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- Lab Experiment 04 – Implementation of Different Types of Operators in SQL --
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Step 1: Create Database DROP DATABASE IF EXISTS OperatorLab; -- output -- 23:02:02
DROP DATABASE IF EXISTS OperatorLab 0 row(s) affected 0.000 sec CREATE DATABASE
OperatorLab; -- output -- 23:02:02 CREATE DATABASE OperatorLab 1 row(s) affected 0.015
sec USE OperatorLab; -- output -- 23:02:02 USE OperatorLab 0 row(s) affected 0.000 sec --
Step 2: Create Tables CREATE TABLE Employees ( EmployeeID INT PRIMARY KEY, Name
VARCHAR(50), Age INT, Salary DECIMAL(10, 2), Department VARCHAR(50), HireDate DATE,
Address VARCHAR(100) ); -- output -- 23:05:29 CREATE TABLE Employees ( EmployeeID INT
PRIMARY KEY, Name VARCHAR(50), Age INT, Salary DECIMAL(10, 2), Department
VARCHAR(50), HireDate DATE, Address VARCHAR(100) ) 0 row(s) affected 0.047 sec
CREATE TABLE Departments ( DepartmentID INT PRIMARY KEY, DepartmentName
VARCHAR(50), EmployeeID INT, FOREIGN KEY (EmployeeID) REFERENCES
Employees(EmployeeID) ); -- output -- 23:06:00 CREATE TABLE Departments ( DepartmentID
INT PRIMARY KEY, DepartmentName VARCHAR(50), EmployeeID INT, FOREIGN KEY
(EmployeeID) REFERENCES Employees(EmployeeID) ) 0 row(s) affected 0.047 sec -- Step 3:
Insert Sample Data INSERT INTO Employees (EmployeeID, Name, Age, Salary, Department,
HireDate, Address) VALUES (1001, 'Ashish', 28, 60000, 'IT', '2024-05-01', '123 Main St, New
York'), (1002, 'Binay', 45, 80000, 'HR', '2020-07-15', '456 Elm St, Chicago'), (1003, 'Charlie', 32,
55000, 'Finance', '2022-01-10', '789 Oak St, Los Angeles'), (1004, 'Dhruv', 38, 75000, 'HR',
'2021-10-30', '101 Pine St, New York'); -- output -- 23:06:48 INSERT INTO Employees
(EmployeeID, Name, Age, Salary, Department, HireDate, Address) VALUES (1001, 'Ashish', 28,
60000, 'IT', '2024-05-01', '123 Main St, New York'), (1002, 'Binay', 45, 80000, 'HR', '2020-07-15',
'456 Elm St, Chicago'), (1003, 'Charlie', 32, 55000, 'Finance', '2022-01-10', '789 Oak St, Los
Angeles'), (1004, 'Dhruv', 38, 75000, 'HR', '2021-10-30', '101 Pine St, New York') 4 row(s)
affected Records: 4 Duplicates: 0 Warnings: 0 0.000 sec INSERT INTO Departments
(DepartmentID, DepartmentName, EmployeeID) VALUES (1, 'IT', 1001), (2, 'HR', 1002), (3,
'Finance', 1003); -- 23:07:15 INSERT INTO Departments (DepartmentID, DepartmentName,
EmployeeID) VALUES (1, 'IT', 1001), (2, 'HR', 1002), (3, 'Finance', 1003) 3 row(s) affected
Records: 3 Duplicates: 0 Warnings: 0 0.000 sec --
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PRACTICE TASKS --
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====================== -- Exercise 1: Arithmetic Operators --
====================== -- a. Add a bonus (10% of Salary) to each employee's salary. --
WRITE YOUR QUERY BELOW -- b. Subtract tax (15% of Salary) from each employee's salary.
-- WRITE YOUR QUERY BELOW -- c. Calculate the yearly salary from the monthly salary
(Salary * 12). -- WRITE YOUR QUERY BELOW -- d. Find the remainder when employees' ages
are divided by 5. -- WRITE YOUR QUERY BELOW -- ====================== --
Exercise 2: Logical Operators -- ====================== -- a. Employees older than 30
and salary greater than 50000. -- WRITE YOUR QUERY BELOW -- b. Employees either in 'HR'
department OR salary > 70000. -- WRITE YOUR QUERY BELOW -- c. Employees who do NOT
live in 'New York'. -- WRITE YOUR QUERY BELOW -- ====================== --
Exercise 3: Comparison Operators -- ====================== -- a. Find employees with
salary = 60000. -- WRITE YOUR QUERY BELOW -- b. List employees not in the 'IT'
department. -- WRITE YOUR QUERY BELOW -- c. Retrieve employees younger than 25 with
salary > 50000. -- WRITE YOUR QUERY BELOW -- ====================== -- Exercise
4: Special Operators -- ====================== -- a. BETWEEN → List employees with
age between 25 and 35. -- WRITE YOUR QUERY BELOW -- b. IN → Find employees working
in 'HR', 'IT', or 'Finance'. -- WRITE YOUR QUERY BELOW -- c. LIKE → Find employees whose
names start with 'A'. -- WRITE YOUR QUERY BELOW -- d. IS NULL → List employees whose
address is not available. -- WRITE YOUR QUERY BELOW -- ====================== --
Exercise 5: Set Operators -- ====================== -- NOTE: For these, assume you
have two Employee tables (Employees2022 and Employees2023). -- a. UNION → Retrieve
employees from 'HR' department in 2023 and 2022. -- WRITE YOUR QUERY BELOW -- b.
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INTERSECT → Find common employees in 'IT' department across 2022 & 2023. -- (MySQL doesn’t have INTERSECT directly – use INNER JOIN / EXISTS workaround) -- WRITE YOUR QUERY BELOW -- c. EXCEPT → Find employees who worked in 2023 but not in 2022. -- (MySQL doesn’t have EXCEPT directly – use LEFT JOIN / NOT EXISTS workaround) -- WRITE YOUR QUERY BELOW -- == -- END OF EXPERIMENT 04 -- ==