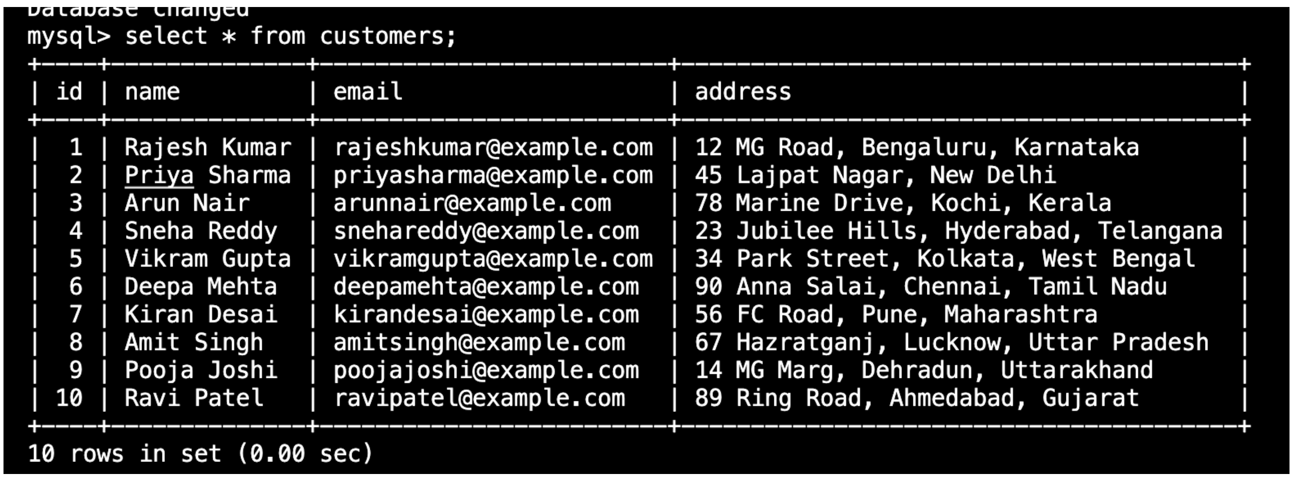
SQL TASK

CUSTOMERS TABLE:

create table customers (id int primary key auto_increment ,name char(50), email varchar(255), address varchar(255));

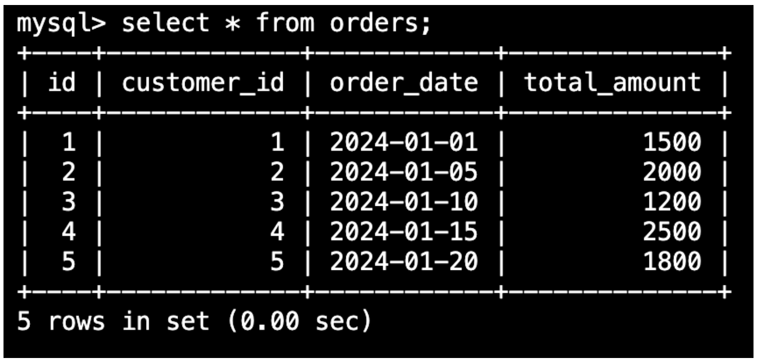
insert into customers (id, name, email, address) values
(1, 'Rajesh Kumar', 'rajeshkumar@example.com', '12 MG Road, Bengaluru, Karnataka'),
(2, 'Priya Sharma', 'priyasharma@example.com', '45 Lajpat Nagar, New Delhi'),
(3, 'Arun Nair', 'arunnair@example.com', '78 Marine Drive, Kochi, Kerala'),
(4, 'Sneha Reddy', 'snehareddy@example.com', '23 Jubilee Hills, Hyderabad, Telangana'),
(5, 'Vikram Gupta', 'vikramgupta@example.com', '34 Park Street, Kolkata, West Bengal'),
(6, 'Deepa Mehta', 'deepamehta@example.com', '90 Anna Salai, Chennai, Tamil Nadu'),
(7, 'Kiran Desai', 'kirandesai@example.com', '56 FC Road, Pune, Maharashtra'),
(8, 'Amit Singh', 'amitsingh@example.com', '67 Hazratganj, Lucknow, Uttar Pradesh'),
(9, 'Pooja Joshi', 'poojajoshi@example.com', '14 MG Marg, Dehradun, Uttarakhand'),
(10, 'Ravi Patel', 'ravipatel@example.com', '89 Ring Road, Ahmedabad, Gujarat')



```
Database changed
mysql> select * from customers;
+----+--------------+-------------------------+----------------------------------------+
| id | name         | email                   | address                                |
+----+--------------+-------------------------+----------------------------------------+
|  1 | Rajesh Kumar | rajeshkumar@example.com | 12 MG Road, Bengaluru, Karnataka       |
|  2 | Priya Sharma | priyasharma@example.com | 45 Lajpat Nagar, New Delhi             |
|  3 | Arun Nair    | arunnair@example.com    | 78 Marine Drive, Kochi, Kerala         |
|  4 | Sneha Reddy  | snehareddy@example.com  | 23 Jubilee Hills, Hyderabad, Telangana |
|  5 | Vikram Gupta | vikramgupta@example.com | 34 Park Street, Kolkata, West Bengal   |
|  6 | Deepa Mehta  | deepamehta@example.com  | 90 Anna Salai, Chennai, Tamil Nadu     |
|  7 | Kiran Desai  | kirandesai@example.com  | 56 FC Road, Pune, Maharashtra          |
|  8 | Amit Singh   | amitsingh@example.com   | 67 Hazratganj, Lucknow, Uttar Pradesh  |
|  9 | Pooja Joshi  | poojajoshi@example.com  | 14 MG Marg, Dehradun, Uttarakhand      |
| 10 | Ravi Patel   | ravipatel@example.com   | 89 Ring Road, Ahmedabad, Gujarat       |
+----+--------------+-------------------------+----------------------------------------+
10 rows in set (0.00 sec)
```

