

DBS PROJECT



Database Design for Online Sales Management System

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TABLE OF CONTENT

1. Introduction

2.Database Design

3.Relations

4.Normalized ER Diagram

5.Database Scheme Design

6.Functional Dependencies

7. Codes for creating various tables in SQL

8.SQL queries

Introduction

The purpose of this project is to create a database design for Online sales and management system. This project deals with designing and implementing a Database system for handling, managing, developing, and evaluating the sales by an online marketing website. Nowadays, people prefer buying products online. So it is important for the company to have an efficient and easily accessible database system in order to monitor the customer's and company's data and act accordingly.

DATABASE DESIGN

1.)Customer:

- a.)Customer-ID
- b.)Username
- c.)Address
- d.)Email

2.)Payment:

- a.)Payment-ID
- b.)Amount
- c.)Transaction-ID
- d.)Discount
- e.)Payment Time
- f.)Details

3.)Stock:

- a.)In stock
- b.)Payment-Type-ID

4.)Transaction Details:

- a.)Transaction Details-ID
- b.)Product-ID
- c.)Mode of Transaction
- d.)Quantity
- e.)Customer-ID

5.)Product:

- a.)Product-ID
- b.)Product Name
- c.)Product Description
- d.)Product-Type-ID

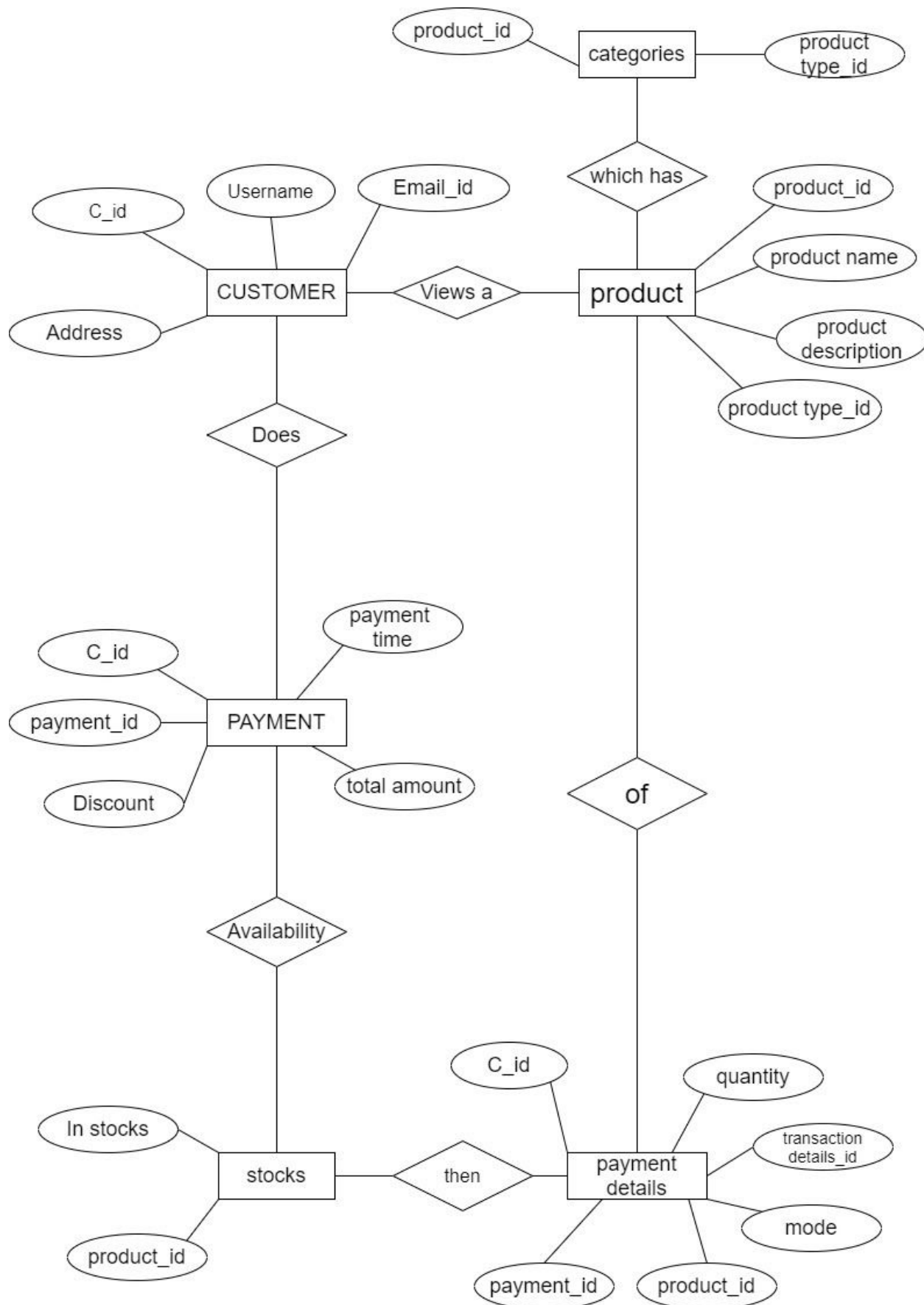
6.)Categories:

