

## Practice 1

The screenshot shows two windows side-by-side. On the left is the Oracle Database 11g documentation page for Practice 1, which includes a section on SELECT statements and a sample query. On the right is the SQL Workshop interface displaying the results of the query:

```
SELECT last_name, job_id, salary AS Sal
From Employees;
```

Results:

LAST_NAME	JOB_ID	SAL
King	AD_PRES	24000
Kochhar	AD_VP	17000
De Haan	AD_VP	17000
Hunold	IT_PROG	9000
Ernst	IT_PROG	6000
Austin	IT_PROG	4800
Pataballa	IT_PROG	4800
Lorentz	IT_PROG	4200
Greenberg	FI_MGR	12008
Faviet	FI_ACCOUNT	9000

More than 10 rows available. Increase rows selector to view more rows.

The screenshot shows two windows side-by-side. On the left is the Oracle Database 11g documentation page for Practice 2, which includes instructions for creating a script and a sample DESCRIBE statement. On the right is the SQL Workshop interface displaying the results of the DESCRIBE statement:

```
DESCRIBE departments
```

Name	Type
DEPARTMENT_ID	NOT NULL NUMBER(4)
DEPARTMENT_NAME	NOT NULL VARCHAR2(30)
MANAGER_ID	NUMBER(6)
LOCATION_ID	NUMBER(4)

4 rows selected

Results:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default
DEPARTMENTS	DEPARTMENT_ID	NUMBER	-	4	0	1	-	-
	DEPARTMENT_NAME	VARCHAR2	30	-	-	-	-	-
	MANAGER_ID	NUMBER	-	6	0	-	✓	-
	LOCATION_ID	NUMBER	-	4	0	-	✓	-

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3	50 Shipping	124
4	60 IT	103
5	80 Sales	149
6	90 Executive	100
7	110 Accounting	205
8	190 Contracting	(null)

```
5. DESCRIBE employees
Name           Null    Type
EMPLOYEE_ID    NOT NULL NUMBER(6)
FIRST_NAME     VARCHAR2(20)
LAST_NAME      NOT NULL VARCHAR2(25)
EMAIL          NOT NULL VARCHAR2(25)
PHONE_NUMBER   VARCHAR2(20)
HIRE_DATE      NOT NULL DATE
JOB_ID         NOT NULL VARCHAR2(10)
SALARY          NUMBER(8,2)
COMMISSION_PCT NUMBER(2,2)
MANAGER_ID     NUMBER(6)
DEPARTMENT_ID  NUMBER(4)

11 rows selected
```

The HR department wants a query to display the last name, job ID, hire date, and employee ID of each employee, with the employee ID appearing first. Provide an alias STARTDATE for the HIRE\_DATE column. Save your SQL statement to a file named lab\_01\_05.sql so that you can dispatch this file to the HR department.

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Part 2 (continued)

6. Test your query in the lab\_01\_05.sql file to ensure that it runs correctly.

Note: After you have executed the query, make sure that you do not enter your next query in the same worksheet. Open a new worksheet.

#	EMPLOYEE_ID	LAST_NAME	JOB_ID	STARTDATE
1	100 King	AD_PRES	17-JUN-87	
2	101 Kochhar	AD_VP	21-SEP-89	
3	102 De Haan	AD_VP	13-JAN-93	
4	103 Hundt	IT_PROG	03-JAN-90	
5	104 Ernst	IT_PROG	21-MAY-91	
6	107 Lorentz	IT_PROG	07-FEB-99	
7	124 Moursos	ST_MAN	16-NOV-99	
8	141 Raji	ST_CLERK	17-OCT-95	
9	142 Davies	ST_CLERK	29-JAN-97	
10	143 Matos	ST_CLERK	15-MAR-98	
...				
19	205 Higgins	AC_MGR	07-JUN-94	
20	206 Gietz	AC_ACCOUNT	07-JUN-94	

7. The HR department wants a query to display all unique job IDs from the EMPLOYEES table.

#	JOB_ID
1	AC_ACCOUNT
2	AC_MGR
3	AD_ASST
4	AD_PRES
5	AD_VP
6	IT_PROG
7	MKT_MAN
...	

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**Practice 1 (continued)**

**Part 3**

If you have time, complete the following exercises:

8. The HR department wants more descriptive column headings for its report on employees. Copy the statement from `Lab_01_05.sql` to a new SQL Worksheet. Name the column headings `Emp #`, `Employee`, `Job`, and `Hire Date`, respectively. Then run your query again.

	Emp #	Employee	Job	Hire Date
1	100 King	AD_PRES	17-JUN-87	
2	101 Kochhar	AD_VP	21-SEP-89	
3	102 De Haan	AD_VP	13-JAN-93	
4	103 Hunold	IT_PROG	03-JAN-90	
5	104 Ernst	IT_PROG	21-MAY-91	
6	107 Lorentz	IT_PROG	07-FEB-99	
7	124 Mourgos	ST_MAN	16-NOV-99	
8	141 Raji	ST_CLERK	17-OCT-95	
9	142 Davies	ST_CLERK	29-JAN-97	
10	143 Metos	ST_CLERK	15-MAR-98	
...				
19	205 Higgins	AC_MGR	07-JUN-94	
20	206 Gietz	AC_ACCOUNT	07-JUN-94	

**Employee and Title**

**Results Explain Describe Saved SQL History**

**SQL Commands**

```
SELECT employee_id As "Emp #", last_name As Employee, job_id As Job, hire_date As "Hire Date"
FROM employees;
```

**Results Explain Describe Saved SQL History**

Emp #	EMPLOYEE	JOB	Hire Date
100	King	AD_PRES	06/17/2003
101	Kochhar	AD_VP	09/21/2005
102	De Haan	AD_VP	01/13/2001
103	Hunold	IT_PROG	01/03/2006
104	Ernst	IT_PROG	05/21/2007
105	Austin	IT_PROG	06/25/2005
106	Pataballa	IT_PROG	02/05/2006
107	Lorentz	IT_PROG	02/07/2007
108	Greenberg	FI_MGR	08/17/2002
109	Faviet	FI_ACCOUNT	08/16/2002

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**Part 3**

If you have time, complete the following exercises:

8. The HR department wants more descriptive column headings for its report on employees. Copy the statement from `Lab_01_05.sql` to a new SQL Worksheet. Name the column headings `Emp #`, `Employee`, `Job`, and `Hire Date`, respectively. Then run your query again.

	Emp #	Employee	Job	Hire Date
1	100 King	AD_PRES	17-JUN-87	
2	101 Kochhar	AD_VP	21-SEP-89	
3	102 De Haan	AD_VP	13-JAN-93	
4	103 Hunold	IT_PROG	03-JAN-90	
5	104 Ernst	IT_PROG	21-MAY-91	
6	107 Lorentz	IT_PROG	07-FEB-99	
7	124 Mourgos	ST_MAN	16-NOV-99	
8	141 Raji	ST_CLERK	17-OCT-95	
9	142 Davies	ST_CLERK	29-JAN-97	
10	143 Metos	ST_CLERK	15-MAR-98	
...				
19	205 Higgins	AC_MGR	07-JUN-94	
20	206 Gietz	AC_ACCOUNT	07-JUN-94	

**Employee and Title**

**Results Explain Describe Saved SQL History**

**SQL Commands**

```
SELECT last_name||','||job_id As "Employee and Title"
FROM employees;
```

**Results Explain Describe Saved SQL History**

Employee and Title
Abel,SA_REP
Ande,SA_REP
Atkinson,ST_CLERK
Austin,IT_PROG
Baer,PR_REP
Baida,PU_CLERK
Banda,SA_REP
Bates,SA_REP
Bell,SH_CLERK
Bernstein,SA_REP

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**Practice 1 (continued)**

**Part 3 (continued)**

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

10. To familiarize yourself with the data in the EMPLOYEES table, create a query to display all the data from that table. Separate each column output by a comma. Name the column title THE\_OUTPUT.

Results

THE_OUTPUT
1 100,Steven,King,SKING,515.123.4567,AD_PRES,,17-JUN-87,24000,.90
2 101,Neena,Kochhar,NKOCHHAR,515.123.4569,AD_VP,100,21-SEP-89,17000,.90
3 102,Lex,De Haan,LDEHAAN,515.123.4569,AD_VP,100,13-JAN-93,17000,.90
4 103,Alexander,Hunold,AHUNOLD,590.423.4567,IT_PROG,102,03-JAN-90,90,6000,.60
5 104,Bruce,Ernst,BERNST,590.423.4568,IT_PROG,103,21-MAY-91,6000,.60
6 107,Diana,Lorentz,DLORENTZ,590.423.5567,IT_PROG,103,07-FEB-99,200,.60
7 124,Kevin,Morales,KMURROS,650.123.5234,ST_MAN,100,16-NOV-99,5800,.50
8 141,Trenna,Rajs,TRAJS,650.121.8009,ST_CLERK,124,17-OCT-95,3500,.50
9 142,Curtis,Davies,CDAVIES,650.121.2994,ST_CLERK,124,29-JAN-97,3100,.50
10 143,Randall,Matos,MRMATOS,650.121.2874,ST_CLERK,124,15-MAR-98,2600,.50
...
19 205,Shelley,Higgins,SHIGGINS,515.123.8080,AC_MGR,101,07-JUN-94,12000,.110
20 206,William,Getz,WGETZ,515.123.8181,AC_ACCOUNT,205,07-JUN-94,8300,.110

Results

Employee and Title	
100	Steven,King,SKING,515.123.4567,06/17/2003,AD_PRES,24000,.90
101	Neena,Kochhar,NKOCHHAR,515.123.4568,09/21/2005,AD_VP,17000,.90
102	Lex,De Haan,LDEHAAN,515.123.4569,01/13/2001,AD_VP,17000,.90
103	Alexander,Hunold,AHUNOLD,590.423.4567,01/03/2006,IT_PROG,9000,.102,60
104	Bruce,Ernst,BERNST,590.423.4568,05/21/2007,IT_PROG,6000,.103,60
105	David,Austin,DAUSTIN,590.423.4569,06/25/2005,IT_PROG,4800,.103,60
106	Valli,Pataballa,VPATABAL,590.423.4560,02/05/2006,IT_PROG,4800,.103,60
107	Diana,Lorentz,DLORENTZ,590.423.5567,02/07/2007,IT_PROG,4200,.103,60
108	Nancy,Greenberg,NGREENBE,515.124.4569,08/17/2002,FI_MGR,12000,.101,100
109	Daniel,Faviet,DFAVIET,515.124.4169,08/16/2002,FI_ACCOUNT,9000,.108,100
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## Practice 2

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Oracle Database 11g: SQL Fundamentals I 2 - 39

**Practice 2**

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\_02\_01.sql. Run your query.

