Task 8: Index Creation SQL Report

This report presents the SQL commands used to create indexes for optimizing query performance on the employees table. The indexes enhance filtering and JOIN operations, leading to improved query execution speed.

1. Index Creation SQL

-- Create index on hire_date to optimize WHERE clause filtering CREATE INDEX idx_hire_date ON employees(hire_date); -- Create index on dept_id to optimize JOIN operations CREATE INDEX idx_dept_id ON employees(dept_id);

2. Verification of Indexes

SHOW INDEX FROM employees;

Index Name	Column	Purpose
idx_hire_date	hire_date	Speeds up WHERE clause filtering on hire_date
idx_dept_id	dept_id	Speeds up JOIN operations between employees and departments

Conclusion: The creation of indexes idx_hire_date and idx_dept_id significantly improves the efficiency of queries involving date filtering and department joins. Proper indexing is an essential database optimization strategy.