- a.)Product-Type-ID
- b.)Product-ID

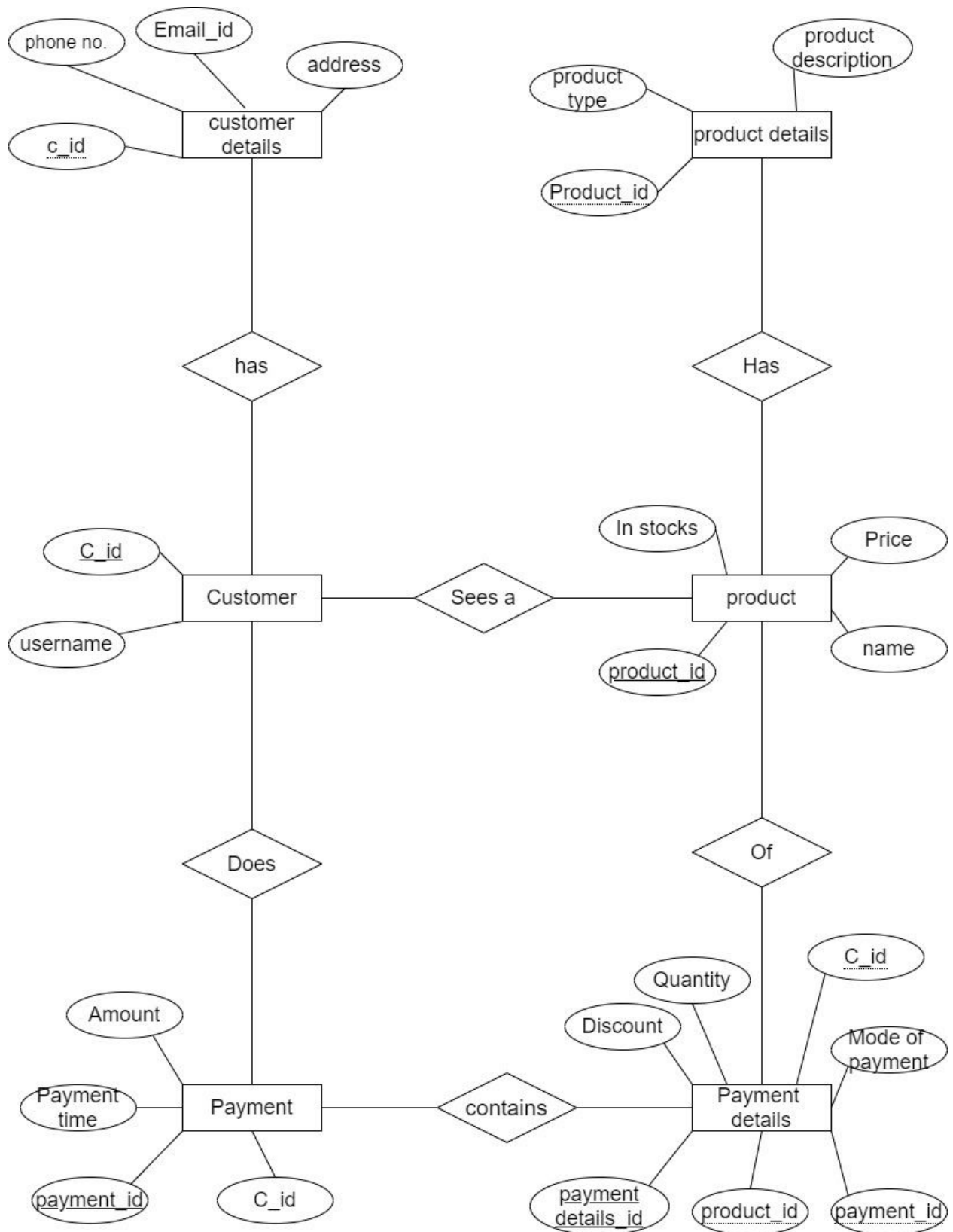
Relations

1. **“Views” is the relation between Customer and Product(One to Many)**
2. **“Does” is the relation between Customer and Payment(one to one)**
3. **“Availability” is the relation between Payment and stock(many to one)**
4. **“Of” is the relation between payment details and Product(one to one)**
5. **“Then” is the relation between payment details and stocks(many to one)**
6. **“Which has” is the relation between categories and product(one to many)**