Results

LAST_NAME	SALARY
King	24000
Kochhar	17000
De Haan	17000
Greenberg	12008
Russell	14000
Partners	13500
Hartstein	13000
Higgins	12008

8 rows returned in 0.00 seconds Download

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

Results

LAST_NAME	DEPARTMENT_ID
Taylor	60

3. The HR department needs to find high-salary and low-salary employees. Modify lab\_02\_01.sql to display the last name and salary for any employee whose salary is not in

Results

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**Oracle Database 11g: SQL Fundamentals I 2 - 39**

**Practice 2**

The HR department needs your assistance in creating some queries.

- 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\_02\_01.sql. Run your query.

LAST_NAME	SALARY
King	24000
Kochhar	17000
De Haan	17000
Hartstein	13000

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

LAST_NAME	DEPARTMENT_ID
Taylor	80

- The HR department needs to find high-salary and low-salary employees. Modify lab\_02\_01.sql to display the last name and salary for any employee whose salary is not in the range of \$5,000 to \$12,000. Save your SQL statement as lab\_02\_03.sql.

LAST_NAME	SALARY
King	24000
Kochhar	17000
De Haan	17000
Lorentz	4200
Rajs	3500
Davies	3100

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```
SELECT last_name, department_id
FROM employees
WHERE employee_id = 176;
```

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**Oracle Database 11g: SQL Fundamentals I 2 - 39**

**Practice 2**

The HR department needs your assistance in creating some queries.

- 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\_02\_01.sql. Run your query.

LAST_NAME	SALARY
King	24000
Kochhar	17000
De Haan	17000
Hartstein	13000

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

LAST_NAME	DEPARTMENT_ID
Taylor	80

- The HR department needs to find high-salary and low-salary employees. Modify lab\_02\_01.sql to display the last name and salary for any employee whose salary is not in the range of \$5,000 to \$12,000. Save your SQL statement as lab\_02\_03.sql.

LAST_NAME	SALARY
King	24000
Kochhar	17000
De Haan	17000
Austin	4800
Pataballa	4800
Lorentz	4200
Greenberg	12008
Khoo	3100
Baida	2900
Tobias	2800

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```
SELECT last_name, salary
FROM employees
WHERE salary NOT BETWEEN 5000 AND 12000;
```

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The screenshot shows two windows side-by-side. The left window is 'Oracle Database 11g: SQL Fundamentals I' with the title 'Practice 2 (continued)'. It contains several numbered steps with tables and SQL queries. Step 4 shows a table with last names, job IDs, and hire dates for Matos and Taylor. Step 5 shows a table for employees in departments 20 or 50. Step 6 shows a table for employees earning between \$5,000 and \$12,000 in department 20 or 50. The right window is 'SQL Workshop' at URL 127.0.0.1:8080/apex/f?p=4500:1003. It displays the results of the SQL query from step 4, showing the same data as the table in the left window. The results table has columns LAST\_NAME, JOB\_ID, and HIRE\_DATE.

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Oracle Database 11g: SQL Fundamentals I 2 - 40

**Practice 2 (continued)**

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 the hire date.

	LAST_NAME	JOB_ID	HIRE_DATE
1	Matos	ST_CLERK	15-MAR-96
2	Taylor	SA_REP	24-MAR-96

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

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

6. Modify lab\_02\_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 50. Label the columns Employee and Monthly\_Salary, respectively. Resave lab\_02\_03.sql as lab\_02\_06.sql. Run the statement in lab\_02\_06.sql.

	Employee	Monthly_Salary
1	Fay	6000
2	Mougos	5800

Autocommit Rows 10 Save Run

```
SELECT last_name, job_id, hire_date
FROM employees
WHERE last_name IN ('Matos', 'Taylor')
ORDER BY hire_date ASC;
```

Results Explain Describe Saved SQL History

LAST_NAME	JOB_ID	HIRE_DATE
Taylor	SH_CLERK	01/24/2006
Matos	ST_CLERK	03/15/2006
Taylor	SA_REP	03/24/2006

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**Practice 2 (continued)**

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 the hire date.

LAST_NAME	JOB_ID	HIRE_DATE
Matos	ST_CLERK	15-MAR-98
Taylor	SA_REP	24-MAR-98

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

LAST_NAME	DEPARTMENT_ID
Davio	50
Fay	20
Hartstein	20
Matos	50
Moungos	50
Rajs	50
Vargas	50

6. Modify lab\_02\_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 50. Label the columns Employee and Monthly Salary, respectively. Resave lab\_02\_03.sql as lab\_02\_06.sql. Run the statement in lab\_02\_06.sql.

Employee	Monthly Salary
Fay	6000
Moungos	5800

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How to use SQL Command menampilk SQL - SORT +  
127.0.0.1:8080/apex/f?p=4500:1003...  
Home > SQL Workshop > SQL Commands

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```
SELECT last_name, department_id
FROM employees
WHERE department_id = 20
OR department_id = 50
ORDER BY last_name ASC;
```

Results Explain Describe Saved SQL History

LAST_NAME	DEPARTMENT_ID
Atkinson	50
Bell	50
Bissot	50
Bull	50
Cabrio	50
Chung	50
Davies	50
Dellinger	50
Dilly	50
Everett	50

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**Practice 2 (continued)**

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 the hire date.

LAST_NAME	JOB_ID	HIRE_DATE
1 Matos	ST_CLERK	15-MAR-98
2 Taylor	SA_REP	24-MAR-96

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

LAST_NAME	DEPARTMENT_ID
1 Dovico	60
2 Foy	20
3 Hartstein	20
4 Matos	50
5 Mourgos	50
6 Rajs	50
7 Vargas	50

6. Modify lab\_02\_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 50. Label the columns Employee and Monthly Salary, respectively. Resave lab\_02\_03.sql as lab\_02\_06.sql. Run the statement in lab\_02\_06.sql.

Employee	Monthly Salary
1 Fay	6000
2 Mourgos	5800

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```
SELECT last_name AS Employee, salary AS "Monthly Salary"
FROM employees
WHERE department_id = 20
OR department_id = 50
AND salary BETWEEN 5000 AND 12000
```

Results Explain Describe Saved SQL History

EMPLOYEE	Monthly Salary
Weiss	8000
Fripp	8200
Kaufling	7900
Vollman	6500
Mourgos	5800
Hartstein	13000
Fay	6000

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**Practice 2 (continued)**

If you have time, complete the following exercises:

12. Display all employee last names in which 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 VMalena

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 those of a sales representative or of 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\_02\_06.sql to display the last name, salary, and commission for all employees whose commission is 20%. Resave lab\_02\_06.sql as lab\_02\_15.sql. Rerun the

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Home > SQL Workshop > SQL Commands

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```
SELECT last_name, hire_date
FROM employees
WHERE hire_date LIKE '_94%';
```

Results Explain Describe Saved SQL History

no data found

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**Practice 2 (continued)**

7. The HR department needs a report that displays the last name and hire date for all employees who were hired in 1994.

LAST_NAME	HIRE_DATE
1 Higgins	07-JUN-94
2 Gietz	07-JUN-94

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 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\_02\_10.sql. 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 Hunold	9000
5 Ernst	6000
6 Austin	4800
7 Pataballa	4800
8 Lorentz	4200

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SELECT last\_name, job\_id  
FROM employees  
WHERE manager\_id IS NULL;

Results Explain Describe Saved SQL History

LAST_NAME	JOB_ID
King	AD_PRES

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**Practice 2 (continued)**

7. The HR department needs a report that displays the last name and hire date for all employees who were hired in 1994.

LAST_NAME	HIRE_DATE
1 Higgins	07-JUN-94
2 Gietz	07-JUN-94

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 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\_02\_10.sql. 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 Hunold	9000
5 Ernst	6000
6 Austin	4800
7 Pataballa	4800
8 Lorentz	4200

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SELECT last\_name, salary, commission\_pct  
FROM employees  
ORDER BY 3 DESC;

Results Explain Describe Saved SQL History

LAST_NAME	SALARY	COMMISSION_PCT
King	24000	-
Kochhar	17000	-
De Haan	17000	-
Hunold	9000	-
Ernst	6000	-
Austin	4800	-
Pataballa	4800	-
Lorentz	4200	-

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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 those of a sales representative or of 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\_02\_06.sql to display the last name, salary, and commission for all employees whose commission is 20%. Resave lab\_02\_06.sql as lab\_02\_15.sql. Rerun the statement in lab\_02\_15.sql.

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

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ORAQUE Application Express

Welcome SYSTEMHR (Logout)

Home Application Builder SQL Workshop Team Development Administration

Home > SQL Workshop > SQL Commands

Autocommit Rows 10 Save Run

```
SELECT last_name
FROM employees
WHERE last_name LIKE '_a%'
```

Results Explain Describe Saved SQL History

LAST_NAME
Grant
Grant
Whalen

3 rows returned in 0.00 seconds Download

**Practice 2 (continued)**

If you have time, complete the following exercises:

12. Display all employee last names in which 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 those of a sales representative or of 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\_02\_06.sql to display the last name, salary, and commission for all employees whose commission is 20%. Resave lab\_02\_06.sql as lab\_02\_15.sql. Rerun the

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ORAQUE Application Express

Welcome SYSTEMHR (Logout)

Home Application Builder SQL Workshop Team Development Administration

Home > SQL Workshop > SQL Commands

Autocommit Rows 10 Save Run

