Online Shopping Cart

Final Report

Group 10

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Introduction

Welcome to our online electronics save, in which innovation meets convenience! In the dynamic realm of e-commerce, our platform stands as a beacon for each tech enthusiasts and casual customers alike. Recognizing the pivotal position that online buying carts play inside the digital market, we've meticulously crafted a consumer-centric experience that seamlessly integrates contemporary technology with user-friendly features.

At the center of our initiative lies a dedication to simplify the journey of administering the go with the flow of goods and merchandise for each directors and clients. Our user registration method sets the stage, imparting a stable gateway for individuals to embark on a continuing exploration of our massive array of digital wonders. With User ID, Email ID, Name, Mobile Number, Country, Address, Date of Birth, and Gender forming the muse of user facts, we make certain a personalized and tailored revel in for each traveler.

Venturing similarly into the coronary heart of our digital market, our product catalog unfolds with mobile devices and laptops taking center degree. Each product, be it a swish cell device or a effective laptop, is meticulously specific, encompassing key attributes which includes running systems, reminiscence specifications, processors, and fashions. This meticulous technique guarantees that our clients have access to comprehensive statistics, empowering them to make informed choices.

But our commitment extends past only a virtual window-buying revel in. We recognize the significance of a streamlined order control machine, and as a result, the creation of the "Orders" entity lets in customers and administrators alike to tune order histories effortlessly. Address information, monitoring information, order dates, and specific Order IDs form the backbone of this entity, permitting powerful analysis and control.

