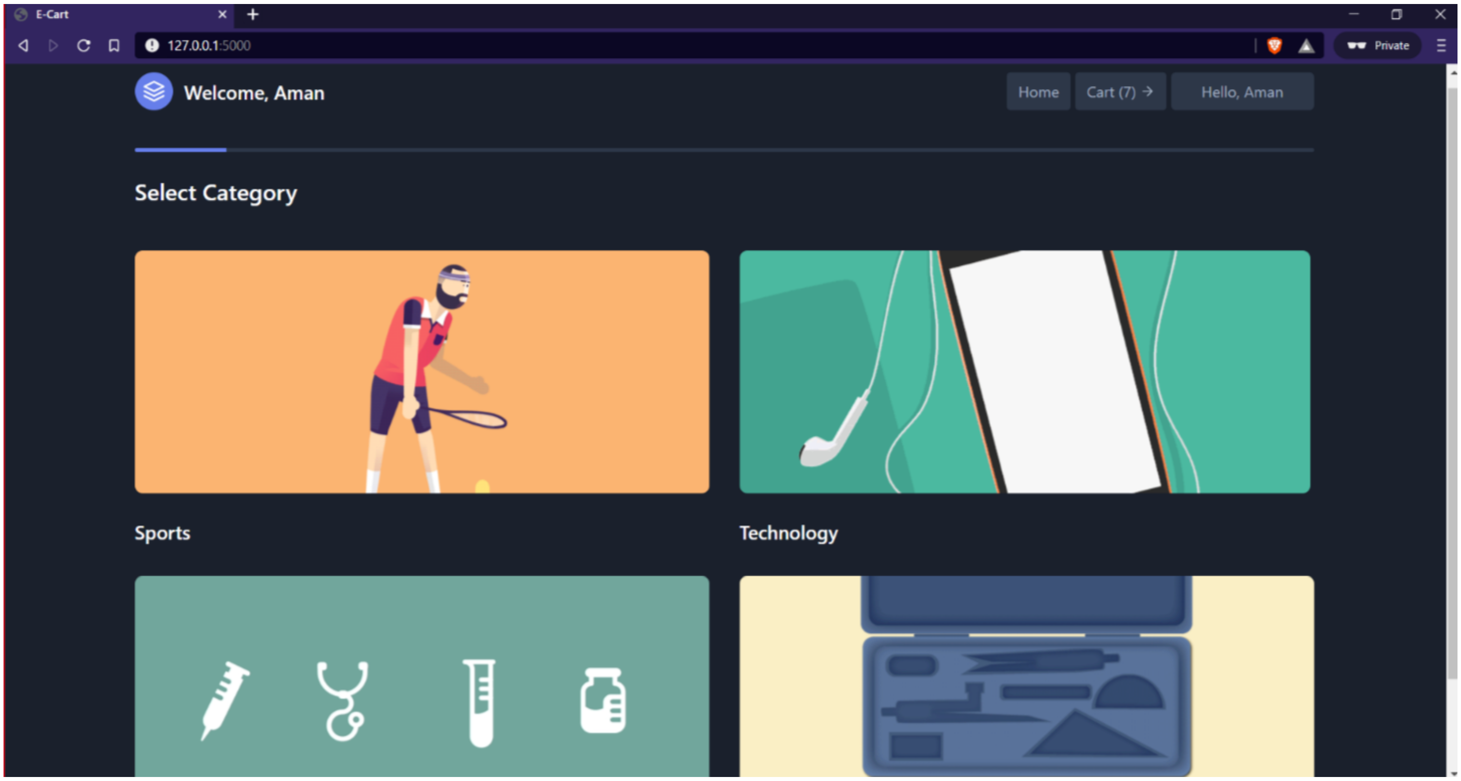
CSD-202

Introduction to Database Management

E-Cart PROJECT



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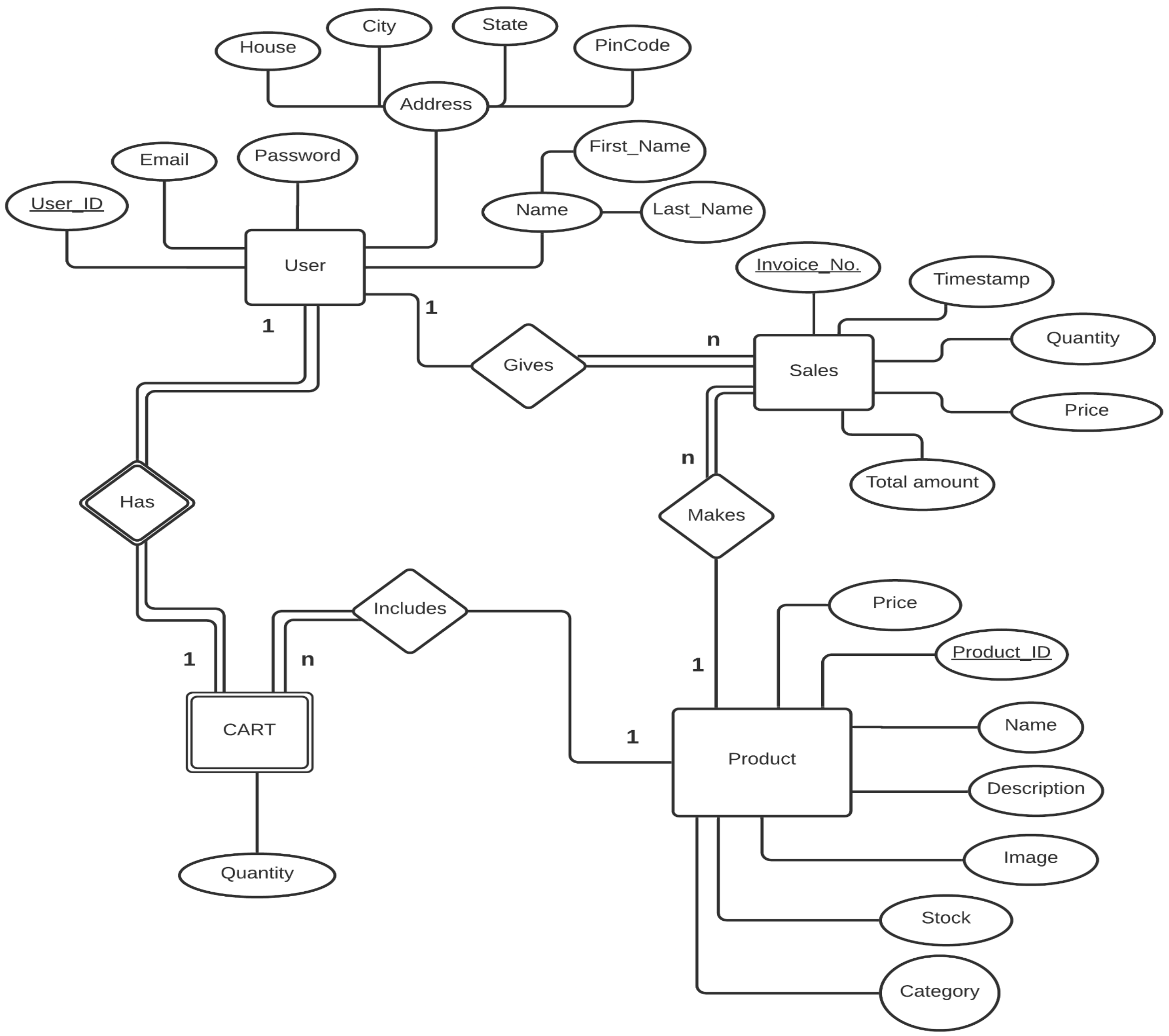
INTRODUCTION

The E-Cart is an E-commerce website which was developed to mimic an Amazon website shopping experience. It is developed using Python, Tailwind CSS and Javascript in the frontend and MySql in the backend. To connect the front end to the backend, Flask framework is used in the project.