```
SELECT last_name
FROM employees
WHERE last_name LIKE '%a%'
AND last_name LIKE '%e%';
```

Results Explain Describe Saved SQL History

LAST_NAME
Baer
Bates
Colmenares
Davies
De Haan
Faviet
Fleur
Gates

4 rows returned in 0.00 seconds Download

12. Display all employee last names in which the third letter of the name is "a."

LAST_NAME
Grant
Whalen

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

LAST_NAME
Davies
De Haan
Hartstein
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 those of a sales representative or of a stock clerk, and whose salaries are not equal to \$2,500, \$3,500, or \$7,000.

LAST_NAME	JOB_ID	SALARY
Abel	SA_REP	11000
Taylor	SA_REP	8600
Davies	ST_CLERK	3100
Matos	ST_CLERK	2600

15. Modify lab\_02\_06.sql to display the last name, salary, and commission for all employees whose commission is 20%. Resave lab\_02\_06.sql as lab\_02\_15.sql. Rerun the statement in lab\_02\_15.sql.

Employee	Monthly Salary	Commission_Pct
Zlotkey	10500	0.2
Taylor	8600	0.2

The screenshot shows the Oracle Application Express interface with the SQL Workshop tab selected. A SQL command is entered to select last names, job IDs, and salaries for specific job roles (SA\_REP and ST\_CLERK) where the salary is not in the set {2500, 3500, 7000}. The results table displays the following data:

LAST_NAME	JOB_ID	SALARY
Nayer	ST_CLERK	3200
Mikillineni	ST_CLERK	2700
Landry	ST_CLERK	2400
Markle	ST_CLERK	2200
Bissot	ST_CLERK	3300
Atkinson	ST_CLERK	2800
Olson	ST_CLERK	2100
Mallin	ST_CLERK	3300

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

LAST_NAME
Davies
De Haan
Hartstein
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 those of a sales representative or of a stock clerk, and whose salaries are not equal to \$2,500, \$3,500, or \$7,000.

LAST_NAME	JOB_ID	SALARY
Abel	SA_REP	11000
Taylor	SA_REP	8600
Davies	ST_CLERK	3100
Matos	ST_CLERK	2600

15. Modify lab\_02\_06.sql to display the last name, salary, and commission for all employees whose commission is 20%. Resave lab\_02\_06.sql as lab\_02\_15.sql. Rerun the statement in lab\_02\_15.sql.

Employee	Monthly Salary	Commission_Pct
Zlotkey	10500	0.2
Taylor	8600	0.2

The screenshot shows the Oracle Application Express interface with the SQL Workshop tab selected. A SQL command is entered to select last names, monthly salaries, and commission percentages for employees with a commission percentage of 20%. The results table displays the following data:

EMPLOYEE	Monthly Salary	COMMISSION_PCT
Zlotkey	10500	2
Olsen	8000	2
Cambrault	7500	2
Bloom	10000	2
Fox	9600	2
Taylor	8600	2
Livingston	8400	2

7 rows returned in 0.00 seconds

## Practice 3

The screenshot shows a dual-pane interface. On the left is a browser window displaying the Oracle Database 11g: SQL Fundamentals I practice page, specifically section 3-33. It contains instructions for Practice 3, Part 1, which asks to write a query to display the system date. A sample query is provided: `SELECT sysdate AS "Date" FROM dual;`. On the right is the Oracle Application Express SQL Workshop. The SQL editor contains the same query. The results pane shows a single row with the date `08/02/2020`.

Oracle Database 11g: SQL Fundamentals I 3 - 33

**Practice 3**

**Part 1**

1. Write a query to display the system date. Label the column as Date.

Note: If your database is remotely located in a different time zone, the output will be the date for the operating system on which the database resides.

Date
1 31-MAY-07

2. The HR department needs a report to display the employee number, last name, salary, and salary increased by 15.5% (expressed as a whole number) for each employee. Label the column as New Salary. Save your SQL statement in a file named lab\_03\_02.sql.
3. Run your query in the lab\_03\_02.sql file.

EMPLOYEE_ID	LAST_NAME	SALARY	New Salary
1	100 King	24000	27720
2	101 Kochhar	17000	19635

This screenshot is identical to the one above, showing the Oracle Application Express interface. The SQL editor now contains a query to calculate a new salary for all employees: `SELECT employee_id, last_name, salary, salary+(salary*15.5/100) As "New Salary" from employees;`. The results pane displays a table with columns `EMPLOYEE_ID`, `LAST_NAME`, `SALARY`, and `New Salary`, showing updated values for each employee.

Oracle Database 11g: SQL Fundamentals I 3 - 33

**Practice 3**

**Part 1**

1. Write a query to display the system date. Label the column as Date.

Note: If your database is remotely located in a different time zone, the output will be the date for the operating system on which the database resides.

Date
1 31-MAY-07

2. The HR department needs a report to display the employee number, last name, salary, and salary increased by 15.5% (expressed as a whole number) for each employee. Label the column as New Salary. Save your SQL statement in a file named lab\_03\_02.sql.
3. Run your query in the lab\_03\_02.sql file.

EMPLOYEE_ID	LAST_NAME	SALARY	New Salary
100	King	24000	27720
101	Kochhar	17000	19635
102	De Haan	17000	19635
103	Hunold	9000	10395
104	Ernst	6000	6930
105	Austin	4800	5544
106	Pataballa	4800	5544
107	Lorentz	4200	4851

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4	T03 Hunold	9000	10395
5	104 Ernst	6000	6930
6	107 Lorentz	4200	4851
7	124 Mourgos	5800	6699
8	141 Raj	3500	4043
9	142 Davies	3100	3581
10	143 Matos	2600	3003
...			
19	205 Higgins	12000	13860
20	206 Gietz	8300	9587

4. Modify your query lab\_03\_02.sql to add a column that subtracts the old salary from the new salary. Label the column **Increases**. Save the contents of the file as lab\_03\_04.sql. Run the revised query.

EMPLOYEE_ID	LAST_NAME	SALARY	New Salary	Increase
1	100 King	24000	27720	3720
2	101 Kochhar	17000	19635	2635
3	102 De Haan	17000	19635	2635
4	103 Hunold	9000	10395	1395
5	104 Ernst	6000	6930	930
...				
20	206 Gietz	8300	9587	1287

Oracle Database 11g: SQL Fundamentals I 3 - 34

BITED Practice 3 (continued)

127.0.0.1:8080/apex/f?p=4500...

ORACLE Application Express

Welcome SYSTEMHR (Logout)

Home Application Builder SQL Workshop Team Development Administrat...

Home > SQL Workshop > SQL Commands

Autocommit Rows 10 Save Run

```
SELECT employee_id, last_name, salary, salary+(salary*15.5/100) As "New Salary",
(salary+(salary*15.5/100))-salary As "Increases"
FROM employees;
```

Results Explain Describe Saved SQL History

EMPLOYEE_ID	LAST_NAME	SALARY	New Salary	Increases
100	King	24000	27720	3720
101	Kochhar	17000	19635	2635
102	De Haan	17000	19635	2635
103	Hunold	9000	10395	1395
104	Ernst	6000	6930	930
105	Austin	4800	5544	744
106	Pataballa	4800	5544	744
107	Lorentz	4200	4851	651

6:27 AM

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Practice 3 (continued)

5. Write a query that displays the last name (with the first letter in uppercase and all the other letters in lowercase) and the length of the last name for all employees whose name starts with the letters "J," "A," or "M." Give each column an appropriate label. Sort the results by the employees' last names.

Name	Length
1 Abel	4
2 Matos	5
3 Mourgos	7

Rewrite the query so that the user is prompted to enter a letter that the last name starts with. For example, if the user enters "H" (capitalized) when prompted for a letter, then the output should show all employees whose last name starts with the letter "H."

Name	Length
1 Hartstein	9
2 Higgins	7
3 Hunold	6

Modify the query such that the case of the entered letter does not affect the output. The entered letter must be capitalized before being processed by the SELECT query.

Enter Substitution Variable

START LETTER:  
h

127.0.0.1:8080/apex/f?p=4500...

ORACLE Application Express

Welcome SYSTEMHR (Logout)

Home Application Builder SQL Workshop Team Development Administrat...

Home > SQL Workshop > SQL Commands

Autocommit Rows 10 Save Run

```
select initcap(last_name) "Name", length(last_name) "Length"
from employees
where last_name like 'J%' or last_name like 'A%' or last_name like 'M%'
order by last_name;
```

Results Explain Describe Saved SQL History

Name	Length
Abel	4
Ande	4
Atkinson	8
Austin	6
Johnson	7
Jones	5
Mallin	6
Markle	6
Marlow	6
Marvins	7

More than 10 rows available. Increase rows selector to view more rows.  
10 rows returned in 0.00 seconds Download

6:34 AM

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**Practice 3 (continued)**

5. Write a query that displays the last name (with the first letter in uppercase and all the other letters in lowercase) and the length of the last name for all employees whose name starts with the letters "J," "A," or "M." Give each column an appropriate label. Sort the results by the employees' last names.

	Name	Length
1	Abel	4
2	Matos	5
3	Mourgos	7

Rewrite the query so that the user is prompted to enter a letter that the last name starts with. For example, if the user enters "H!" (capitalized) when prompted for a letter, then the output should show all employees whose last name starts with the letter "H."

	Name	Length
1	Hartstein	9
2	Higgins	7
3	Hunold	6

Modify the query such that the case of the entered letter does not affect the output. The entered letter must be capitalized before being processed by the SELECT query.

**Enter Substitution Variable**

START LETTER:  
h

Workspace: HR User: SYSTEMHR Language

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**Practice 3 (continued)**

6. The HR department wants to find the duration of employment for each employee. For each employee, display the last name and calculate the number of months between today and the date on which the employee was hired. Label the column as MONTHS\_WORKED. Order your results by the number of months employed. Round the number of months up to the closest whole number.

**Note:** Because this query depends on the date when it was executed, the values in the MONTHS\_WORKED column will differ for you.

	LAST_NAME	MONTHS_WORKED
1	Zlotkey	88
2	Mourgos	90
3	Grant	96
4	Lorentz	100
5	Vargas	107
6	Taylor	110
7	Matos	111
8	Fay	117
9	Davies	124
10	Abel	133
11	Hartstein	135
12	Rajs	139
13	Higgins	156

select last\_name, round(months\_between(sysdate,hire\_date),0) Months\_worked  
from employees  
order by 2;

Results Explain Describe Saved SQL History

LAST_NAME	MONTHS_WORKED
Banda	147
Kumar	147
Ande	148
Lee	149
Markle	149
Geoni	150
Phillanker	150
Zlotkey	150
Marvins	150
Grant	151

More than 10 rows available. Increase rows selector to view more rows.

Oracle Documentation - Part 1

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**EMPLOYEES\_AND\_THEIR\_SALARIES**

1 King *****
2 Kochhar *****
3 De Haan *****
4 Hartstein *****
5 Higgins *****
...
19 Matos **
20 Vergas **

9. Create a query to display the last name and the number of weeks employed for all employees in department 90. Label the number of weeks column as TENURE. Truncate the number of weeks value to 0 decimal places. Show the records in descending order of the employee's tenure.  
Note: The TENURE value will differ as it depends on the date on which you run the query.

**LAST\_NAME** **TENURE**

1 King	1041
2 Kochhar	923
3 De Haan	750

Oracle Database 11g: SQL Fundamentals I 3 - 37

127.0.0.1:8080/apex/f?p=4500...

Autocommit Rows 10 Save Run