Conceptual Data Modeling

EER
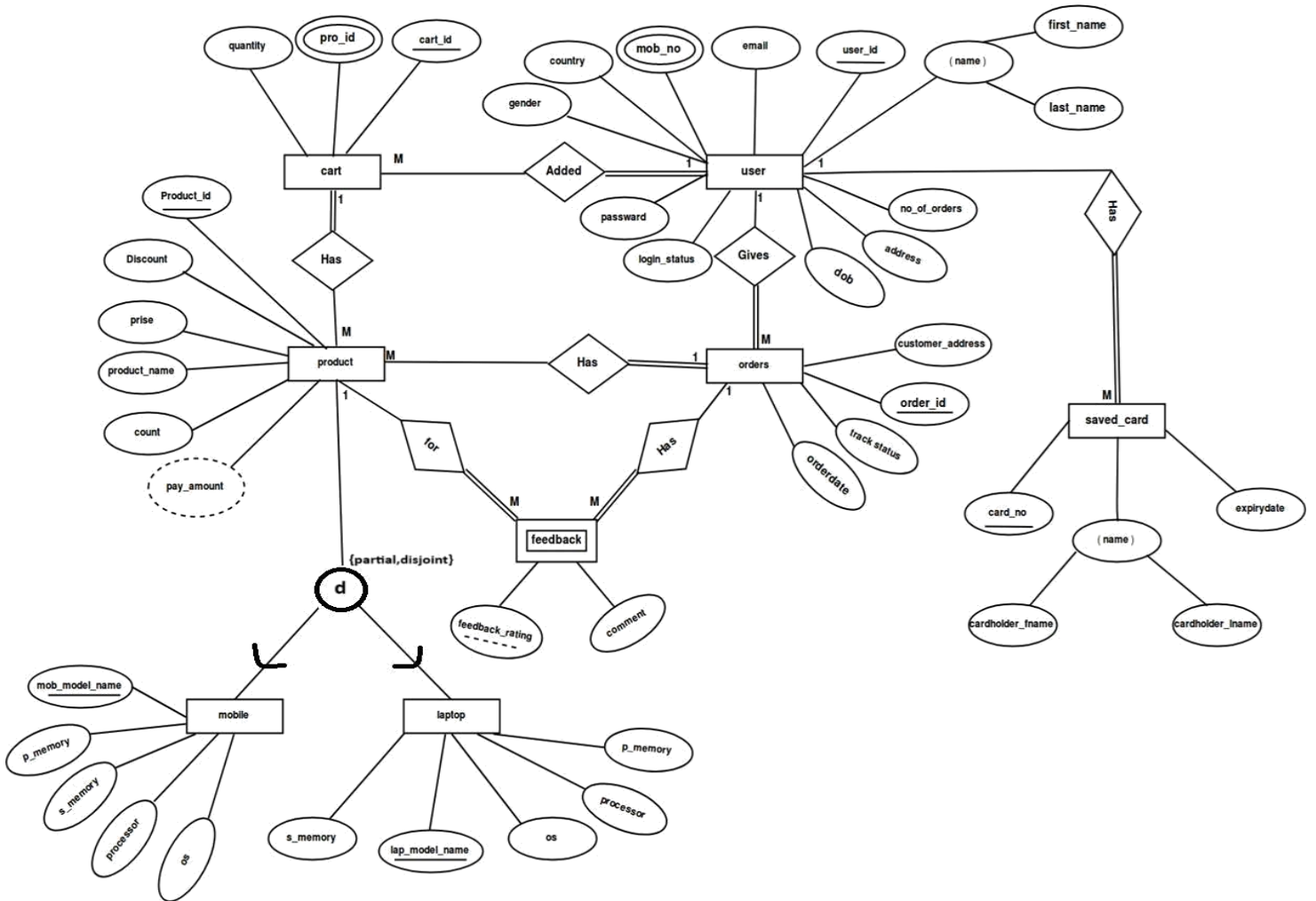
UML
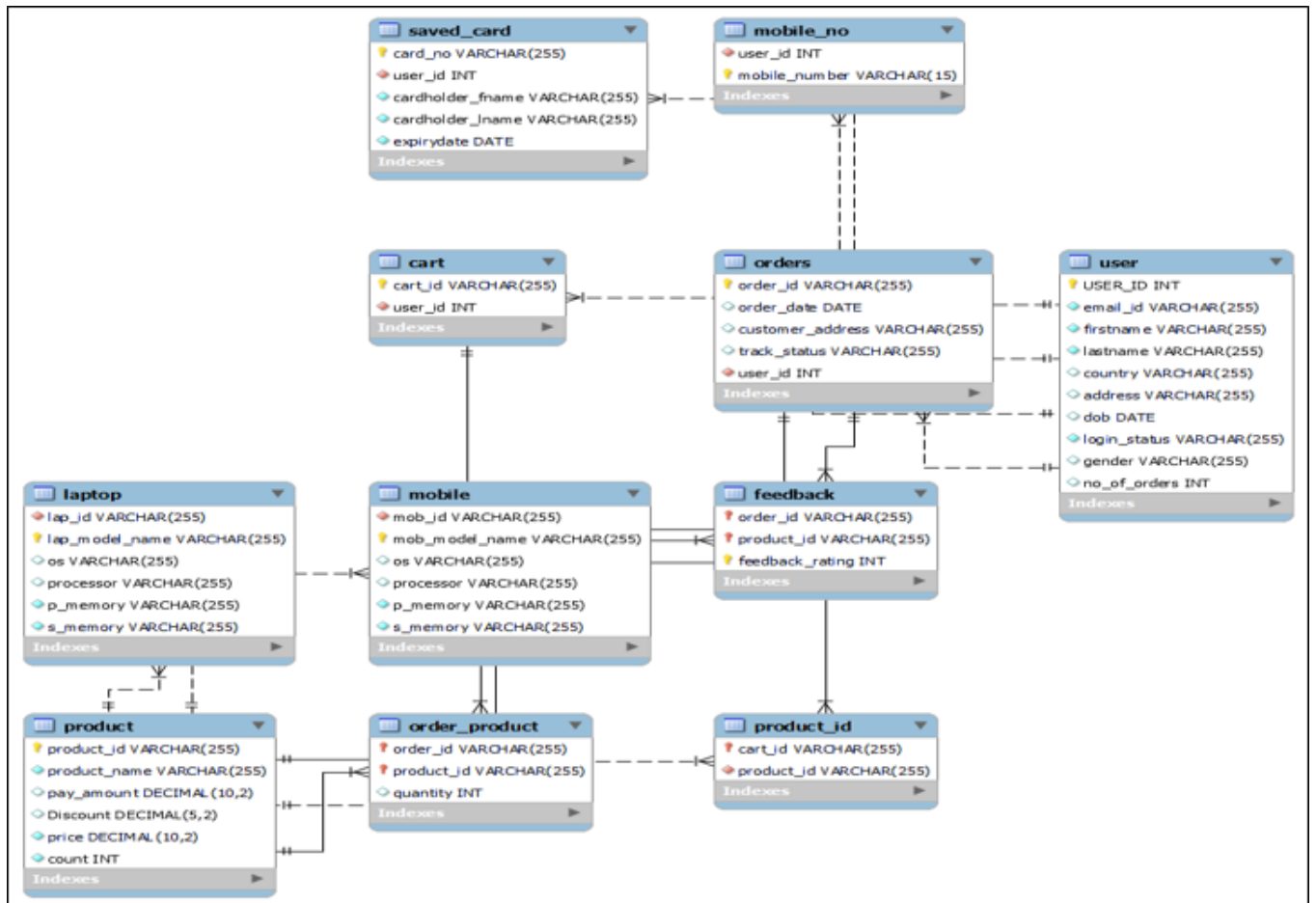
Logical Model

