System.

Steps to draw E-R Diagram :-

Step 1 : Identifying the main Entities

1. Customer
2. Account
3. Branch
4. loan
5. Credit-card
6. Banker-info

Step 2 : Defining Attributes for each entity

1. Customer : Customer_ID (PK), Name, Address, Phone, Email
2. Account : Account_No (PK) [Branch_Name, Location, IFSC code] Balance, category
3. Branch : Branch_ID (PK), Branch_Name, Location, IFSC code
4. Banker_info: Banker_name, Banker_ID (PK), Banker_email.
5. Loan : Loan_ID (PK), amount, Duration,
6. Credit_card : Credit_card number (PK), Limit, expirye date.

Step 3 : Identifying Relationship Blw Entities

A Customer can have mutiple Accounts (1 to many)

An Account is operated in one Branch (many to 1)

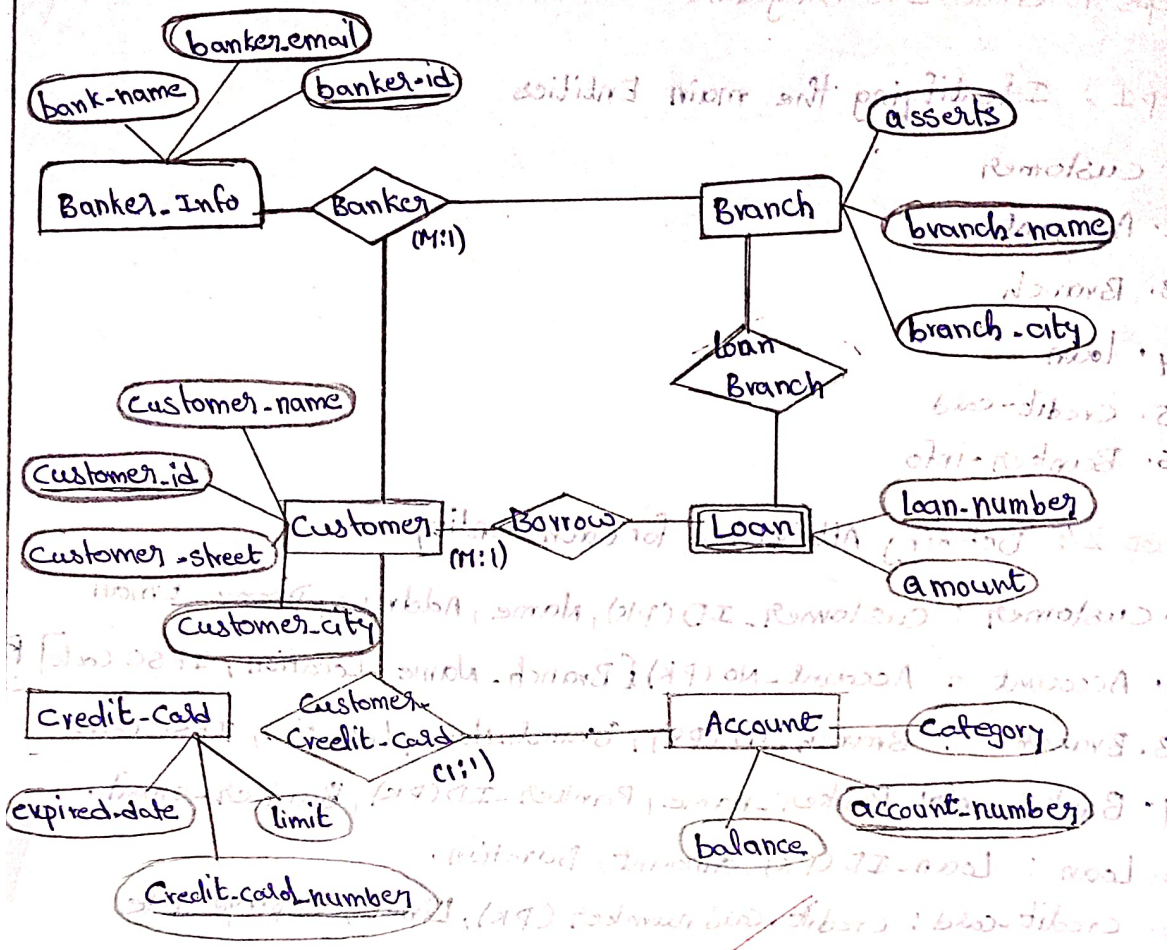
A customer can have multiple loans (1 to many)

A loan is processed by Banker (many to 1)

A Banker works in one Branch (many to 1)

Step 4 : Set cardinalities

using (1:1), (1:N) or (1:M) to indicate how many instances are involved.


banker_email
bank-name
banker-id
Banker_Info
Banker
(M:1)
Branch
asserts
branch-name
branch-city
loan
Branch
Customer_name
Customer_id
Customer
Borrow
Loan
loan-number
Customer_street
(M:1)
amount
Customer_city
Credit-Card
Customer-Credit-Card
(1:1)
Account
Category
expired_date
limit
account_number
balance
Credit_card_number

Step 5 : Draw the ER Diagram

open drawio website

Draw diagram using:

Rectangles for entities

Ellipse for attributes

Diamonds for relationships

Lines to connect them

Under line the primary keys.

