Task no: -1

Date: 29/7/2025

Conceptual Design using Entity Relationship Diagram

Aim:

To design an Entity - Relationship Diagram for a E-Commerce Database management System.

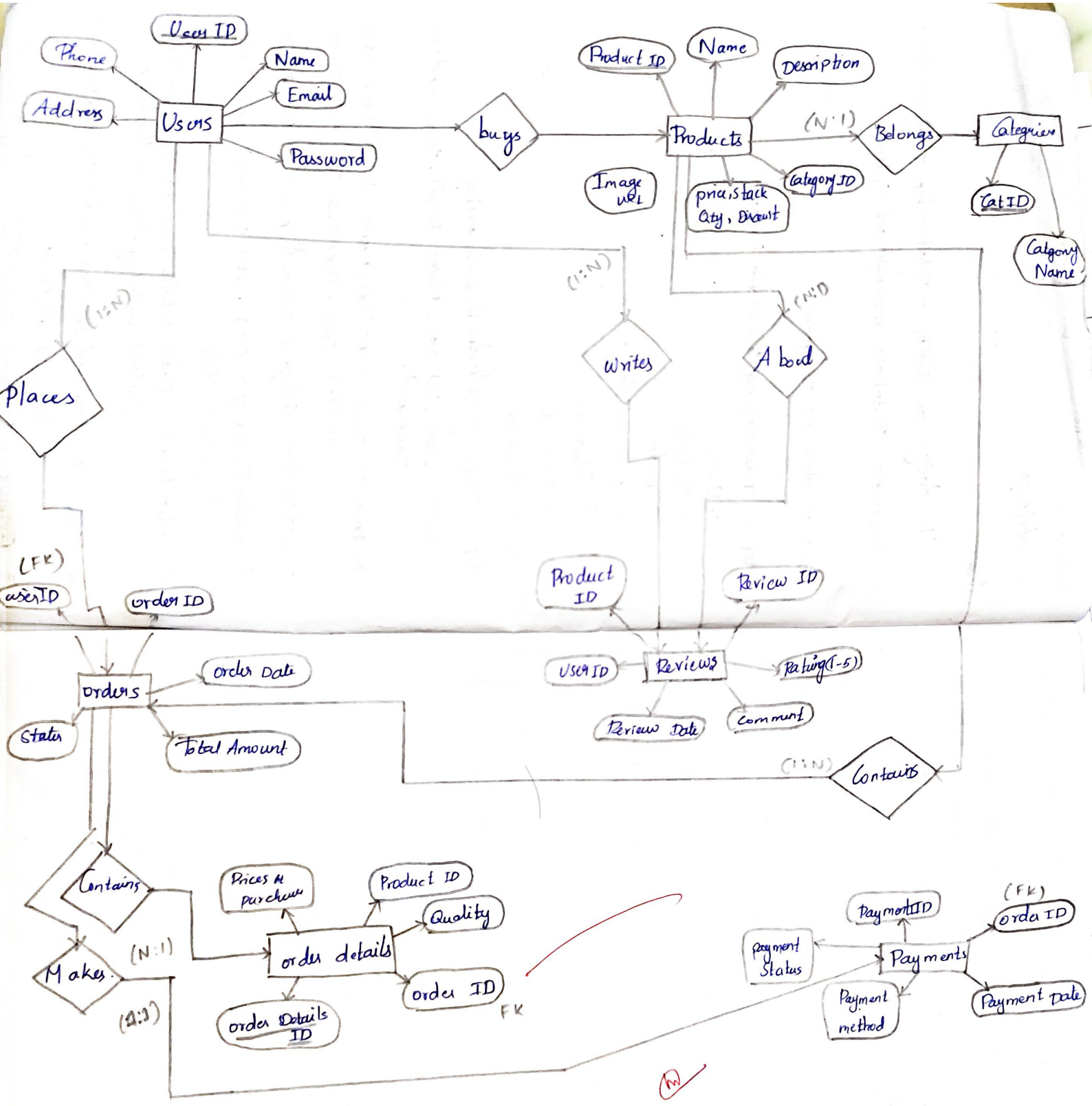
Steps to draw ER Diagram:

Step 1: Identifying the main Entites.

