Task NO :- 1 Date :- 29-01-2025	Conceptual Design using Entity - Relationship Diagram - Banking management system

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), 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, expiry_date.

Step 3 :- Identifying Relationship B/W Entities.

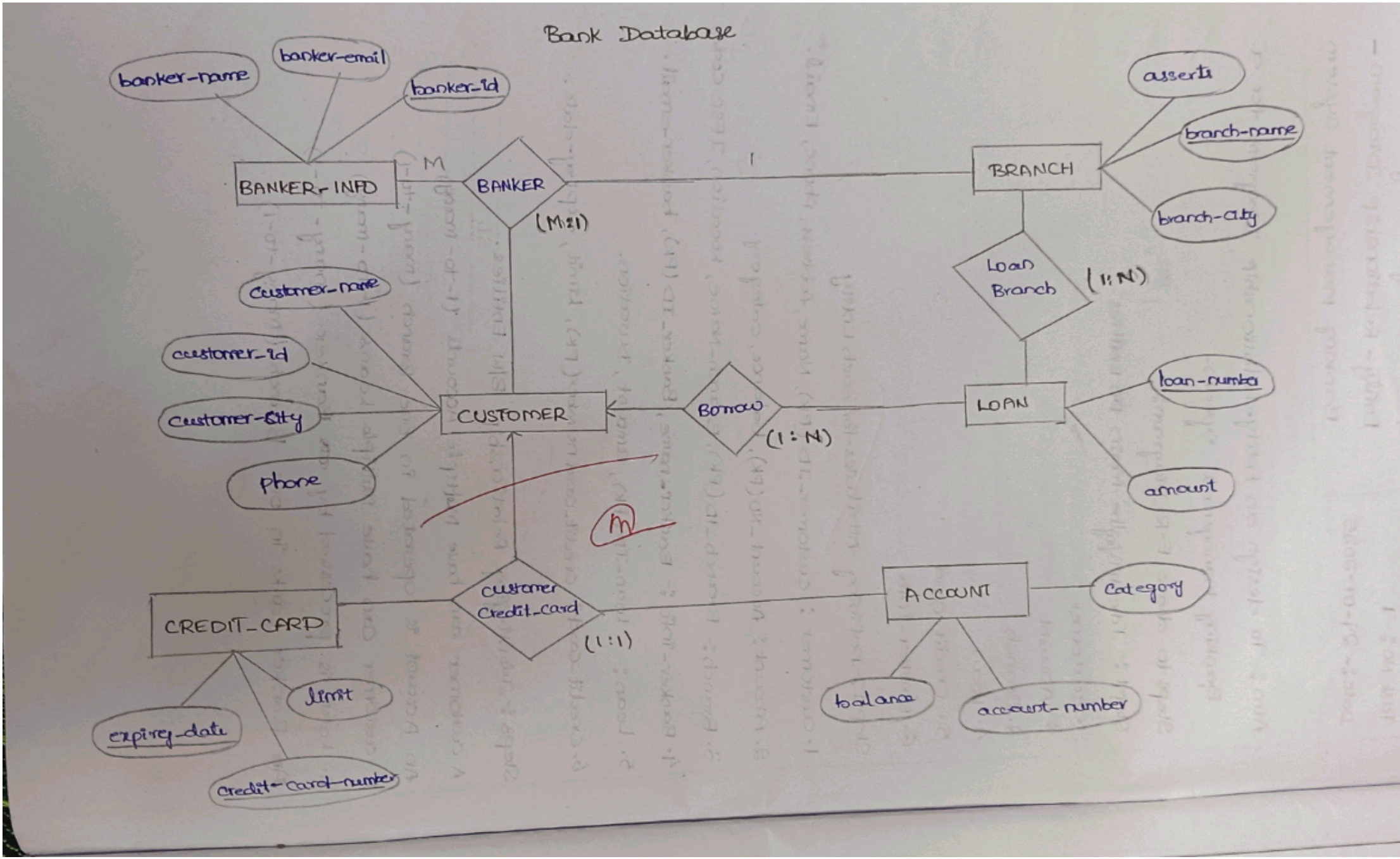
A customer can have multiple Accounts (1-to-many).

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

A customer can have multiple Loans (1-to-many)

A Loan is processed by a Banker (many-to-1)

A Banker works in one Branch (many-to-1)


Bank Database
banker-name
banker-email
banker-id
BANKER-INFO
M
BANKER
(M:1)
1
BRANCH
assets
branch-name
branch-city
Loan Branch
(1:N)
Customer-name
customer-id
Customer-city
phone
CUSTOMER
Borrow
(1:N)
LOAN
loan-number
amount
m
CREDIT-CARD
customer Credit-card
(1:1)
ACCOUNT
Category
limit
expiry-date
Credit-card-number
balance
account-number

Step 4 :- Set cardinalities.

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

Step 5 :- Draw the ER diagram

Open draw.io Website

Draw diagram using :

Rectangles for entities

Ellipse for attributes

Diamonds for relationships

Lines to connect them

Underline the primary keys.

Input :-

Bank management system.

Output :-

Entity Relationship Diagram (ERD) that clearly shows:

All identified entities with attributes

All relationships with Appropriate cardinalities

Foreign keys and keys marked appropriately.

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	29/7/25

Result :- Hence, the Entity-Relationship diagram of Banking management system was successfully drawn using draw.io.

Task No:- 1.1

Date :- 05/08/25

28/7/25

Converting ER Diagram into Relationship model.

Aim:- To convert Banking Management ER Diagram into 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 represrepresented by the primary key.
- The multivalued attribute is represented by a separate table.
- Composite attributes represented by components.
- Derived attributes are not considered in the table.

VEL TECH	
EX NO.	1.1
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	—
TOTAL (20)	15
SIGN WITH DATE	

29/7/25

Result :- Hence, the Relational model of Banking Management system using ER model was Successfully drawn.

Relational model :-