

## Lecture Notes – String Functions-Concatenation

### Section 1: Lecture Summary

The lecture covers **string concatenation** using the **CONCAT** function and **CONCAT\_WS** function in SQL. It explains how to join two or more strings, with **CONCAT\_WS** allowing a specified separator added between strings. Examples demonstrate basic usage, adding spaces or other separators, and applying these functions to format employee full names and hire dates from the **Employees** table for readable output.

### Section 2: Key Concepts and Explanations

**CONCAT** joins multiple strings directly without spaces unless explicitly included. For example, **CONCAT('hello', ',', 'world')** produces "Hello,World".

**CONCAT\_WS** (with separator) inserts the specified separator between all strings. For example, **CONCAT\_WS(' ', 'hello', 'world')** produces "hello world", and **CONCAT\_WS('--', 'hello', 'world')** produces "hello--world". The separator can be any string like space, hyphen, or multiple characters.

Aliases can be used for readability, such as **AS full\_name**. These functions format query results into single, descriptive columns, useful for combining fields like names and dates.

### Section 3: Example Code and Use Cases

```
SELECT CONCAT(FirstName, ' ', LastName) AS full_name
FROM Employees;
```

This concatenates **FirstName** and **LastName** with a space, producing output like "Raghav Pal".

```
SELECT CONCAT_WS(' JOINED ON ', FirstName, HireDate) AS employee_hire
FROM Employees
ORDER BY HireDate;
```

This uses **CONCAT\_WS** with " JOINED ON " as separator, producing output like "Girish JOINED ON 2016-01-15", sorted by **HireDate** ascending.

#### Section 4: Key Takeaways

**CONCAT** and **CONCAT\_WS** enable joining strings for formatted, readable results in a single column. Use literal strings like spaces or phrases as separators in **CONCAT\_WS** for precise control. Apply with **ORDER BY** to organize output by relevant fields like dates. These functions work with **varchar** and **date** columns from tables like **Employees**.