Date : 29-07-2025

TASK NAME :: Conceptual Design after FTR

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

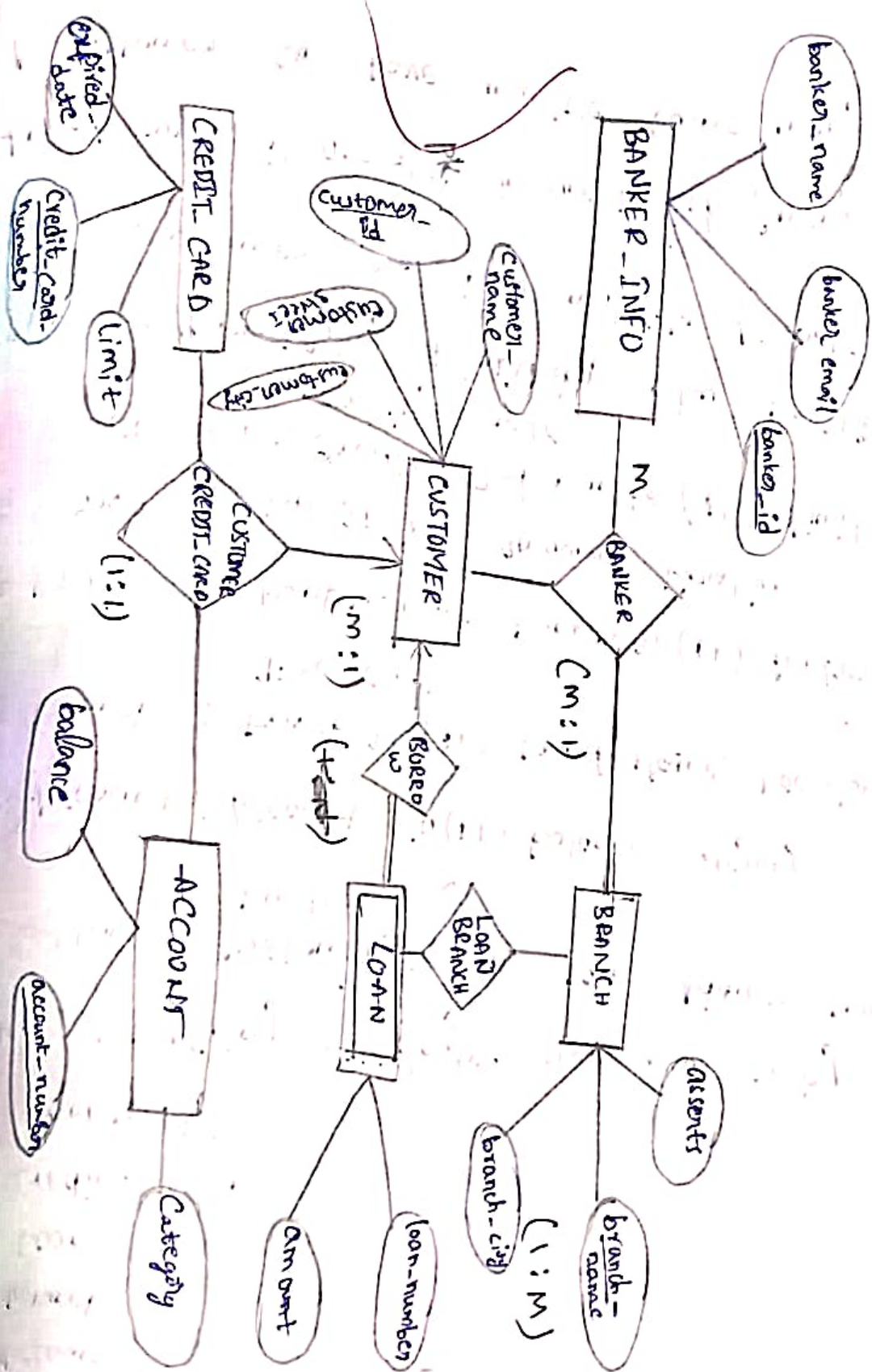Steps to draw E-R Diagrams:

Step 1 :- Identifying 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 Blw 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 (many-to-1)

ER-diagram:

BANKER_INFO entity with attributes:
- banker_name
- banker email
- banker_id

BANKER relationship (M ... m:1) connects BANKER_INFO and CUSTOMER

CUSTOMER entity with attributes:
- customer-Id
- customer_name
- customer street
- customer city

CREDIT_CARD entity with attributes:
- expired_date
- credit_card_number
- Limit

CUSTOMER CREDIT_CARD relationship (1:1)

ACCOUNT entity with attributes:
- balance
- account_number
- Category

BORROW relationship (m:1) (dept) connects CUSTOMER and LOAN

LOAN entity with attributes:
- Amount
- loan-number

LOAN BRANCH relationship connects LOAN and BRANCH

BRANCH entity with attributes:
- asserts
- branch-city
- branch-name
- (1:M)

BANKER relationship (m:1) connects CUSTOMER and BRANCH

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 (M:N) to indicates 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

