

### Instructions:

- This assignment is designed to test your knowledge of MySQL database concepts in the context of a stock management system for an e-commerce platform.
- Write SQL queries for each task and provide explanations where necessary.
- Submit your assignment as a single SQL script file.

### Task 1: Create a Database Create a new MySQL database named `ecommerce_stock_db`.

QUERY- `CREATE DATABASE ecommerce_stock_db ;`

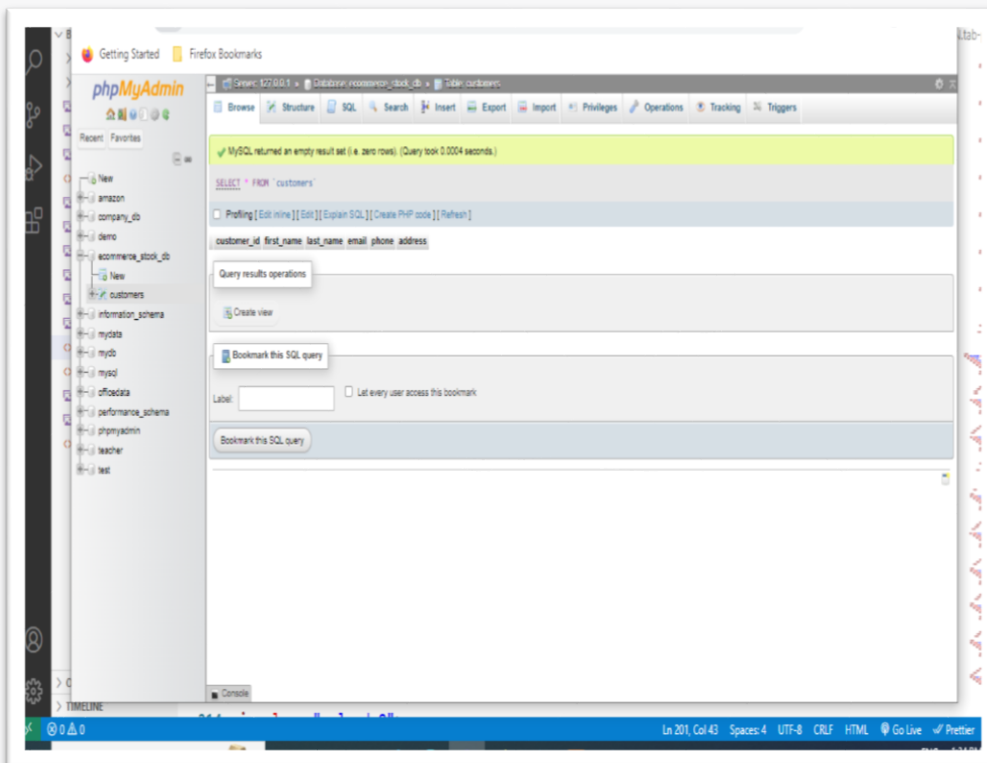
### Task 2: Create Tables Inside the `ecommerce_stock_db`, create the following tables:

#### 1. `customers` table with the following columns:

- `customer_id` (Primary Key, Auto Increment)
- `first_name`
- `last_name`
- `email`
- `Phone`
- `address`

#### QUERY-2

```
CREATE TABLE customers(  
customer_id int NOT NULL AUTO_INCREMENT,  
first_name varchar(50) null,  
last_name varchar(50) null,  
email varchar(50) null,  
phone int null,  
address text null,  
PRIMARY KEY(customer_id))
```

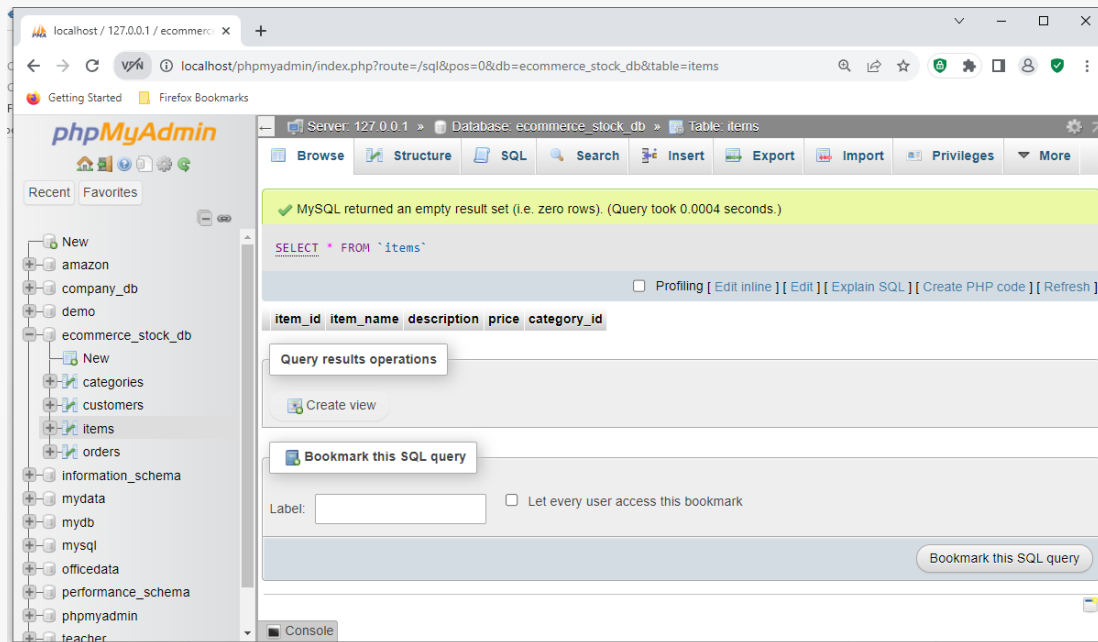


## 2- items table with the following columns:

- item\_id (Primary Key, Auto Increment)
- item\_name
- description
- price
- stock\_quantity
- category\_id (Foreign Key referencing category\_id in the categories table)

