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學習

Oracle Database

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#oracle

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1: Oracle

OracleRDBMSLarry EllisonBob MinerEd Oates70。IBMSystem R。

1	197811
Oracle V2	1979-01-01
Oracle3	198311
Oracle Version 4	1984-01-01
Oracle5	1985-01-01
Oracle6	1988-01-01
Oracle7	1992-01-01
Oracle8	1997-07-01
Oracle8i	1999-02-01
Oracle9i	2001-06-01
Oracle 10g	2003-01-01
Oracle 11g	2007-01-01
Oracle 12c	2013-01-01

Examples

```
SELECT 'Hello world!' FROM dual;
```

OracleSQL “” 。 JOINDUMMY'X'。

```
create table MY_table (
   what varchar2(10),
   who varchar2(10),
   mark varchar2(10)
);
```

```
insert into my_table (what, who, mark) values ('Hello', 'world', '!' );
insert into my_table values ('Bye bye', 'ponies', '?' );
insert into my_table (what) values('Hey');
```

Oracle

```
commit;
```

```
select what, who, mark from my_table where what='Hello';
```

SQL

5。 。

```
SELECT employee_name, date_of_birth, salary
FROM   employees
WHERE  salary > 50000
   AND date_of_birth >= DATE '2000-01-01'
ORDER BY employee_name;
```

5。 。

```
SELECT department_id, COUNT(*)
FROM   employees
GROUP BY department_id
HAVING COUNT(*) >= 5
ORDER BY COUNT(*) DESC;
```

PL / SQLHello World

```
/* PL/SQL is a core Oracle Database technology, allowing you to build clean, secure,
   optimized APIs to SQL and business logic. */

set serveroutput on

BEGIN
   DBMS_OUTPUT.PUT_LINE ('Hello World!');
END;
```

Oracle https://riptutorial.com/zh-TW/oracle/topic/558/oracle

2: DUAL

DUALDUMMY VARCHAR2(1) x ◦

SYSDUAL◦ ◦

DUAL◦

DUALSQL◦ oracle◦

Examples

```
select sysdate from dual
```

start_valueend_value

```
select :start_value + level -1 n
from dual
connect by level <= :end_value  - :start_value + 1
```

DUAL https://riptutorial.com/zh-TW/oracle/topic/7328/dual

3: JOINS

Examples

CROSS JOIN◦ ◦ TABLEA20TABLEB2020*20 = 400◦

```
SELECT *
FROM TABLEA CROSS JOIN TABLEB;
```

```
SELECT *
FROM TABLEA, TABLEB;
```

SQL

TABLEA

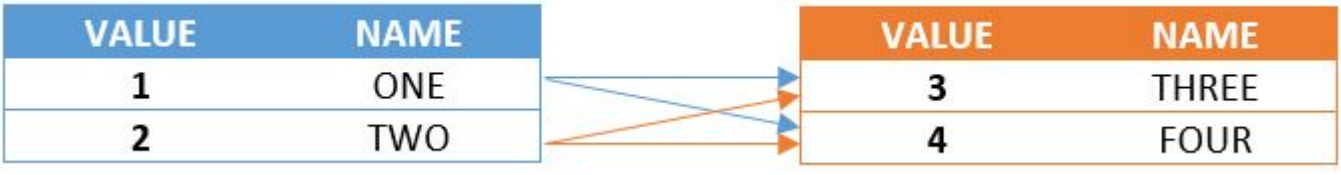
```
+-------+---------+
| VALUE |   NAME  |
+-------+---------+
|   1   |   ONE   |
|   2   |   TWO   |
+-------+---------+
```

TABLEB

```
+-------+--------+
| VALUE |  NAME  |
+-------+--------+
|   3   |  THREE |
|   4   |  FOUR  |
+-------+--------+
```

```
SELECT *
FROM TABLEA CROSS JOIN TABLEB;
```

```
+-------+--------+-------+--------+
| VALUE |  NAME  | VALUE |  NAME  |
+-------+--------+-------+--------+
|   1   |   ONE  |   3   |  THREE |
|   1   |   ONE  |   4   |  FOUR  |
|   2   |   TWO  |   3   |  THREE |
|   2   |   TWO  |   4   |  FOUR  |
+-------+--------+-------+--------+
```



