Additional Practices and Solutions

Chapter 12

Practices for Lesson 1

Practices Overview

In these practices, you will be working on extra exercises that are based on the following topics:

- Basic SQL `SELECT` statement
- Basic SQL Developer commands
- SQL functions

Practice 1-1: Additional Practice

Overview

In this practice, exercises have been designed to be worked on after you have discussed the following topics: basic SQL `SELECT` statement, basic SQL Developer commands, and SQL functions.

Tasks

1. The HR department needs to find data for all the clerks who were hired after 1997.

	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY
1	141	Trenna	Rajs	TRAJS	650.121.8009	17-OCT-03	ST_CLERK	3500
2	142	Curtis	Davies	CDAVIES	650.121.2994	29-JAN-05	ST_CLERK	3100
3	143	Randall	Matos	RMATOS	650.121.2874	15-MAR-06	ST_CLERK	2600
4	144	Peter	Vargas	PVARGAS	650.121.2004	09-JUL-06	ST_CLERK	2500

2. The HR department needs a report of employees who earn a commission. Show the last name, job, salary, and commission of these employees. Sort the data by salary in descending order.

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

3. For budgeting purposes, the HR department needs a report on projected raises. The report should display those employees who have no commission, but who have a 10% raise in salary (round off the salaries).

	New salary
1	The salary of Whalen after a 10% raise is 4840
2	The salary of Hartstein after a 10% raise is 14300
3	The salary of Fay after a 10% raise is 6600
4	The salary of Higgins after a 10% raise is 13209
5	The salary of Gietz after a 10% raise is 9130
6	The salary of King after a 10% raise is 26400
7	The salary of Kochhar after a 10% raise is 18700
8	The salary of De Haan after a 10% raise is 18700
9	The salary of Hunold after a 10% raise is 9900
10	The salary of Ernst after a 10% raise is 6600
11	The salary of Lorentz after a 10% raise is 4620
12	The salary of Mourgos after a 10% raise is 6380
13	The salary of Rajs after a 10% raise is 3850
14	The salary of Davies after a 10% raise is 3410
15	The salary of Matos after a 10% raise is 2860
16	The salary of Vargas after a 10% raise is 2750

4. Create a report of employees and their duration of employment. Show the last names of all the employees together with the number of years and the number of completed months that they have been employed. Order the report by the duration of their employment. The employee who has been employed the longest should appear at the top of the list.

	LAST_NAME	YEARS	MONTHS
3	Higgins	11	11
4	King	10	11
5	Whalen	10	8
6	Rajs	10	7
7	Hartstein	10	3
8	Abel	10	0
9	Davies	9	4
10	Fay	8	9
11	Kochhar	8	8
12	Hunold	8	5
13	Taylor	8	2
14	Matos	8	2
15	Vargas	7	10
16	Lorentz	7	3
17	Grant	7	0
18	Ernst	7	0
19	Mourgos	6	6
20	Zlotkey	6	4

5. Show those employees who have a last name starting with the letters “J,” “K,” “L,” or “M.”

	LAST_NAME
1	King
2	Kochhar
3	Lorentz
4	Matos
5	Mourgos

6. Create a report that displays all employees, and indicate with the words *Yes* or *No* whether they receive a commission. Use the `DECODE` expression in your query.

	LAST_NAME	SALARY	COMMISSION
1	Whalen	4400	No
2	Hartstein	13000	No
3	Fay	6000	No
4	Higgins	12008	No
5	Gietz	8300	No
6	King	24000	No
7	Kochhar	17000	No
8	De Haan	17000	No
9	Hunold	9000	No
10	Ernst	6000	No
11	Lorentz	4200	No
12	Mourgos	5800	No
13	Rajs	3500	No
14	Davies	3100	No
15	Matos	2600	No
16	Vargas	2500	No
17	Zlotkey	10500	Yes
18	Abel	11000	Yes
19	Taylor	8600	Yes
20	Grant	7000	Yes

These exercises can be used for extra practice after you have discussed the following topics: basic SQL `SELECT` statements, basic SQL Developer commands, SQL functions, joins, and group functions.