- User (**user_id**, email_id, first_name,last_name, country, address, dob (Date of Birth) ,login_status, gender, no_of_orders)
- Mobile_No (user_id (Foreign Key referencing User table NOT NULL), **mob_no**)
- Cart (**cart_id** ,user_id (Foreign Key referencing User table NOT NULL))
- Product_ID (cart_id (Foreign Key referencing Cart table NOT NULL),pro_id (Foreign Key referencing Product table NOT NULL), quantity)
  (**cart_id, product_id**)->Primary Key
- Orders (**order_id** ,order_date, customer_address, track_status, user_id (Foreign Key referencing User table NOT NULL))
- Order_Product(order_id (Foreign Key referencing Orders table NOT NULL) ,product_id (Foreign Key referencing Product table NOT NULL), quantity)
   (**order_id,product_id**) -> Composite Primary Key
- Product (**pro_id** ,product_name, pay_amount, Discount, price, count)
- Mobile (**mob_model_name** ,mobile_id (Foreign Key referencing product table NOT NULL), os, processor, p_memory, s_memory)
- Laptop (**Laptop_model_name** ,Laptop_id (Foreign Key referencing product table NOT NULL), os, processor, p_memory, s_memory)
- Saved_card(**card_no**,user_id(Foreign Key referencing User table NOT NULL)), cardholder_fname, cardholder_lname, expirydate)
- Feedback (**feedback_rating**, comment, order_id (Foreign Key referencing Orders table), product_id (Foreign Key referencing Product table NOT NULL)) (order_id,product_id,feedback_rating)-> Composite Primary Key

In the user entity since mobile number is a multivalued attribute, it is decomposed into two tables. One table is user which holds attributes other than mobile no. Another table named mobile_no has a mobile number and user_id where user_id is a foreign key from the user table and (user_id,mob_no) combined to make the primary key for mobile_no table.

Since product_id is a multivalued attribute, it must be kept in a separate table. Thus, we split product_in_cart entity into two tables -cart, and product_id.The cart table has cart _id as the primary key and user_id as a foreign key from the user table. Product_id table has pro_id as a foreign key from the product table, cart_id as a foreign key from the cart table and quantity. (cart_id,pro_id) forms the composite primary key for product_id table.

Since the foreign key product_id is a multivalued attribute, orders must be decomposed into orders and order_product. In orders, order_id is primary key. In order_product,order_id is foreign key from orders and product_id is foreign from product. (order_id,product_id) combinedly forms the primary key now because quantity can be uniquely derived from the combination of order_id and product_id thus it shifted into the order_product.

MySQL Implementation

The database was created in MySQL and the following queries were performed:

✓	5	11:05:07	select * from user LIMIT 0, 1000	100 row(s) returned
✓	6	11:06:03	select * from cart LIMIT 0, 1000	100 row(s) returned
✓	7	11:06:15	select * from Product LIMIT 0, 1000	21 row(s) returned
✓	8	11:06:40	select * from Mobile LIMIT 0, 1000	9 row(s) returned
✓	9	11:06:46	select * from LAptop LIMIT 0, 1000	12 row(s) returned
✓	10	11:07:00	select * from mobile_no LIMIT 0, 1000	100 row(s) returned
✓	11	11:07:34	select * from feedback LIMIT 0, 1000	100 row(s) returned
✓	12	11:07:53	select * from saved_card LIMIT 0, 1000	100 row(s) returned
✓	13	11:08:11	select * from product_id LIMIT 0, 1000	100 row(s) returned
✓	14	11:08:27	select * from orders LIMIT 0, 1000	100 row(s) returned
✓	15	11:08:40	select * from order_product LIMIT 0, 1000	100 row(s) returned