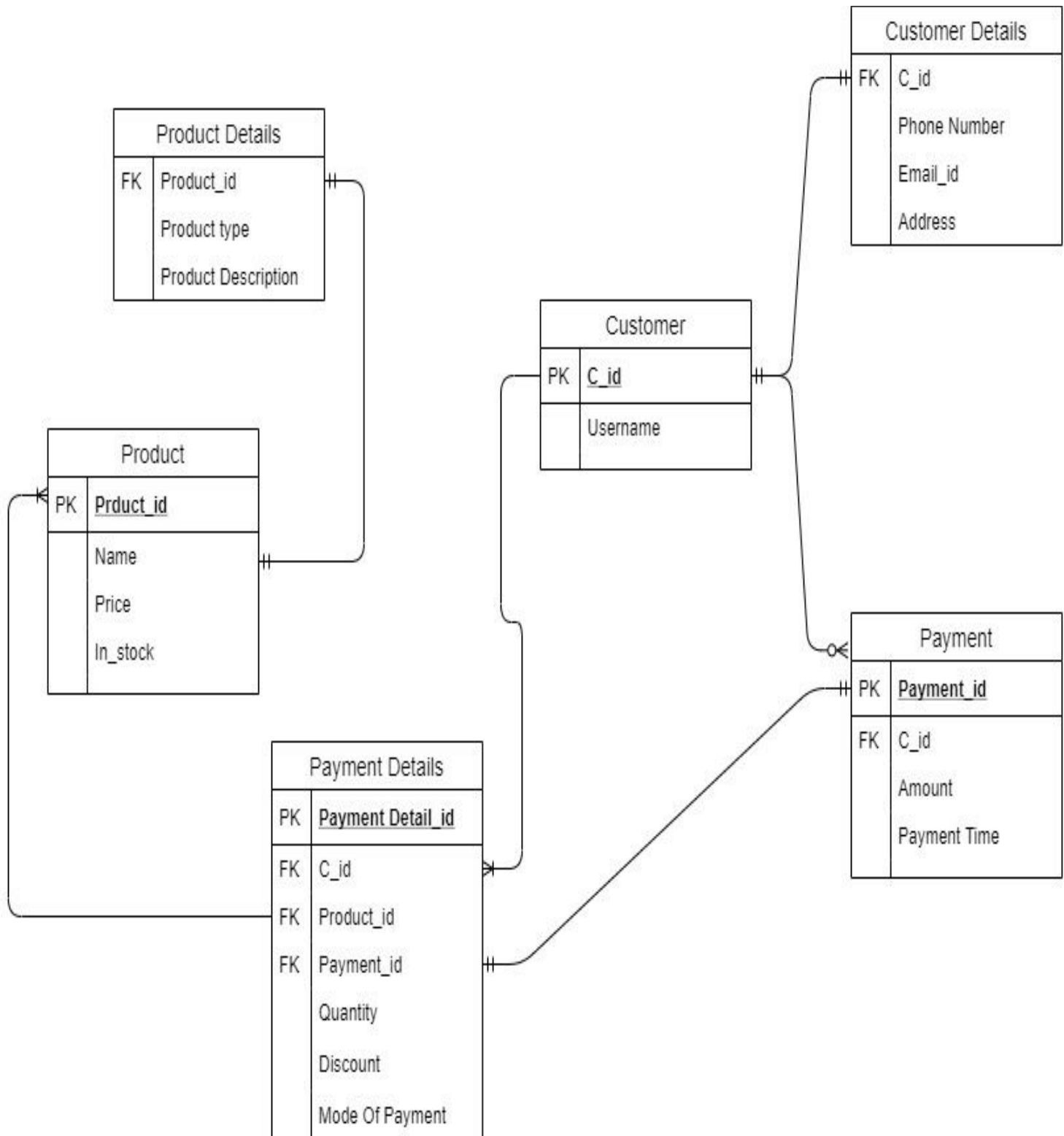
ER diagram



Normalized ER diagram



Database Schema Diagram



Functional Dependencies

Customer Details

```
{  
    C_id-->phone Number      C_id-->Email_id  
    Address-->Email_id      Email_id-->Address  
    Phone Number-->Address  C_id-->Address  
}
```

Product

```
{  
    Product_id -->name-->price  
    name-->In_stock  
    Product_id-->in_stock  
}
```

Customer

```
{  
    C_id-->Username  
}
```

Product Details

```
{  
    Product_id -->Product Description  
    Product_id-->Product type  
}
```

Payment

```
{  
    C_id-->Payment_id-->payment Time  
    Payment_id-->amount  
}
```

Payment Details

```
{  
    PaymentDetail_id-->Mode Of Payment  
    payment_id-->Discount  
    C-id-->Quantity  
    PaymentDetail_id-->payment_id  
}
```


SQL CODE FOR ABOVE NORMALIZED ER DIAGRAM

Code for Database:

Create database sales;

Code for using the database:

use sales;

Code for creating Customer's table:

```
create table Customer  
(  
Customer_id int PRIMARY KEY,  
Username varchar(100) NOT NULL  
