

# **Practices for Lesson 3: Restricting and Sorting Data**

## **Chapter 3**

## Practices for Lesson 3: Overview

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### Practices Overview

This practice covers the following topics:

- Selecting data and changing the order of the rows that are displayed
- Restricting rows by using the `WHERE` clause
- Sorting rows by using the `ORDER BY` clause
- Using substitution variables to add flexibility to your SQL `SELECT` statements

## Practice 3-1: Restricting and Sorting Data

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### Overview

In this practice, you build reports by using statements with the `WHERE` clause and the `ORDER BY` clause. You make the SQL statements more reusable and generic by including the ampersand substitution.

### Task

The HR department needs your assistance in creating some queries.

1. Because of budget issues, the HR department needs a report that displays the last name and salary of employees who earn more than \$12,000. Save your SQL statement as a file named `lab_03_01.sql`. Run your query.

	LAST_NAME	SALARY
1	King	24000
2	Kochhar	17000
3	De Haan	17000
4	Hartstein	13000
5	Higgins	12008

2. Open a new SQL Worksheet. Create a report that displays the last name and department number for employee number 176.

	LAST_NAME	DEPARTMENT_ID
1	Taylor	80

3. The HR department needs to find high-salaried and low-salaried employees. Modify `lab_03_01.sql` to display the last name and salary for any employee whose salary is not in the range \$5,000 through \$12,000. Save your SQL statement as `lab_03_03.sql`.

	LAST_NAME	SALARY
1	King	24000
2	Kochhar	17000
3	De Haan	17000
4	Lorentz	4200
5	Rajs	3500
6	Davies	3100
7	Matos	2600
8	Vargas	2500
9	Whalen	4400
10	Hartstein	13000
11	Higgins	12008

4. Create a report to display the last name, job ID, and hire date for employees with the last names of Matos and Taylor. Order the query in ascending order by hire date.

	LAST_NAME	JOB_ID	HIRE_DATE
1	Matos	ST_CLERK	15-MAR-14
2	Taylor	SA_REP	24-MAR-14

5. Display the last name and department ID of all employees in department 20 or department 50 in ascending alphabetical order by last\_name.

	LAST_NAME	DEPARTMENT_ID
1	Davies	50
2	Fay	20
3	Hartstein	20
4	Matos	50
5	Mourgos	50
6	Rajs	50
7	Vargas	50

6. Modify lab\_03\_03.sql to display the last name and salary of employees who earn between \$5,000 and \$12,000, and are in department 20 or department 50. Label the columns Employee and Monthly Salary, respectively. Save lab\_03\_03.sql as lab\_03\_06.sql. Run the statement in lab\_03\_06.sql.

	Employee	Monthly Salary
1	Fay	6000
2	Mourgos	5800

7. The HR department needs a report that displays the last name and hire date of all employees who were hired in 2010.

	LAST_NAME	HIRE_DATE
1	Higgins	07-JUN-10
2	Gietz	07-JUN-10

8. Create a report to display the last name and job title of all employees who do not have a manager.

	LAST_NAME	JOB_ID
1	King	AD_PRES

9. Create a report to display the last name, salary, and commission of all employees who earn commissions. Sort the data in descending order of salary and commissions. Use the column's numeric position in the ORDER BY clause.

	LAST_NAME	SALARY	COMMISSION_PCT
1	Abel	11000	0.3
2	Zlotkey	10500	0.2
3	Taylor	8600	0.2
4	Grant	7000	0.15

10. Members of the HR department want to have more flexibility with the queries that you are writing. They would like a report that displays the last name and salary of employees who earn more than an amount that the user specifies after a prompt. Save this query to a file named `lab_03_10.sql`. (You can use the query created in Task 1 and modify it.) If you enter 12000 when prompted, the report displays the following results:

	LAST_NAME	SALARY
1	King	24000
2	Kochhar	17000
3	De Haan	17000
4	Hartstein	13000
5	Higgins	12008

11. The HR department wants to run reports based on a manager. Create a query that prompts the user for a manager ID, and generates the employee ID, last name, salary, and department for that manager's employees. The HR department wants the ability to sort the report on a selected column. You can test the data with the following values:

manager\_id = 103, sorted by last\_name:

	EMPLOYEE_ID	LAST_NAME	SALARY	DEPARTMENT_ID
1	104	Ernst	6000	60
2	107	Lorentz	4200	60

manager\_id = 201, sorted by salary:

	EMPLOYEE_ID	LAST_NAME	SALARY	DEPARTMENT_ID
1	202	Fay	6000	20

manager\_id = 124, sorted by employee\_id:

	EMPLOYEE_ID	LAST_NAME	SALARY	DEPARTMENT_ID
1	141	Rajs	3500	50
2	142	Davies	3100	50
3	143	Matos	2600	50
4	144	Vargas	2500	50

If you have time, complete the following exercises:

12. Display the last names of all employees where the third letter of the name is "a."

	LAST_NAME
1	Grant
2	Whalen

13. Display the last names of all employees who have both an "a" and an "e" in their last name.

	LAST_NAME
1	Davies
2	De Haan
3	Hartstein
4	Whalen

If you want an extra challenge, complete the following exercises:

14. Display the last name, job, and salary for all employees whose jobs are either that of a sales representative or a stock clerk, and whose salaries are not equal to \$2,500, \$3,500, or \$7,000.

	LAST_NAME	JOB_ID	SALARY
1	Abel	SA_REP	11000
2	Taylor	SA_REP	8600
3	Davies	ST_CLERK	3100
4	Matos	ST_CLERK	2600

15. Modify `lab_03_06.sql` to display the last name, salary, and commission for all employees whose commission is 20%. Save `lab_03_06.sql` as `lab_03_15.sql`. Rerun the statement in `lab_03_15.sql`.

	Employee	Monthly Salary	COMMISSION_PCT
1	Zlotkey	10500	0.2
2	Taylor	8600	0.2