## QUERY-

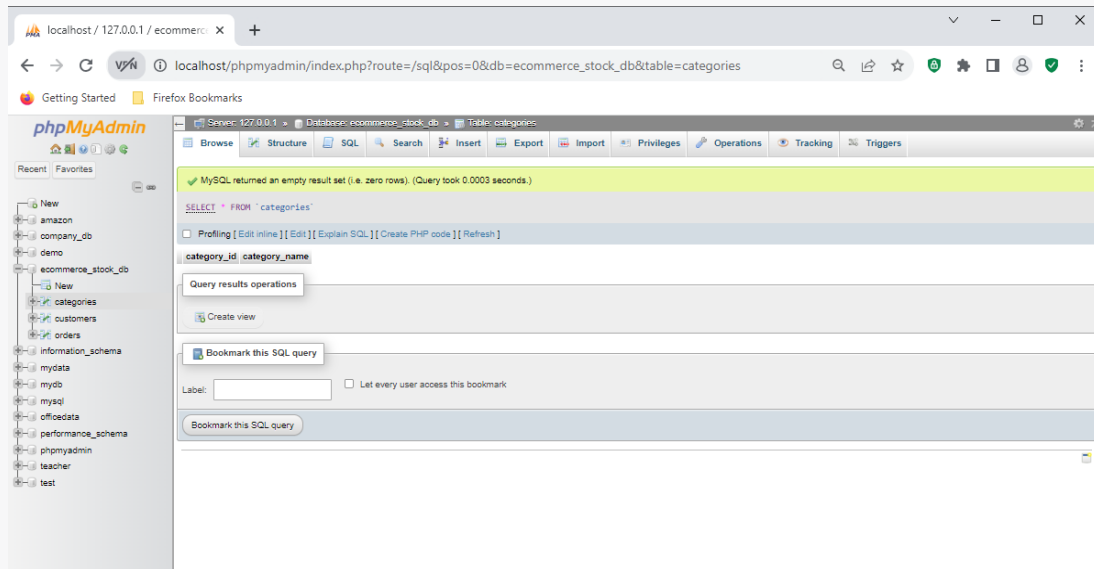
```
CREATE TABLE items(
  item_id int not null AUTO_INCREMENT,
  item_name varchar(200) not null,
  description text,
  price float not null,
  category_id int not null,
  PRIMARY KEY (item_id),
  FOREIGN KEY(category_id) REFERENCES categories(category_id))
```



### 3- categories table with the following columns:

- category\_id (Primary Key, Auto Increment)
- category\_name

QUERY- CREATE TABLE categories(  
category\_id int not null AUTO\_INCREMENT,  
category\_name varchar(200) not null,  
PRIMARY KEY(category\_id))



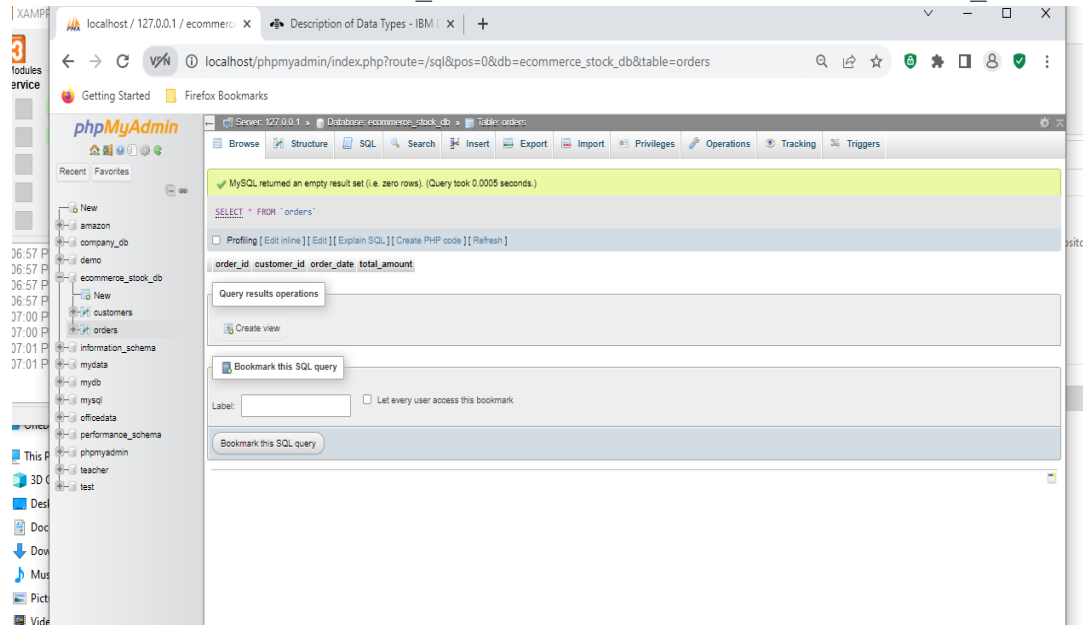
**4-orders table with the following columns:**

- **order\_id** (Primary Key, Auto Increment)
- **customer\_id** (Foreign Key referencing customer\_id in the customers table)
- **order\_date**
- **total\_amount**

QUERY- CREATE TABLE orders(

order\_id int not null AUTO\_INCREMENT,

```
customer_id int not null,  
  
order_date DATE not null,  
  
total_amount float not null,  
  
PRIMARY KEY (order_id),  
  
FOREIGN KEY (customer_id) REFERENCES customers (customer_id);
```



**Task 3: Insert Data** Insert at least 10 records into the `customers` table, 20 records into the `items` table, 5 records into the `categories` table, and 30 records into the `orders` table. Ensure that items are assigned to categories and orders are associated with customers and items.

