Additional Practices

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Additional Practices

The following exercises can be used for extra practice after you have discussed data manipulation language (DML) and data definition language (DDL) statements in the lessons titled "Managing Schema Objects" and "Manipulating Large Data Sets."

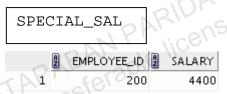
Note: Run the lab_ap_cre_special_sal.sql, lab_ap_cre_sal_history.sql, and lab_ap_cre_mgr_history.sql scripts in the labs folder to create the SPECIAL_SAL, SAL_HISTORY, and MGR_HISTORY tables.

1. The Human Resources department wants to get a list of underpaid employees, the salary history of employees, and the salary history of managers based on an industry salary survey. So they have asked you to do the following:

Write a statement to do the following:

- Retrieve the employee ID, hire date, salary, and manager ID of those employees whose employee ID is more than or equal to 200 from the EMPLOYEES table.
- If the salary is less than \$5,000, insert the employee ID and salary into the SPECIAL SAL table.
- Insert the employee ID, hire date, and salary into the SAL_HISTORY table.
- Insert the employee ID, manager ID, and salary into the MGR_HISTORY table.
- 2. Query the SPECIAL_SAL, SAL_HISTORY and MGR_HISTORY tables to view the inserted records.

 SPECIAL_SAL



SALARY_HISTORY

| | A | EMPLOYEE_ID | A I | HIRE, | DATE | A | SALARY |
|---|---|-------------|------|-------|------|---|--------|
| 1 | | 201 | 17-F | EB-1 | .996 | | 13000 |
| 2 | | 202 | 17-7 | AUG- | 1997 | | 6000 |
| 3 | | 203 | 07-J | UN-1 | L994 | | 6500 |
| 4 | | 204 | 07-J | UN-1 | L994 | | 10000 |
| 5 | | 205 | 07-J | UN-1 | L994 | | 12000 |
| 6 | | 206 | 07-J | UN-1 | L994 | | 8300 |

MGR_HISTORY

| | A | EMPLOYEE_ID | A | MANAGER_ID | A | SALARY |
|---|---|-------------|---|------------|---|--------|
| 1 | | 201 | | 100 | | 13000 |
| 2 | | 202 | | 201 | | 6000 |
| 3 | | 203 | | 101 | | 6500 |
| 4 | | 204 | | 101 | | 10000 |
| 5 | | 205 | | 101 | | 12000 |
| 6 | | 206 | | 205 | | 8300 |

3. The DBA wants you to create a table, which has a primary key constraint, but wants the index to have a different name than the constraint. Create the LOCATIONS_NAMED_INDEX table based on the following table instance chart. Name the index for the PRIMARY KEY column as LOCATIONS_PK_IDX.

| Column Name | Deptno | Dname |
|-------------|-------------|------------|
| Primary Key | Yes | 30003,46Ur |
| Data Type | Number | VARCHAR2 |
| Length | 4 (0000000) | 30 |

4. Query the USER_INDEXES table to display INDEX_NAME for the LOCATIONS_NAMED_INDEX table.



The following exercises can be used for extra practice after you have discussed enhancements to the GROUP BY clause.

5. The Human Resources department requires some reports on certain departments. These are its requirements:

Write a query to display the following for those departments whose department ID is greater than 80:

- The total salary for every job within a department
- The total salary
- The total salary for those cities in which the departments are located
- The total salary for every job, irrespective of the department
- The total salary for every department irrespective of the city
- The total salary for the departments, irrespective of the job titles and cities



- 6. The Accounting department requires an analysis on the maximum and minimum salaries by department, job, and manager. They have asked you to do the following:
 - Write a query to display the following groupings:
 - Department ID, Job ID
 - Job ID, Manager ID

The query should calculate the maximum and minimum salaries for each of these groups.