Input for the ER Design

Banking Management System Seenoria

user Requirements ( Branch, Bank, Customer, Account, Loand)

Data base Design Rules ( Entity - Attribute - Relationship identification)

Output

Entity Relation Diagram (ERD) that clearly shows:

All identified entities with attributes

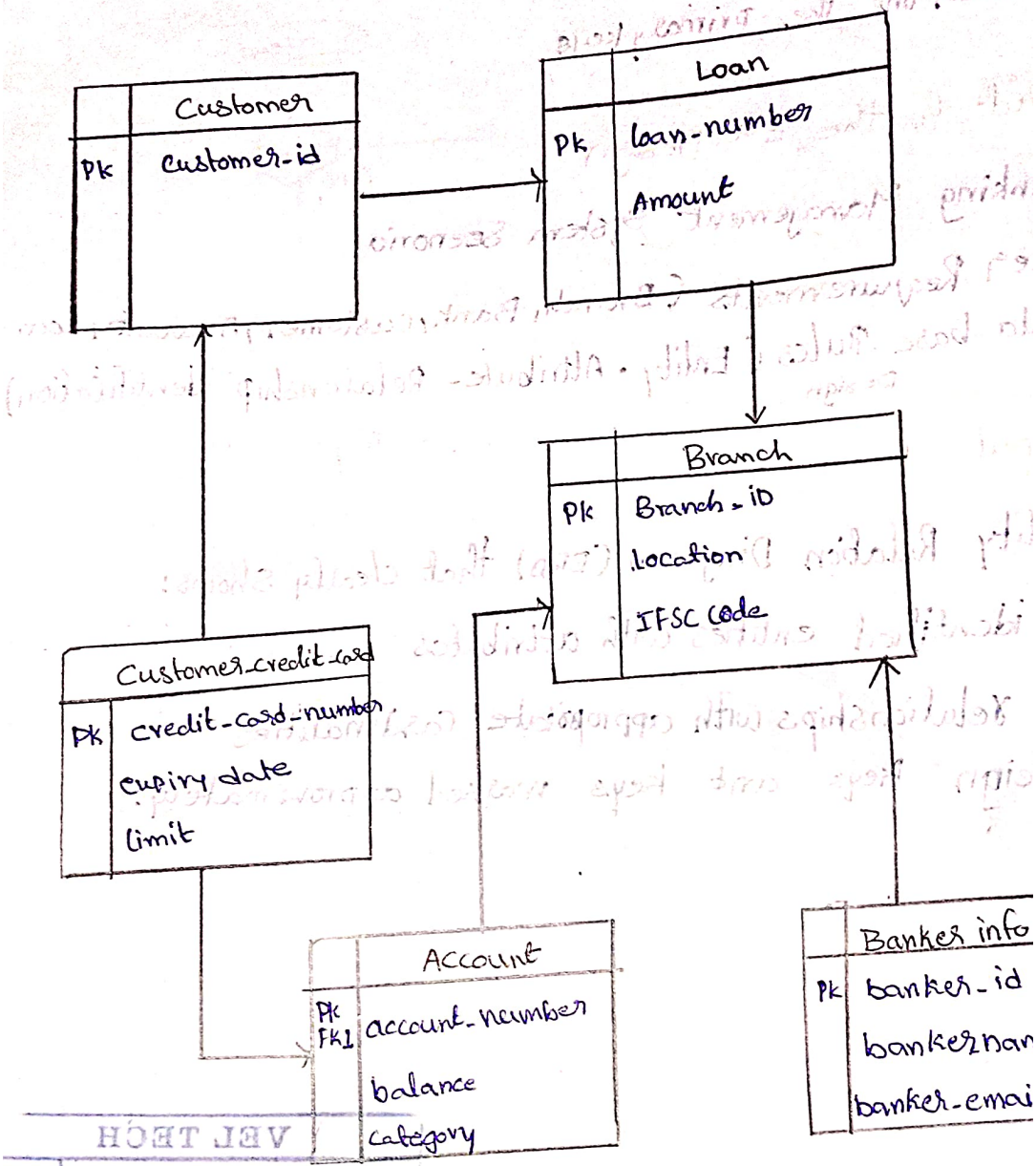
All relationships with appropriate cardinalities

Foreign keys ant keys marked approximately.

| VEL TECH | |
|---|---|
| EX NO. | 1 |
| PERFORMANCE (5) | 5 |
| RESULT AND ANALYSIS (5) | 5 |
| VIVA VOCE (5) | 5 |
| RECORD (5) | - |
| TOTAL (20) | 15 |
| SIGN WITH DATE | |

Result :

Hence, the Entity-Relationship diagram of Binod Banking m System was successfully drawn using draw.io.


Customer
Pk
Customer-id
Loan
Pk
loan-number
Amount
Branch
Pk
Branch-ID
Location
IFSC code
Customer_credit_card
Pk
Credit-card-number
expiry date
limit
Account
Pk
FK1
account_number
balance
category
Banker info
Pk
banker_id

Task No : 1.2 Converting ER Diagram into Relational Model

Date : ~~5/8/25~~ 29/07/25

**Aim** : To convert ER Diagram into a Relational Model

Steps for Converting the ER Diagram to the table

- Entity type becomes a table
- All single-valued attribute becomes a column for the table
- A key attribute of the entity type represented by the primary key.
- The multivalued attribute is represented by a separate table
- Composite attribute represented by components.
- Derived attributes are not considered in the table.

Using these rules, you can convert the ER Diagram to tables and columns and assign the mapping between the tables. Table structure for the given ER Diagram is as bellow:

| VEL TECH | |
|---|---|
| EX NO. | 1 |
| PERFORMANCE (5) | 5 |
| RESULT AND ANALYSIS (5) | 5 |
| VIVA VOCE (5) | 5 |
| RECORD (5) | — |
| TOTAL (20) | 15 |
| SIGN WITH DATE | |

23/9/25

Result :

Hence, the Entity Relationship diagram of Banking Management system is successfully Converted into the relation Model. Using draw.io