```
select last_name, LPAD(salary,15,'$') as "Salary"
from employees
```

Results Explain Describe Saved SQL History

**LAST\_NAME** **Salary**

King	\$\$\$\$\$\$\$\$\$\$24000
Kochhar	\$\$\$\$\$\$\$\$\$\$17000
De Haan	\$\$\$\$\$\$\$\$\$\$17000
Hunold	\$\$\$\$\$\$\$\$\$\$9000
Ernst	\$\$\$\$\$\$\$\$\$\$56000
Austin	\$\$\$\$\$\$\$\$\$\$54800
Pataballa	\$\$\$\$\$\$\$\$\$\$4800
Lorentz	\$\$\$\$\$\$\$\$\$\$4200
Greenberg	\$\$\$\$\$\$\$\$\$\$12008
Faviet	\$\$\$\$\$\$\$\$\$\$9000

More than 10 rows available. Increase rows selector to view more rows.

Oracle Documentation - Part 1

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11. Create a query to display the last name and salary for all employees. Format the salary to be 15 characters long, left-padded with the \$ symbol. Label the column as SALARY.

**LAST\_NAME** **SALARY**

1 King	\$\$\$\$\$\$\$\$\$\$24000
2 Kochhar	\$\$\$\$\$\$\$\$\$\$17000
...	
20 Gietz	\$\$\$\$\$\$\$\$\$\$8300

8. Create a query that displays the first eight characters of the employees' last names and indicates the amounts of their salaries with asterisks. Each asterisk signifies a thousand dollars. Sort the data in descending order of salary. Label the column as EMPLOYEES\_AND\_THEIR\_SALARIES.

**EMPLOYEES\_AND\_THEIR\_SALARIES**

1 King *****
2 Kochhar *****
3 De Haan *****
4 Hartstein *****
5 Higgins *****
...
19 Matos **
20 Vergas **

9. Create a query to display the last name and the number of weeks employed for all employees in department 90. Label the number of weeks column as TENURE. Truncate the number of weeks value to 0 decimal places. Show the records in descending order of the employee's tenure.  
Note: The TENURE value will differ as it depends on the date on which you run the query.

**LAST\_NAME** **TENURE**

1 King
2 Kochhar
3 De Haan
4 Hartstein
5 Higgins
...
19 Matos
20 Vergas

127.0.0.1:8080/apex/f?p=4500...

Autocommit Rows 10 Save Run

```
select last_name, RPAD(last_name,8)||' | '|| RPAD(' ' , salary/1000+1, '*') EMPLOYEES_AND_THEIR_SALARIES
from employees
order by salary DESC;
```

Results Explain Describe Saved SQL History

**LAST\_NAME** **EMPLOYEES\_AND\_THEIR\_SALARIES**

King	King *****
Kochhar	Kochhar *****
De Haan	De Haan *****
Russell	Russell *****
Partners	Partners *****
Hartstein	Hartstein *****
Greenberg	Greenber *****
Higgins	Higgins *****
Errazuriz	Errazun *****
Ozer	Ozer *****

More than 10 rows available. Increase rows selector to view more rows.

The screenshot shows two windows side-by-side. The left window is titled 'Oracle Documentation - Part\_1' and displays a table titled 'EMPLOYEES\_AND THEIR\_SALARIES' with data for employees 1 through 5. The right window is titled 'SQL Workshop' and shows an SQL query being run against the 'employees' table to calculate tenure based on hire date.

**EMPLOYEES\_AND THEIR\_SALARIES**

Employee ID	Last Name	Salary
1	King	\$8300
2	Kochhar	\$5300
3	De Haan	\$5100
4	Hartstein	\$4900
5	Higgins	\$4800

**Results**

LAST_NAME	TENURE
De Haan	1020
King	893
Kochhar	775

3 rows returned in 0.04 seconds [Download](#)

**SQL Commands**

```
select last_name, TRUNC((SYSDATE-hire_date)/7) As TENURE
from employees
where department_id = 90
order by TENURE DESC;
```

## Practice 4

The screenshot shows two windows side-by-side. The left window is titled 'Oracle Database 11g: SQL Fundamentals I' and displays a practice exercise. The right window is titled 'SQL Workshop' and shows the results of the SQL query.

**Exercise 4**

- Create a report that produces the following for each employee:  
<employee last name> earns <salary> monthly but wants <3 times salary>. Label the column Dream Salaries.

Dream Salaries

King earns \$24,000.00 monthly but wants \$72,000.00.
Kochhar earns \$17,000.00 monthly but wants \$51,000.00.
De Haan earns \$17,000.00 monthly but wants \$51,000.00.
Hunold earns \$9,000.00 monthly but wants \$27,000.00.
Ernst earns \$6,000.00 monthly but wants \$18,000.00.

19 Higgins earns \$12,000.00 monthly but wants \$36,000.00.  
20 Gietz earns \$8,300.00 monthly but wants \$24,900.00.

- Display each employee's last name, hire date, and salary review date, which is the first Monday after 6 months of service. Label the column REVIEW. Format the dates to appear in the format similar to "Monday, the Thirty-First of July, 2000."

**Results**

Dream Salary
King earns \$24000 monthly but wants \$72000
Kochhar earns \$17000 monthly but wants \$51000
De Haan earns \$17000 monthly but wants \$51000
Hunold earns \$9000 monthly but wants \$27000
Ernst earns \$6000 monthly but wants \$18000
Austin earns \$4800 monthly but wants \$14400
Pataballa earns \$4800 monthly but wants \$14400
Lorentz earns \$4200 monthly but wants \$12600
Greenberg earns \$12008 monthly but wants \$36024
Faviet earns \$9000 monthly but wants \$27000

More than 10 rows available. Increase rows selector to view more rows.  
10 rows returned in 0.00 seconds [Download](#)

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Oracle Database 11g: SQL Fundamentals I 4 - 44

**Practice 4**

- Create a report that produces the following for each employee:  
 <employee last name> earns <salary> monthly but wants <3 times salary>. Label the column Dream Salaries.

Dream Salaries
1 King earns \$24,000 monthly but wants \$72,000.00.
2 Kochhar earns \$17,000 monthly but wants \$51,000.00.
3 De Haan earns \$17,000 monthly but wants \$51,000.00.
4 Hunold earns \$9,000 monthly but wants \$27,000.00.
5 Ernst earns \$6,000 monthly but wants \$18,000.00.
...
19 Higgins earns \$12,000 monthly but wants \$36,000.00.
20 Gietz earns \$8,300 monthly but wants \$24,900.00.

- Display each employee's last name, hire date, and salary review date, which is the first Monday after six months of service. Label the column REVIEW. Format the dates to appear in the format similar to "Monday, the Thirty-First of July, 2000."

LAST_NAME	HIRE_DATE	REVIEW
1 King	17-JUN-87	Monday, the Twenty-First of December, 1987
2 Kochhar	21-SEP-89	Monday, the Twenty-Sixth of March, 1990
3 De Haan	13-JAN-93	Monday, the Nineteenth of July, 1993
4 Hunold	03-JAN-90	Monday, the Ninth of July, 1990
5 Ernst	21-MAY-91	Monday, the Twenty-Fifth of November, 1991
...		

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9:57 AM

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Oracle Database 11g: SQL Fundamentals I 4 - 45

**Practice 4 (continued)**

- Display the last name, hire date, and day of the week on which the employee started. Label the column DAY. Order the results by the day of the week, starting with Monday.

LAST_NAME	HIRE_DATE	DAY
1 Grant	24-MAY-99	MONDAY
2 Gietz	07-JUN-94	TUESDAY
3 Taylor	24-MAR-98	TUESDAY
4 Higgins	07-JUN-94	TUESDAY
5 Ras	17-OCT-95	TUESDAY
...		
19 Lorentz	07-FEB-99	SUNDAY
20 Fay	17-AUG-97	SUNDAY

- Create a query that displays the employees' last names and commission amounts. If an employee does not earn commission, show "No Commission." Label the column COMM.

LAST_NAME	COMM
1 King	No Commission
2 Kochhar	No Commission
3 De Haan	No Commission
4 Hunold	No Commission
5 Ernst	No Commission
6 Lorentz	No Commission
...	

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10:02 AM

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4. Create a query that displays the employees' last names and commission amounts. If an employee does not earn commission, show "No Commission." Label the column COMM.

LAST_NAME	COMM
King	No Commission
Kochhar	No Commission
De Haan	No Commission
Hunold	No Commission
Ernst	No Commission
Lorentz	No Commission
Zlotkey	.2
Abel	.3
Taylor	.2
Grant	.15
Whalen	No Commission
Hartstein	No Commission
Fay	No Commission
Higgins	No Commission
Gietz	No Commission

Oracle Database 11g: SQL Fundamentals I 4 - 46

Autocommit Rows 10 Save Run

```
select LAST_NAME, NVL(TO_CHAR(COMMISSION_PCT), 'No Commission')
from employees;
```

Results Explain Describe Saved SQL History

LAST_NAME	NVL(TO_CHAR(COMMISSION_PCT), 'NOCOMMISSION')
King	No Commission
Kochhar	No Commission
De Haan	No Commission
Hunold	No Commission
Ernst	No Commission
Austin	No Commission
Pataballa	No Commission
Lorentz	No Commission
Greenberg	No Commission
Faviet	No Commission

More than 10 rows available. Increase rows selector to view more rows.  
10 rows returned in 0.02 seconds Download

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Practice 4 (continued)

If you have time, complete the following exercises:

5. Using the DECODE function, write a query that displays the grade of all employees based on the value of the column JOB\_ID, using the following data:

Job	Grade
AD_PRES	A
ST_MAN	B
IT_PROG	C
SA_REP	D
ST_CLERK	E
None of the above	0

JOB_ID	GRADE
1 AC_ACCOUNT	0
2 AC_MGR	0
3 AD_ASST	0
4 AD_PRES	A
5 AD_VP	0
18 ST_CLERK	E
19 ST_CLERK	E

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Autocommit Rows 10 Save Run