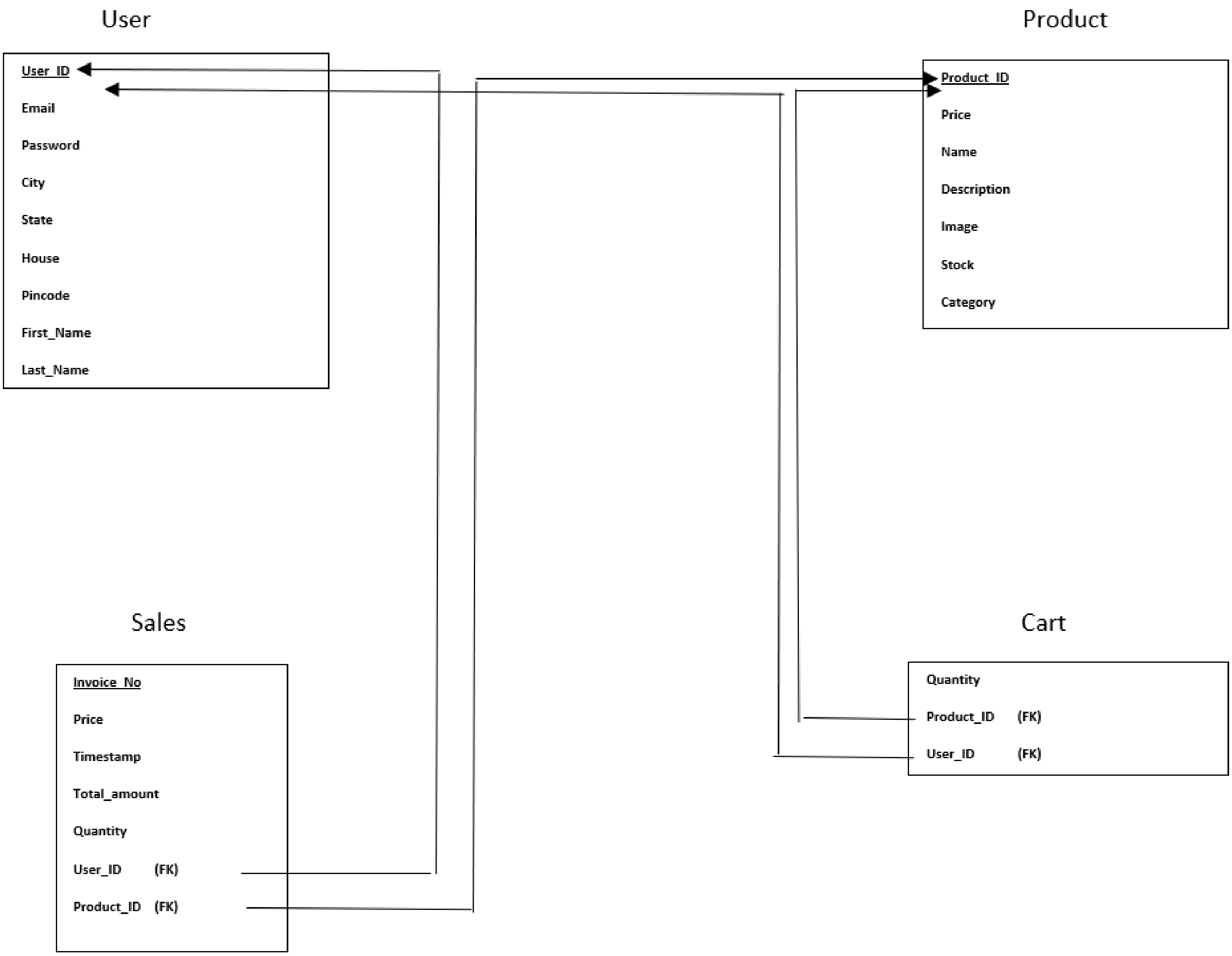
Flow of the website -

1. Login Page - When the user opens the website, he/she is greeted with the login page.
2. Register Page - If the user is new to the website, he/she faces a registration portal; otherwise the user uses their credentials to log into the website.
3. Category Page - After logging in, the user is greeted with the category page, where he/she can proceed to select any of the four provided categories. The user selects the product and adds it to their cart.
4. Cart Page - After his/her shopping is done, he/she proceeds to purchase the items listed in the cart.
