

Date: 29/7/25

### Task 1 :- I-I

ER Diagram for a mobile phone purchase and Billing management system that maintains details of customers.

Aim: To design an Entity Relationship (ER) diagram for a mobile phone purchase and Billing management system that maintains details of customers, mobiles, purchases, billing and login credentials for administrative purpose

### ALGORITHM :

Step 1 : Start

Step 2 : Identify the main Entities.

- Customer
- Mobile
- Bill
- Login

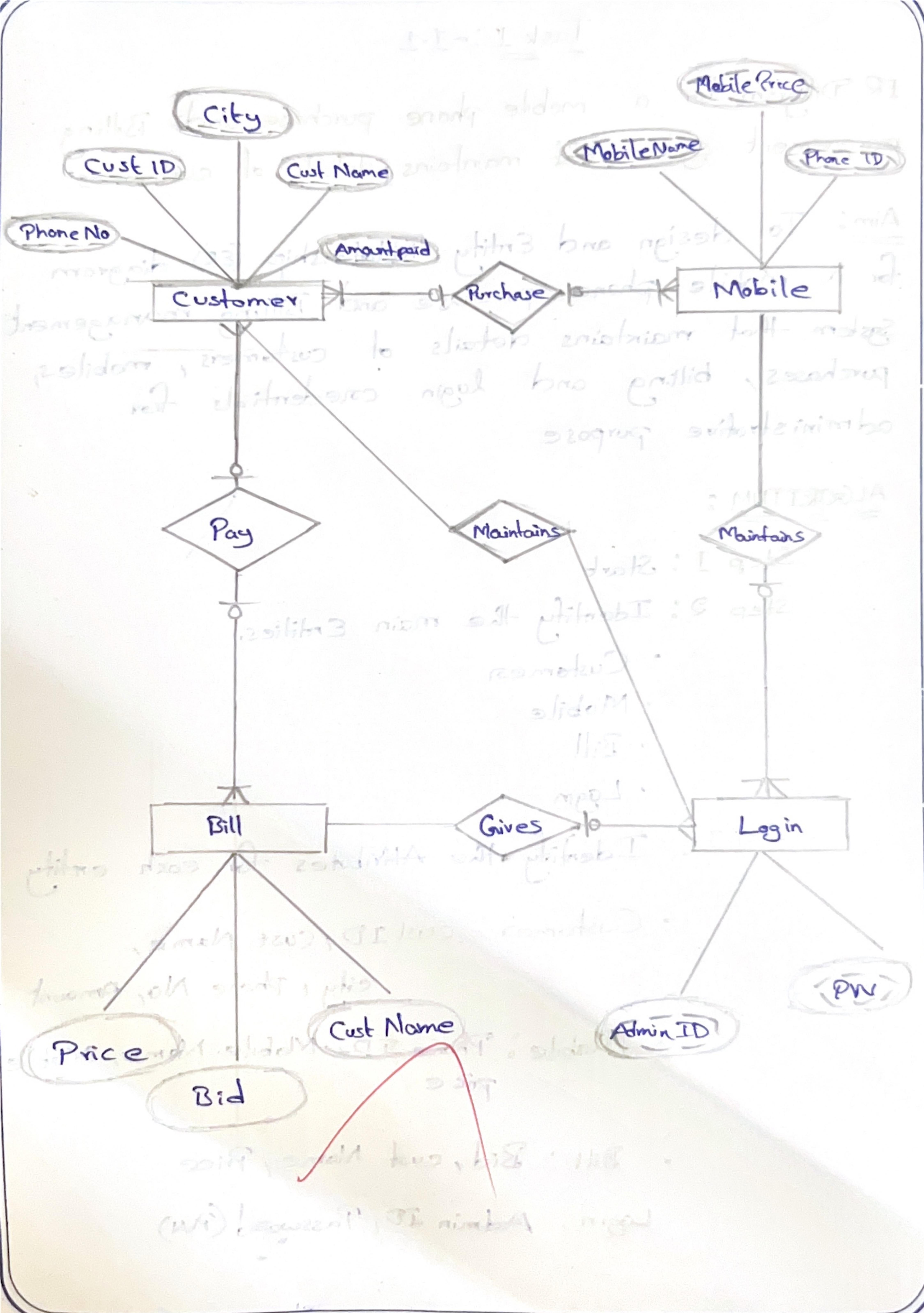
Step 3 : Identify the Attributes for each entity

• Customer :- cust ID, Cust Name, city, Phone No, Amount

• Mobile :- Phone ID, Mobile Name, Mobile price

• Bill :- Bid, cust Name, Price

Login : Admin ID, Password (PW)