);
```

Data in customer table:

```
mysql> select * from customer;
```

CustomerID	Username
1	jayshah07
2	satyapavan
3	rajesh064
4	sanketd
5	tharizeph
6	manan123
7	halagamer
8	deep34

```
8 rows in set (0.01 sec)
```

Code for creating Customer_details's table:

```
create table Customer_details
(
Customer_id int NOT NULL,
Phone_no varchar(13),
Email_Id varchar(30),
Address varchar(120),
FOREIGN KEY (Customer_id)
REFERENCES Customer(Customer_id)
);
```

Data in Customer_details table:

```
mysql> select * from customer_details;
```

CustomerID	Phone_no	Email_id	Address
1	9986965412	jayshah@gmail.com	Vinay Tower,Mumbai,Maharashtra
2	9632587410	satyapavan@gmal.com	Gandhi Nagar,Hyderabad,Telangana
4	9512347860	sanketd@gmail.com	Bidar,Karnataka
6	9001723657	mananshah@gmail.com	Pooja Park,Mumbai,Maharashtra
3	9663224490	raju@gmail.com	Hanuman gali,Delhi
5	9110003610	zeph@gmail.com	Hyderabad
7	9887755440	harsh06@gmail.com	Gandhi Chowk,Ahmedabad,Gujarat
8	9631472581	deepu@gmail.com	Nehru road,Bhopal,Madhya Pradesh

```
8 rows in set (0.00 sec)
```