```
SELECT job_id, decode (job_id,
'AD_PRES', 'A',
'ST_MAN', 'B',
'IT_PROG', 'C',
'SA_REP', 'D',
'ST_CLERK', 'E',
'0')GRADE
FROM employees;
```

Home Application Builder SQL Workshop Team Development Administrators

Home > SQL Workshop > SQL Commands

Results Explain Describe Saved SQL History

JOB_ID	GRADE
AC_ACCOUNT	0
AC_MGR	0
AD_ASST	0
AD_PRES	A
AD_VP	0
AD_VP	0
FI_ACCOUNT	0
FI_ACCOUNT	0
FI_ACCOUNT	0

Autocommit Rows 10 Save Run

**Practice 4 (continued)**

If you have time, complete the following exercises:

5. Using the DECODE function, write a query that displays the grade of all employees based on the value of the column JOB\_ID, using the following data:

Job	Grade
AD_PRES	A
ST_MAN	B
IT_PROG	C
SA_REP	D
ST_CLERK	E
None of the above	0

None of the above 0

JOB_ID	GRADE
1 AC_ACCOUNT	0
2 AC_MGR	0
3 AD_ASST	0
4 AD_PRES	A
5 AD_VP	0

...

JOB_ID	GRADE
18 ST_CLERK	E
19 ST_CLERK	E
20 ST_MAN	B

6. Rewrite the statement in the preceding exercise using the CASE syntax.

JOB_ID	GRADE
1 AC_ACCOUNT	0
2 AC_MGR	0
3 AD_ASST	0
4 AD_PRES	A
5 AD_VP	0

...

JOB_ID	GRADE
18 ST_CLERK	E
19 ST_CLERK	E
20 ST_MAN	B

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```
SELECT job_id, CASE job_id
WHEN 'AD_PRES' THEN 'A'
WHEN 'ST_MAN' THEN 'B'
WHEN 'IT_PROG' THEN 'C'
WHEN 'SA_REP' THEN 'D'
WHEN 'ST_CLERK' THEN 'E'
ELSE '0' END GRADE
FROM employees;
```

Results Explain Describe Saved SQL History

JOB_ID	GRADE
AC_ACCOUNT	0
AC_MGR	0
AD_ASST	0
AD_PRES	A
AD_VP	0
FI_ACCOUNT	0
FI_ACCOUNT	0

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**Practice 5**

Determine the validity of the following three statements. Circle either True or False.

- Group functions work across many rows to produce one result per group.  
True/False
- Group functions include nulls in calculations.  
True/False
- The WHERE clause restricts rows before inclusion in a group calculation.  
True/False

The HR department needs the following reports:

- Find the highest, lowest, sum, and average salary of all employees. Label the columns as Maximum, Minimum, Sum, and Average. Round your results to the nearest whole number. Save your SQL statement as lab\_05\_04.sql. Run the query.

	Maximum	Minimum	Sum	Average
1	24000	2500	175500	8775

- Modify the query in lab\_05\_04.sql to display the minimum, maximum, sum, and average salary for each job type. Resave lab\_05\_04.sql as lab\_05\_05.sql. Run the statement in lab\_05\_05.sql.

JOB_ID	Maximum	Minimum	Sum	Average
IT_PROG	9000	4200	19200	6400
AC_MGR	12000	12000	12000	12000
AC_ACCOUNT	8300	8300	8300	8300
ST_MAN	5800	5800	5800	5800
AD_ASST	4100	4100	4100	4100

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```
SELECT round(MAX(salary)) "Maximum",
round(MIN(salary)) "Minimum",
round(SUM(salary)) "Sum",
round(AVG(salary)) "Average"
from employees;
```

Results Explain Describe Saved SQL History

Maximum	Minimum	Sum	Average
24000	2100	691416	6462

1 rows returned in 0.01 seconds Download

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2. Group functions include nulls in calculations.  
True/False

3. The `WILDE` clause restricts rows before inclusion in a group calculation.  
True/False

The HR department needs the following reports:

4. Find the highest, lowest, sum, and average salary of all employees. Label the columns as `Maximum`, `Minimum`, `Sum`, and `Average`, respectively. Round your results to the nearest whole number. Save your SQL statement as `lab_05_04.sql`. Run the query.

	Maximum	Minimum	Sum	Average
1	24000	2500	175000	8775

5. Modify the query in `lab_05_04.sql` to display the minimum, maximum, sum, and average salary for each job type. Rename `lab_05_04.sql` as `lab_05_05.sql`. Run the statement in `lab_05_05.sql`.

JOB_ID	Maximum	Minimum	Sum	Average
IT_PROG	9000	4200	19200	6400
AC_MGR	12000	12000	12000	12000
AC_ACCOUNT	8300	8300	8300	8300
ST_MAN	5800	5800	5800	5800
AD_ASST	4400	4400	4400	4400
AD_VP	17000	17000	34000	17000
SA_MAN	10500	10500	10500	10500
MK_MAN	13000	13000	13000	13000
AD_PRES	24000	24000	24000	24000
SA_REP	11000	7000	26600	8867
MK_REP	6000	6000	6000	6000
ST_CLERK	3500	2500	11700	2925

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```
SELECT job_id,
       round(MAX(salary)) "Maximum",
       round(MIN(salary)) "Minimum",
       round(SUM(salary)) "Sum",
       round(AVG(salary)) "Average"
  from employees
 GROUP BY job_id;
```

Results Explain Describe Saved SQL History

JOB_ID	Maximum	Minimum	Sum	Average
IT_PROG	9000	4200	28800	5760
AC_MGR	12008	12008	12008	12008
AC_ACCOUNT	8300	8300	8300	8300
ST_MAN	8200	5800	36400	7280
PU_MAN	11000	11000	11000	11000
AD_ASST	4400	4400	4400	4400
AD_VP	17000	17000	34000	17000
SH_CLERK	4200	2500	64300	3215
FI_ACCOUNT	9000	6900	39600	7920
FI_MGR	12008	12008	12008	12008

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4 ST\_MAN 5800 5800 5800 5800

5 AD\_ASST 4400 4400 4400 4400

6 AD\_VP 17000 17000 34000 17000

7 SA\_MAN 10500 10500 10500 10500

8 MK\_MAN 13000 13000 13000 13000

9 AD\_PRES 24000 24000 24000 24000

10 SA\_REP 11000 7000 26600 8867

11 MK\_REP 6000 6000 6000 6000

12 ST\_CLERK 3500 2500 11700 2925

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```
SELECT job_id, COUNT(*)
  FROM employees
 GROUP BY job_id;
```

Results Explain Describe Saved SQL History

JOB_ID	COUNT(*)
AC_ACCOUNT	1
AC_MGR	1
AD_ASST	1
AD_PRES	1
AD_VP	2
FI_ACCOUNT	5
FI_MGR	1
HR_REP	1
IT_PROG	5
MK_MAN	1

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**Practice 5 (continued)**

6. Write a query to display the number of people with the same job.

JOB_ID	COUNT(*)
1 AC_ACCOUNT	1
2 AC_MGR	1
3 AD_ASST	1
4 AD_PRES	1
5 AD_VP	2
6 IT_PROG	3
7 MK_MAN	1
8 MK_REP	1
9 SA_MAN	1
10 SA_REP	3
11 ST_CLERK	4
12 ST_MAN	1

Generalize the query so that the user in the HR department is prompted for a job title. Save the script to a file named lab\_05\_06.sql. Run the query. Enter IT\_PROG when prompted.

JOB_ID	COUNT(*)
IT_PROG	3

7. Determine the number of managers without listing them. Label the column as Number of Managers. Hint: Use the MANAGER\_ID column to determine the number of managers.

Number of Managers
1
6

8. Find the difference between the highest and lowest salaries. Label the column DIFFERENCE.

DIFFERENCE
21500

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```
SELECT job_id, COUNT(*)
FROM employees
WHERE job_id = 'IT_PROG'
GROUP BY job_id;
```

Results Explain Describe Saved SQL History

JOB_ID	COUNT(*)
IT_PROG	5

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**Practice 5 (continued)**

6. Write a query to display the number of people with the same job.

JOB_ID	COUNT(*)
1 AC_ACCOUNT	1
3 AD_ASST	1
4 AD_PRES	1
5 AD_VP	2
6 IT_PROG	3
7 MK_MAN	1
8 MK_REP	1
9 SA_MAN	1
10 SA_REP	3
11 ST_CLERK	4
12 ST_MAN	1

Generalize the query so that the user in the HR department is prompted for a job title. Save the script to a file named lab\_05\_06.sql. Run the query. Enter IT\_PROG when prompted.

JOB_ID	COUNT(*)
IT_PROG	3

7. Determine the number of managers without listing them. Label the column as Number of Managers. Hint: Use the MANAGER\_ID column to determine the number of managers.

Number of Managers
1
6

8. Find the difference between the highest and lowest salaries. Label the column DIFFERENCE.

DIFFERENCE
21500

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```
SELECT COUNT(DISTINCT manager_id) "Number of Managers"
FROM employees;
```

Results Explain Describe Saved SQL History

Number of Managers
18

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Number of Managers

	Number of Managers
1	8

8. Find the difference between the highest and lowest salaries. Label the column DIFFERENCE.

DIFFERENCE

	DIFFERENCE
1	21500

Oracle Database 11g: SQL Fundamentals I 5 - 31

**Practice 5 (continued)**

If you have time, complete the following exercises:

9. Create a report to display the manager number and the salary of the lowest-paid employee for that manager. Exclude anyone whose manager is not known. Exclude any groups where the minimum salary is \$6,000 or less. Sort the output in descending order of salary.

MANAGER\_ID MIN(SALARY)

MANAGER_ID	MIN(SALARY)
1	102
2	205
3	149
	7000

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

10. Create a query to display the total number of employees and, of that total, the number of employees hired in 1995, 1996, 1997, and 1998. Create appropriate column headings.

TOTAL 1995 1996 1997 1998

TOTAL	1995	1996	1997	1998
1	20	1	2	2
	3			

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```
SELECT MAX(salary) - MIN(salary) DIFFERENCE
FROM employees;
```

Results Explain Describe Saved SQL History

DIFFERENCE

DIFFERENCE
21900

1 rows returned in 0.00 seconds Download

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to a file named lab\_05\_06.sql. Run the query. Enter 12345678 when prompted.