**QUERY- Inserted 10 records into the customer table**

```
INSERT INTO `customers` (`first_name`, `last_name`, `email`, `phone`, `address`)
```

```
VALUES
```

```
('rakhi','saini','rakhi@gmail.com','099988856','delhi'),
```

```
('riya','tiwari','riya@gmail.com','099988878','mumbai'),
```

```
('rohit','singh','rohit@gmail.com','099988822','jammu'),
```

```
('mohit','singh','mohit@gmail.com','099988833','madhya pradesh'),
```

```
('sagar','gupta','sagar@gmail.com','099988844','uttarpradesh'),
```

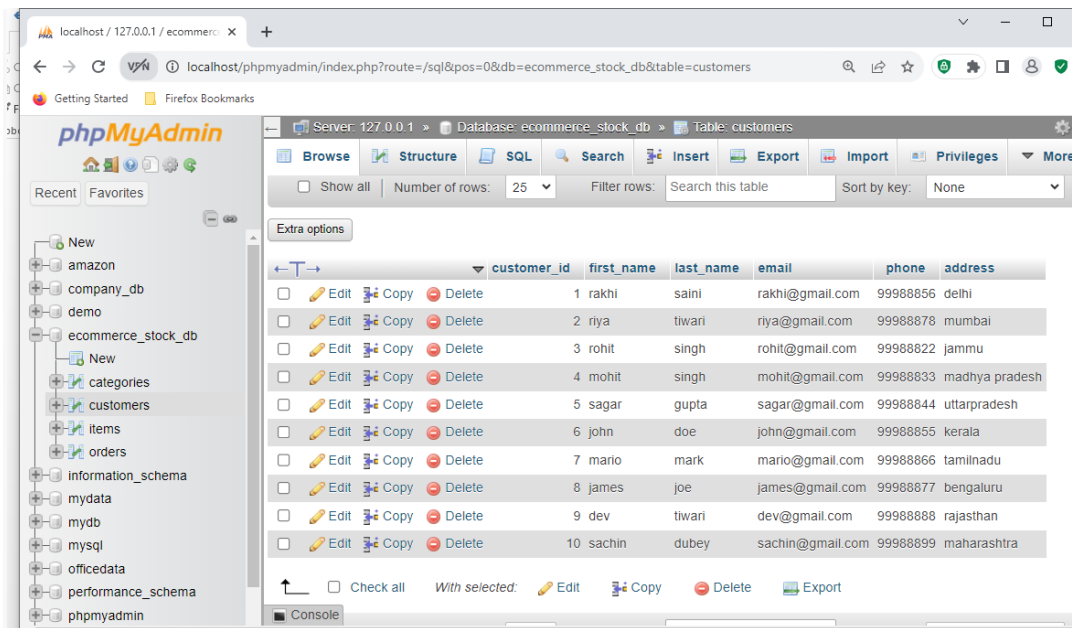
```
('john','doe','john@gmail.com','099988855','kerala'),
```

```
('mario','mark','mario@gmail.com','099988866','tamilnadu'),
```

```
('james','joe','james@gmail.com','099988877','bengaluru'),
```

```
('dev','tiwari','dev@gmail.com','099988888','rajasthan'),
```

```
('sachin','dubey','sachin@gmail.com','099988899','maharashtra');
```



## 2. Inserted 5 records into the categories table

Query- INSERT INTO `categories`(`category\_name`)

VALUES

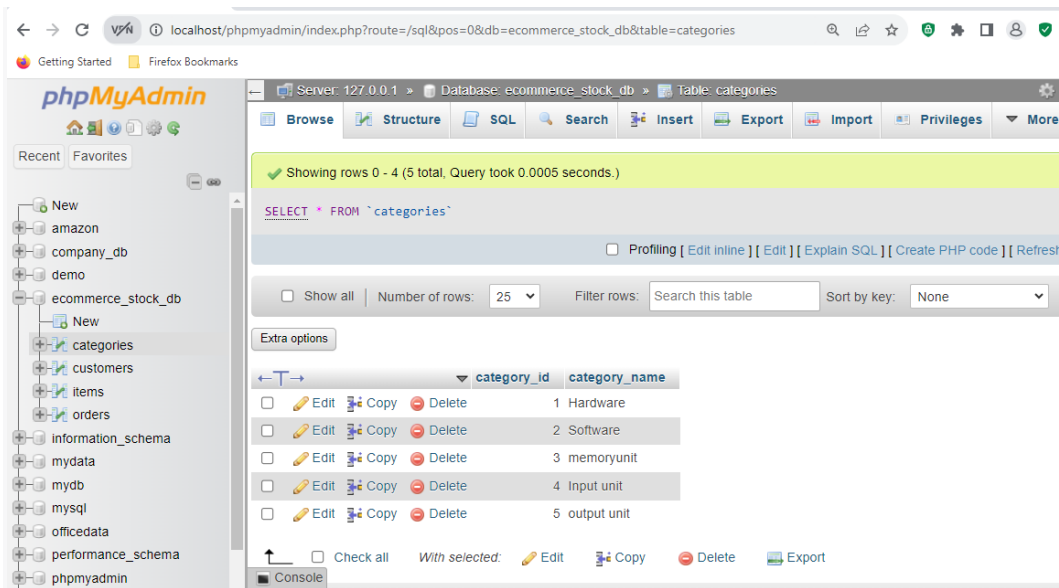
('Hardware'),

('Software'),

('memoryunit'),

('Input unit'),

('output unit')