5. Remove product- If the user wants to remove certain product from cart, he/she can do so else he/she may proceed to checkout.
6. Sign Out - After the purchase is done, the user can sign out of the website.

ER MODEL



Relational Schema



User

User_ID
Email
Password
City
State
House
Pincode
First_Name
Last_Name

Product

Product_ID
Price
Name
Description
Image
Stock
Category

Sales

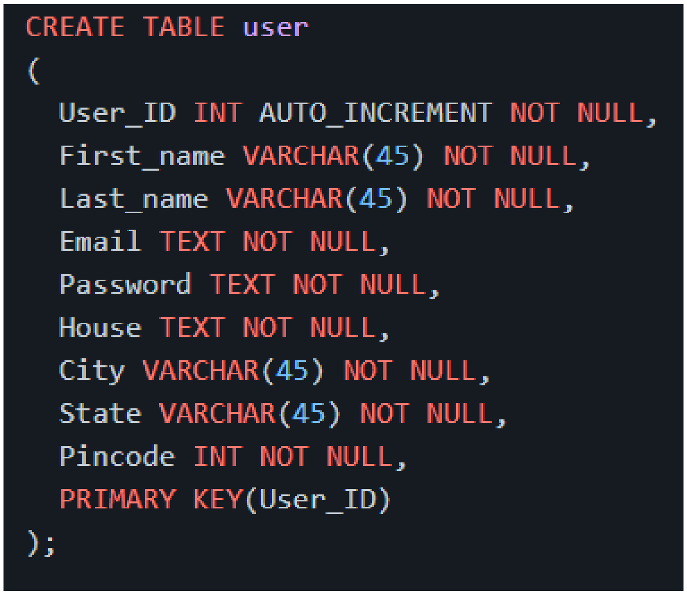
Invoice_No
Price
Timestamp
Total_amount
Quantity
User_ID (FK)
Product_ID (FK)

Cart

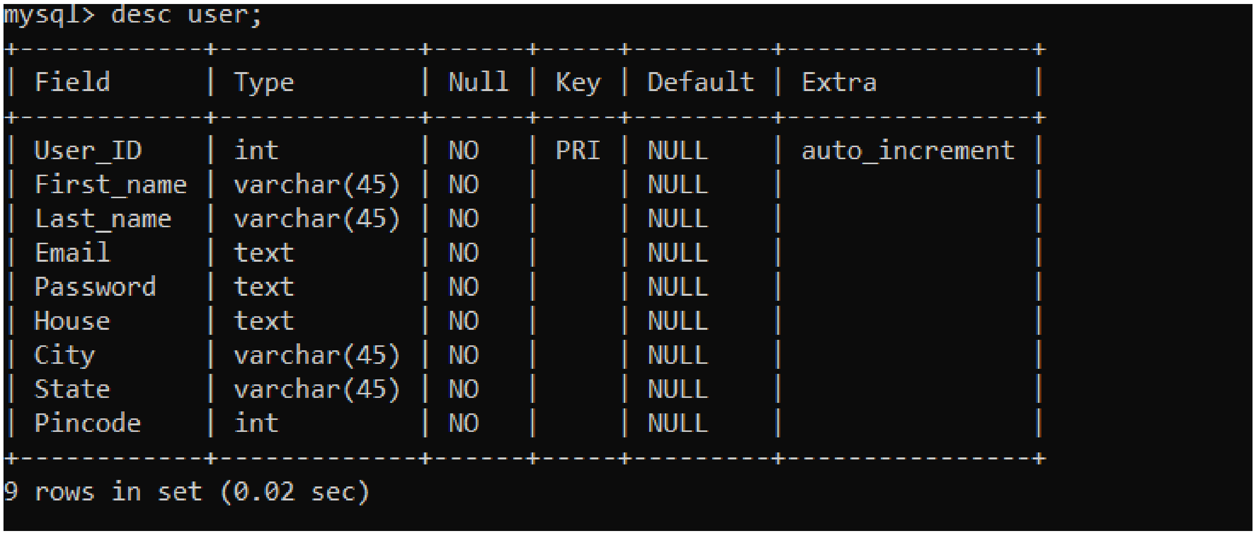
Quantity
Product_ID (FK)
User_ID (FK)