ORDERS TABLE:
create table orders (id int primary key auto_increment, customer_id int not null, order_date date, total_amount int);

insert into orders (id, customer_id, order_date, total_amount) values
(1, 1, '2024-01-01', 1500),
(2, 2, '2024-01-05', 2000),
(3, 3, '2024-01-10', 1200),
(4, 4, '2024-01-15', 2500),
(5, 5, '2024-01-20', 1800);

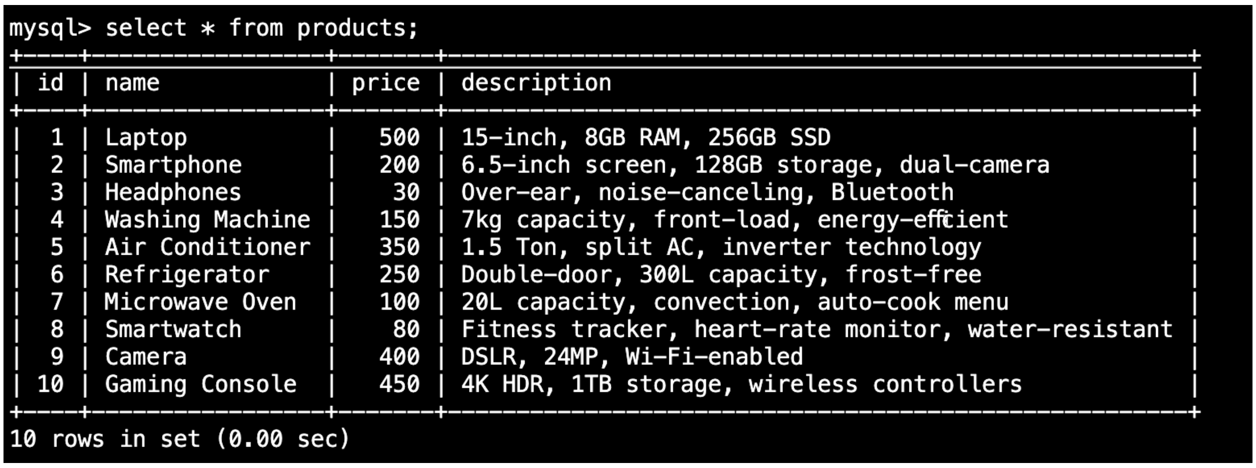


```
mysql> select * from orders;
+----+-------------+------------+--------------+
| id | customer_id | order_date | total_amount |
+----+-------------+------------+--------------+
|  1 |           1 | 2024-01-01 |         1500 |
|  2 |           2 | 2024-01-05 |         2000 |
|  3 |           3 | 2024-01-10 |         1200 |
|  4 |           4 | 2024-01-15 |         2500 |
|  5 |           5 | 2024-01-20 |         1800 |
+----+-------------+------------+--------------+
5 rows in set (0.00 sec)
```