JOB\_ID COUNT(\*)

JOB_ID	COUNT(*)
IT_PROG	3

7. Determine the number of managers without listing them. Label the column as Number of Managers. Hint: Use the MANAGER\_ID column to determine the number of managers.

Number of Managers

	Number of Managers
1	8

8. Find the difference between the highest and lowest salaries. Label the column DIFFERENCE.

DIFFERENCE

	DIFFERENCE
1	21500

Oracle Database 11g: SQL Fundamentals I 5 - 31

**Practice 5 (continued)**

If you have time, complete the following exercises:

9. Create a report to display the manager number and the salary of the lowest-paid employee for that manager. Exclude anyone whose manager is not known. Exclude any groups where the minimum salary is \$6,000 or less. Sort the output in descending order of salary.

MANAGER\_ID MIN(SALARY)

MANAGER_ID	MIN(SALARY)
1	102
2	205
3	149
	7000

8 rows returned in 0.01 seconds Download

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```
SELECT manager_id, MIN(salary)
FROM employees
WHERE manager_id IS NOT NULL
GROUP BY manager_id
HAVING MIN(salary) > 6000
ORDER BY MIN(salary) DESC;
```

Results Explain Describe Saved SQL History

MANAGER\_ID MIN(SALARY)

MANAGER_ID	MIN(SALARY)
102	9000
205	8300
145	7000
146	7000
108	6900
147	6200
149	6200
148	6100

8 rows returned in 0.01 seconds Download

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**Practice 5 (continued)**

If you have time, complete the following exercises:

- Create a report to display the manager number and the salary of the lowest-paid employee for that manager. Exclude anyone whose manager is not known. Exclude any groups where the minimum salary is \$6,000 or less. Sort the output in descending order of salary.

MANAGER_ID	MIN(SALARY)
102	9000
205	8300
149	7000

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

- Create a query to display the total number of employees and, of that total, the number of employees hired in 1995, 1996, 1997, and 1998. Create appropriate column headings.

TOTAL	1995	1996	1997	1998
1	20	1	2	2

- Create a matrix query to display the job, the salary for that job based on department number, and the total salary for that job, for departments 20, 50, 80, and 90, giving each column an appropriate heading.

Job	Dept 20	Dept 50	Dept 80	Dept 90	Total
IT_PROG	(null)	(null)	(null)	(null)	19200
AC_MGR	(null)	(null)	(null)	(null)	12000
AC_ACCOUNT	(null)	(null)	(null)	(null)	8300
ST_MAN	(null)	5800	(null)	(null)	5800
AD_ASST	(null)	(null)	(null)	(null)	4400
AD_VP	(null)	(null)	34000	34000	
SA_MAN	(null)	(null)	10500	(null)	10500
MK_MAN	13000	(null)	(null)	(null)	13000
AD_PRES	(null)	(null)	24000	24000	
SA_REP	(null)	(null)	19600	(null)	26800
MK_REP	6000	(null)	(null)	(null)	6000

**Practice 6**

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If you have time, complete the following exercises:

- Create a query to display the total number of employees and, of that total, the number of employees hired in 1995, 1996, 1997, and 1998. Create appropriate column headings.

TOTAL	1995	1996	1997	1998
1	20	1	2	2

- Create a matrix query to display the job, the salary for that job based on department number, and the total salary for that job, for departments 20, 50, 80, and 90, giving each column an appropriate heading.

Job	Dept 20	Dept 50	Dept 80	Dept 90	Total
IT_PROG	(null)	(null)	(null)	(null)	19200
AC_MGR	(null)	(null)	(null)	(null)	12000
AC_ACCOUNT	(null)	(null)	(null)	(null)	8300
ST_MAN	(null)	5800	(null)	(null)	5800
AD_ASST	(null)	(null)	(null)	(null)	4400
AD_VP	(null)	(null)	34000	34000	
SA_MAN	(null)	(null)	10500	(null)	10500
MK_MAN	13000	(null)	(null)	(null)	13000
AD_PRES	(null)	(null)	24000	24000	
SA_REP	(null)	(null)	19600	(null)	26800
MK_REP	6000	(null)	(null)	(null)	6000
ST_CLERK	(null)	11700	(null)	(null)	11700

## Practice 6

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**Practice 6**

- Write a query for the HR department to produce the addresses of all the departments. Use the LOCATIONS and COUNTRIES tables. Show the location ID, street address, city, state or province, and country in the output. Use a NATURAL JOIN to produce the results.

LOCATION_ID	STREET_ADDRESS	CITY	STATE_PROVINCE	COUNTRY_NAME
1	1400 2014 Jabberwocky Rd	Southlake	Texas	United States of America
2	1500 2011 Interiors Blvd	South San Francisco	California	United States of America
3	1700 2004 Charade Rd	Seattle	Washington	United States of America
4	1800 460 Blor St. W.	Toronto	Ontario	Canada
5	2500 Magdalen Centre, The	Oxford	Oxford	United Kingdom

- The HR department needs a report of all employees. Write a query to display the last name, department number, and department name for all the employees.

LAST_NAME	DEPARTMENT_ID	DEPARTMENT_NAME
Whalen	10	Administration
Hartstein	20	Marketing
Fay	20	Marketing
Davies	50	Shipping

RESULTS

```
SELECT location_id, street_address, city, state_province, country_name
FROM locations
NATURAL JOIN countries;
```

LOCATION_ID	STREET_ADDRESS	CITY	STATE_PROVINCE	COUNTRY_NAME
1000	1297 Via Cola di Rie	Roma	-	Italy
1100	93091 Calle della Testa	Venice	-	Italy
1200	2017 Shinjuku-ku	Tokyo	Tokyo Prefecture	Japan
1300	9450 Kamiya-cho	Hiroshima	-	Japan
1400	2014 Jabberwocky Rd	Southlake	Texas	United States of America
1500	2011 Interiors Blvd	South San Francisco	California	United States of America
1600	2007 Zagora St	South Brunswick	New Jersey	United States of America
1700	2004 Charade Rd	Seattle	Washington	United States of America
1800	147 Spadina Ave	Toronto	Ontario	Canada
1900	6092 Boxwood St	Whitehorse	Yukon	Canada

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**Practice 6**

- Write a query for the HR department to produce the addresses of all the departments. Use the LOCATIONS and COUNTRIES tables. Show the location ID, street address, city, state or province, and country in the output. Use a NATURAL JOIN to produce the results.

LOCATION_ID	STREET_ADDRESS	CITY	STATE_PROVINCE	COUNTRY_NAME
1	1400 2014 Jabberwocky Rd	Southlake	Texas	United States of America
2	1500 2011 Interiors Blvd	South San Francisco	California	United States of America
3	1700 2004 Charade Rd	Seattle	Washington	United States of America
4	1800 460 Blor St. W.	Toronto	Ontario	Canada
5	2500 Magdalen Centre, The	Oxford	Oxford	United Kingdom

- The HR department needs a report of all employees. Write a query to display the last name, department number, and department name for all the employees.

LAST_NAME	DEPARTMENT_ID	DEPARTMENT_NAME
Whalen	10	Administration
Hartstein	20	Marketing
Fay	20	Marketing
Davies	50	Shipping
Vargas	50	Shipping
Rajs	50	Shipping
Moungos	50	Shipping
Mets	50	Shipping
Hunold	60	IT
Ernst	60	IT

LAST_NAME	DEPARTMENT_ID	DEPARTMENT_NAME
Higgins	110	Accounting
Gietz	110	Accounting

RESULTS

```
SELECT last_name, department_id, department_name
FROM employees
JOIN departments
USING (department_id);
```

LAST_NAME	DEPARTMENT_ID	DEPARTMENT_NAME
Whalen	10	Administration
Fay	20	Marketing
Hartstein	20	Marketing
Tobias	30	Purchasing
Colmenares	30	Purchasing
Baida	30	Purchasing
Raphaely	30	Purchasing
Khoo	30	Purchasing
Himuro	30	Purchasing
Mavris	40	Human Resources

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**Practice 6 (continued)**

3. The HR department needs a report of employees in Toronto. Display the last name, job, department number, and the department name for all employees who work in Toronto.

LAST_NAME	JOB_ID	DEPARTMENT_ID	DEPARTMENT_NAME
Hartstein	MK_MAN	20	Marketing
Fay	MK_REP	20	Marketing

4. Create a report to display employees' last name and employee number along with their manager's last name and manager number. Label the columns Employee, Emp#, Manager, and Mgr#, respectively. Save your SQL statement as lab\_06\_04.sql. Run the query.

Employee	EMP#	Manager	Mgr#
Kochhar	101	King	100
De Haan	102	King	100
Hunold	103	De Haan	102
Ernst	104	Hunold	103
Lorentz	107	Hunold	103
Moungos	124	King	100
Rajs	141	Moungos	124

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```
SELECT e.last_name, e.job_id, e.department_id,
d.department_name
FROM employees e, departments d, locations l
WHERE e.department_id = d.department_id
AND d.location_id = l.location_id
AND LOWER(l.city) = 'toronto';
```

Results Explain Describe Saved SQL History

LAST_NAME	JOB_ID	DEPARTMENT_ID	DEPARTMENT_NAME
Hartstein	MK_MAN	20	Marketing
Fay	MK_REP	20	Marketing

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**Practice 6 (continued)**

3. The HR department needs a report of employees in Toronto. Display the last name, job, department number, and the department name for all employees who work in Toronto.

LAST_NAME	JOB_ID	DEPARTMENT_ID	DEPARTMENT_NAME
Hartstein	MK_MAN	20	Marketing
Fay	MK_REP	20	Marketing

4. Create a report to display employees' last name and employee number along with their manager's last name and manager number. Label the columns Employee, Emp#, Manager, and Mgr#, respectively. Save your SQL statement as lab\_06\_04.sql. Run the query.