Code for creating Payment table:

```
Create table Payment
(
PaymentID int PRIMARY KEY,
Customer_id int NOT NULL,
Amount float(10,2) NOT NULL,
Time varchar(30) NOT NULL,
FOREIGN KEY (Customer_id)
REFERENCES Customer(Customer_id)
);
```

Data in Payment table:

```
mysql> select * from payment;
```

PaymentID	CustomerID	Payment_time	Amount
1	2	11:30 AM	127.00
2	7	3:03 PM	24300.00
3	1	8:30 PM	299.00
4	3	12:30 PM	6000.00
5	4	6:00 PM	270.00
6	8	9:00 AM	45860.00
7	2	12:01 AM	500.00
8	3	8:30 PM	240.00
9	6	8:00 PM	24000.00
10	4	2:30 PM	46500.00

```
10 rows in set (0.00 sec)
```

Code for creating Product table:

```
create table Product
(
Product_id int PRIMARY KEY,
Name varchar(25) NOT NULL,
Price float(10,2) NOT NULL,
InStock varchar(5) NOT NULL
);
```

Data in Product Table:

```
mysql> select * from product;
```

Product_id	Name	Price	InStock
1	Vivo V17	27990.00	Yes
2	Redmi Note 8	12999.00	No
3	Rich Dad Poor Dad	399.00	Yes
4	Python for Everybody	709.00	Yes
5	Parachute Coconut Oil	127.00	Yes
6	Asus Vivobook 14	56990.00	Yes
7	Titan Analog Man's Watch	2395.00	No
8	Hero Sprint Junior Cycle	6315.00	Yes

```
8 rows in set (0.00 sec)
```


Code for creating Product_details table:

```
Create table Product_details
(
Product_id int NOT NULL,
Description varchar(500),
Type varchar(25) NOT NULL,
FOREIGN KEY (Product_id)
REFERENCES Product(Product_id)
);
```

Data in Product_details table:

```
mysql> select * from product_details;
```

ProductID	Description	Type
5	Volume:300ml,Speciality:No Preservatives	Oil
1	32MP front camera,8GB Ram,128GB internal memory	Mobile
2	Colour:Purple,4GB Ram,64GB internal storage,48MP AI Quad camera	Mobile
3	What the rich teach their kids about money that the Poor and Middle class do not	Book
6	Intel Core i5 8th Gen 14-inch,8GB Ram,512GB SSD,Windows 10	Laptop
4	Exploring Data in Python 3	Programming Book
7	Dial Color:Silver,Band Color:Brown,Display type:Analog	Men's Watch
8	Single Speed cycle for boys,Height between 3 feet 2 inches to 4 feet 2 inches	Cycle

```
8 rows in set (0.00 sec)
```

Code for creating Payment_details table:

```
Create table Payment_details
(
Payment_detail_id int Primary key,
PaymentID int NOT NULL,
Product_id int, NOT NULL,
Customer_id int NOT NULL,
Discount float(8,2),
Quantity int,
Mode varchar(20),
FOREIGN KEY (Customer_id)
REFERENCES Customer(Customer_id)
FOREIGN KEY (PaymentID)
REFERENCES Payment(PaymentID),
FOREIGN KEY(Product_id)
REFERENCES Product(Product_id)
);
```

