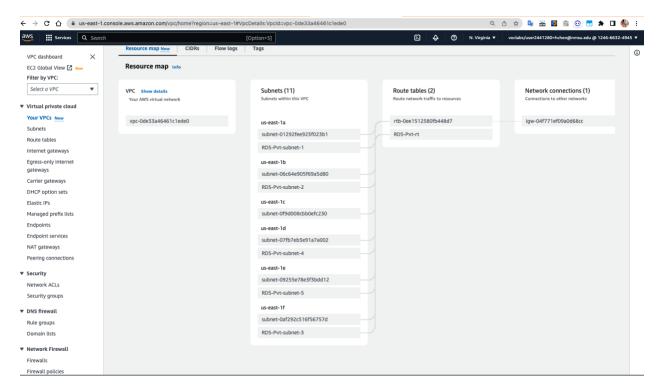
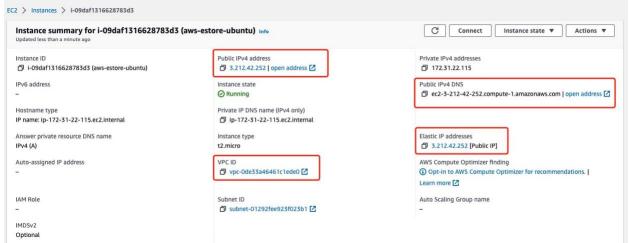
You need to create a Virtual Private Cloud (VPC) with private and a public subnets. The RDS
instance will be placed on the private subnet; the EC2 instance with the webserver will be
placed on the public subnet.

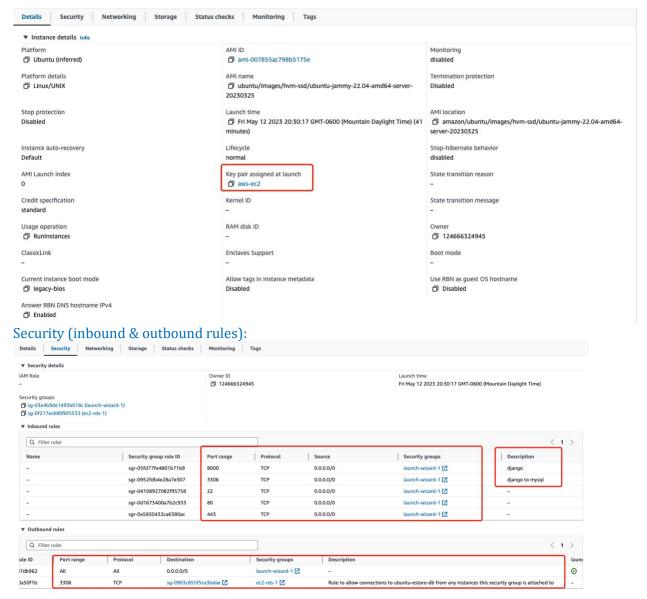
I created multiple subnets, but it's the same since the EC2 instance is placed in public subnets and RDS is placed in private subnets.



• You need to provide access paths such that the only way to access the RDS database is through the webserver (i.e., only the webserver IP is allowed to send messages to the server and the server only responds to the webserver). The webserver is accessible publicly.

EC2 instance (associated Elastic IP address 3.212.42.252):





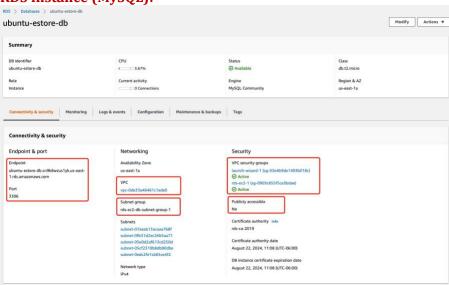
SSH access:

ssh -i aws-ec2.pem ubuntu@ec2-3-212-42-252.compute-1.amazonaws.com

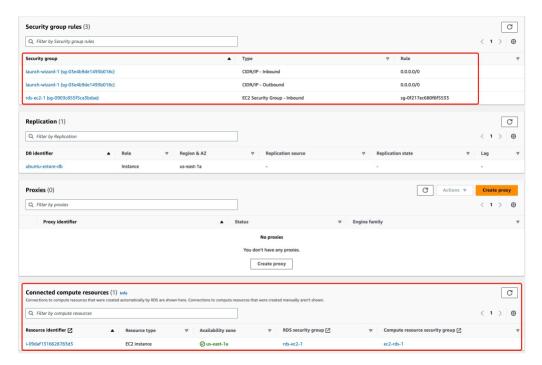


- You need to create a relational SQL database. The database will contain one table for the products, one table for the user's credentials, and another table for the products that the user has bought (which helps build preferences).
 - Product Table: Product ID (Primary Key); Name; Description; Manufacturer Name; Inventory Count.
 - User Table: User ID Primary Key; User Name; User Password (no need to encrypt);
 User Preferences (VARCHAR 20; fill with some fake information).
 - Products Bought Table: User ID, Product ID (Primary Key); User Name; Product Name; Quantity; Date of Purchase.

RDS instance (MySQL):



Security (inbound & outbound rules):



MySQL Database:

mysql -u admin -h ubuntu-estore-db.cn9k8wzus1yk.us-east-1.rds.amazonaws.com -p Enter password: lVWwHFYF415Zg4LCkSPy

I built Web Application with Django framework which manages db structure automatically by modifying models.py and CRUD is controlled by views.py. Some tables are created by Django for Auth.

```
Last login: Fri May 12 20:56:31 2023 from 128.123.30.77
ubuntu@ip-172-31-22-115:~$ mysql -u admin -h ubuntu-estore-db.cn9k8wzus1yk.us-east-1.rds.amazonaws.com -p
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 3056
Server version: 8.0.32 Source distribution
Copyright (c) 2000, 2023, Oracle and/or its affiliates.
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql> USE estoredb;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A
  auth group
  auth_group_permissions
  auth permission
 auth_user
  autn_user_groups
auth_user_user_permissions
  django_admin_log
  django_content_type
  django_migrations
  diango session
  ecom customer
  ecom feedback
  ecom orders
 ecom_product
14 rows in set (0.00 sec)
mysql>
```

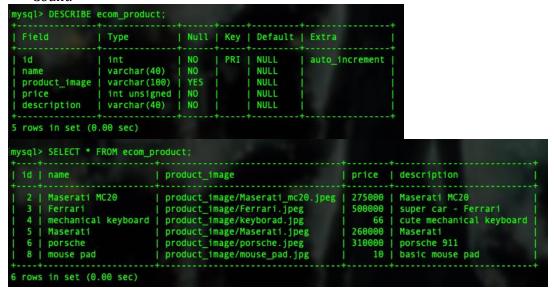
 User Table: User ID Primary Key; User Name; User Password (no need to encrypt); User Preferences (VARCHAR 20; fill with some fake information).

| Field | Туре | 1 | Null | Key | Default | Extra |
|--------------|--------------|---|------|-----|---------|----------------|
| id | int | 1 | NO I | PRI | NULL | auto_increment |
| password | varchar(128) | | NO | | NULL | |
| last_login | datetime(6) | | YES | | NULL | |
| is_superuser | tinyint(1) | | NO I | | NULL | |
| username | varchar(150) | | NO | UNI | NULL | |
| first_name | varchar(30) | | NO | | NULL | |
| last_name | varchar(150) | | NO I | | NULL | |
| email | varchar(254) | | NO | | NULL | |
| is_staff | tinyint(1) | | NO | | NULL | |
| is_active | tinyint(1) | | NO | | NULL | |
| date joined | datetime(6) | I | NO | | NULL | |



```
mysql> DESCRIBE ecom_customer;
 Field
                             | Null | Key | Default | Extra
              | Type
                               NO
                                          I NULL
                                                       auto_increment
 id
               int
 profile_pic |
               varchar (100)
                                            NULL
 address
               varchar (40)
                               NO
                                            NULL
 mobile
               varchar (20)
                               NO
                                            NULL
                               NO
                                      UNI | NULL
 user_id
               int
 rows in set (0.00 sec)
nysql> SELECT * FROM ecom_customer;
  id | profile_pic
                                                  | address | mobile
  1 | profile pic/CustomerProfilePic/smile.jpeg |
                                                              5756460000
                                                                                  2 1
                                                   XXXX
                                                              5756460001
      profile_pic/CustomerProfilePic/boy.jpeg
                                                    XXX
      profile_pic/CustomerProfilePic/girl.jpeg
                                                    XXXXXX
                                                               5756460002
      profile_pic/CustomerProfilePic/batman.png
                                                              5756460003
                                                    XXXXXX
 rows in set (0.00 sec)
```

 Product Table: Product ID (Primary Key); Name; Description; Manufacturer Name; Inventory Count.