MYSQL

1. Database Tables -
   - User table -

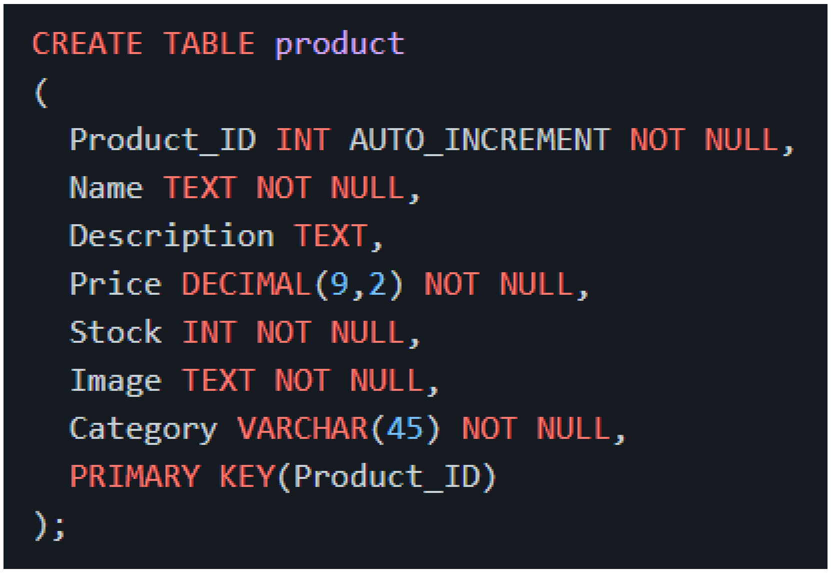


```
CREATE TABLE user
(
  User_ID INT AUTO_INCREMENT NOT NULL,
  First_name VARCHAR(45) NOT NULL,
  Last_name VARCHAR(45) NOT NULL,
  Email TEXT NOT NULL,
  Password TEXT NOT NULL,
  House TEXT NOT NULL,
  City VARCHAR(45) NOT NULL,
  State VARCHAR(45) NOT NULL,
  Pincode INT NOT NULL,
  PRIMARY KEY(User_ID)
);
```

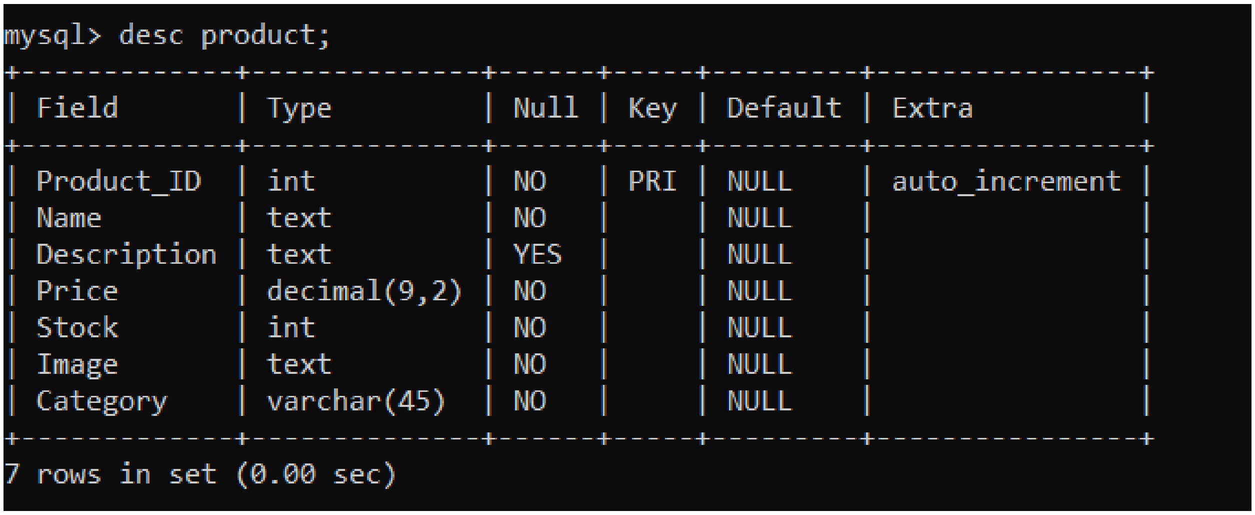


```
mysql> desc user;
+------------+-------------+------+-----+---------+----------------+
| Field      | Type        | Null | Key | Default | Extra          |
+------------+-------------+------+-----+---------+----------------+
| User_ID    | int         | NO   | PRI | NULL    | auto_increment |
| First_name | varchar(45) | NO   |     | NULL    |                |
| Last_name  | varchar(45) | NO   |     | NULL    |                |
| Email      | text        | NO   |     | NULL    |                |
| Password   | text        | NO   |     | NULL    |                |
| House      | text        | NO   |     | NULL    |                |
| City       | varchar(45) | NO   |     | NULL    |                |
| State      | varchar(45) | NO   |     | NULL    |                |
| Pincode    | int         | NO   |     | NULL    |                |
+------------+-------------+------+-----+---------+----------------+
9 rows in set (0.02 sec)
```

