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Fall 2024

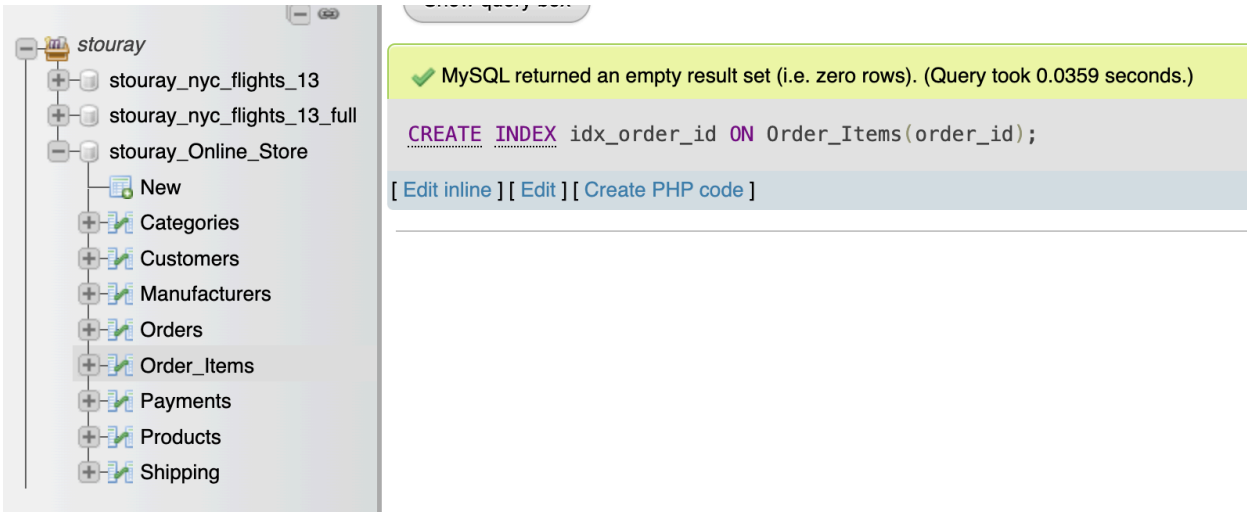
1. SELECT DISTINCT tailnum
   FROM flights
   WHERE dest = 'ORD';

2. SELECT *
   FROM flights
   WHERE air_time > (SELECT AVG(air_time) FROM flights);

3. SELECT DISTINCT tailnum
   FROM flights
   WHERE origin = 'JFK' AND dest = 'ORD';

4. SELECT SUM(planes.seats) AS total_seats
   FROM flights
   JOIN planes ON flights.tailnum = planes.tailnum
   WHERE flights.origin = 'JFK' AND flights.dest = 'ORD';

5. SELECT DISTINCT airports.name
   FROM flights
   JOIN airports ON flights.dest = airports.faa
   WHERE flights.origin = 'EWR' AND flights.carrier = 'AA';

6. 

Screenshot of the Database created above

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7. Creating the Tables

a. Creating the Customers table

```
CREATE TABLE Customers (
    customer_id INT AUTO_INCREMENT PRIMARY KEY,
    first_name VARCHAR(50),
    last_name VARCHAR(50),
    email VARCHAR(100),
    phone VARCHAR(15),
    address VARCHAR(255),
    city VARCHAR(50),
    state VARCHAR(50),
    zip_code VARCHAR(10),
    created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP
);
```

b. Creating the Manufacturers table

```
CREATE TABLE Manufacturers (
    manufacturer_id INT AUTO_INCREMENT PRIMARY KEY,
    name VARCHAR(100),
    website VARCHAR(100)
);
```

c. Creating the Categories table

```
CREATE TABLE Categories (
    category_id INT AUTO_INCREMENT PRIMARY KEY,
    name VARCHAR(100)
);
```