• - Products Bought Table: User ID, Product ID (Primary Key); User Name; Product Name; Quantity; Date of Purchase.

```
ysql> DESCRIBE ecom_orders;
                              | Null | Key | Default | Extra
 Field
              I Type
                                      I PRI I NULL
                                                        auto increment
                varchar(50)
                                YES
                varchar (500)
 mobile
               varchar(20)
                                              NULL
 order_date
 status | varchar(50)
customer_id | int
product_id | int
                                              NULL
                                YES
 rows in set (0.00 sec)
mysql> SELECT * FROM ecom_orders;
                                     | address | mobile | order_date | status | customer_id | product_id |
 id | email
                                                 | 648888 | 2023-05-12 | Pending |
| 648888 | 2023-05-12 | Pending |
       testuser_004@gmail.com | xxxx
       testuser_004@gmail.com |
                                      XXXX
                                                                                                        4
       testuser_004@gmail.com | xxxx
                                                 | 648888 | 2023-05-12 | Pending
| 648888 | 2023-05-12 | Pending
       testuser_004@gmail.com | xxxx
 rows in set (0.00 sec)
```

• You need to create a web page that allows you to view the contents of the table; delete entries from the table using user and product ID; and add entries to the tables as well. You can use any front end language, such as PHP, Javascript, or Python. The language should allow you to send SQL commands to the back-end database from the user inputs in the website.

Run server:

cd ecommerce/

python3 manage.py runserver 0.0.0.0:8000

mysql> exit

Bye
ubuntu@ip-172-31-22-115:-\$ cd ecommerce/
ubuntu@ip-172-31-22-115:-\forall / ecommerce\$ python3 manage.py runserver 0.0.0.0:8000

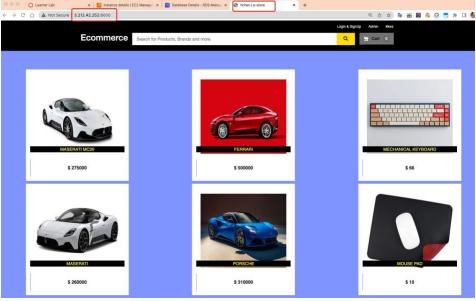
Watching for file changes with StatReloader
Performing system checks...

System check identified no issues (0 silenced).

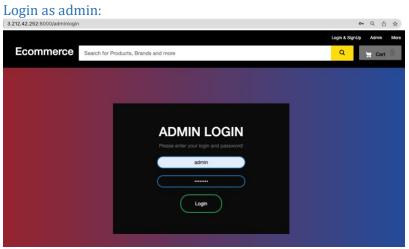
May 13, 2023 - 03:51:30

Django version 3.0.5, using settings 'ecommerce.settings'
Starting development server at http://0.0.0.0:8000/
Quit the server with CONTROL-C.

A web page that allows you to view the contents of the table:



CRUD Database



Able to see the order table:



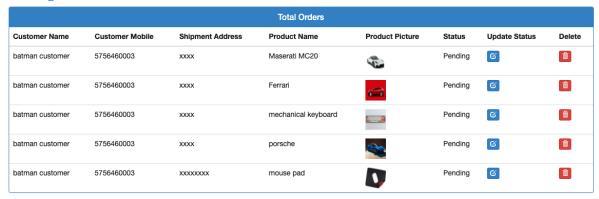
| Recent Booking | | | | | | | |
|-----------------|-----------------|------------------|---------------------|-----------------|---------|--|--|
| Customer Name | Customer Mobile | Shipment Address | Product Name | Product Picture | Status | | |
| batman customer | 5756460003 | XXXXX | Maserati MC20 | • | Pending | | |
| batman customer | 5756460003 | XXXX | Ferrari | •= | Pending | | |
| batman customer | 5756460003 | XXXXX | mechanical keyboard | | Pending | | |
| batman customer | 5756460003 | XXXXX | porsche | | Pending | | |

