

CSG1207/CSI5135: Systems and Database Design

Lab 06

Introduction

This lab allows you to practise the SQL covered in this week's lecture. Do your best to answer the following questions and write the specified queries. You are encouraged to experiment with SQL – it is a very flexible language, so if you can think of something that would be useful to achieve in a query, it can probably be done. This lab uses the “company” database, which you can create by running the script file Module 5 of the unit materials. It is assumed that you are working in SQL Server Management Studio, also covered in Module 5.

If you are having trouble writing an SQL query, read any error messages and try to fix the error. Search for examples in the unit materials, and ask your tutor for assistance if needed. Contact your tutor if you spot something which appears to be incorrect in any of the labs.

Lab Tasks

- Q1.** Write a query which selects the last name, job ID and salary of all employees who earn a salary of at least \$12,000.
- Q2.** Which of the following queries would retrieve all details of employees who have a job ID of 'IT_PROG'?
- `SELECT * FROM employee WHERE job_id == 'IT_PROG'`
 - `SELECT * FROM employee WHERE job_id = "IT_PROG"`
 - `SELECT * FROM employee WHERE job_id = 'IT_PROG'`
 - `SELECT * FROM employee WHERE job_id = IT_PROG`
- Q3.** Write a query which selects the full name (e.g. “Steven King”) of any employees who do not have their gender recorded in the database. Order the results by first name.
- Q4.** Write a query which selects the employee ID, last name and salary of all employees who have a salary which is either less than \$5,000 or more than \$15,000. Order the results by the salary, with the highest salaries at the top.
- Q5.** Write a query which selects the last name, hire date and salary of all employees hired between June 1st 1997 and September 20th 1999 who have a salary of over \$5,000.

Q6. Write a query which selects the last name of all employees who have both an “a” and an “e” in their last name. Order the results by last name, in descending order.

Q7. The following query is meant to retrieve details of all employees who were either hired before January 1st 1988 or are female, and who also earn a salary of at least \$15,000. Identify the errors in the query, and fix it so that it works as intended.

```
SELECT *  
FROM employee  
WHERE hire_date< 01-JAN-1988OR gender = 'F'  
AND salary <= 15000;
```

(Note: When working as intended, Steven King and Neena Kochhar are the only employees the query should return)

Q8. Write a query which selects the first name, and job ID of all employees who have a job ID of either IT_PROG, ST_CLERK, or SA_REP and have a first name starting either A, B, C or D. Order the results by first name.

Q9. Write a query which selects the last name, salary and job ID of the three highest paid employees who have a job ID which does not start with “AD”.

Challenge Query!

The following query is more difficult than the previous queries, and may involve SQL syntax which has not yet been covered in the unit.

Q10. Over a decade ago, a theft occurred in the company that was never solved. Some pieces of evidence were found which can be used to determine the identity of the thief. The evidence available is:

- The theft occurred in a room that only certain employees had access to – employees with job IDs of either ST_MAN, ST_CLERK, SA_MAN or SA_REP
- A dark and blurry security camera photo shows part of the thief’s name tag, but only “el” can be made out (it may be part of a first name or last name)
- Scent of lady’s perfume was noticed at the scene of the theft after it occurred (You may assume that no perfume-wearing men were employed at the time)
- The theft occurred on June 15th 1997, so anyone hired after then is not a suspect

Write a query which identifies the thief, using the available evidence. The query should return the thief’s full name, with the column being given an alias of “the_thief”.

(For an added challenge, identify which piece of evidence is not actually needed to determine the identity of the thief)