create database Employees

use Employees

-- Employee table

CREATE TABLE employees (

employee\_id INT PRIMARY KEY,

first\_name VARCHAR(50),

last\_name VARCHAR(50),

email VARCHAR(100),

salary DECIMAL(10, 2),

department\_id INT

);

-- Inserting data into employees table

INSERT INTO employees (employee\_id, first\_name, last\_name, email, salary, department\_id) VALUES

(101, 'John', 'Doe', 'john.d@example.com', 60000.00, 10),

(102, 'Jane', 'Smith', 'jane.s@example.com', 75000.00, 20),

(103, 'Peter', 'Jones', 'peter.j@example.com', 55000.00, 10),

(104, 'Mary', 'Johnson', 'mary.j@example.com', 90000.00, 30),

(105, 'Chris', 'Lee', 'chris.l@example.com', 62000.00, 20);

-- department table

CREATE TABLE departments (

department\_id INT PRIMARY KEY,

department\_name VARCHAR(50)

);

-- Inserting data into department table

INSERT INTO departments (department\_id, department\_name) VALUES

(10, 'IT'),

(20, 'Sales'),

(30, 'Finance');

select \* from employees

select \* from departments

--Find employees earning more than the average salary

SELECT

first\_name,last\_name,salary

FROM employees

WHERE

salary > (SELECT AVG(salary) FROM employees);

--Find all employees who work in the 'Sales' department

SELECT first\_name, last\_name

FROM employees

WHERE department\_id IN (SELECT department\_id FROM departments WHERE department\_name = 'Sales');

--Find all employees who have a salary greater than the average salary of their own department.

SELECT

first\_name,last\_name,salary,department\_id

FROM employees e1

WHERE

salary > (SELECT AVG(salary) FROM employees e2 WHERE e2.department\_id = e1.department\_id);

--Find employees who are in either the 'IT' or 'Finance' departments.

SELECT first\_name,last\_name

FROM employees

WHERE

department\_id IN (SELECT department\_id FROM departments WHERE department\_name IN ('IT', 'Finance'));

--if there exists a department record with a department\_name of 'Sales' for each employee

SELECT first\_name, last\_name

FROM employees e

WHERE EXISTS (

SELECT 1

FROM departments d

WHERE d.department\_id = e.department\_id AND d.department\_name = 'Sales'

);

--List each employee's salary and compare it to the overall average salary.

SELECT

first\_name,last\_name,salary,

(SELECT AVG(salary) FROM employees) AS average\_salary

FROM employees;

--Calculate the average salary for each department and then find the departments

--where the average is above the company-wide average.

SELECT

dept\_name,avg\_salary

FROM

(SELECT d.department\_name AS dept\_name, AVG(e.salary) AS avg\_salary

FROM employees e

JOIN departments d ON e.department\_id = d.department\_id

GROUP BY d.department\_name) AS department\_avg\_salaries -- This is the derived table

WHERE

avg\_salary > (SELECT AVG(salary) FROM employees);