d. Creating the Products table

```
CREATE TABLE Products (
    product_id INT AUTO_INCREMENT PRIMARY KEY,
    name VARCHAR(100),
    description TEXT,
    price DECIMAL(10, 2),
    stock_quantity INT,
    manufacturer_id INT,
    category_id INT,
    FOREIGN KEY (manufacturer_id) REFERENCES
Manufacturers(manufacturer_id),
    FOREIGN KEY (category_id) REFERENCES Categories(category_id)
);
```

e. Creating the Orders table

```
CREATE TABLE Orders (
    order_id INT AUTO_INCREMENT PRIMARY KEY,
    customer_id INT,
    order_date TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    status VARCHAR(50),
    total DECIMAL(10, 2),
    payment_status VARCHAR(50),
    shipping_status VARCHAR(50),
    FOREIGN KEY (customer_id) REFERENCES Customers(customer_id)
);
```

f. Creating the Order_Items table (for many-to-many relationship between orders and products)

```
CREATE TABLE Order_Items (
    order_item_id INT AUTO_INCREMENT PRIMARY KEY,
    order_id INT,
    product_id INT,
    quantity INT,
    price DECIMAL(10, 2),
    FOREIGN KEY (order_id) REFERENCES Orders(order_id),
    FOREIGN KEY (product_id) REFERENCES Products(product_id)
);
```

g. Creating the Payments table

```
CREATE TABLE Payments (
    payment_id INT AUTO_INCREMENT PRIMARY KEY,
    order_id INT,
    amount DECIMAL(10, 2),
    payment_date TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    payment_method VARCHAR(50),
    FOREIGN KEY (order_id) REFERENCES Orders(order_id)
);
```

h. Creating the Shipping table

```
CREATE TABLE Shipping (
    shipping_id INT AUTO_INCREMENT PRIMARY KEY,
    order_id INT,
    shipping_address VARCHAR(255),
    city VARCHAR(50),
    state VARCHAR(50),
    zip_code VARCHAR(10),
    shipping_date TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
    shipping_method VARCHAR(50),
    FOREIGN KEY (order_id) REFERENCES Orders(order_id)
);
```

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8. Populating the the tables with Data

```
-- Insert into Customers
INSERT INTO Customers (first_name, last_name, email, phone, address, city, state, zip_code)
VALUES ('Ibraim', 'Turay', 'ibraimturay@example.com', '123-456-7890', '123 Main St', 'New York', 'NY', '10001');

-- Insert into Manufacturers
INSERT INTO Manufacturers (name, website)
VALUES ('fulie Corp', 'www.fulie.com');


-- Insert into Categories
INSERT INTO Categories (name)
VALUES ('Electronics');

-- Insert into Products
INSERT INTO Products (name, description, price, stock_quantity, manufacturer_id, category_id)
VALUES ('Laptop', 'High performance laptop', 999.99, 10, 1, 1);

-- Insert into Orders
INSERT INTO Orders (customer_id, status, total, payment_status, shipping_status)
VALUES (1, 'Completed', 999.99, 'Paid', 'Shipped');


-- Insert into Order_Items
INSERT INTO Order_Items (order_id, product_id, quantity, price)
VALUES (1, 1, 1, 999.99);

-- Insert into Payments
INSERT INTO Payments (order_id, amount, payment_method)
VALUES (1, 999.99, 'Credit Card');

-- Insert into Shipping
INSERT INTO Shipping (order_id, shipping_address, city, state, zip_code, shipping_method)
VALUES (1, '123 Main St', 'New York', 'NY', '10001', 'Standard');
```

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10. UPDATE Customers
    SET email = 'birdwatcher@yahoo.com'
    WHERE first_name = 'Ibraim' AND last_name = 'Turay';

10. CREATE INDEX idx_order_id ON Order_Items(order_id);

Note: That the tables must be created in the order that they were created to avoid any errors for example the **Manufacturers** and the **Categories** tables must be created before the **Product** table because their **Primary keys** are **referenced** in the the Product table as **Foreign keys**. And so on and so forth, as can be seen throughout the creation of the rest of the tables.