7. Create a report that displays the department name, location ID, last name, job title, and salary of those employees who work in a specific location. Prompt the user for a location. For example, if the user enters `1800`, results are as follows:

	DEPARTMENT_NAME	LOCATION_ID	LAST_NAME	JOB_ID	SALARY
1	Marketing	1800	Hartstein	MK_MAN	13000
2	Marketing	1800	Fay	MK_REP	6000

8. Find the number of employees who have a last name that ends with the letter “n.” Create two possible solutions.

	COUNT(*)
1	3

9. Create a report that shows the name, location, and number of employees for each department. Make sure that the report also includes `department_ID`s without employees.

	DEPARTMENT_ID	DEPARTMENT_NAME	LOCATION_ID	COUNT(E.EMPLOYEE_ID)
1	80	Sales	2500	3
2	110	Accounting	1700	2
3	60	IT	1400	3
4	10	Administration	1700	1
5	90	Executive	1700	3
6	20	Marketing	1800	2
7	50	Shipping	1500	5
8	190	Contracting	1700	0

10. The HR department needs to find the job titles in departments 10 and 20. Create a report to display the job IDs for those departments.

	JOB_ID
1	AD_ASST
2	MK_MAN
3	MK_REP

11. Create a report that displays the jobs that are found in the Administration and Executive departments. Also display the number of employees for these jobs. Show the job with the highest number of employees first.

	JOB_ID	FREQUENCY
1	AD_VP	2
2	AD_PRES	1
3	AD_ASST	1

These exercises can be used for extra practice after you have discussed the following topics: basic SQL `SELECT` statements, basic SQL Developer commands, SQL functions, joins, group functions, and subqueries.

12. Show all the employees who were hired in the first half of the month (before the 16th of the month, irrespective of the year).

	LAST_NAME	HIRE_DATE
1	De Haan	13-JAN-01
2	Hunold	03-JAN-06
3	Lorentz	07-FEB-07
4	Matos	15-MAR-06
5	Vargas	09-JUL-06
6	Abel	11-MAY-04
7	Higgins	07-JUN-02
8	Gietz	07-JUN-02

13. Create a report that displays the following for all employees: last name, salary, and salary expressed in terms of thousands of dollars.

	LAST_NAME	SALARY	THOUSANDS
1	King	24000	24
2	Kochhar	17000	17
3	De Haan	17000	17
4	Hunold	9000	9
5	Ernst	6000	6
6	Lorentz	4200	4
7	Mourgos	5800	5
8	Rajs	3500	3
9	Davies	3100	3
10	Matos	2600	2
11	Vargas	2500	2
12	Zlotkey	10500	10
13	Abel	11000	11
14	Taylor	8600	8
15	Grant	7000	7
16	Whalen	4400	4
17	Hartstein	13000	13
18	Fay	6000	6
19	Higgins	12008	12
20	Gietz	8300	8

14. Show all the employees who have managers with a salary higher than $15,000. Show the following data: employee name, manager name, manager salary, and salary grade of the manager.

	LAST_NAME	MANAGER	SALARY	GRADE_LEVEL
1	Kochhar	King	24000	E
2	De Haan	King	24000	E
3	Mourgos	King	24000	E
4	Zlotkey	King	24000	E
5	Hartstein	King	24000	E
6	Whalen	Kochhar	17000	E
7	Higgins	Kochhar	17000	E
8	Hunold	De Haan	17000	E

15. Show the department number, name, number of employees, and average salary of all the departments, together with the names, salaries, and jobs of the employees working in each department.