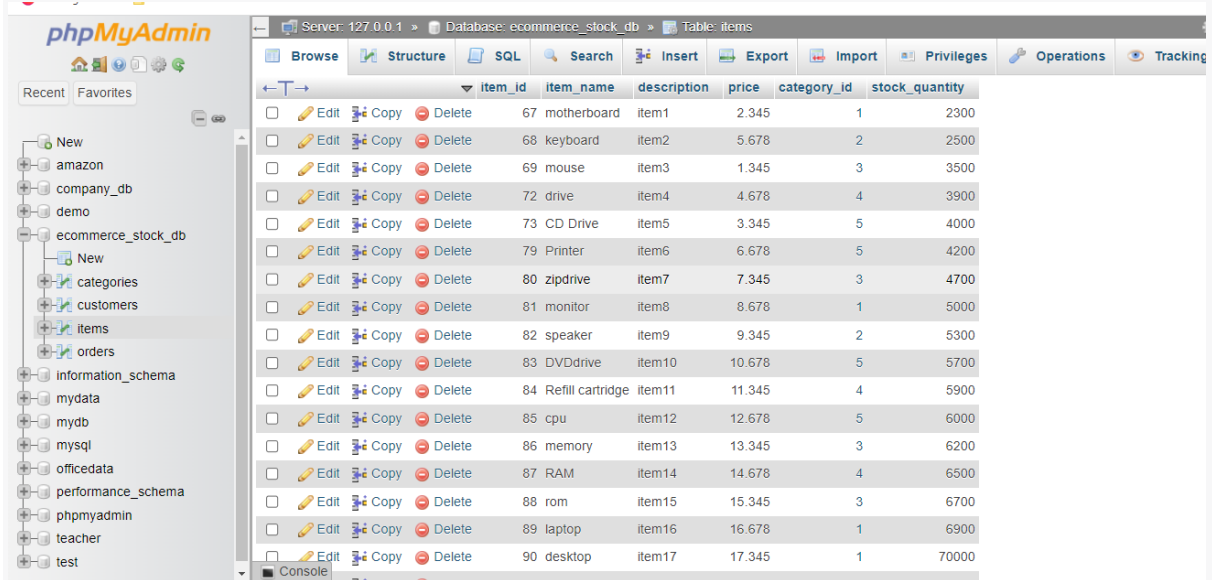
Inserted 30 records into orders table-

Server: 127.0.0.1 » Database: ecommerce\_stock\_db » Table: orders

	order_id	customer_id	order_date	total_amount
<input type="checkbox"/> Edit Copy Delete	91	2	2020-09-09	20
<input type="checkbox"/> Edit Copy Delete	92	4	2020-09-12	21
<input type="checkbox"/> Edit Copy Delete	93	6	2020-09-20	22
<input type="checkbox"/> Edit Copy Delete	94	7	2020-09-25	23
<input type="checkbox"/> Edit Copy Delete	95	3	2020-09-30	24
<input type="checkbox"/> Edit Copy Delete	96	1	2020-10-05	25
<input type="checkbox"/> Edit Copy Delete	97	8	2020-10-15	26
<input type="checkbox"/> Edit Copy Delete	98	9	2020-10-20	27
<input type="checkbox"/> Edit Copy Delete	109	10	2020-10-25	28
<input type="checkbox"/> Edit Copy Delete	166	1	2020-10-30	29
<input type="checkbox"/> Edit Copy Delete	167	2	2020-11-06	30
<input type="checkbox"/> Edit Copy Delete	168	3	2020-11-11	31
<input type="checkbox"/> Edit Copy Delete	169	4	2020-11-14	32
<input type="checkbox"/> Edit Copy Delete	170	8	2020-11-19	33
<input type="checkbox"/> Edit Copy Delete	171	8	2020-11-24	34
<input type="checkbox"/> Edit Copy Delete	172	9	2020-11-29	35
<input type="checkbox"/> Edit Copy Delete	173	9	2020-12-05	36
<input type="checkbox"/> Edit Copy Delete	174	7	2020-12-10	37