Information about table

Some Basic Queries

USER_ID	email_id	firstname	lastname	country	address	dob	login_status	gender	no_of_orders
3736	sjeannenetb@irs.gov	Shane	Jeannenet	United States	3459 Dryden Court	1979-12-27	Inactive	Male	13
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

SELECT * FROM User WHERE email_id = 'sjeannenetb@irs.gov';

SELECT Product.product_name, Product.price, Product.count
FROM Product
JOIN Product_ID ON Product.product_id = Product_ID.product_id

Result Grid	Filter Rows:	Export:	Wrap Cell Content:

	product_name	price	count
▶	Mobile 1	197	40

JOIN Cart ON Product_ID.cart_id = Cart.cart_id
WHERE Cart.cart_id = '597qj';
SELECT SUM(Product.price * order_product.quantity
) AS total_amount
FROM Product
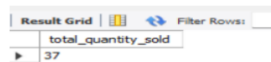JOIN order_product ON Product.product_id = order_product.product_id

WHERE order_product.order_id = '1165357533431';
SELECT mob_model_name, os FROM Mobile;

mob_model_name	os
Apple	Apple iOS
Asus	Apple iOS
LG	Blackberry OS
Motorola	Web OS
Nokia	Bada
Nothing	Symbian OS
Oneplus	Windows Mobile OS
Redmi	Windows Mobile OS
Samsung	Windows Mobile OS
NULL	NULL
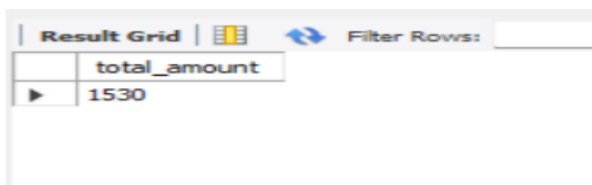
SELECT SUM(quantity)
AS total_quantity_sold
FROM order_product
WHERE product_id = '89lx47y';

total_quantity_sold
37

SELECT user_id, COUNT(order_id) AS total_orders
FROM Orders
GROUP BY user_id;

total_amount
1530

user_id	total_orders
1400	1
5306	2
5507	2
9539	4
10538	1
10660	1
10884	1
11133	2
12303	3
17342	2
19464	1
20685	2
20820	1
20982	1
22876	1
27645	1
28170	1
30017	2
30645	3
34357	3
34846	1
35815	2
35963	1
36469	1
38409	1
39397	2
42289	1
43513	10
43999	1

```
SELECT User.*, Orders.order_id
FROM User
INNER JOIN Orders ON User.user_id = Orders.user_id;
```

```
SELECT *
FROM User
WHERE user_id IN (SELECT DISTINCT user_id FROM Orders);
```