PRODUCTS TABLE:

create table products (id int primary key auto_increment,name char(50), price int, description varchar(255));

```
insert into products (id, name, price, description) values
(1, 'Laptop', 500, '15-inch, 8GB RAM, 256GB SSD'),
(2, 'Smartphone', 200, '6.5-inch screen, 128GB storage, dual-camera'),
 (3, 'Headphones', 30, 'Over-ear, noise-canceling, Bluetooth'),
 (4, 'Washing Machine', 150, '7kg capacity, front-load, energy-efficient'),
 (5, 'Air Conditioner', 350, '1.5 Ton, split AC, inverter technology'),
 (6, 'Refrigerator', 250, 'Double-door, 300L capacity, frost-free'),
 (7, 'Microwave Oven', 100, '20L capacity, convection, auto-cook menu'),
 (8, 'Smartwatch', 80, 'Fitness tracker, heart-rate monitor, water-resistant'),
 (9, 'Camera', 400, 'DSLR, 24MP, Wi-Fi-enabled'),
(10, 'Gaming Console', 450, '4K HDR, 1TB storage, wireless controllers');
```



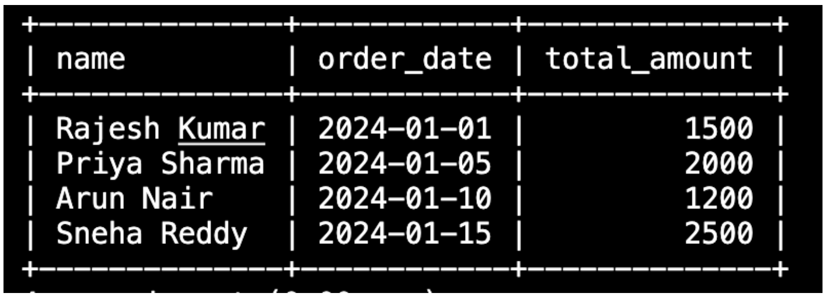
```
mysql> select * from products;
+----+-----------------+-------+------------------------------------------------------+
| id | name            | price | description                                          |
+----+-----------------+-------+------------------------------------------------------+
|  1 | Laptop          |   500 | 15-inch, 8GB RAM, 256GB SSD                          |
|  2 | Smartphone      |   200 | 6.5-inch screen, 128GB storage, dual-camera          |
|  3 | Headphones      |    30 | Over-ear, noise-canceling, Bluetooth                 |
|  4 | Washing Machine |   150 | 7kg capacity, front-load, energy-efficient           |
|  5 | Air Conditioner |   350 | 1.5 Ton, split AC, inverter technology               |
|  6 | Refrigerator    |   250 | Double-door, 300L capacity, frost-free               |
|  7 | Microwave Oven  |   100 | 20L capacity, convection, auto-cook menu             |
|  8 | Smartwatch      |    80 | Fitness tracker, heart-rate monitor, water-resistant |
|  9 | Camera          |   400 | DSLR, 24MP, Wi-Fi-enabled                            |
| 10 | Gaming Console  |   450 | 4K HDR, 1TB storage, wireless controllers            |
+----+-----------------+-------+------------------------------------------------------+
10 rows in set (0.00 sec)
```

SOLUTIONS:

- Retrieve all customers who have placed an order in the last 30 days

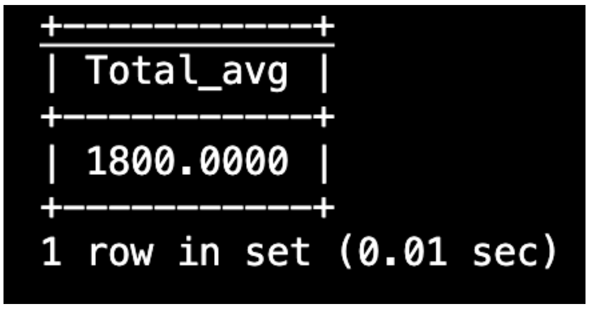
select name,order_date,total_amount from customers inner join orders on customers.id = orders.customer_id where order_date <= “2024-01-15”;

The above query combines customers and orders table , there by display all customers who placed order in 30 days



```
+--------------+------------+--------------+
| name         | order_date | total_amount |
+--------------+------------+--------------+
| Rajesh Kumar | 2024-01-01 |         1500 |
| Priya Sharma | 2024-01-05 |         2000 |
| Arun Nair    | 2024-01-10 |         1200 |
| Sneha Reddy  | 2024-01-15 |         2500 |
+--------------+------------+--------------+
```

- Retrieve the average total of all orders.