1. Users
2. Products
3. Orders
4. order Details
5. Categories
6. Payments
7. Reviews

Step 2: Defining attributes for each entity.

1. Users: User - ID (PK), Name, Email, Phone, Address Password.
2. products: Product_ID (PK), Name, Description, Category ID (fk), Price, Stock Duty, Discount, Image url
3. Categories: Category ID (PK), Name of the Category
4. orders: Order_ID (PK), User ID (fk), order Date, Total Amount, Status
5. Order Details: Order Details ID (PK), order ID (fk), product ID (fk), Quantity, Price At Purchase.
6. Payments: Payment ID (PK), order ID (fk), payment Date Payment Method
7. Reviews: Reviews: Review ID (PK), Product ID (FK), User ID (FK) Rating (1-5), comment, Review Date


User ID
Phone
Name
Email
Address
Users
Password
buys
Product ID
Name
Description
Products
(N:1)
Belongs
Categories
Image URL
price, stock Qty, Discount
Category ID
Cat ID
Category Name
(1:N)
(N:1)
Places
Writes
A bout
(FK)
userID
order ID
Product ID
Review ID
Orders
order Date
User ID
Reviews
Rating(1-5)
Status
Total Amount
Review Date
comment
(1:N)
Contains
Contains
Prices at purchase
Product ID
Quality
Makes
(N:1)
order details
order ID
(1:1)
order Details ID
FK
PaymentID
(FK)
order ID
Payment Status
Payments
Payment method
Payment Date

Step3: Identifying Relationship B/w Entities.

one user can place many orders (1-to-many)

one order can include multiple products (1 to many)

one product can appear in many orders (1 to many)

one category includes many products (1 to many).

one order can have one payment (1 to 1)

A user can write many reviews (1 to many)

A product can have many reviews (1 to many)

A product can have many review (1 to may)

A review is about a product (many to one)

one product can contain multiple products (1 to many)

Step4: - Set cardinalities

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

Step5. Draw the ER diagram

Open draw.io website

Draw diagram using:

Rectangle for entities

Ellipse for attributes

Diamonds for relationships

Lines to Connect them

Under line the primary keys.

Input for the ER Diagram:

Real-time E-commerce business system Scenario User Requirements (product Details, User's order, payment info)

Data base Design Rules (Entity - Attributes - Relationship identification.

Output:

Entity Relationship Diagram (ERD) that clearly.

Shows:

All identified entities with attributes

All relationships with appropriate cardinality

Foreign keys and keys mapped 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	

Result:

Hence, the Entity Relationship diagram of E-commerce database management systems was successfully drawn using draw.io. 23/7/25

Task no: 11

Date : 29.7.25

Convert ER Diagram into Relationship model.

Aim:

To Convert an ER Diagram into a Relationship model for a E- commerce database management System.