| | DEPARTMENT_ID | JOB_ID | MANAGER_ID | MAX(SALARY) | MIN(SALARY) |
|-----|---------------|------------|------------|-------------|-------------|
| 1 | (null) | AC_MGR | 101 | 12000 | 12000 |
| 2 | (null) | SH_CLERK | 122 | 3800 | 2500 |
| 3 | (null) | SH_CLERK | 124 | 3100 | 2600 |
| 4 | (null) | MK_MAN | 100 | 13000 | 13000 |
| 5 | (null) | ST_MAN | 100 | 8200 | 5800 |
| 6 | (null) | ST_CLERK | 121 | 3300 | 2100 |
| 7 | (null) | SA_REP | 148 | 11500 | CO 6100 |
| 8 | (null) | SH_CLERK | 120 | 3200 | 2500 |
| 9 | (null) | AD_ASST | 101 | 4400 | 4400 |
| 10 | (null) | AD_PRES | (null) | 24000 | 24000 |
| ••• | | | npppa. | his | |
| 40 | 50 | SH_CLERK | (null) | 4200 | 2500 |
| 41 | 20 | MK_MAN | (null) | 13000 | 13000 |
| 42 | 90 | AD_PRES | (null) | 24000 | 24000 |
| 43 | 60 | IT_PROG | (null) | 9000 | 4200 |
| 44 | X 100 | FI_MGR | (null) | 12000 | 12000 |
| 45 | 30 | PU_CLERK | (null) | 3100 | 2500 |
| 46 | 100 | FI_ACCOUNT | (null) | 9000 | 6900 |
| 47 | 70 | PR_REP | (null) | 10000 | 10000 |
| 48 | (null) | SA_REP | (null) | 7000 | 7000 |
| 49 | 10 | AD_ASST | (null) | 4400 | 4400 |
| 50 | 20 | MK_REP | (null) | 6000 | 6000 |
| 51 | 40 | HR_REP | (null) | 6500 | 6500 |
| 52 | 30 | PU_MAN | (null) | 11000 | 11000 |

The following exercises can be used for extra practice after you have discussed the datetime functions.

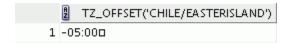
You work for a global company and the new vice president of operations wants to know the different time zones of all the company branches. He has requested the following information:

- 7. Alter the session to set the NLS DATE FORMAT to DD-MON-YYYY HH24:MI:SS.
- 8. a. Write queries to display the time zone offsets (TZ_OFFSET) for the following time zones:

Australia/Sydney

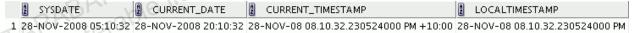


Chile/Easter Island



- ogmail com) has a servalue to the salue to the b. Alter the session to set the TIME_ZONE parameter value to the time zone offset of Australia/Sydney.
- c. Display SYSDATE, CURRENT_DATE, CURRENT_TIMESTAMP, and LOCALTIMESTAMP for this session.

Note: The output may be different based on the date when the command is executed.

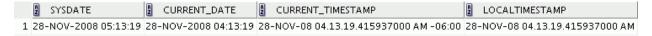


d. Alter the session to set the TIME_ZONE parameter value to the time zone offset of Chile/Easter Island.

Note: The results of the preceding question are based on a different date, and in some cases, they will not match the actual results that the students get. Also, the time zone offset of the various countries may differ based on the daylight saving time.

e. Display SYSDATE, CURRENT_DATE, CURRENT TIMESTAMP, and LOCALTIMESTAMP for this session.

Note: The output may be different based on the date when the command is executed.



Alter the session to set the NLS DATE FORMAT to DD-MON-YYYY.

Note

- Observe in the preceding question that CURRENT_DATE, CURRENT_TIMESTAMP, and LOCALTIMESTAMP are all sensitive to the session time zone. Observe that SYSDATE is not sensitive to the session time zone.
- The results of the preceding question are based on a different date, and in some cases, they will not match the actual results that the students get. Also the time zone offset of the various countries may differ based on the daylight saving time.
- 9. The Human Resources department wants a list of employees who are up for review in January, so they have requested you to do the following:

Write a query to display the last name, month of the date of hire, and hire date of those employees who have been hired in the month of January, irrespective of the year of hire.

LAST_NAME EXTRACT(MONTHFROMHIRE_DATE) HIRE_DATE

1 Grant
1 13-JAN-2000
2 De Haan
3 Hunold

| | LAST_NAME | EXTRACT(MONTHFROMHIRE_DATE) | HIRE_DATE |
|----|-----------|-----------------------------|-------------|
| 1 | Grant | 1 | 13-JAN-2000 |
| 2 | De Haan | 1 | 13-JAN-1993 |
| 3 | Hunold | 1 | 03-JAN-1990 |
| 4 | Landry | 3000 | 14-JAN-1999 |
| 5 | Davies | First Ison | 29-JAN-1997 |
| 6 | Partners | 1000 | 05-JAN-1997 |
| 7 | Zlotkey | 1000000 | 29-JAN-2000 |
| 8 | Tucker | ARIDISE 1 | 30-JAN-1997 |
| 9 | King | | 30-JAN-1996 |
| 10 | Marvins | 1 | 24-JAN-2000 |
| 11 | Fox | 1 | 24-JAN-1998 |
| 12 | Johnson | 1 | 04-JAN-2000 |
| 13 | Taylor | 1 | 24-JAN-1998 |
| 14 | Sarchand | 1 | 27-JAN-1996 |

The following exercises can be used for extra practice after you have discussed advanced subqueries.