   - Product Table -

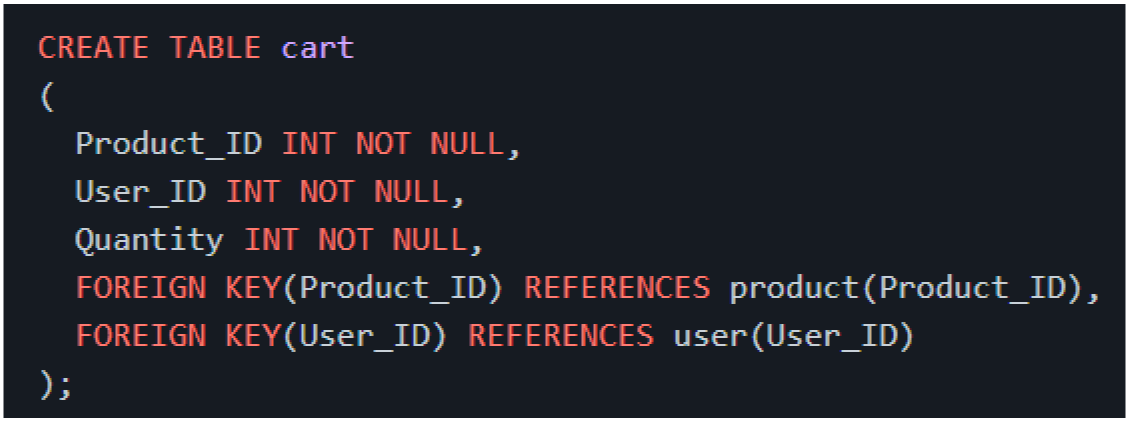


```sql
CREATE TABLE product
(
  Product_ID INT AUTO_INCREMENT NOT NULL,
  Name TEXT NOT NULL,
  Description TEXT,
  Price DECIMAL(9,2) NOT NULL,
  Stock INT NOT NULL,
  Image TEXT NOT NULL,
  Category VARCHAR(45) NOT NULL,
  PRIMARY KEY(Product_ID)
);
```

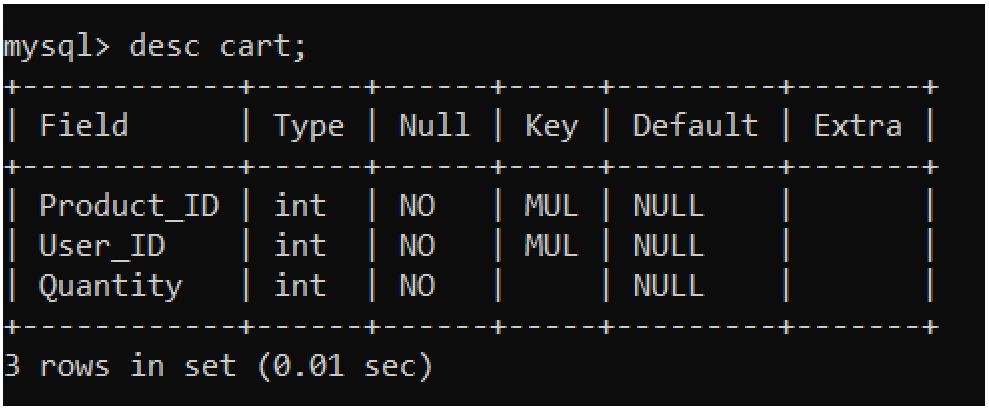


```
mysql> desc product;
+-------------+--------------+------+-----+---------+----------------+
| Field       | Type         | Null | Key | Default | Extra          |
+-------------+--------------+------+-----+---------+----------------+
| Product_ID  | int          | NO   | PRI | NULL    | auto_increment |
| Name        | text         | NO   |     | NULL    |                |
| Description | text         | YES  |     | NULL    |                |
| Price       | decimal(9,2) | NO   |     | NULL    |                |
| Stock       | int          | NO   |     | NULL    |                |
| Image       | text         | NO   |     | NULL    |                |
| Category    | varchar(45)  | NO   |     | NULL    |                |
+-------------+--------------+------+-----+---------+----------------+
7 rows in set (0.00 sec)
```

- Cart Table -

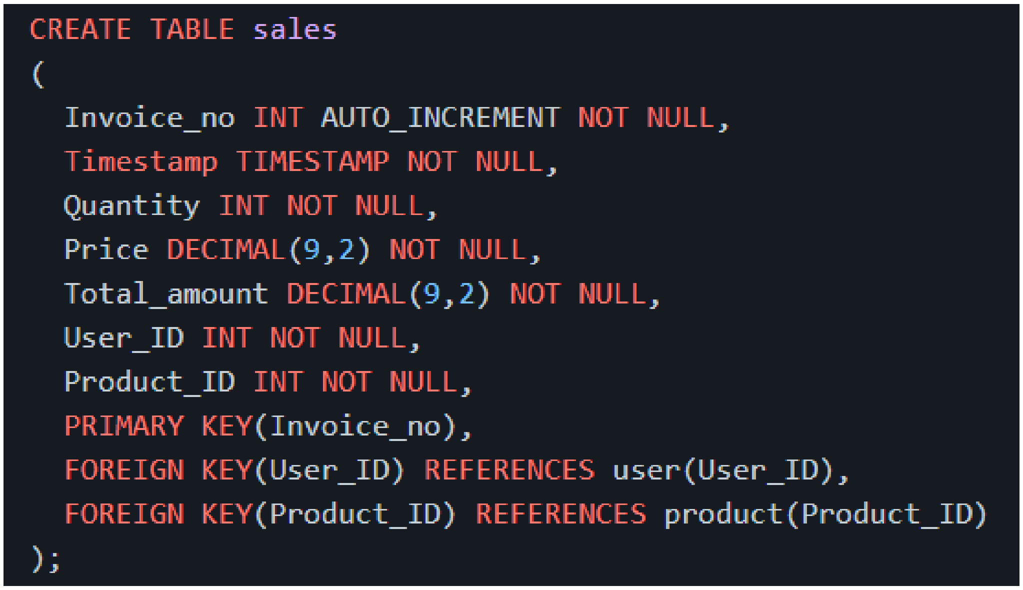


```sql
CREATE TABLE cart
(
  Product_ID INT NOT NULL,
  User_ID INT NOT NULL,
  Quantity INT NOT NULL,
  FOREIGN KEY(Product_ID) REFERENCES product(Product_ID),
  FOREIGN KEY(User_ID) REFERENCES user(User_ID)
);
```