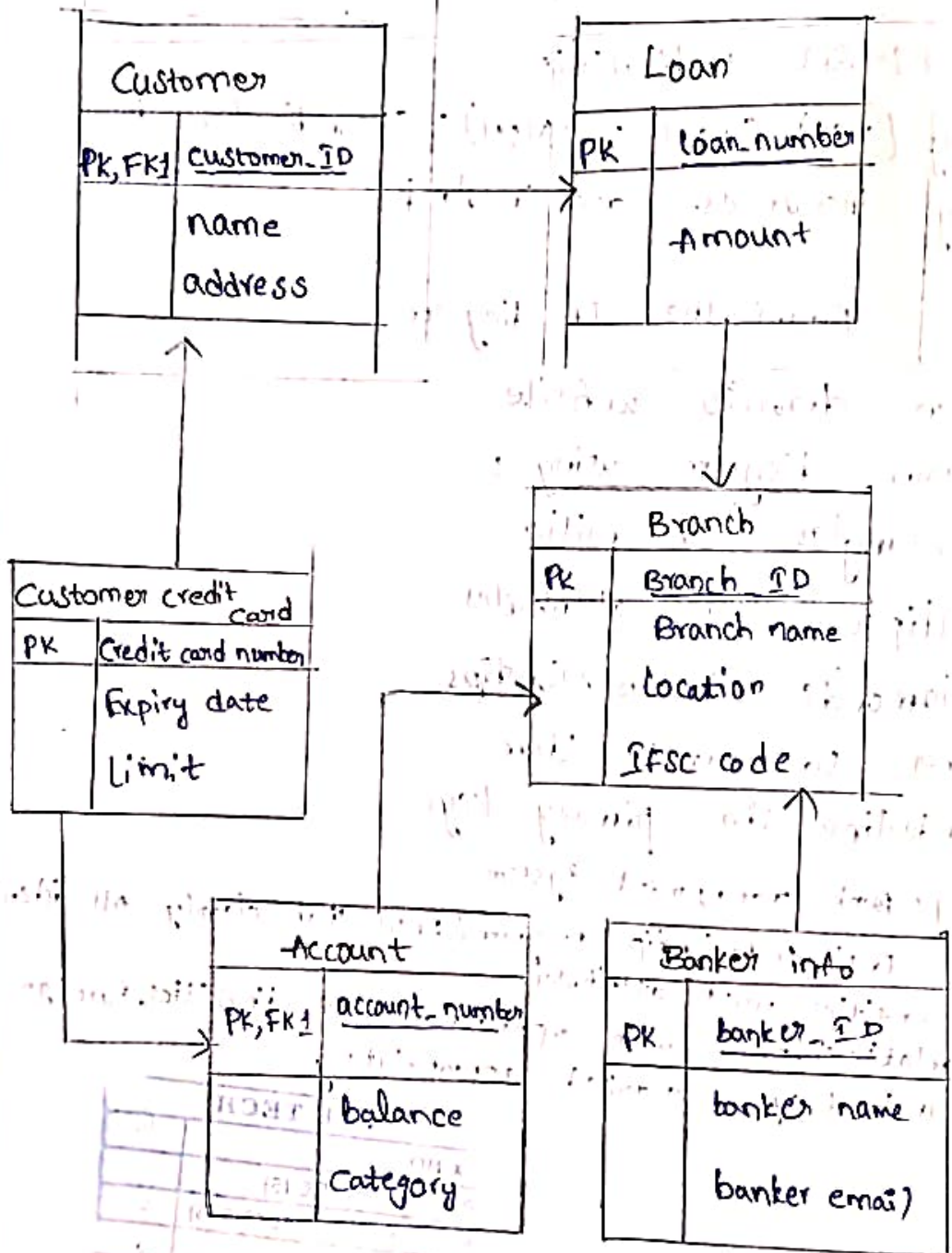Lines - to connect them

Underline the primary keys.

Input :- Bank management system

output :- Entity relationship Diagram (ERD), that clearly all ident--ified entities with attributes.

-All relationships with appropriate cardinalities, foreign keys and keys marked appropriately.

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

Relational model of banking management System

Customer

Pk, FK1	Customer_ID
	name
	address

Loan

PK	loan_number
	Amount

Customer credit card

PK	Credit card number
	Expiry date
	Limit

Branch

PK	Branch ID
	Branch name
	Location
	IFSC code

Account

PK, FK1	account_number
	balance
	Category

Banker info

PK	banker_ID
	banker name
	banker email

TASK NO :- 1.2

DATE :- 08-08-25 29-07-25

TASK NAME :- Convert the ER diagram into Relational Model.

Aim :- To Convert the ER Diagram of a banking management system in to 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 repre- -sented by the primary key
- The . multi valued attribute is represented by a seperate table.
- Composite attribute represented by Compone- -nts.
- Derived attribute are not considered in the table.

Result :- Hence the convertion of ER diagram into relational model of Banking management System was successfully drawn.