Inserted 20 records into item table-

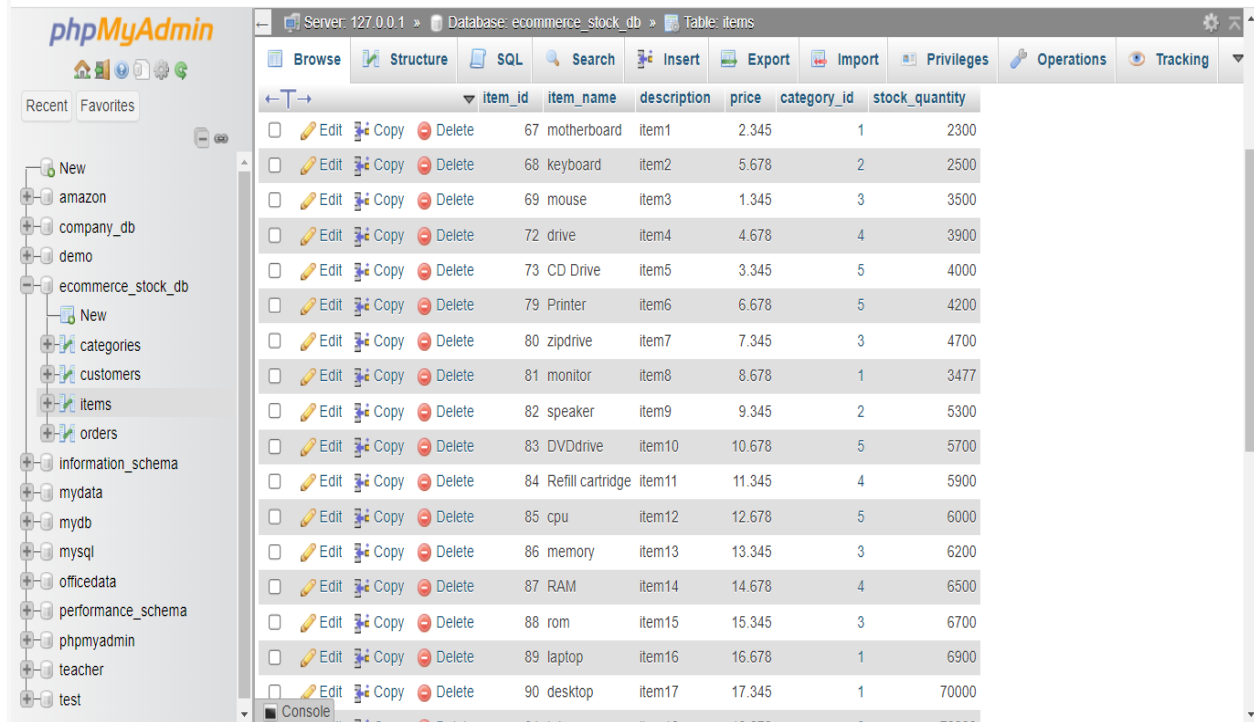


Server: 127.0.0.1 » Database: ecommerce\_stock\_db » Table: items

		item_id	item_name	description	price	category_id	stock_quantity
<input type="checkbox"/>	Edit Copy Delete	67	motherboard	item1	2.345	1	2300
<input type="checkbox"/>	Edit Copy Delete	68	keyboard	item2	5.678	2	2500
<input type="checkbox"/>	Edit Copy Delete	69	mouse	item3	1.345	3	3500
<input type="checkbox"/>	Edit Copy Delete	72	drive	item4	4.678	4	3900
<input type="checkbox"/>	Edit Copy Delete	73	CD Drive	item5	3.345	5	4000
<input type="checkbox"/>	Edit Copy Delete	79	Printer	item6	6.678	5	4200
<input type="checkbox"/>	Edit Copy Delete	80	zipdrive	item7	7.345	3	4700
<input type="checkbox"/>	Edit Copy Delete	81	monitor	item8	8.678	1	5000
<input type="checkbox"/>	Edit Copy Delete	82	speaker	item9	9.345	2	5300
<input type="checkbox"/>	Edit Copy Delete	83	DVDdrive	item10	10.678	5	5700
<input type="checkbox"/>	Edit Copy Delete	84	Refill cartridge	item11	11.345	4	5900
<input type="checkbox"/>	Edit Copy Delete	85	cpu	item12	12.678	5	6000
<input type="checkbox"/>	Edit Copy Delete	86	memory	item13	13.345	3	6200
<input type="checkbox"/>	Edit Copy Delete	87	RAM	item14	14.678	4	6500
<input type="checkbox"/>	Edit Copy Delete	88	rom	item15	15.345	3	6700
<input type="checkbox"/>	Edit Copy Delete	89	laptop	item16	16.678	1	6900
<input type="checkbox"/>	Edit Copy Delete	90	desktop	item17	17.345	1	70000

Task 4: Update Data Write a SQL query to update the stock quantity of a specific item in the items table.

QUERY- UPDATE items set stock\_quantity = '3477' WHERE item\_id=81;



Server: 127.0.0.1 » Database: ecommerce\_stock\_db » Table: items

	item_id	item_name	description	price	category_id	stock_quantity
<input type="checkbox"/>	67	motherboard	item1	2.345	1	2300
<input type="checkbox"/>	68	keyboard	item2	5.678	2	2500
<input type="checkbox"/>	69	mouse	item3	1.345	3	3500
<input type="checkbox"/>	72	drive	item4	4.678	4	3900
<input type="checkbox"/>	73	CD Drive	item5	3.345	5	4000
<input type="checkbox"/>	79	Printer	item6	6.678	5	4200
<input type="checkbox"/>	80	zipdrive	item7	7.345	3	4700
<input type="checkbox"/>	81	monitor	item8	8.678	1	3477
<input type="checkbox"/>	82	speaker	item9	9.345	2	5300
<input type="checkbox"/>	83	DVDdrive	item10	10.678	5	5700
<input type="checkbox"/>	84	Refill cartridge	item11	11.345	4	5900
<input type="checkbox"/>	85	cpu	item12	12.678	5	6000
<input type="checkbox"/>	86	memory	item13	13.345	3	6200
<input type="checkbox"/>	87	RAM	item14	14.678	4	6500
<input type="checkbox"/>	88	rom	item15	15.345	3	6700
<input type="checkbox"/>	89	laptop	item16	16.678	1	6900
<input type="checkbox"/>	90	desktop	item17	17.345	1	70000

Task 5: Delete Data Write a SQL query to delete a customer from the `customers` table and all related orders (if any) in the database.

QUERY- DELETE FROM `orders` WHERE customer\_id=1;

DELETE FROM `customers` WHERE customer\_id=1;

Server: 127.0.0.1 » Database: ecommerce\_stock\_db » Table: customers

	customer_id	first_name	last_name	email	phone	address
<input type="checkbox"/>	2	riya	tiwari	riya@gmail.com	99988878	mumbai
<input type="checkbox"/>	3	rohit	singh	rohit@gmail.com	99988822	jammu
<input type="checkbox"/>	4	mohit	singh	mohit@gmail.com	99988833	madhya pradesh
<input type="checkbox"/>	5	sagar	gupta	sagar@gmail.com	99988844	uttarpradesh
<input type="checkbox"/>	6	john	doe	john@gmail.com	99988855	kerala
<input type="checkbox"/>	7	mario	mark	mario@gmail.com	99988866	tamilnadu
<input type="checkbox"/>	8	james	joe	james@gmail.com	99988877	bengaluru
<input type="checkbox"/>	9	dev	tiwari	dev@gmail.com	99988888	rajasthan
<input type="checkbox"/>	10	sachin	dubey	sachin@gmail.com	99988899	maharashtra

Query results operations

Server: 127.0.0.1 » Database: ecommerce\_stock\_db » Table: orders

	order_id	customer_id	order_date	total_amount
<input type="checkbox"/>	91	2	2020-09-09	20
<input type="checkbox"/>	92	4	2020-09-12	21
<input type="checkbox"/>	93	6	2020-09-20	22
<input type="checkbox"/>	94	7	2020-09-25	23
<input type="checkbox"/>	95	3	2020-09-30	24
<input type="checkbox"/>	97	8	2020-10-15	26
<input type="checkbox"/>	98	9	2020-10-20	27
<input type="checkbox"/>	109	10	2020-10-25	28
<input type="checkbox"/>	167	2	2020-11-06	30
<input type="checkbox"/>	168	3	2020-11-11	31
<input type="checkbox"/>	169	4	2020-11-14	32
<input type="checkbox"/>	170	8	2020-11-19	33
<input type="checkbox"/>	171	8	2020-11-24	34
<input type="checkbox"/>	172	9	2020-11-29	35