USER_ID	email_id	firstname	lastname	country	address	dob	login_status	gender	no_of_orders	order_id
1400	carchdeacong@hatena.ne.jp	Cecilius	Archdeacon	United States	9 Gerald Road	1980-01-01	Active	Male	7	8311184609242
5306	kcarek2m@dyndns.org	Kimberley	Carek	United States	7513 Summerview Trail	1980-03-19	Inactive	Female	15	7714592430084
5306	kcarek2m@dyndns.org	Kimberley	Carek	United States	7513 Summerview Trail	1980-03-19	Inactive	Female	15	8683697089320
5507	qmacclinton20@g.co	Quinlan	MacClinton	United States	43263 Dapin Cross 43263 Dapin Crossing tive	Male	18	6808852935344
5507	qmacclinton20@g.co	Quinlan	MacClinton	United States	43263 Dapin Crossing	1980-02-26	Active	Male	18	8606670540005
9539	aproctor1@prweb.com	Ann	Proctor	United States	1428 Comanche Alley	1979-12-17	Inactive	Female	17	1151096499887
9539	aproctor1@prweb.com	Ann	Proctor	United States	1428 Comanche Alley	1979-12-17	Inactive	Female	17	4021763699107
9539	aproctor1@prweb.com	Ann	Proctor	United States	1428 Comanche Alley	1979-12-17	Inactive	Female	17	6690096831774
9539	aproctor1@prweb.com	Ann	Proctor	United States	1428 Comanche Alley	1979-12-17	Inactive	Female	17	7505248769083
10538	leltun25@nature.com	Leigh	Eltun	United States	64952 Chive Pass	1980-03-02	Active	Genderqueer	1	6125542356012
10660	tcainey12@aol.com	Tiena	Cainey	United States	87818 Namekagon Drive	1980-01-23	Inactive	Female	16	5775480314401
10884	estobbe1h@usatoday.com	Enriqueta	Stobbe	United States	261 Marquette Center	1980-02-07	Inactive	Female	19	1165357533431
11133	ifuttere@salon.com	Ilyse	Futter	United States	52 Grasskamp Court	1979-12-30	Active	Female	18	3861715438300
11133	ifuttere@salon.com	Ilyse	Futter	United States	52 Grasskamp Court	1979-12-30	Active	Female	18	4393967900207
12303	cjowers11@google.co.uk	Carmelia	Jowers	United States	16 Delladonna Park	1980-01-22	Active	Female	18	2024679543268
12303	cjowers11@google.co.uk	Carmelia	Jowers	United States	16 Delladonna Park	1980-01-22	Active	Female	18	3844659579726
12303	cjowers11@google.co.uk	Carmelia	Jowers	United States	16 Delladonna Park	1980-01-22	Active	Female	18	8040636816916
17342	wjorgesen1j@salon.com	Welch	Jorgesen	United States	90 Independence Alley	1980-02-09	Active	Polygender	20	8794058577279
17342	wjorgesen1j@salon.com	Welch	Jorgesen	United States	90 Independence Alley	1980-02-09	Active	Polygender	20	94711507940
19464	mmollon8@intel.com	Mahmoud	Mollon	United States	72664 Mesta Terrace	1979-12-24	Active	Male	3	1297089787637
20685	mupshall2g@marketwatch.com	Mollee	Upshall	United States	5706 Laurel Way	1980-03-13	Active	Female	12	5694819569024
20685	mupshall2g@marketwatch.com	Mollee	Upshall	United States	5706 Laurel Way	1980-03-13	Active	Female	12	8610115249331
20820	nsimic2c@walmart.com	Nicolle	Simic	United States	97 Crest Line Drive	1980-03-09	Inactive	Agender	12	9073636616622
20982	vferneyhough2@ox.ac.uk	Vilhelmina	Ferneyhough	United States	9 Messerschmidt Park	1979-12-18	Inactive	Female	0	1386163188881
22876	mcossinsz@chronoengine.com	Mollee	Cossins	United States	993 Swallow Trail	1980-01-20	Inactive	Female	17	7963384185464
27645	rwallbridge2i@phoca.cz	Roderic	Wallbridge	United States	115 Summit Park	1980-03-15	Active	Male	9	5036014614472
28170	hraundv@icq.com	Hope	Raund	United States	9998 Packers Crossing	1980-01-16	Inactive	Female	8	7008578452532
30017	kstroobant1a@zdnet.com	Kimball	Stroobant	United States	9375 Forest Run Terr...	1980-01-31	Inactive	Male	11	3268419953502

Result 3 ✕

SELECT product_name, price
FROM Product
WHERE price > (SELECT AVG(price) FROM Product);

	product_name	price
▶	laptop4	161
	laptop8	198
	Mobile9	197
	laptop5	165
	Mobile8	153
	laptop	175
	Mobile6	196
	Mobile4	165
	Mobile1	197
	Mobile	200

SELECT mob_model_name FROM Mobile
UNION
SELECT lap_model_name FROM Laptop;

Result Grid | Filter Rows:

mob_model_name
▶ Redmi
Samsung
Motorola
Nothing
LG
Apple
Asus
Oneplus
Nokia
HP
lenovo
Macbook Pro1
Victus
XPS
legion
YOGA
Macbook air
Macbook Pro
Macbook Pro2

SELECT *
FROM User u1
WHERE u1.no_of_orders >= ALL
    (SELECT no_of_orders FROM User u2 WHERE u2.user_id <> u1.user_id);

