

□ 1. SELECT Queries (Data Retrieval)**☑ E-Commerce System**

-- Get all customers who joined in the last 30 days

```
SELECT * FROM Customers
```

```
WHERE CreatedDate >= CURRENT_DATE - INTERVAL '30 days';
```

-- List of orders with customer name and total amount

```
SELECT o.OrderID, c.FullName, o.TotalAmount
```

```
FROM Orders o
```

```
JOIN Customers c ON o.CustomerID = c.CustomerID;
```

-- Get top 5 most expensive products

```
SELECT ProductName, Price
```

```
FROM Products
```

```
ORDER BY Price DESC
```

```
LIMIT 5;
```

☑ Student System

-- Get all students from 'Computer Science' department

```
SELECT * FROM students
```

```
WHERE dept = 'Computer Science';
```

-- Get students with marks above 80

```
SELECT student_name, marks
```

```
FROM students
```

```
WHERE marks > 80;
```

-- List all students enrolled in 'Database Systems' course

```
SELECT s.student_name, c.course_name
```

```
FROM enrollments e
JOIN students s ON e.student_id = s.student_id
JOIN courses c ON e.course_id = c.course_id
WHERE c.course_name = 'Database Systems';
```

□ 2. WHERE Clause with Conditions

☑ E-Commerce

-- Get all products that are out of stock

```
SELECT * FROM Products
WHERE Stock = 0;
```

-- Get all orders placed today

```
SELECT * FROM Orders
WHERE OrderDate::DATE = CURRENT_DATE;
```

☑ Student System

-- Find students in 3rd year with marks below 50

```
SELECT * FROM students
WHERE year_of_study = 3 AND marks < 50;
```

□ 3. UPDATE Queries (Modify Data)

☑ E-Commerce

-- Update stock after new shipment received

```
UPDATE Products
SET Stock = Stock + 100
WHERE ProductID = 101;
```

-- Correct email typo for a customer

```
UPDATE Customers
SET Email = 'corrected_email@example.com'
```

WHERE CustomerID = 5;

✔ Student System

-- Update marks of a student

UPDATE students

SET marks = 92

WHERE student_name = 'Rahul Sharma';

-- Change department of a student

UPDATE students

SET dept = 'Data Science'

WHERE student_id = 10;

● 4. DELETE Queries (Remove Data)

⚠ **Use carefully** — DELETE removes data permanently unless a backup exists.

✔ E-Commerce

-- Delete an order (e.g., if cancelled)

DELETE FROM Orders

WHERE OrderID = 500;

-- Delete discontinued products (zero stock and price = 0)

DELETE FROM Products

WHERE Stock = 0 AND Price = 0;

✔ Student System

-- Delete students who have graduated (e.g., 4th year and passed)

DELETE FROM students

WHERE year_of_study = 4 AND marks >= 50;

-- Remove enrollment record for a student who dropped a course

```
DELETE FROM enrollments
```

```
WHERE student_id = 3 AND course_id = 2;
```

▣ Pro Tip (Real-time usage)

In real-time applications:

- **SELECT** is used in dashboards, reports, and API calls.
 - **WHERE** filters data dynamically (user inputs, filters).
 - **UPDATE** is used in admin panels or actions like "Edit Profile", "Change Quantity".
 - **DELETE** is typically used with caution or soft deletes (`is_deleted = true` flag).
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