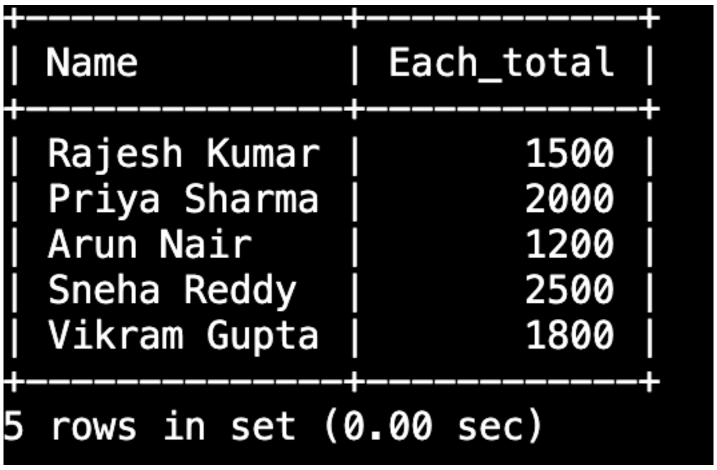


```
+-----------+
| Total_avg |
+-----------+
| 1800.0000 |
+-----------+
1 row in set (0.01 sec)
```

select avg(total_amount) as Total_avg from orders;

The above query takes avg of all the order's amount.

- Get the total amount of all orders placed by each customer.

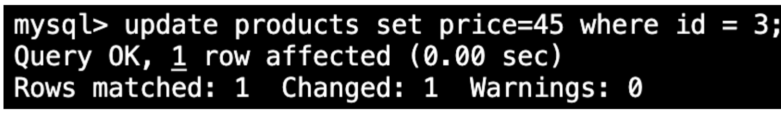


```
+--------------+------------+
| Name         | Each_total |
+--------------+------------+
| Rajesh Kumar |       1500 |
| Priya Sharma |       2000 |
| Arun Nair    |       1200 |
| Sneha Reddy  |       2500 |
| Vikram Gupta |       1800 |
+--------------+------------+
5 rows in set (0.00 sec)
```

select Name ,sum(total_amount) as Each_total from customers inner join orders on customers.id = orders.customer_id group by customer_id;

The   above gets the total amount of all orders placed by each customer.

- Update the price of Product C to 45.00.

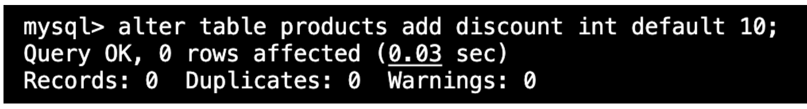


```
mysql> update products set price=45 where id = 3;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

update products set price=45 where id = 3;

The above query Update the price of Product headphones to 45.00

- Add a new column discount to the products table.



```
mysql> alter table products add discount int default 10;
Query OK, 0 rows affected (0.03 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

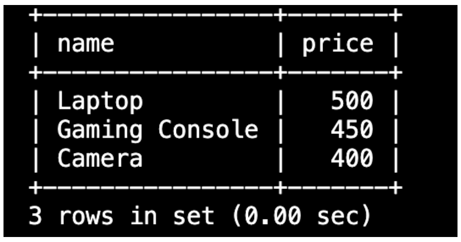
alter table products add discount int default 10;

The above query adds a new column discount to the products table.

- Retrieve the top 3 products with the highest price.

select name , price from products order by price desc limit 3;

The above query retrieves the top 3 products with the highest price.

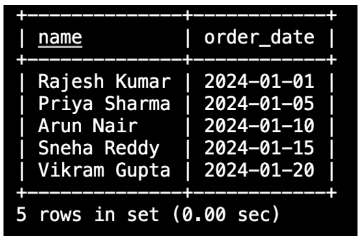


```
+----------------+-------+
| name           | price |
+----------------+-------+
| Laptop         |   500 |
| Gaming Console |   450 |
| Camera         |   400 |
+----------------+-------+
3 rows in set (0.00 sec)
```

- Join the orders and customers tables to retrieve the customer's name and order date for each order.

select name, order_date from customers join orders on customers.id = orders.customer_id;

The above query joins the orders and customers tables to retrieve the customer's name and order date for each order.