	USER_ID	email_id	firstname	lastname	country	address	dob	login_status	gender	no_of_orders
▶	17342	wjorgesen1j@salon.com	Welch	Jorgesen	United States	90 Independence Alley	1980-02-09	Active	Polygender	20
	34846	fsmithers9@blogspot.com	Farica	Smithers	United States	93865 Bluejay Road	1979-12-25	Active	Female	20
	99131	sbriat5@sogou.com	Stefano	Briat	United States	4423 School Hill	1979-12-21	Inactive	Male	20
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Implementation Of NoSQL

NoSQL Collections created on MongoDB for all the MySQL tables as shown below:

Sample Queries

1) Find Users with Inactive Login Status:

db.users.find({ "login_status": "Inactive" })

Output:

2) Find Orders with Feedback Ratings Greater Than 5:

db.orders.find({ "feedback_rating": { $gt: 5 } })

Output:

3) Order count split based on Track status:

```
db.orders.aggregate([
  {
    $group: {
      _id: "$track_status",
      order_count: { $sum: 1 }
    }
  }
])
```

Output:

4) Listing customers whose names start with an 'A'

db.user.find({ firstname: /^A/ })

Output:

```
shopping> db.user.find({ firstname: /^A/ })
[
  {
    _id: ObjectId('656792034da73c13f329175a'),
    user_id: 9539,
    email_id: 'aproctor1@prweb.com',
    firstname: 'Ann',
    lastname: 'Proctor',
    country: 'United States',
    address: '1428 Comanche Alley',
    dob: ISODate('1979-12-17T00:00:00.000Z'),
    login_status: 'Inactive',
    gender: 'Female',
    no_of_orders: 17
  },
  {
    _id: ObjectId('656792034da73c13f329176c'),
    user_id: 54289,
    email_id: 'aillsleyj@stumbleupon.com',
    firstname: 'Al',
    lastname: 'Illsley',
    country: 'United States',
    address: '621 Shoshone Crossing',
    dob: ISODate('1980-01-04T00:00:00.000Z'),
    login_status: 'Active',
    gender: 'Male',
    no_of_orders: 9
  },
  {
    _id: ObjectId('656792034da73c13f3291775'),
    user_id: 13041,
    email_id: 'agirardets@comcast.net',
    firstname: 'Andrea',
    lastname: 'Girardet',
    country: 'United States',
    address: '4 Spenser Terrace',
    dob: ISODate('1980-01-13T00:00:00.000Z'),
    login_status: 'Active',
    gender: 'Male',
    no_of_orders: 11
```

5) Find Mobile Devices with a specific Processor (e.g., snapdragon900):

db.mobile_devices.find({ "processor": "snapdragon900" })

Output:

```
shopping> db.Mobile.find({ "processor": "snapdragon900" })
[
  {
    _id: ObjectId('6567b8c84da73c13f32918fc'),
    mob_id: '77lm49n',
    mob_model_name: 'Apple',
    os: 'Apple iOS',
    processor: 'snapdragon900',
    p_memory: '8GB',
    s_memory: '512GB'
  },
  {
    _id: ObjectId('6567b8c84da73c13f3291902'),
    mob_id: '62we91o',
    mob_model_name: 'Motorola',
    os: 'Web OS',
    processor: 'snapdragon900',
    p_memory: '16GB',
    s_memory: '128GB'
  },
  {
    _id: ObjectId('6567b8c84da73c13f3291904'),
    mob_id: '77lm49z',
    mob_model_name: 'Asus',
    os: 'Apple iOS',
    processor: 'snapdragon900',
    p_memory: '4GB',
    s_memory: '1TB'
  }
]
```

Application (Used Python)

