Department of Information Systems and Technologies
2025-2026 Fall Semester

CTIS259 Database Management Systems and Applications

Lab Guide 08

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Aim of this lab session: **1.** Practice 5-1: Using Conversion Functions and Conditional Expressions (NVL/NVL2/CASE)
2. Company Database Queries.

ORACLE Server Configurations:

IP Address: 139.179.33.231

Port number: 1522

SID: orclctis

Please USE oraxx accounts!

Practices for Lesson 5

Lesson Overview

This practice provides a variety of exercises using `TO_CHAR` and `TO_DATE` functions, and conditional expressions such as `DECODE` and `CASE`. Remember that for nested functions, the results are evaluated from the innermost function to the outermost function.

Practice 5-1: Using Conversion Functions and Conditional Expressions

1. 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	Whalen earns $4,400.00 monthly but wants $13,200.00.
2	Hartstein earns $13,000.00 monthly but wants $39,000.00.
3	Fay earns $6,000.00 monthly but wants $18,000.00.
4	Higgins earns $12,000.00 monthly but wants $36,000.00.
5	Gietz earns $8,300.00 monthly but wants $24,900.00.

…

19	Taylor earns $8,600.00 monthly but wants $25,800.00.
20	Grant earns $7,000.00 monthly but wants $21,000.00.

2. 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	Whalen	17-SEP-87	Monday, the Twenty-First of March, 1988
2	Hartstein	17-FEB-96	Monday, the Nineteenth of August, 1996
3	Fay	17-AUG-97	Monday, the Twenty-Third of February, 1998
4	Higgins	07-JUN-94	Monday, the Twelfth of December, 1994
5	Gietz	07-JUN-94	Monday, the Twelfth of December, 1994

…

19	Taylor	24-MAR-98	Monday, the Twenty-Eighth of September, 1998
20	Grant	24-MAY-99	Monday, the Twenty-Ninth of November, 1999

3. 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	Ernst	21-MAY-91	TUESDAY
3	Taylor	24-MAR-98	TUESDAY
4	Rajs	17-OCT-95	TUESDAY
5	Mourgos	16-NOV-99	TUESDAY

…

19	Matos	15-MAR-98	SUNDAY
20	Fay	17-AUG-97	SUNDAY

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
1	Whalen	No Commission
2	Hartstein	No Commission
3	Fay	No Commission
4	Higgins	No Commission
5	Gietz	No Commission

…

16	Vargas	No Commission
17	Zlotkey	.2
18	Abel	.3
19	Taylor	.2
20	Grant	.15

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
6	AD_VP	0
7	IT_PROG	C

…

14	SA_REP	D
15	SA_REP	D

…

19	ST_CLERK	E
20	ST_MAN	B

6. Rewrite the statement in the preceding exercise by 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
6	AD_VP	0
7	IT_PROG	C

...

14	SA_REP	D
15	SA_REP	D

...

19	ST_CLERK	E
20	ST_MAN	B

Please USE stu (fStudentId) accounts!

Company Database Queries:

1. Retrieve the birth date and address of the employee whose name is "**JOHN MICC**".

	BDATE	ADDRESS
1	12.10.72	HOUSTON

2. Retrieve all the attribute values of the employee tuples of department **1**.

FNAME	LNAME	SSN	BDATE	ADDRESS	SALARY	SEX	SUPERSSN	DNO
JOHN	MICC	111	12.10.72	HOUSTON	10000	M	222	1
ALICE	SMITH	333	14.03.67	NEWYORK	15000	F	222	1
ANN	YOUNG	123	20.03.89	COLORADO	13000	F	111	1
JACK	MITO	334	24.11.94	STAFFORD	12000	M	111	1
ARIA	BLAKE	115	13.01.62	HOUSTON	20000	F	222	1

3. Retrieve only distinct Address values.

ADDRESS
CALIFORNIA
MARYLAND
HOUSTON
COLORADO
STAFFORD
NEWYORK

4. Retrieve all employees in department **1** whose salary is between **$10,000** and **$15,000.**

FNAME	LNAME	SSN	BDATE	ADDRESS	SALARY	SEX	SUPERSSN	DNO
JOHN	MICC	111	12.10.72	HOUSTON	10000	M	222	1
ALICE	SMITH	333	14.03.67	NEWYORK	15000	F	222	1
ANN	YOUNG	123	20.03.89	COLORADO	13000	F	111	1
JACK	MITO	334	24.11.94	STAFFORD	12000	M	111	1

5. Retrieve a list of employees and the projects each works in, ordered by the employees department and within each department ordered alphabetically by name.

DNAME	LNAME	FNAME	PNAME
ADMINISTRATION	FRANK	JANE	PRODUCT_M
ADMINISTRATION	MINELL	MARRY	PRODUCT_X
PERSONNEL	ABRAM	ARDEN	PRODUCT_Y
PERSONNEL	CURTIS	BILL	PRODUCT_X
PERSONNEL	CURTIS	BILL	PRODUCT_Y
PERSONNEL	CURTIS	BILL	PRODUCT_Z
RESEARCH	BLAKE	ARIA	PRODUCT_M
RESEARCH	MICC	JOHN	PRODUCT_X
RESEARCH	MICC	JOHN	PRODUCT_Y
RESEARCH	SMITH	ALICE	PRODUCT_Y
RESEARCH	YOUNG	ANN	PRODUCT_Y

6. Retrieve the name and address of all employees who work for the '**Research**' department.

FNAME	LNAME	ADDRESS
JOHN	MICC	HOUSTON
ALICE	SMITH	NEWYORK
ANN	YOUNG	COLORADO
JACK	MITO	STAFFORD
ARIA	BLAKE	HOUSTON

7. For every project located in "**Houston**" list the project number, the controlling department number, and the department manager's last name, address, and birth date.

	PNUMBER	DNUM	LNAME	ADDRESS	BDATE
1	1	1	MICC	HOUSTON	12.10.72
2	5	3	SMITH	NEWYORK	14.03.67