Task 6: Retrieve Item Information Write an SQL query to retrieve information about an item, including its name, description, price, and category name, for a specific item.

```
SELECT items.item_name, items.description, items.price, categories.category_name
```

```
FROM items
```

```
JOIN categories ON items.category_id = categories.category_id
```

```
WHERE items.item_id = 69;
```

The screenshot shows the phpMyAdmin web interface. The left sidebar displays a database structure tree with 'ecommerce\_stock\_db' selected, showing tables like 'categories', 'customers', 'items', and 'orders'. The main panel is titled 'Server: 127.0.0.1 » Database: ecommerce\_stock\_db » Table: items'. It features a toolbar with options like 'Browse', 'Structure', 'SQL', 'Search', 'Insert', 'Export', 'Import', 'Privileges', and 'More'. A yellow status bar indicates 'Showing rows 0 - 0 (1 total, Query took 0.0005 seconds)'. Below this, the SQL query is displayed: 

```
SELECT items.item_name, items.description, items.price, categories.category_name FROM items JOIN categories ON items.category_id = categories.category_id WHERE items.item_id = 69;
```

 The query execution options include 'Profiling', 'Edit inline', 'Edit', 'Explain SQL', 'Create PHP code', and 'Refresh'. The results are shown in a table with columns 'item\_name', 'description', 'price', and 'category\_name'. The single row of data is: 

item_name	description	price	category_name
mouse	item3	1.345	memoryunit

 Below the table, there are controls for 'Show all', 'Number of rows' (set to 25), and a 'Filter rows' search box. At the bottom, a 'Query results operations' section includes buttons for 'Print', 'Copy to clipboard', 'Export', 'Display chart', and 'Create view'.

Task 7: Calculate Total Stock Value Write an SQL query to calculate the total value of all items in stock, considering the price and stock quantity.

QUERY- `SELECT SUM(price * stock_quantity) AS total_stock_value`  
`FROM items;`

The screenshot displays the phpMyAdmin web interface. On the left, the database structure tree shows the 'ecommerce\_stock\_db' database selected, with the 'items' table highlighted. The main panel shows the 'Table: items' view. A green status bar at the top indicates 'Showing rows 0 - 0 (1 total, Query took 0.0060 seconds.)'. Below this, the SQL query is entered: `SELECT SUM(price * stock_quantity) AS total_stock_value FROM items;`. The query execution options are visible, including 'Profiling', 'Edit inline', 'Edit', 'Explain SQL', 'Create PHP code', and 'Refresh'. The query results are displayed in a table with one row, showing the 'total\_stock\_value' as 7197932.820616722. The interface also includes a 'Query results operations' section with buttons for 'Print', 'Copy to clipboard', 'Export', 'Display chart', and 'Create view'.

Task 8: Retrieve Customer Order History Write an SQL query to retrieve the order history for a specific customer, including order dates, item names, quantities, and total amounts spent.

QUERY-

```
SELECT orders.order_date, items.item_name, items.stock_quantity, orders.total_amount
```

```
FROM orders
```

```
JOIN items ON items.item_id = orders.item_id
```

```
WHERE orders.customer_id = 5;
```



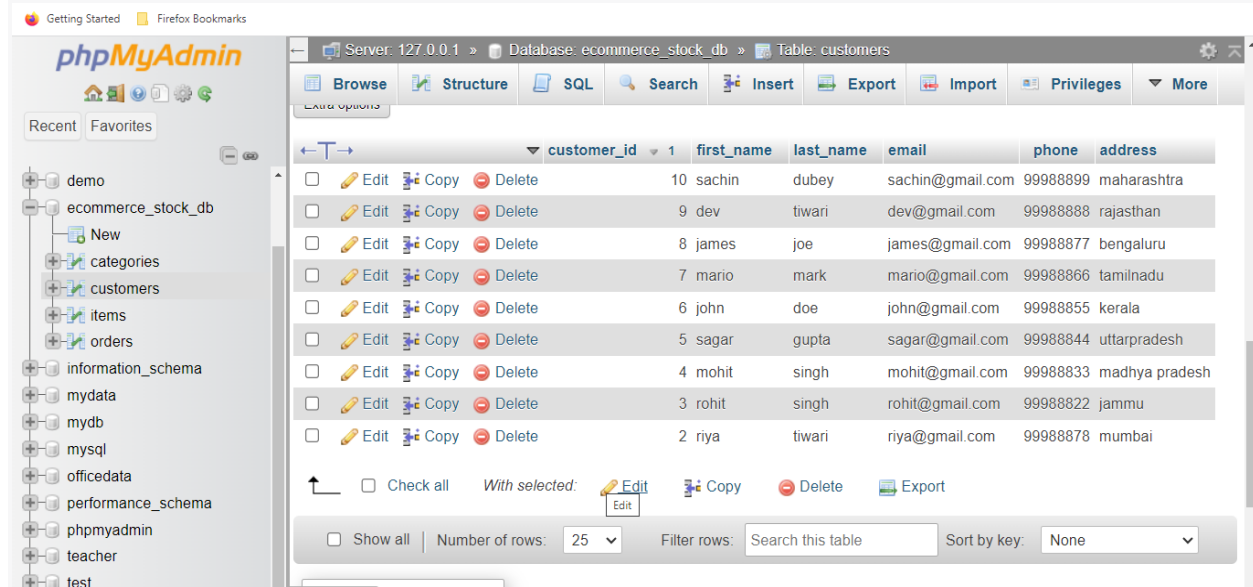
The screenshot shows the phpMyAdmin interface with the 'orders' table selected in the 'ecommerce\_stock\_db' database. The table contains 20 rows of data, including order dates, item names, stock quantities, and total amounts. The interface includes a sidebar with a database tree, a top navigation bar with tabs like 'Browse', 'Structure', 'SQL', etc., and a main content area displaying the table data.