### Step 4: Identify Relationship between Entities

- Customer - Purchase - Mobile: A customer can purchase one or more mobiles.
- Customer - Pay - Bill: A customer pays and receives a bill.
- Bill - gives - login: A bill is given by a login / admin account
- Login - maintains - customer / Mobile: Admin maintains customer and mobile data

### Step 5: Determine cardinality

- Customer to mobile: Many-to-many
- Customer to bill: One-to-one or one-to-many
- Login to Bill: One-to-many
- Login to mobile/customer: One-to-many

### Step 6: Draw the ER Diagram

Rectangles = Entities

Ellipses = Attributes

Diamonds = Relationships

Lines = Connections

Symbol = Cardinalities

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EX NO.
PERFORMANCE (5)
RESULT AND ANALYSIS (5)
VIVA VOCE (5)
RECORD (5)
TOTAL (20)
WITH DATE

Result Thus the design an entity relationship diagram for a mobile phone purchase and billing management is successfully completed.

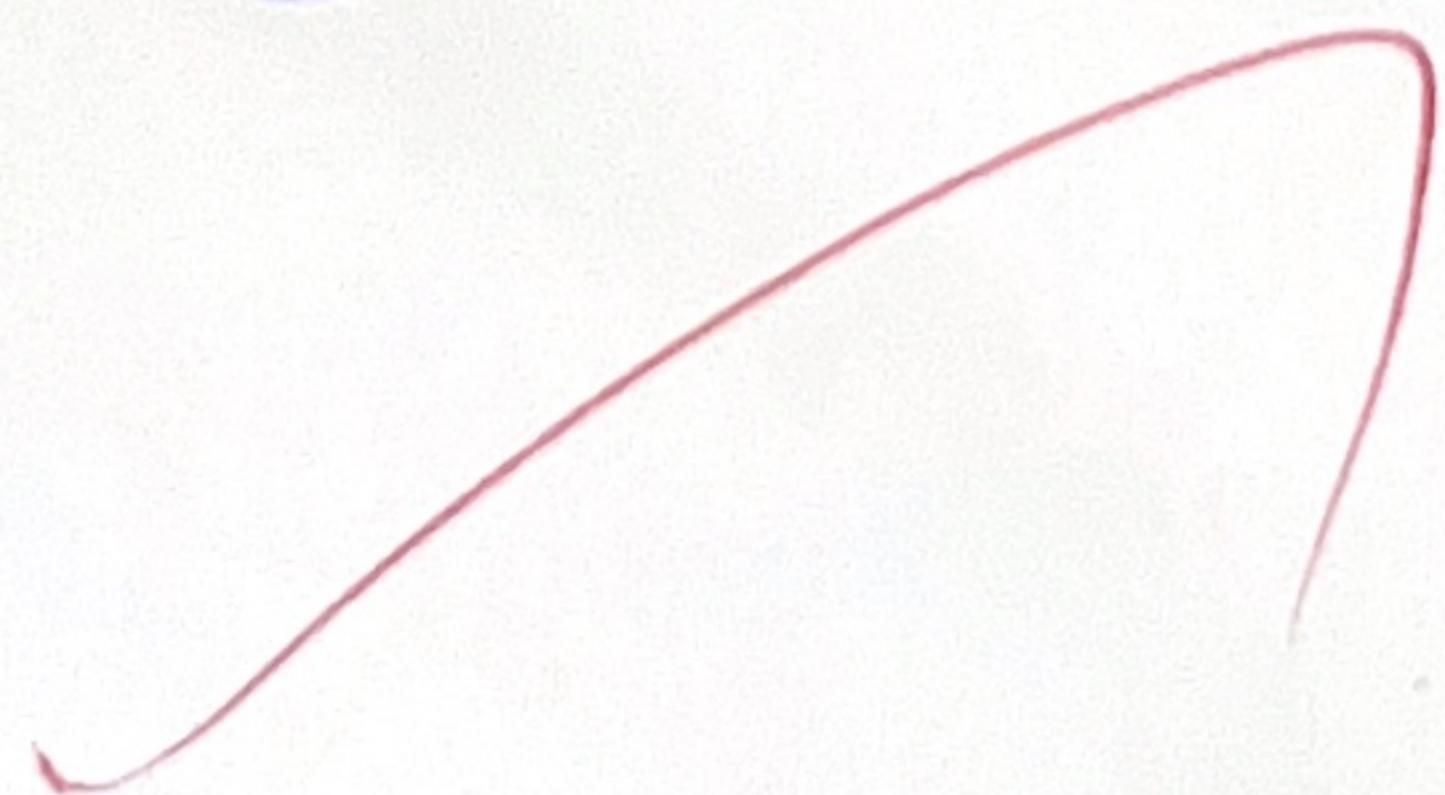
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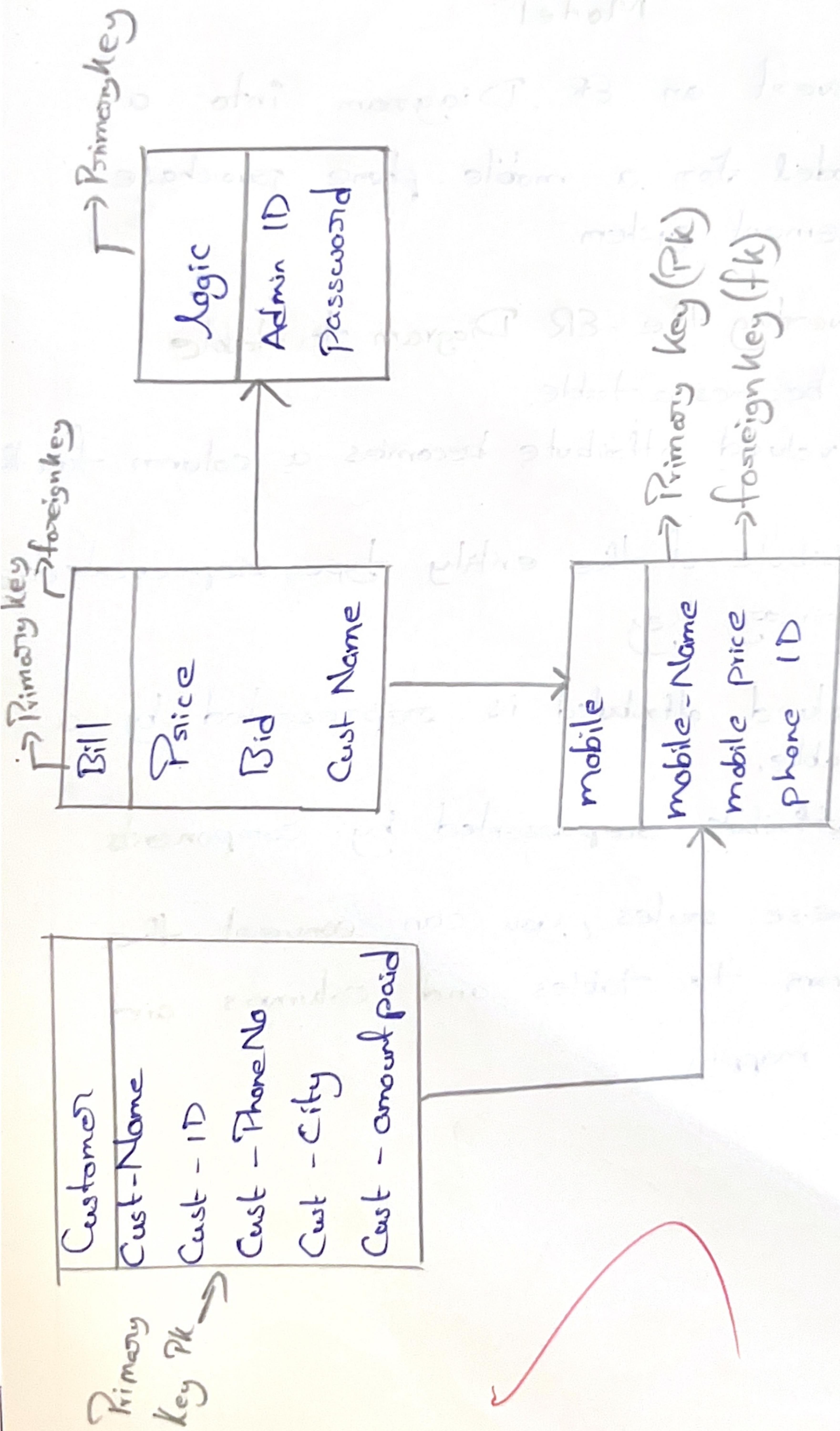
### Task 9b Convert ER Diagram into Relationship Model

Aim: To convert an ER Diagram into a Relationship model for a mobile phone purchase database management system.

Steps for converting the ER Diagram to 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 attributed is represented by a separate table.
  - \* Composite attribute represented by components.
- \* Desired these rules, you can convert the ER diagram to tables and columns and assign the mapping





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Result Thus, the conversion of an ER Diagram into a Relationship model for a mobile phone purchase database management system was drawn successfully.