Python is used to access the database, and the analyzed data visualization is displayed below. Mysql.connector is used to connect MySQL to Python, and then cursor.Run the query with the command "fetchall," then use the pandas library to convert the list into a dataframe, and finally use matplotlib to plot the graphs for the analytics.
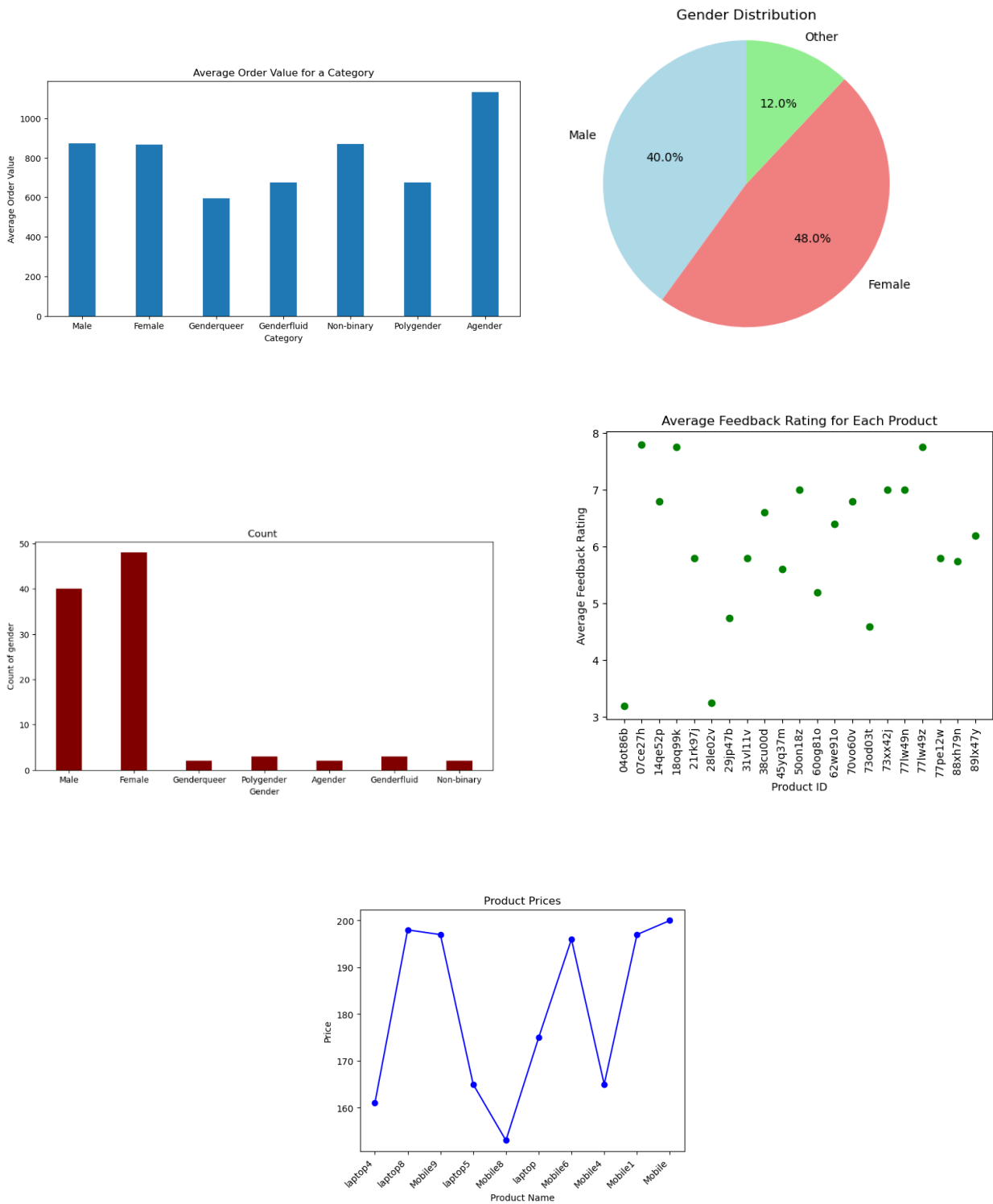
Conclusion

In conclusion, our online electronics shop is more than just a digital marketplace; it is a testament to the fusion of innovation and user-centric layout. With a dedication to simplifying the drift of goods, empowering customers with comprehensive product data, and ensuring seamless transactions, we've created a platform where generation meets reliability.

As you embark on your adventure through our digital aisles, rest confident that your pride is our priority. The streamlined order management, intuitive shopping cart, and secure fee options are tailor-made to offer a trouble-unfastened and beautiful buying enjoy.

Join us in this realm wherein each click signifies a step closer to excellence, and in which our willpower for fantastic electronics and client satisfaction is unwavering. Welcome to a world where innovation, comfort, and your specific purchasing experience converge seamlessly.