order_date	item_name	stock_quantity	total_amount
2020-12-18	motherboard	2300	39
2020-12-19	motherboard	2300	40
2021-01-05	motherboard	2300	47
2020-12-18	keyboard	2500	39
2020-12-19	keyboard	2500	40
2021-01-05	keyboard	2500	47
2020-12-18	mouse	3500	39
2020-12-19	mouse	3500	40
2021-01-05	mouse	3500	47
2020-12-18	drive	3900	39
2020-12-19	drive	3900	40
2021-01-05	drive	3900	47
2020-12-18	CD Drive	4000	39
2020-12-19	CD Drive	4000	40
2021-01-05	CD Drive	4000	47
2020-12-18	Printer	4200	39
2020-12-19	Printer	4200	40
2021-01-05	Printer	4200	47

Task 9: Implement ORDER BY DESC Write an SQL query to retrieve a list of all tables, ordering them in descending order by the `primary_key` or `id` column.

QUERY- `SELECT * FROM Customers`

`ORDER BY customer_id DESC;`

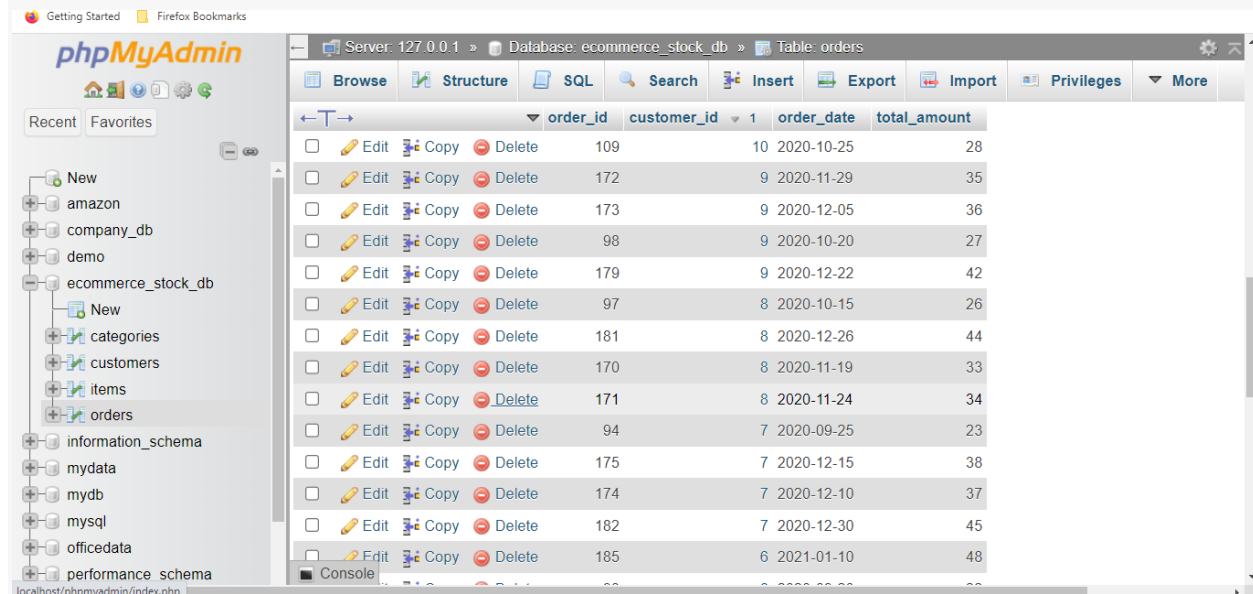


The screenshot shows the phpMyAdmin interface for the 'ecommerce\_stock\_db' database. The 'customers' table is selected, and the data is displayed in descending order by 'customer\_id'. The table has columns: customer\_id, first\_name, last\_name, email, phone, and address. The data is as follows:

customer_id	first_name	last_name	email	phone	address
10	sachin	dubey	sachin@gmail.com	99988899	maharashtra
9	dev	tiwari	dev@gmail.com	99988888	rajasthan
8	james	joe	james@gmail.com	99988877	bengaluru
7	mario	mark	mario@gmail.com	99988866	tamilnadu
6	john	doe	john@gmail.com	99988855	kerala
5	sagar	gupta	sagar@gmail.com	99988844	uttarpradesh
4	mohit	singh	mohit@gmail.com	99988833	madhya pradesh
3	rohit	singh	rohit@gmail.com	99988822	jammu
2	riya	tiwari	riya@gmail.com	99988878	mumbai