Data in Payment_details table:

```
mysql> select * from payment_details;
```

Payment_detailID	PaymentID	CustomerID	ProductID	Quantity	Mode	Discount
1	1	2	5	1	Cash On Delivery	0.00
2	3	1	3	1	UPI	100.00
3	2	7	1	1	Debit Card	3690.00
4	8	3	5	2	UPI	7.00
5	7	2	4	1	Credit Card	209.00
6	5	4	3	1	UPI	129.00
7	6	8	6	1	Cash On Delivery	11130.00
8	4	3	8	1	Cash On Delivery	315.00
9	9	6	1	1	Credit Card	3990.00
10	10	4	6	1	Debit Card	10490.00

```
10 rows in set (0.00 sec)
```

SQL Queries

1.Total number of customers who have done Payment after 12:00 PM

Code: **Select Count**(Customer_id) **as** Total_customers
From Payment
Where Payment_time **regexp** ".(PM)";

```
+-----+
| Total_customers |
+-----+
|              7 |
+-----+
1 row in set (0.00 sec)
```

2.Name,Price,Description,Type of Products which are Out of Stock

Code:

Select Name,Price,Description,Type **From** Product
Inner join Product_details **On**
Product.Product_id=Product_details.Product_id
Where InStock="No";

```
+-----+-----+-----+-----+
| Name          | Price  | Description                                     | Type      |
+-----+-----+-----+-----+
| Redmi Note 8  | 12999.00 | Colour:Purple,4GB Ram,64GB internal storage,48MP AI Quad camera | Mobile    |
| Titan Analog Man's Watch | 2395.00 | Dial Color:Silver,Band Color:Brown,Display type:Analog          | Men's Watch |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

3. Showing details of Customers in State Maharashtra

Code:

```
Select Username,Phone_no,Email_id,Address  
From Customer Inner join Customer_details On  
Customer.Customer_id=Customer_details.Customer_id  
Where Address regexp “.(Maharashtra)”;
```

Username	Phone_no	Email_id	Address
jayshah07	9986965412	jayshah@gmail.com	Vinay Tower,Mumbai,Maharashtra
manan123	9001723657	mananshah@gmail.com	Pooja Park,Mumbai,Maharashtra

2 rows in set (0.00 sec)

4. Customer who has got maximum discount

Code:

```
Select * from Customer Where  
Customer_id=(Select Customer_id from payment_details  
              Where Discount=(Select Max(Discount)  
                              From Payment_details));
```

CustomerID	Username
8	deep34

1 row in set (0.00 sec)

5.Quantity Sold for each Product In Descending

Code:

```
Select Product_id,Name,Price,  
Count(Product_id) as Quantity_sold from payment_details  
Inner join Product  
On Product.Product_id=payment_details.Product_id  
Group by payment_details.Product_id;  
Order by Quantity_sold desc;
```

ProductID	Name	Price	Quantity_sold
1	Vivo V17	27990.00	2
3	Rich Dad Poor Dad	399.00	2
5	Parachute Coconut Oil	127.00	2
6	Asus Vivobook 14	56990.00	2
4	Python for Everybody	709.00	1
8	Hero Sprint Junior Cycle	6315.00	1

6 rows in set (0.00 sec)

6. Total payment done by customers in increasing Order

Code:

```
Select payment.Customer_id,Username,  
Sum(Amount) as Total_payment from payment  
Inner join customer On  
payment.Customer_id=customer.Customer_id  
Group by payment.CustomerID  
Order by Total_payment;
```

CustomerID	Username	Total_payment
1	jayshah07	299.00
2	satypavan	627.00
3	rajesh064	6240.00
6	manan123	24000.00
7	halagamer	24300.00
8	deep34	45860.00
4	sanketd	46770.00

7 rows in set (0.00 sec)

7.Quantity of each product sold

Code:

```
Select Name,Sum(Quantity) as Quantity  
From Payment_details inner join Product  
On Product.Product_id=Payment_details.Product_id  
Group by Payment_details.Product_id;
```

Name	Quantity
Parachute Coconut Oil	3
Rich Dad Poor Dad	2
Vivo V17	2
Python for Everybody	1
Asus Vivobook 14	2
Hero Sprint Junior Cycle	1

6 rows in set (0.00 sec)