
# LAB 1: Hands-on Lab: Sub-queries, Multiple Tables

Estimated time needed: **30** minutes

## Objective for Exercise:

- Learn about Sub-queries & Multiple Table in SQL.

# LAB: Practice Sub-Queries and Working with Multiple Tables

Now lets practice sub-queries and working with multiple tables. Use the EMPLOYEES and DEPARTMENTS tables created previously and execute the queries in the last two lessons.

Here are the queries to save you some time typing them. Please execute these queries and verify the results:

# Part A: Sub-Queries and Nested-Selects

Query A1: Enter a failing (i.e. which gives an error) to retrieve all employees whose salary is greater than the average salary

select * from employees where salary > AVG(salary)

Query A2: Enter a working query using a sub-select to retrieve all employees whose salary is greater than the average salary

select EMP_ID, F_NAME, L_NAME, SALARY from employees where SALARY > (select AVG(SALARY) from employees);

Query A3: Enter a failing query (i.e. that gives an error) that retrieves all employees records and average salary in every row

select EMP_ID, SALARY, AVG(SALARY) AS AVG_SALARY from employees ;

Query A4: Enter a Column Expression that retrieves all employees records and average salary in every row

select EMP_ID, SALARY, ( select AVG(SALARY) from employees ) AS AVG_SALARY from employees ;

Query A5: Enter a Table Expression that retrieves only the columns with non-sensitive employee data

select * from ( select EMP_ID, F_NAME, L_NAME, DEP_ID from employees) AS EMP4ALL ;

# Part B: Accessing Multiple Tables with Sub-Queries

Query B1: Retrieve only the EMPLOYEES records that correspond to departments in the DEPARTMENTS table

select * from employees where DEP_ID IN ( select DEPT_ID_DEP from departments );

Query B2: Retrieve only the list of employees from location L0002

select * from employees where DEP_ID IN ( select DEPT_ID_DEP from departments where LOC_ID = 'L0002' );

Query B3: Retrieve the department ID and name for employees who earn more than $70,000

select DEPT_ID_DEP, DEP_NAME from departments where DEPT_ID_DEP IN ( select DEP_ID from employees where SALARY > 70000 ) ;

Query B4: Specify 2 tables in the FROM clause

select * from employees, departments;

# Accessing Multiple Tables with Implicit Joins

Query B5: Retrieve only the EMPLOYEES records that correspond to departments in the DEPARTMENTS table

select * from employees, departments where employees.DEP_ID = departments.DEPT_ID_DEP;

Query B6: Use shorter aliases for table names

select * from employees E, departments D where E.DEP_ID = D.DEPT_ID_DEP;

Query B7: Retrieve only the Employee ID and Department name in the above query

select EMP_ID, DEP_NAME from employees E, departments D where E.DEP_ID = D.DEPT_ID_DEP;

Query B8: In the above query specify the fully qualified column names with aliases in the SELECT clause

select E.EMP_ID, D.DEP_NAME from employees E, departments D where E.DEP_ID = D.DEPT_ID_DEP

# Author(s)

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# Changelog

| Date | Version | Changed by | Change Description |
|---|---|---|---|
| 2020-08-27 | 2.0 | Simran | Migrated Lab to Markdown and added to course repo in GitLab |