Query- `SELECT * FROM orders`

`ORDER BY customer_id DESC;`

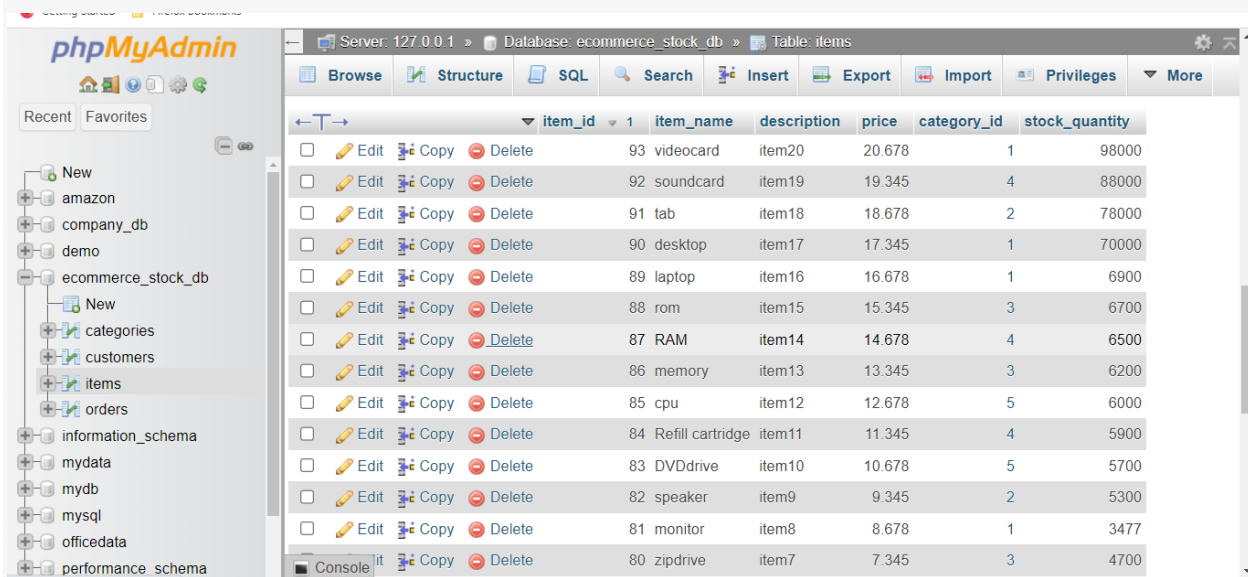


The screenshot shows the phpMyAdmin interface for the 'ecommerce\_stock\_db' database. The 'orders' table is selected, and the data is displayed in descending order by 'customer\_id'. The table has columns: order\_id, customer\_id, order\_date, and total\_amount. The data is as follows:

order_id	customer_id	order_date	total_amount
109	10	2020-10-25	28
172	9	2020-11-29	35
173	9	2020-12-05	36
98	9	2020-10-20	27
179	9	2020-12-22	42
97	8	2020-10-15	26
181	8	2020-12-26	44
170	8	2020-11-19	33
171	8	2020-11-24	34
94	7	2020-09-25	23
175	7	2020-12-15	38
174	7	2020-12-10	37
182	7	2020-12-30	45
185	6	2021-01-10	48

Query- SELECT \* FROM items

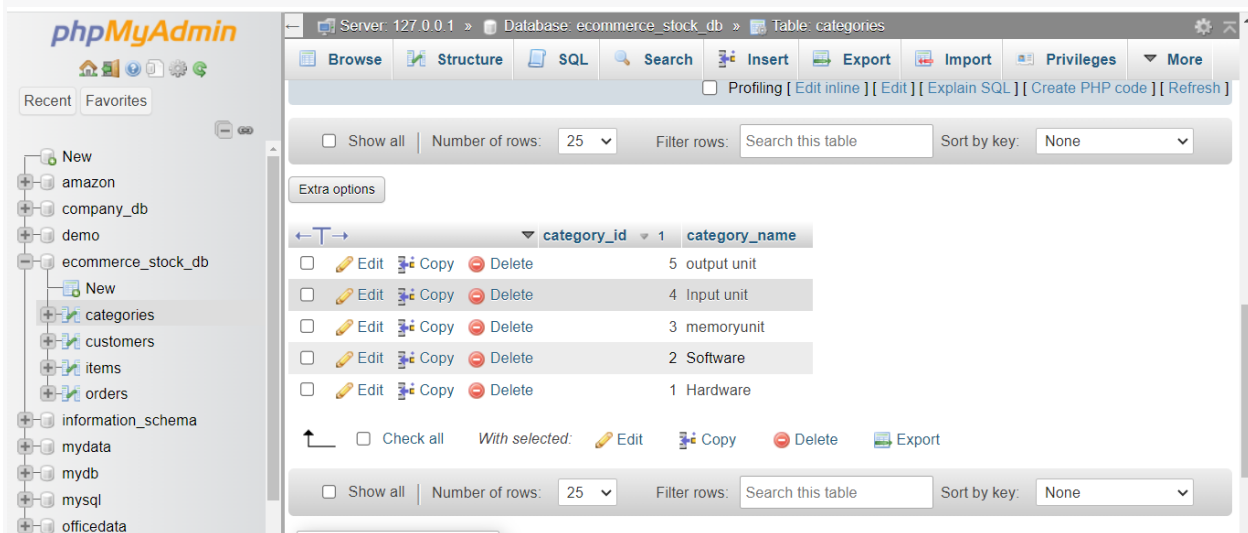
ORDER BY item\_id DESC;



	item_id	item_name	description	price	category_id	stock_quantity
<input type="checkbox"/>	93	videocard	item20	20.678	1	98000
<input type="checkbox"/>	92	soundcard	item19	19.345	4	88000
<input type="checkbox"/>	91	tab	item18	18.678	2	78000
<input type="checkbox"/>	90	desktop	item17	17.345	1	70000
<input type="checkbox"/>	89	laptop	item16	16.678	1	6900
<input type="checkbox"/>	88	rom	item15	15.345	3	6700
<input type="checkbox"/>	87	RAM	item14	14.678	4	6500
<input type="checkbox"/>	86	memory	item13	13.345	3	6200
<input type="checkbox"/>	85	cpu	item12	12.678	5	6000
<input type="checkbox"/>	84	Refill cartridge	item11	11.345	4	5900
<input type="checkbox"/>	83	DVDdrive	item10	10.678	5	5700
<input type="checkbox"/>	82	speaker	item9	9.345	2	5300
<input type="checkbox"/>	81	monitor	item8	8.678	1	3477
<input type="checkbox"/>	80	zipdrive	item7	7.345	3	4700

Query- SELECT \* FROM `categories`

ORDER BY category\_id DESC;



	category_id	category_name
<input type="checkbox"/>	5	output unit
<input type="checkbox"/>	4	Input unit
<input type="checkbox"/>	3	memoryunit
<input type="checkbox"/>	2	Software
<input type="checkbox"/>	1	Hardware



Task 10: Backup and Restore Export a backup of the `ecommerce_stock_db` database to a SQL file. Then, write SQL statements to restore the database from the backup fileSubmission:

- Save your SQL script with a meaningful filename (e.g., `ecommerce_assignment.sql`).
- Submit the SQL script by the due date specified.