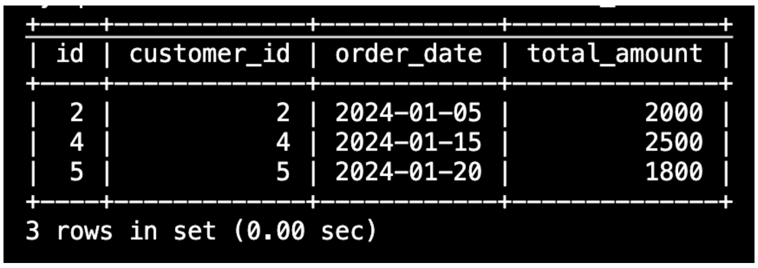


```
+--------------+------------+
| name         | order_date |
+--------------+------------+
| Rajesh Kumar | 2024-01-01 |
| Priya Sharma | 2024-01-05 |
| Arun Nair    | 2024-01-10 |
| Sneha Reddy  | 2024-01-15 |
| Vikram Gupta | 2024-01-20 |
+--------------+------------+
5 rows in set (0.00 sec)
```

- Retrieve the orders with a total amount greater than 1500.00.

The below query retrieves the orders with a total amount greater than 1500.00.

select * from orders where total_amount > 150;



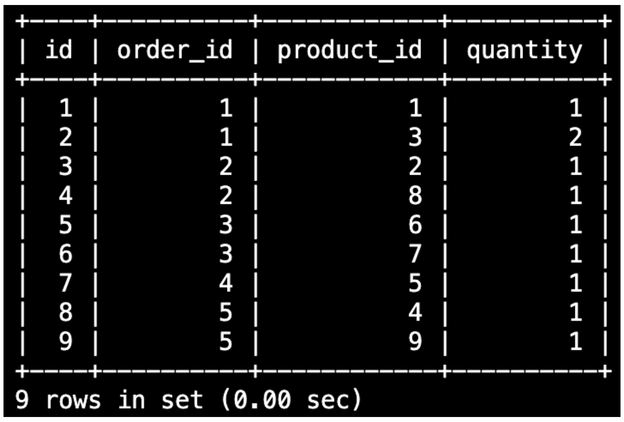
```
+----+-------------+------------+--------------+
| id | customer_id | order_date | total_amount |
+----+-------------+------------+--------------+
|  2 |           2 | 2024-01-05 |         2000 |
|  4 |           4 | 2024-01-15 |         2500 |
|  5 |           5 | 2024-01-20 |         1800 |
+----+-------------+------------+--------------+
3 rows in set (0.00 sec)
```

- Normalize the database by creating a separate table for order items and updating the orders table to reference the order_items table.

create table order_details (id int primary key auto_increment, order_id int not null, product_id int not null, quantity int default 1, foreign key (order_id) references orders(id), foreign key (product_id) references products(id));

INSERT INTO order_details (order_id, product_id, quantity) VALUES (1, 1, 1),
(1, 3, 2),(2, 2, 1),(2, 8, 1),(3, 6, 1),(3, 7, 1),(4, 5, 1),(5, 4, 1),(5, 9, 1);

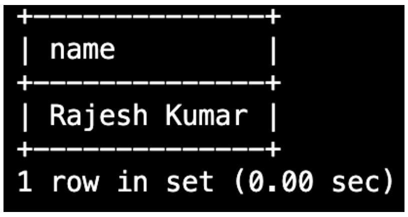
The above queries normalise the database.



```
+----+----------+------------+----------+
| id | order_id | product_id | quantity |
+----+----------+------------+----------+
|  1 |        1 |          1 |        1 |
|  2 |        1 |          3 |        2 |
|  3 |        2 |          2 |        1 |
|  4 |        2 |          8 |        1 |
|  5 |        3 |          6 |        1 |
|  6 |        3 |          7 |        1 |
|  7 |        4 |          5 |        1 |
|  8 |        5 |          4 |        1 |
|  9 |        5 |          9 |        1 |
+----+----------+------------+----------+
9 rows in set (0.00 sec)
```

- Get the names of customers who have ordered Product A

select customers.name from customers join orders
on customers.id = orders.customer_id
join order_details
on orders.id= order_details.order_id
join products
on order_details.product_id = products.id
where products.id = 3;



```
+--------------+
| name         |
+--------------+
| Rajesh Kumar |
+--------------+
1 row in set (0.00 sec)
```

The above query gets the names of customers who have ordered product headphones