Employee	EMP#	Manager	Mgr#
Kochhar	101	King	100
De Haan	102	King	100
Hunold	103	De Haan	102
Ernst	104	Hunold	103
Lorentz	107	Hunold	103
Moungos	124	King	100
Rajs	141	Moungos	124
Davies	142	Moungos	124
Matos	143	Moungos	124
Vargas	144	Moungos	124
Wihalen	200	Kochhar	101
Hartstein	201	King	100
Fay	202	Hartstein	201
Higgins	205	Kochhar	101
Gietz	206	Higgins	205

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```
SELECT e.last_name Employee, e.employee_id EMP#, m.last_name, e.manager_id Mgr#
FROM employees e JOIN employees m
ON (e.manager_id = m.employee_id)
```

Results Explain Describe Saved SQL History

EMPLOYEE	EMP#	LAST_NAME	MGR#
Kumar	173	Cambrault	148
Bates	172	Cambrault	148
Smith	171	Cambrault	148
Fox	170	Cambrault	148
Bloom	169	Cambrault	148
Ozer	168	Cambrault	148
Hunold	103	De Haan	102
Banda	167	Errazuriz	147
Ande	166	Errazuriz	147
Lee	165	Errazuriz	147

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**Practice 6 (continued)**

5. Modify lab\_06\_04.sql to display all employees including King, who has no manager. Order the results by the employee number. Save your SQL statement as lab\_06\_05.sql. Run the query in lab\_06\_05.sql.

Employee	EMP#	Manager	Mgr#
1 King	100 (null)	(null)	
2 Kochhar	101 King	100	
3 De Haan	102 King	100	
4 Hunold	103 De Haan	102	
5 Ernst	104 Hunold	103	
6 Lorentz	107 Hunold	103	
7 Mourgos	124 King	100	
8 Raji	141 Mourgos	124	
9 Davies	142 Mourgos	124	
10 Matos	143 Mourgos	124	
...			
18 Fay	202 Hartstein	201	
19 Higgins	205 Kochhar	101	
20 Gietz	206 Higgins	205	

6. Create a report for the HR department that displays employee last names, department numbers, and all the employees who work in the same department as a given employee. Give each column an appropriate label. Save the script to a file named lab\_06\_06.sql.

DEPARTMENT	EMPLOYEE	COLLEAGUE
1	20 Fay	Hartstein
2	20 Hartstein	Fay
3	50 Davies	Matos
4	50 Davies	Mourgos
5	50 Davies	Raji
6	50 Davies	Vargas
7	50 Matos	Davies
8	50 Matos	Mourgos
9	50 Matos	Raji
10	50 Matos	Vargas
...		
42	110 Higgins	Gietz

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```
SELECT e.last_name Employee, e.employee_id EMP#, m.last_name Manager, m.employee_id Mgr#
FROM employees e
LEFT OUTER JOIN employees m
ON (e.manager_id = m.employee_id )
ORDER BY e.employee_id;
```

Results Explain Describe Saved SQL History

EMPLOYEE	EMP#	MANAGER	MGR#
King	100	-	-
Kochhar	101	King	100
De Haan	102	King	100
Hunold	103	De Haan	102
Ernst	104	Hunold	103
Austin	105	Hunold	103
Pataballa	106	Hunold	103
Lorentz	107	Hunold	103

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6. Create a report for the HR department that displays employee last names, department numbers, and all the employees who work in the same department as a given employee. Give each column an appropriate label. Save the script to a file named lab\_06\_06.sql.

DEPARTMENT	EMPLOYEE	COLLEAGUE
2	101 King	100
3	102 King	100
4	103 De Haan	102
5	104 Hunold	103
6	107 Hunold	103
7	124 King	100
8	141 Mourgos	124
9	142 Mourgos	124
10	143 Mourgos	124
...		
18	202 Hartstein	201
19	205 Kochhar	101
20	206 Higgins	205

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Autocommit Rows 10 Save Run

```
SELECT e1.department_id department, e1.last_name employee,
e2.last_name colleague
FROM employees e1, employees e2
WHERE e1.department_id = e2.department_id
AND e1.employee_id <> e2.employee_id
ORDER BY e1.department_id, e1.last_name, e2.last_name;
```

Results Explain Describe Saved SQL History

DEPARTMENT	EMPLOYEE	COLLEAGUE
20	Fay	Hartstein
20	Hartstein	Fay
30	Baida	Colmenares
30	Baida	Himuro
30	Baida	Khoo
30	Baida	Raphaely
30	Baida	Tobias
30	Colmenares	Baida

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**Practice 6 (continued)**

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

- The HR department wants to determine the names of all the employees who were hired after Davies. Create a query to display the name and hire date of any employee hired after employee Davies.

LAST_NAME	HIRE_DATE
Lorentz	07-FEB-99
Mourgos	16-NOV-99
Matos	15-MAR-98
Vargas	09-JUL-98
Zlotkey	29-JAN-00
Taylor	24-MAR-98
Grant	24-MAY-99
Fay	17-AUG-97

9. The HR department needs to find the names and hire dates of all the employees who were hired before their managers, along with their managers' names and hire dates. Save the script to a file named lab\_06\_09.sql.

LAST_NAME	HIRE_DATE	LAST_NAME_1	HIRE_DATE_1
Whalen	17-SEP-87	Kochhar	21-SEP-89
Hunold	03-JAN-90	De Haan	13-JAN-93
Vargas	09-JUL-98	Mourgos	16-NOV-99
Matos	15-MAR-98	Mourgos	16-NOV-99
Davies	29-JAN-97	Mourgos	16-NOV-99
Rajs	17-OCT-95	Mourgos	16-NOV-99
Grant	24-MAY-99	Zlotkey	29-JAN-00
Taylor	24-MAR-98	Zlotkey	29-JAN-00

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Autocommit Rows 10 Save Run

```
SELECT e.last_name, e.hire_date
FROM employees e JOIN employees davies
ON (davies.last_name = 'Davies')
WHERE davies.hire_date < e.hire_date;
```

Results Explain Describe Saved SQL History

LAST_NAME	HIRE_DATE
Kochhar	09/21/2005
Hunold	01/03/2006
Ernst	05/21/2007
Austin	06/25/2005
Pataballa	02/05/2006
Lorentz	02/07/2007
Chen	09/28/2005
Sciarras	09/30/2005
Urman	03/07/2006
Popp	12/07/2007

12:29 PM

**Practice 6 (continued)**

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

- The HR department wants to determine the names of all the employees who were hired after Davies. Create a query to display the name and hire date of any employee hired after employee Davies.

LAST_NAME	HIRE_DATE
Lorentz	07-FEB-99
Mourgos	16-NOV-99
Matos	15-MAR-98
Vargas	09-JUL-98
Zlotkey	29-JAN-00
Taylor	24-MAR-98
Grant	24-MAY-99
Fay	17-AUG-97

9. The HR department needs to find the names and hire dates of all the employees who were hired before their managers, along with their managers' names and hire dates. Save the script to a file named lab\_06\_09.sql.

LAST_NAME	HIRE_DATE	LAST_NAME_1	HIRE_DATE_1
Whalen	17-SEP-87	Kochhar	21-SEP-89
Hunold	03-JAN-90	De Haan	13-JAN-93
Vargas	09-JUL-98	Mourgos	16-NOV-99
Matos	15-MAR-98	Mourgos	16-NOV-99
Davies	29-JAN-97	Mourgos	16-NOV-99
Rajs	17-OCT-95	Mourgos	16-NOV-99
Grant	24-MAY-99	Zlotkey	29-JAN-00
Taylor	24-MAR-98	Zlotkey	29-JAN-00

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Autocommit Rows 10 Save Run

```
SELECT w.last_name, w.hire_date, m.last_name, m.hire_date
FROM employees w JOIN employees m
ON (w.manager_id = m.employee_id)
WHERE w.hire_date < m.hire_date;
```

Results Explain Describe Saved SQL History

LAST_NAME	HIRE_DATE	LAST_NAME	HIRE_DATE
Kaufling	05/01/2003	King	06/17/2003
Raphaely	12/07/2002	King	06/17/2003
De Haan	01/13/2001	King	06/17/2003
Higgins	06/07/2002	Kochhar	09/21/2005
Baer	06/07/2002	Kochhar	09/21/2005
Mavris	06/07/2002	Kochhar	09/21/2005
Whalen	09/17/2003	Kochhar	09/21/2005
Greenberg	08/17/2002	Kochhar	09/21/2005
Austin	06/25/2005	Hunold	01/03/2006
Faviet	08/16/2002	Greenberg	08/17/2002

12:32 PM

## Practice 7

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**Enter Substitution Variable**

ENTER\_NAME:  
Zlotkey

OK Cancel

	LAST_NAME	HIRE_DATE
1	Abel	11-MAY-96
2	Taylor	24-MAR-98

2. Create a report that displays the employee number, last name, and salary of all employees who earn more than the average salary. Sort the results in order of ascending salary.

	EMPLOYEE_ID	LAST_NAME	SALARY
1	103	Hunold	9000
2	149	Zlotkey	10500
3	174	Abel	11000
4	205	Higgins	12000
5	201	Hartstein	13000
6	101	Kochhar	17000
7	102	De Hean	17000
8	100	King	24000

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```
select employee_id, last_name, salary
from employees
where salary > (select avg(salary) from employees)
order by salary ASC;
```

Results Explain Describe Saved SQL History

EMPLOYEE_ID	LAST_NAME	SALARY
203	Mavris	6500
123	Vollman	6500
165	Lee	6800
113	Popp	6900
155	Tuvault	7000
161	Sewall	7000
178	Grant	7000
164	Marvins	7200

9:43 AM

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**Practice 7 (continued)**

3. Write a query that displays the employee number and last name of all employees who work in a department with any employee whose last name contains the letter "u." Save your SQL statement as lab\_07\_03.sql. Run your query.

	EMPLOYEE_ID	LAST_NAME
1	124	Mourgos
2	141	Rajs
3	142	Davies
4	143	Matos
5	144	Vargas
6	103	Hunold
7	104	Ernst
8	107	Lorentz

4. The HR department needs a report that displays the last name, department number, and job ID of all employees whose department location ID is 1700.

	LAST_NAME	DEPARTMENT_ID	JOB_ID
1	Whalen	10	AD_ASST

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```
select employee_id, last_name
from employees
where department_id in (select department_id from employees where last_name like '%u%');
```

Results Explain Describe Saved SQL History

EMPLOYEE_ID	LAST_NAME
107	Lorentz
106	Pataballa
105	Austin
104	Ernst
103	Hunold
199	Grant
198	OConnell
197	Feeney

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3. Write a query that displays the employee number and last name of all employees who work in a department with any employee whose last name contains the letter "u." Save your SQL statement as lab\_07\_03.sql. Run your query.

EMPLOYEE_ID	LAST_NAME
1	Mourgos
2	Rajs
3	Davies
4	Matos
5	Vargas
6	Hunold
7	Ernst
8	Lorentz

4. The HR department needs a report that displays the last name, department number, and job ID of all employees whose department location ID is 1700.