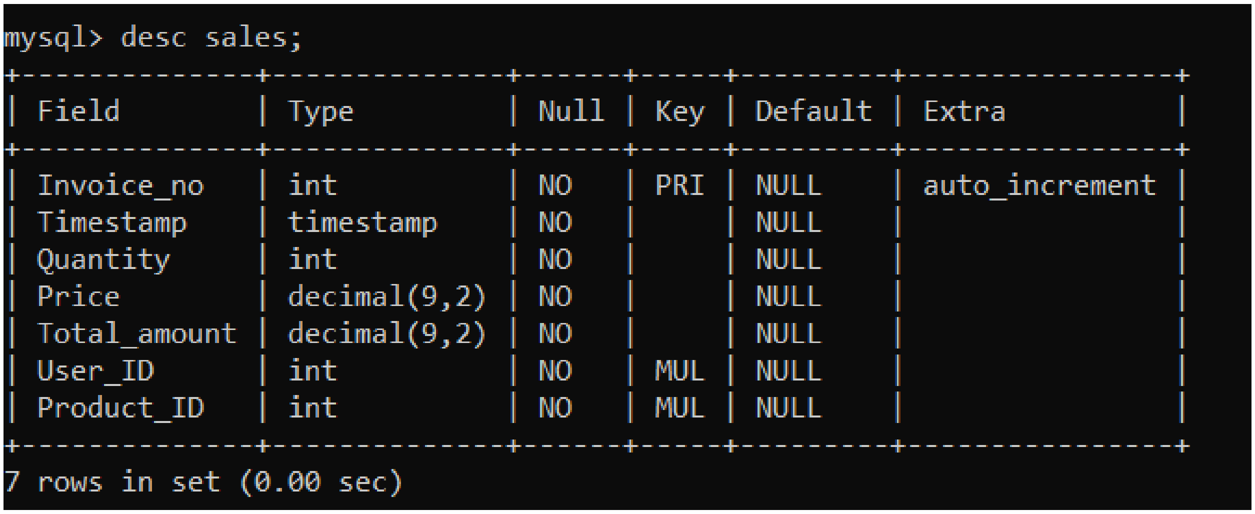


```
mysql> desc cart;
+------------+------+------+-----+---------+-------+
| Field      | Type | Null | Key | Default | Extra |
+------------+------+------+-----+---------+-------+
| Product_ID | int  | NO   | MUL | NULL    |       |
| User_ID    | int  | NO   | MUL | NULL    |       |
| Quantity   | int  | NO   |     | NULL    |       |
+------------+------+------+-----+---------+-------+
3 rows in set (0.01 sec)
```

- Sales Table -



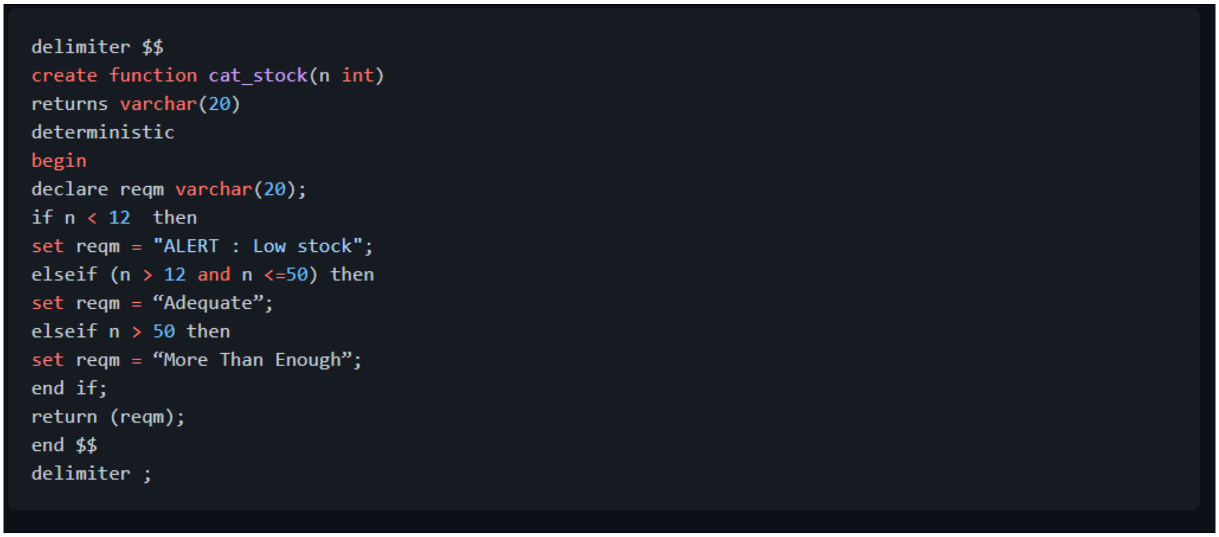
```
CREATE TABLE sales
(
  Invoice_no INT AUTO_INCREMENT NOT NULL,
  Timestamp TIMESTAMP NOT NULL,
  Quantity INT NOT NULL,
  Price DECIMAL(9,2) NOT NULL,
  Total_amount DECIMAL(9,2) NOT NULL,
  User_ID INT NOT NULL,
  Product_ID INT NOT NULL,
  PRIMARY KEY(Invoice_no),
  FOREIGN KEY(User_ID) REFERENCES user(User_ID),
  FOREIGN KEY(Product_ID) REFERENCES product(Product_ID)
);
```



```
mysql> desc sales;
+--------------+--------------+------+-----+---------+----------------+
| Field        | Type         | Null | Key | Default | Extra          |
+--------------+--------------+------+-----+---------+----------------+
| Invoice_no   | int          | NO   | PRI | NULL    | auto_increment |
| Timestamp    | timestamp    | NO   |     | NULL    |                |
| Quantity     | int          | NO   |     | NULL    |                |
| Price        | decimal(9,2) | NO   |     | NULL    |                |
| Total_amount | decimal(9,2) | NO   |     | NULL    |                |
| User_ID      | int          | NO   | MUL | NULL    |                |
| Product_ID   | int          | NO   | MUL | NULL    |                |
+--------------+--------------+------+-----+---------+----------------+
7 rows in set (0.00 sec)
```