Steps For converting the ER diagram into a table:-

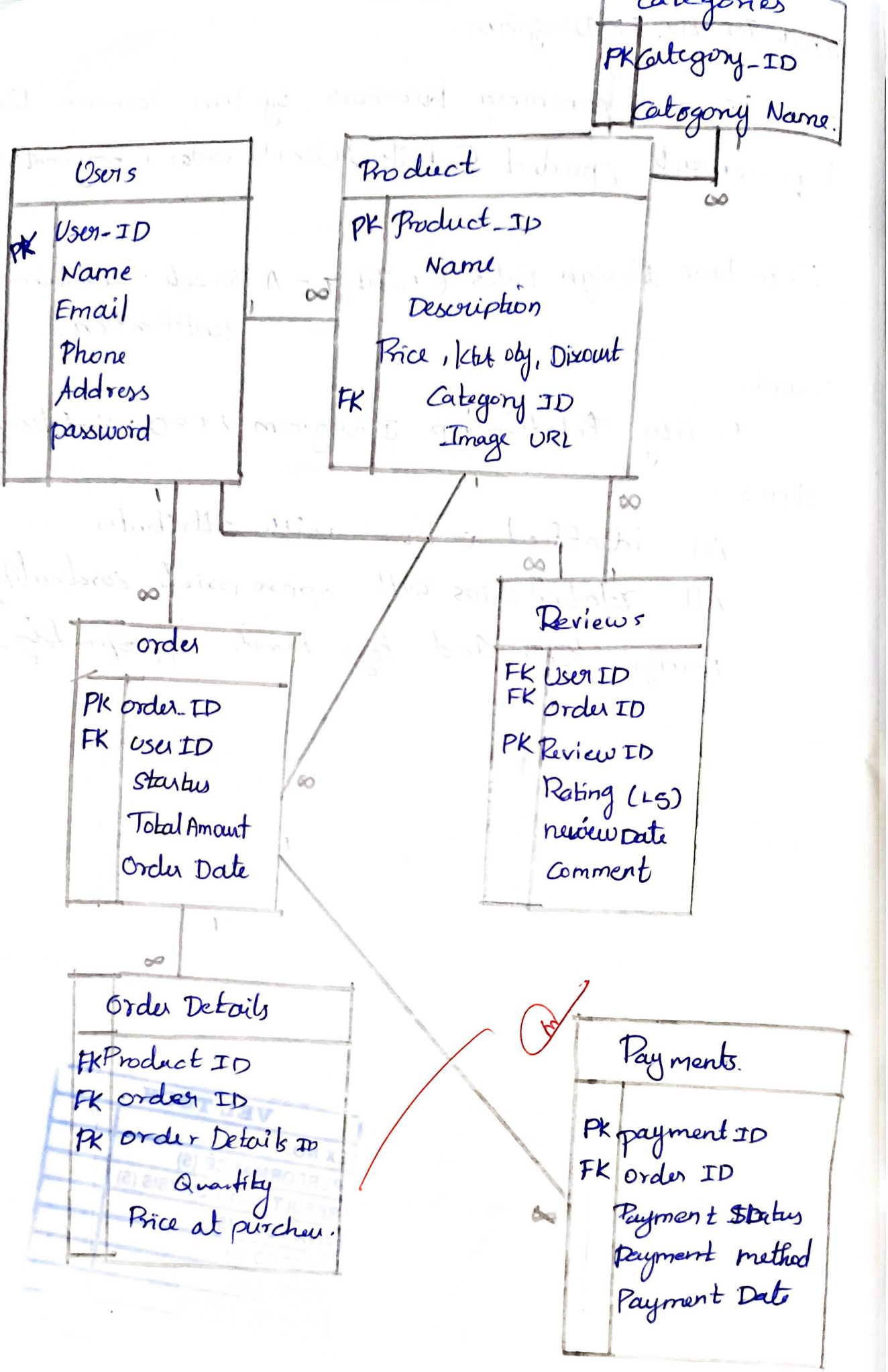
* Entity type becomes a table
* All Single valued attribute becomes a column for the table.
* A key attribute of the entity type represented by the primary key
* The multivalued attribute is prepresented by a Seperate table
* Composite attribute represented by components.
* Derived attributes are not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

Using these rules, you can convert ER diagram to tables and Columns and asign the mapping between the tables. Table Structure for the given ER diagram is as below.

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

Result: The conversion of an ER Diagram into Relationship model for a E-commerce data base management System was successfully drawn

29/7/25


PK Category_ID
Category Name.
Users
PK User-ID
Name
Email
Phone
Address
password
Product
PK Product_ID
Name
Description
Price, Cost obj, Discount
FK Category ID
Image URL
order
PK order_ID
FK User ID
Status
Total Amount
Order Date
Reviews
FK User ID
FK Order ID
PK Review ID
Rating (1-5)
review Date
Comment
Order Details
FK Product ID
FK order ID
PK order Details ID
Quantity
Price at purchase
Payments
PK payment ID
FK order ID
Payment Status
Payment method
Payment Date