LAST_NAME	DEPARTMENT_ID	JOB_ID
Whalen	10	AD_ASST
King	90	AD_PRES
Kochhar	90	AD_VP
De Haan	90	AD_VP
Higgins	110	AC_MGR
Gietz	110	AC_ACCOUNT

Modify the query so that the user is prompted for a location ID. Save this to a file named lab\_07\_04.sql.

5. Create a report for HR that displays the last name and salary of every employee who reports to King.

LAST_NAME	SALARY
Kochhar	17000
De Haan	17000
Mourgos	5800

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Autocommit Rows 10 Save Run

```
select last_name, department_id, job_id
from employees
where department_id in (select department_id from departments where location_id = 1700);
```

Results Explain Describe Saved SQL History

LAST_NAME	DEPARTMENT_ID	JOB_ID
King	90	AD_PRES
Kochhar	90	AD_VP
De Haan	90	AD_VP
Greenberg	100	FI_MGR
Faviet	100	FI_ACCOUNT
Chen	100	FI_ACCOUNT
Sciarrা	100	FI_ACCOUNT
Urman	100	FI_ACCOUNT

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4. The HR department needs a report that displays the last name, department number, and job ID of all employees whose department location ID is 1700.

LAST_NAME	DEPARTMENT_ID	JOB_ID
Whalen	10	AD_ASST
King	90	AD_PRES
Kochhar	90	AD_VP
De Haan	90	AD_VP
Higgins	110	AC_MGR
Gietz	110	AC_ACCOUNT

Modify the query so that the user is prompted for a location ID. Save this to a file named lab\_07\_04.sql.

5. Create a report for HR that displays the last name and salary of every employee who reports to King.

LAST_NAME	SALARY
Kochhar	17000
De Haan	17000
Mourgos	5800
Zlotkey	10500
Hartstein	13000

Oracle Database 11g: SQL Fundamentals I 7 - 27

Practice 7 (continued)

6. Create a report for HR that displays the department number, last name, and job ID for every employee in the Executive department.

DEPARTMENT_ID	LAST_NAME	JOB_ID
---------------	-----------	--------

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```
select last_name, salary
from employees
where manager_id in (select employee_id from employees where last_name='King');
```

Results Explain Describe Saved SQL History

LAST_NAME	SALARY
Kochhar	17000
De Haan	17000
Raphaely	11000
Weiss	8000
Fripp	8200
Kaufling	7900
Vollman	6500
Mourgos	5800

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**Practice 7 (continued)**

6. Create a report for HR that displays the department number, last name, and job ID for every employee in the Executive department.

DEPARTMENT_ID	LAST_NAME	JOB_ID
1	90 King	AD_PRES
2	90 Kochhar	AD_VP
3	90 De Haan	AD_VP

If you have the time, complete the following exercise:

7. Modify the query in lab\_07\_03.sql to display the employee number, last name, and salary of all employees who earn more than the average salary, and who work in a department with any employee whose last name contains a "u." Resave lab\_07\_03.sql as lab\_07\_07.sql. Run the statement in lab\_07\_07.sql.

EMPLOYEE_ID	LAST_NAME	SALARY
1	103 Hunold	9000

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Autocommit Rows 10 Save Run

```
select department_id, last_name, job_id
from employees
where department_id in (select department_id from departments where department_name = 'Executive');
```

Results Explain Describe Saved SQL History

DEPARTMENT_ID	LAST_NAME	JOB_ID
90	King	AD_PRES
90	Kochhar	AD_VP
90	De Haan	AD_VP

3 rows returned in 0.05 seconds Download

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**Practice 7 (continued)**

6. Create a report for HR that displays the department number, last name, and job ID for every employee in the Executive department.

DEPARTMENT_ID	LAST_NAME	JOB_ID
1	90 King	AD_PRES
2	90 Kochhar	AD_VP
3	90 De Haan	AD_VP

If you have the time, complete the following exercise:

7. Modify the query in lab\_07\_03.sql to display the employee number, last name, and salary of all employees who earn more than the average salary, and who work in a department with any employee whose last name contains a "u." Resave lab\_07\_03.sql as lab\_07\_07.sql. Run the statement in lab\_07\_07.sql.

EMPLOYEE_ID	LAST_NAME	SALARY
1	103 Hunold	9000

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```
select employee_id, last_name, salary
from employees
where salary > (select avg(salary) from employees) and
department_id in (select department_id from employees where last_name like '%u%');
```

Results Explain Describe Saved SQL History

EMPLOYEE_ID	LAST_NAME	SALARY
103	Hunold	9000
123	Vollman	6500
122	Kaufling	7900
121	Fripp	8200
120	Weiss	8000
177	Livingston	8400
176	Taylor	8600
175	Hutton	8800
174	Abel	11000
172	Bates	7300

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.01 seconds Download

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## Practice 8

**Practice 8**

- The HR department needs a list of department IDs for departments that do not contain the job ID ST\_CLERK. Use the set operators to create this report.

DEPARTMENT_ID	NAME
1	10
2	20
3	60
4	80
5	90
6	110
7	190

- The HR department needs a list of countries that have no departments located in them. Display the country ID and the name of the countries. Use the set operators to create this report.

COUNTRY_ID	COUNTRY_NAME
1	DE
	Germany

- Produce a list of jobs for departments 10, 50, and 20, in that order. Display the job ID and department ID by using the set operators.

JOB_ID	DEPARTMENT_ID	
1	AD_ASST	10
2	ST_MAN	50
3	ST_CLERK	50
4	MK_MAN	20
5	MK_REP	20

**Practice 8**

- The HR department needs a list of department IDs for departments that do not contain the job ID ST\_CLERK. Use the set operators to create this report.

DEPARTMENT_ID	NAME
1	10
2	20
3	60
4	80
5	90
6	110
7	190

- The HR department needs a list of countries that have no departments located in them. Display the country ID and the name of the countries. Use the set operators to create this report.

COUNTRY_ID	COUNTRY_NAME
1	DE
	Germany

- Produce a list of jobs for departments 10, 50, and 20, in that order. Display the job ID and department ID by using the set operators.

JOB_ID	DEPARTMENT_ID	
1	AD_ASST	10
2	ST_MAN	50
3	ST_CLERK	50
4	MK_MAN	20
5	MK_REP	20

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2. The HR department needs a list of countries that have no departments located in them. Display the country ID and the name of the countries. Use the set operators to create this report.

COUNTRY_ID	COUNTRY_NAME
1 DE	Germany

3. Produce a list of jobs for departments 10, 50, and 20, in that order. Display the job ID and department ID by using the set operators.

JOB_ID	DEPARTMENT_ID
1 AD_ASST	10
2 ST_MAN	50
3 SH_CLERK	50
4 MK_MAN	20
5 MK_REP	20

4. Create a report that lists the employee IDs and job IDs of those employees who currently have a job title that is the same as their job title when they were initially hired by the company (that is, they changed jobs but have now gone back to doing their original job).

EMPLOYEE_ID	JOB_ID
1	176 SA_REP
2	200 AD_ASST

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Autocommit Rows 10 Save Run

```
SELECT distinct job_id, department_id
FROM employees
WHERE department_id = 10
UNION ALL
SELECT DISTINCT job_id, department_id
FROM employees
WHERE department_id = 50
UNION ALL
SELECT DISTINCT job_id, department_id
FROM employees
WHERE department_id = 20
```

Results Explain Describe Saved SQL History

JOB_ID	DEPARTMENT_ID
AD_ASST	10
ST_MAN	50
SH_CLERK	50
ST_CLERK	50
MK_MAN	20
MK_REP	20

6 rows returned in 0.04 seconds Download

Workspace: HR User: SYSTEMHR 1 minute ago 1:30 PM

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2. The HR department needs a list of countries that have no departments located in them. Display the country ID and the name of the countries. Use the set operators to create this report.

COUNTRY_ID	COUNTRY_NAME
1 DE	Germany

3. Produce a list of jobs for departments 10, 50, and 20, in that order. Display the job ID and department ID by using the set operators.

JOB_ID	DEPARTMENT_ID
1 AD_ASST	10
2 ST_MAN	50
3 SH_CLERK	50
4 MK_MAN	20
5 MK_REP	20

4. Create a report that lists the employee IDs and job IDs of those employees who currently have a job title that is the same as their job title when they were initially hired by the company (that is, they changed jobs but have now gone back to doing their original job).

EMPLOYEE_ID	JOB_ID
1	176 SA_REP
2	200 AD_ASST

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Autocommit Rows 10 Save Run

```
SELECT employee_id,job_id
FROM employees
INTERSECT
SELECT employee_id,job_id
FROM job_history;
```

Results Explain Describe Saved SQL History

EMPLOYEE_ID	JOB_ID
176	SA_REP
200	AD_ASST

2 rows returned in 0.13 seconds Download

Workspace: HR User: SYSTEMHR 1 minute ago 1:30 PM

**Practice 8 (continued)**

5. The HR department needs a report with the following specifications:

- Last name and department ID of all employees from the EMPLOYEES table, regardless of whether or not they belong to a department
- Department ID and department name of all departments from the DEPARTMENTS table, regardless of whether or not they have employees working in them

Write a compound query to accomplish this.

LAST_NAME	DEPARTMENT_ID	TO_CHAR(NULL)
Abel	80 (null)	
Davies	50 (null)	
De Haan	90 (null)	
Ernst	60 (null)	
Fay	20 (null)	
Gietz	110 (null)	
Grant	(null) (null)	
Hartstein	20 (null)	
Higgins	110 (null)	
Hunold	60 (null)	
King	90 (null)	
Kochhar	90 (null)	
Lorentz	60 (null)	
Matos	50 (null)	
Mourgos	50 (null)	
Rajs	50 (null)	
Taylor	80 (null)	
Vargas	50 (null)	

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```
SELECT last_name,department_id,TO_CHAR(null)
FROM employees
UNION
SELECT TO_CHAR(null),department_id,department_name
FROM departments;
```

Results Explain Describe Saved SQL History

LAST_NAME	DEPARTMENT_ID	TO_CHAR(NULL)
Abel	80	-
Ande	80	-
Atkinson	50	-
Austin	60	-
Baer	70	-
Baida	30	-
Banda	80	-
Bates	80	-
Bell	50	-
Bernstein	80	-

More than 10 rows available. Increase rows selector to view more rows.