

## Lecture Notes – INTERSECT

### Section 1: Lecture Summary

The lecture covers the **INTERSECT** set operation in SQL, its syntax, and example queries. It demonstrates finding common rows between two compatible queries using **INTERSECT**, such as employees who are managers and earn over 90,000 salary from the **Employees** table, and orders that are delivered with UPI payments from **Orders** and **Payments** tables. MySQL currently executes **INTERSECT** but shows deprecation warnings, recommending **WHERE** clauses or **JOIN**s instead.

### Section 2: Key Concepts and Explanations

**INTERSECT** is a set operation that returns only common rows from two or more compatible queries, meaning they must have the same number of columns with matching data types.

Queries are written as **SELECT** statements separated by **INTERSECT**, with optional **WHERE** conditions in each.

For example, one query filters managers using **JobTitle LIKE '%manager%'**, and another filters **Salary > 90000**; **INTERSECT** finds the overlap.

MySQL supports **INTERSECT** now but warns of future removal, as simpler alternatives like **WHERE** or **JOIN** achieve the same results.

Common rows are exact matches across all selected columns.

### Section 3: Example Code and Use Cases

Using **companyDB**:

Find employees who are managers (**JobTitle** containing 'manager') and earn more than 90,000 **Salary**:

```
SELECT EmpID, FirstName, LastName
FROM Employees
WHERE JobTitle LIKE '%manager%'
INTERSECT
SELECT EmpID, FirstName, LastName
FROM Employees
WHERE Salary > 90000;
```

Result: Only the Finance Manager (EmpID 115, Salary 95,000) appears as the common row.

Another example adapted to **companyDB** (projects assigned to employees in the same department as the project):

```
SELECT EmpID, ProjectID
FROM EmployeeProjects
INTERSECT
SELECT e.EmpID, p.ProjectID
FROM Employees e
JOIN Projects p ON e.DeptID = p.DeptID;
```

#### Section 4: Key Takeaways

**INTERSECT** retrieves common rows from compatible queries.

MySQL executes it with deprecation warnings; prefer **WHERE** or **JOIN** for future compatibility.

Queries must match in column count and types for **INTERSECT** to work.

Use for simplifying overlaps across tables or conditions, like managers with high salary or delivered orders paid by UPI.