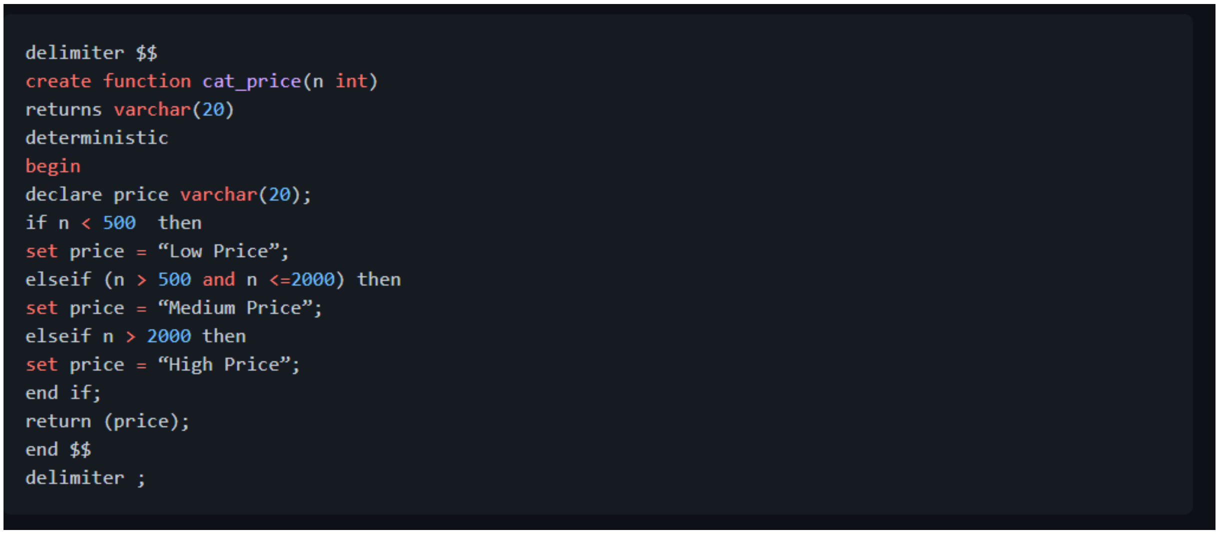
2. Functions -

- Function to check availability of stock -



```
delimiter $$
create function cat_stock(n int)
returns varchar(20)
deterministic
begin
declare reqm varchar(20);
if n < 12  then
set reqm = "ALERT : Low stock";
elseif (n > 12 and n <=50) then
set reqm = “Adequate”;
elseif n > 50 then
set reqm = “More Than Enough”;
end if;
return (reqm);
end $$
delimiter ;
```

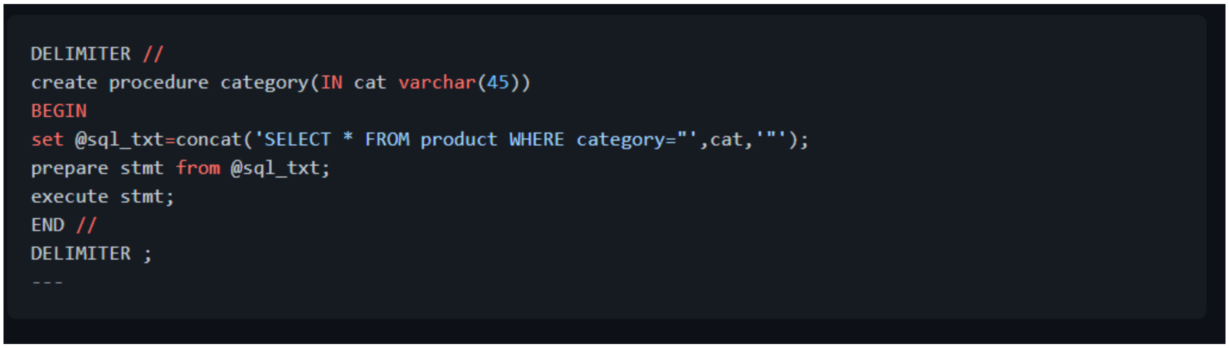
- Function to check pricing of available product -



```
delimiter $$
create function cat_price(n int)
returns varchar(20)
deterministic
begin
declare price varchar(20);
if n < 500  then
set price = “Low Price”;
elseif (n > 500 and n <=2000) then
set price = “Medium Price”;
elseif n > 2000 then
set price = “High Price”;
end if;
return (price);
end $$
delimiter ;
```