Able to view/edit/delete orders:

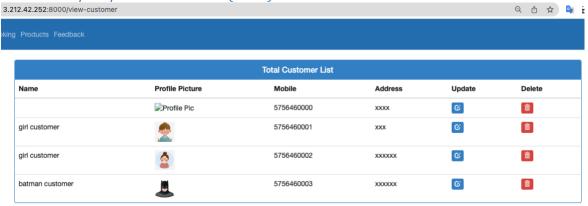


| | | | Total Orders | | | | |
|-----------------|-----------------|------------------|---------------------|--|---------|---------------|--------|
| Customer Name | Customer Mobile | Shipment Address | Product Name | Product Picture | Status | Update Status | Delete |
| batman customer | 5756460003 | XXXX | Maserati MC20 | 4 | Pending | © | |
| batman customer | 5756460003 | XXXX | Ferrari | •= | Pending | Ø | |
| batman customer | 5756460003 | XXXX | mechanical keyboard | WARRY TO THE PARTY OF THE PARTY | Pending | © | |
| batman customer | 5756460003 | XXXX | porsche | | Pending | Ø | |
| batman customer | 5756460003 | XXXXXXXX | Maserati MC20 | • | Pending | Ø | |
| batman customer | 5756460003 | XXXXXXX | mouse pad | D | Pending | © | |

Deleting Maserati MC20:



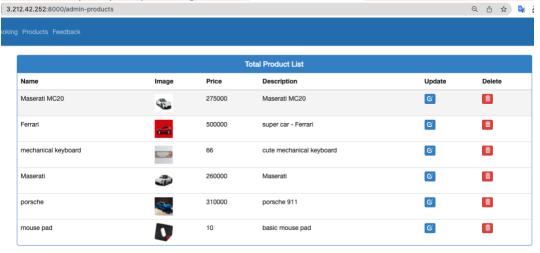
Able to view/edit/delete customers (users):



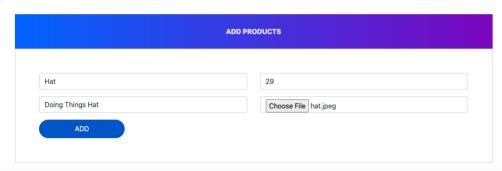
Deleting user:

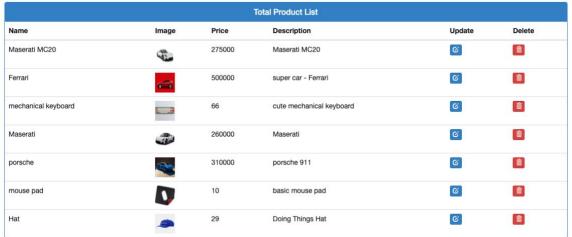


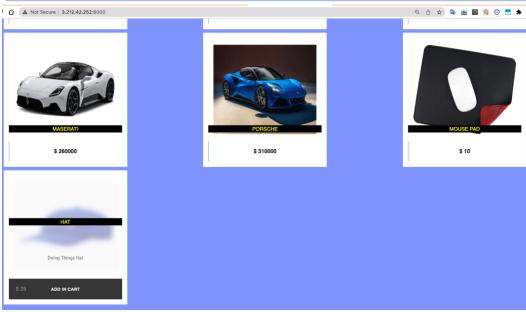
Able to view/add/edit/delete products:





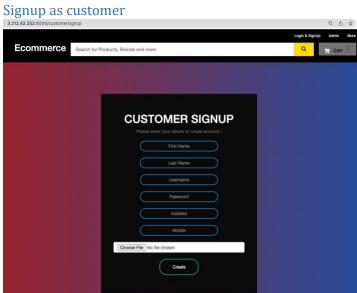




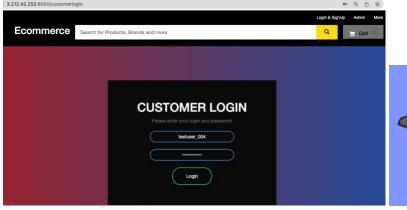


Deleting Ferrari:

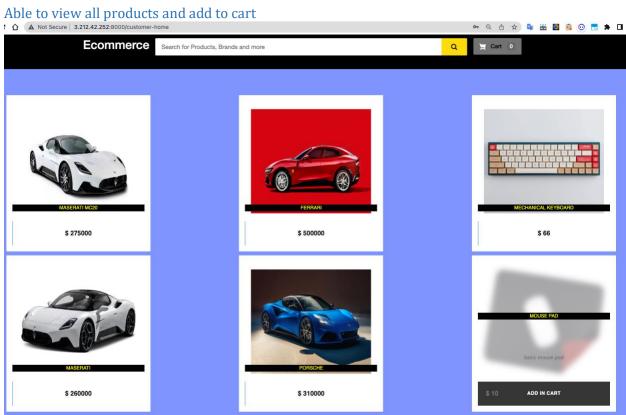
| | | Tota | al Product List | | |
|---------------------|----------|--------|--------------------------|----------|--------|
| Name | Image | Price | Description | Update | Delete |
| Maserati MC20 | 4 | 275000 | Maserati MC20 | © | |
| mechanical keyboard | | 66 | cute mechanical keyboard | Ø | Î |
| Maserati | 3 | 260000 | Maserati | © | |
| porsche | * | 310000 | porsche 911 | © | Î |
| mouse pad | D | 10 | basic mouse pad | Ø | Î |
| Hat | | 29 | Doing Things Hat | © | |



Login as customer 3.212.42.252:8000/customerlogin

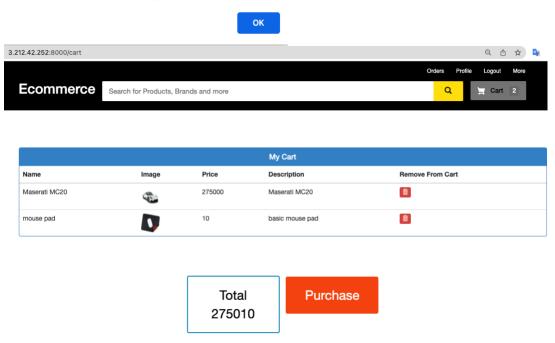






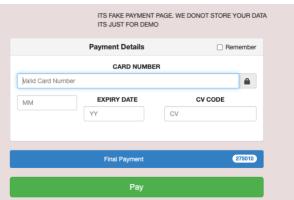
3.212.42.252:8000 says

mouse pad added to cart successfully!



After Purchase, the order will be added into order table



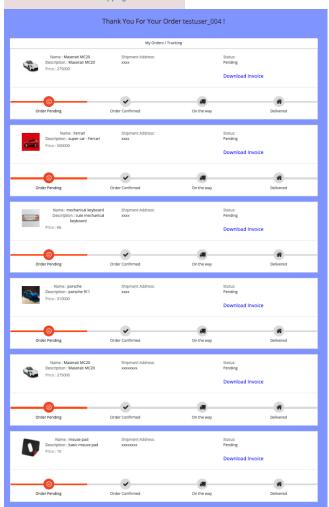


Payment Successful!

We are delighted to inform you that we received your payments

View Orders

Continue Shopping



Check order table is updated



| | | | Total Orders | | | | |
|-----------------|-----------------|------------------|---------------------|-----------------|---------|---------------|--------|
| Customer Name | Customer Mobile | Shipment Address | Product Name | Product Picture | Status | Update Status | Delete |
| batman customer | 5756460003 | XXXX | Maserati MC20 | • | Pending | © | |
| batman customer | 5756460003 | XXXX | Ferrari | = | Pending | Ø | |
| batman customer | 5756460003 | XXXX | mechanical keyboard | WARRY . | Pending | Ø | |
| batman customer | 5756460003 | XXXX | porsche | | Pending | Ø | |
| batman customer | 5756460003 | XXXXXXXX | Maserati MC20 | • | Pending | Ø | |
| batman customer | 5756460003 | XXXXXXXX | mouse pad | D | Pending | Ø | |