10. The CEO needs a report on the top three earners in the company for profit sharing. He has asked you to provide him with a list.

Write a query to display the top three earners in the EMPLOYEES table. Display their last names and salaries.



11. The benefits for the state of California have been changed based on a local ordinance. So Ae who a she employees the benefits representative has asked you to compile a list of people who are affected. Write a query to display the employee ID and last name of the employees who work in the state of California.

Hint: Use scalar subqueries.



| 41 | 193 Everett |
|----|-------------|
| 42 | 194 McCain |
| 43 | 195 Jones |
| 44 | 196 Walsh |
| 45 | 197 Feeney |

12. The DBA wants to remove old information from the database. One of the things that the DBA thinks is unnecessary is the old employment records. She has asked you to do the following:

Write a query to delete the oldest JOB_HISTORY row of an employee by looking up the JOB HISTORY table for MIN(START DATE) for the employee. Delete the records of only those employees who have changed at least two jobs.

Hint: Use a correlated DELETE command.

13. The vice president of Human Resources needs the complete employment records for his annual employee recognition banquet speech. He makes a quick phone call to stop you from following the DBA's orders.

Roll back the transaction.

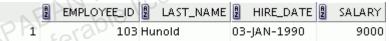
14. The sluggish economy is forcing the management to take cost reduction actions. The CEO wants to review the highest paid jobs in the company. He has requested a list from you based on the following specifications:

Write a query to display the job IDs of those jobs whose maximum salary is above half the maximum salary in the entire company. Use the WITH clause to write this query. Name the query MAX SAL CALC.

| | 2 JOB_TITLE | A | JOB_TOTAL |
|---|-------------------------------|---|-----------|
| 1 | President | | 24000 |
| 2 | Administration Vice President | | 17000 |
| 3 | Sales Manager | | 14000 |
| 4 | Marketing Manager | | 13000 |

The following exercises can be used for extra practice after you have discussed hierarchical retrieval.

- 15. Lex De Haan is quitting the company. His replacement wants reports of his direct reports. Write a SQL statement to display the employee number, last name, start date, and salary, showing:
 - a. De Haan's direct reports:



b. The organization tree under De Haan (employee number 102):

| | A | EMPLOYEE_ID | A | LAST_NAME | A | HIRE_DATE | A | SALARY |
|---|---|-------------|-----|-----------|-----|-----------|---|--------|
| 1 | | 103 | Hu | nold | 03- | -JAN-1990 | | 9000 |
| 2 | | 104 | Err | nst | 21- | -MAY-1991 | | 6000 |
| 3 | | 105 | Au | stin | 25- | -JUN-1997 | | 4800 |
| 4 | | 106 | Pat | taballa | 05- | -FEB-1998 | | 4800 |
| 5 | | 107 | Lo | rentz | 07- | -FEB-1999 | | 4200 |

16. Write a hierarchical query to display the employee number, manager number, and employee last name for all employees who are two levels below employee De Haan (employee number 102). Also, display the level of the employee.

| | A | EMPLOYEE_ID | MANAGER_ID | 2 LEVEL | LAST_NAME |
|---|---|-------------|------------|---------|-----------|
| 1 | | 104 | 103 | 3 | Ernst |
| 2 | | 105 | 103 | 3 | Austin |
| 3 | | 106 | 103 | 3 | Pataballa |
| 4 | | 107 | 103 | 3 | Lorentz |

17. The CEO wants a hierarchical report on all employees. He has given you the following requirements:

Produce a hierarchical report to display the employee number, manager number, the LEVEL pseudocolumn, and employee last name. For every row in the EMPLOYEES table, you should print a tree structure that shows the employee, the employee's manager, the manager's manager, and so on. Use indentations for the NAME column.



Note: The output shown is only a sample. All the rows from the actual output are not included here.