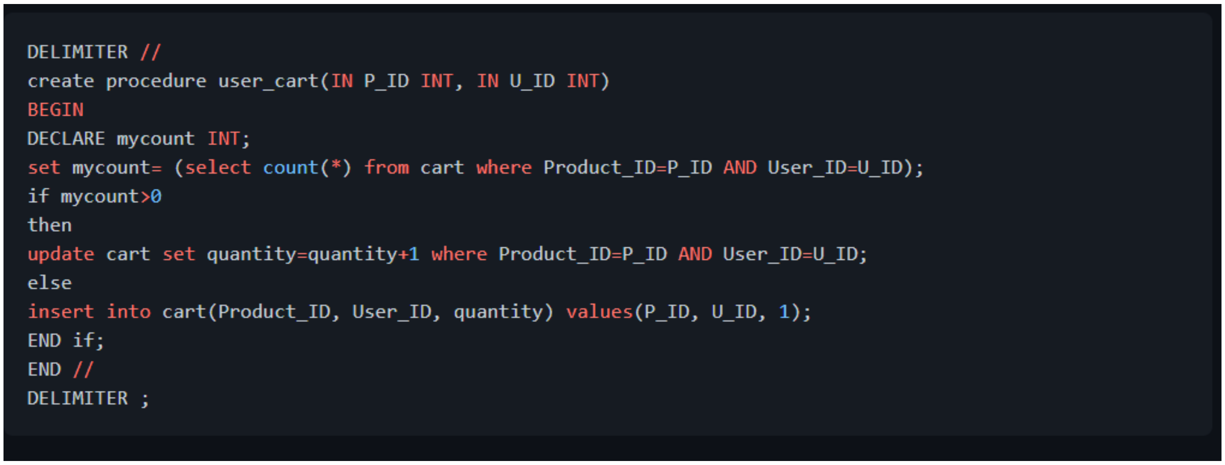
3. Procedures -

- Procedure to sort by category -



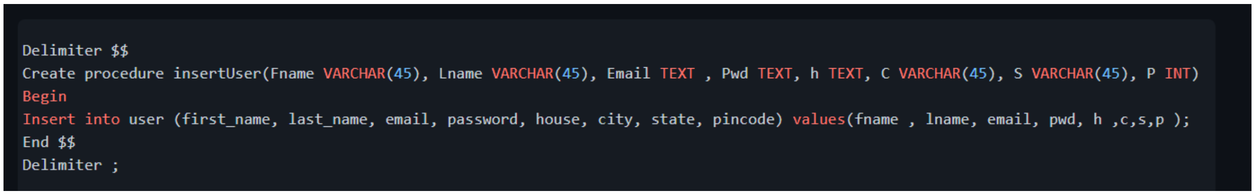
```
DELIMITER //
create procedure category(IN cat varchar(45))
BEGIN
set @sql_txt=concat('SELECT * FROM product WHERE category="',cat,'"');
prepare stmt from @sql_txt;
execute stmt;
END //
DELIMITER ;
---
```

- Procedure to check availability of stock -



```
DELIMITER //
create procedure user_cart(IN P_ID INT, IN U_ID INT)
BEGIN
DECLARE mycount INT;
set mycount= (select count(*) from cart where Product_ID=P_ID AND User_ID=U_ID);
if mycount>0
then
update cart set quantity=quantity+1 where Product_ID=P_ID AND User_ID=U_ID;
else
insert into cart(Product_ID, User_ID, quantity) values(P_ID, U_ID, 1);
END if;
END //
DELIMITER ;
```

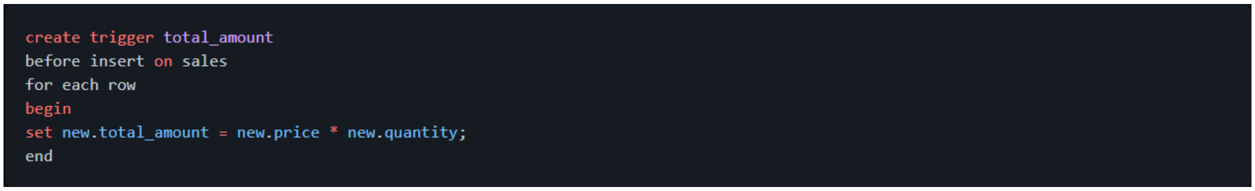
- Procedure to insert values into user table -



```
Delimiter $$
Create procedure insertUser(Fname VARCHAR(45), Lname VARCHAR(45), Email TEXT , Pwd TEXT, h TEXT, C VARCHAR(45), S VARCHAR(45), P INT)
Begin
Insert into user (first_name, last_name, email, password, house, city, state, pincode) values(fname , lname, email, pwd, h ,c,s,p );
End $$
Delimiter ;
```

4. Trigger-

- Trigger which sets the total amount of products in cart -



```
create trigger total_amount
before insert on sales
for each row
begin
set new.total_amount = new.price * new.quantity;
end
```

LIMITATIONS

1. Same sequence of products in sales cannot be given by multiple users.
2. Image attribute in the product table is not multi-valued.
3. Only one quantity of product can be added to cart at a time.
4. We assume that the product will never be out of stock.