	DEPARTMENT_ID	DEPARTMENT_NAME	EMPLOYEES	AVG_SAL	LAST_NAME	SALARY	JOB_ID
1	10	Administration	1	4400.00	Whalen	4400	AD_ASST
2	20	Marketing	2	9500.00	Hartstein	13000	MK_MAN
3	20	Marketing	2	9500.00	Fay	6000	MK_REP
4	50	Shipping	5	3500.00	Davies	3100	ST_CLERK
5	50	Shipping	5	3500.00	Matos	2600	ST_CLERK
6	50	Shipping	5	3500.00	Rajs	3500	ST_CLERK
7	50	Shipping	5	3500.00	Mourgos	5800	ST_MAN
8	50	Shipping	5	3500.00	Vargas	2500	ST_CLERK
9	60	IT	3	6400.00	Hunold	9000	IT_PROG
10	60	IT	3	6400.00	Lorentz	4200	IT_PROG
11	60	IT	3	6400.00	Ernst	6000	IT_PROG
12	80	Sales	3	10033.33	Zlotkey	10500	SA_MAN
13	80	Sales	3	10033.33	Abel	11000	SA_REP
14	80	Sales	3	10033.33	Taylor	8600	SA_REP
15	90	Executive	3	19333.33	Kochhar	17000	AD_VP
16	90	Executive	3	19333.33	King	24000	AD_PRES
17	90	Executive	3	19333.33	De Haan	17000	AD_VP
18	110	Accounting	2	10154.00	Gietz	8300	AC_ACCOUNT
19	110	Accounting	2	10154.00	Higgins	12008	AC_MGR
20	(null)	(null)	0	No average	Grant	7000	SA_REP

16. Create a report to display the department number and lowest salary of the department with the highest average salary.

	DEPARTMENT_ID	MIN(SALARY)
1	90	17000

17. Create a report that displays departments where no sales representatives work. Include the department number, department name, manager ID, and location in the output.

	DEPARTMENT_ID	DEPARTMENT_NAME	MANAGER_ID	LOCATION_ID
1	50	Shipping	124	1500
2	60	IT	103	1400
3	110	Accounting	205	1700
4	20	Marketing	201	1800
5	10	Administration	200	1700
6	190	Contracting	(null)	1700
7	90	Executive	100	1700

18. Create the following statistical reports for the HR department. Include the department number, department name, and the number of employees working in each department that:

    a. Employs fewer than three employees:

	DEPARTMENT_ID	DEPARTMENT_NAME	COUNT(*)
1	10	Administration	1
2	110	Accounting	2
3	20	Marketing	2

    b. Has the highest number of employees:

	DEPARTMENT_ID	DEPARTMENT_NAME	COUNT(*)
1	50	Shipping	5

    c. Has the lowest number of employees:

	DEPARTMENT_ID	DEPARTMENT_NAME	COUNT(*)
1	10	Administration	1

19. Create a report that displays the employee number, last name, salary, department number, and the average salary in their department for all employees.

	EMPLOYEE_ID	LAST_NAME	DEPARTMENT_ID	SALARY	AVG(S.SALARY)
1	149	Zlotkey	80	10500	10033.333333333333333333333333333333333333
2	174	Abel	80	11000	10033.333333333333333333333333333333333333
3	144	Vargas	50	2500	3500
4	101	Kochhar	90	17000	19333.333333333333333333333333333333333333
5	100	King	90	24000	19333.333333333333333333333333333333333333
6	103	Hunold	60	9000	6400
7	142	Davies	50	3100	3500
8	104	Ernst	60	6000	6400
9	143	Matos	50	2600	3500
10	200	Whalen	10	4400	4400
11	202	Fay	20	6000	9500
12	205	Higgins	110	12008	10154
13	102	De Haan	90	17000	19333.333333333333333333333333333333333333
14	107	Lorentz	60	4200	6400
15	141	Rajs	50	3500	3500
16	201	Hartstein	20	13000	9500
17	206	Gietz	110	8300	10154
18	176	Taylor	80	8600	10033.333333333333333333333333333333333333
19	124	Mourgos	50	5800	3500

20. Create an anniversary overview based on the hire date of the employees. Sort the anniversaries in ascending order.

	LAST_NAME	BIRTHDAY
1	Hunold	January 03
2	De Haan	January 13
3	Davies	January 29
4	Zlotkey	January 29
5	Lorentz	February 07
6	Hartstein	February 17
7	Matos	March 15
8	Taylor	March 24
9	Abel	May 11
10	Ernst	May 21
11	Grant	May 24
12	Higgins	June 07
13	Gietz	June 07
14	King	June 17
15	Vargas	July 09
16	Fay	August 17
17	Whalen	September 17
18	Kochhar	September 21
19	Rajs	October 17
20	Mourgos	November 16