Cross Join Oracle

INNER JOINJOIN。

TableExpression [INNER] JOIN TableExpression {ON booleanExpression |}

ONjoin。

ONSELECT。ON

```
-- Join the EMP_ACT and EMPLOYEE tables
-- select all the columns from the EMP_ACT table and
-- add the employee's surname (LASTNAME) from the EMPLOYEE table
-- to each row of the result
SELECT SAMP.EMP_ACT.*, LASTNAME
 FROM SAMP.EMP_ACT JOIN SAMP.EMPLOYEE
 ON EMP_ACT.EMPNO = EMPLOYEE.EMPNO
-- Join the EMPLOYEE and DEPARTMENT tables,
-- select the employee number (EMPNO),
-- employee surname (LASTNAME),
-- department number (WORKDEPT in the EMPLOYEE table and DEPTNO in the
-- DEPARTMENT table)
-- and department name (DEPTNAME)
-- of all employees who were born (BIRTHDATE) earlier than 1930.
SELECT EMPNO, LASTNAME, WORKDEPT, DEPTNAME
 FROM SAMP.EMPLOYEE JOIN SAMP.DEPARTMENT
 ON WORKDEPT = DEPTNO
 AND YEAR(BIRTHDATE) < 1930

-- Another example of "generating" new data values,
-- using a query which selects from a VALUES clause (which is an
-- alternate form of a fullselect).
-- This query shows how a table can be derived called "X"
-- having 2 columns "R1" and "R2" and 1 row of data
SELECT *
FROM (VALUES (3, 4), (1, 5), (2, 6))
AS VALUESTABLE1(C1, C2)
JOIN (VALUES (3, 2), (1, 2),
(0, 3)) AS VALUESTABLE2(c1, c2)
ON VALUESTABLE1.c1 = VALUESTABLE2.c1
-- This results in:
-- C1          |C2          |C1          |2
-- -----------------------------------------------
-- 3           |4           |3           |2
-- 1           |5           |1           |2


-- List every department with the employee number and
-- last name of the manager

SELECT DEPTNO, DEPTNAME, EMPNO, LASTNAME
FROM DEPARTMENT INNER JOIN EMPLOYEE
ON MGRNO = EMPNO

-- List every employee number and last name
-- with the employee number and last name of their manager
SELECT E.EMPNO, E.LASTNAME, M.EMPNO, M.LASTNAME
FROM EMPLOYEE E INNER JOIN
DEPARTMENT INNER JOIN EMPLOYEE M
```

```
    ON MGRNO = M.EMPNO
    ON E.WORKDEPT = DEPTNO
```

LEFT OUTER JOIN

LEFT OUTER JOIN。

```
SELECT
      ENAME,
      DNAME,
      EMP.DEPTNO,
      DEPT.DEPTNO
FROM
      SCOTT.EMP LEFT OUTER JOIN SCOTT.DEPT
      ON EMP.DEPTNO = DEPT.DEPTNO;
```

ANSI。 (+) 。

```
SELECT
      ENAME,
      DNAME,
      EMP.DEPTNO,
      DEPT.DEPTNO
FROM
      SCOTT.EMP,
      SCOTT.DEPT
WHERE
      EMP.DEPTNO = DEPT.DEPTNO(+);
```

```
+-----------+---------+
|    NAME   |  DEPTNO |
+-----------+---------+
|     A     |    2    |
|     B     |    1    |
|     C     |    3    |
|     D     |    2    |
|     E     |    1    |
|     F     |    1    |
|     G     |    4    |
|     H     |    4    |
+-----------+---------+
```

DEPT

```
+---------+--------------+
|  DEPTNO |   DEPTNAME   |
+---------+--------------+
|    1    |  ACCOUNTING  |
|    2    |    FINANCE   |
|    5    |   MARKETING  |
|    6    |      HR      |
+---------+--------------+
```

```
SELECT
```

```
      *
FROM
      EMPLOYEE LEFT OUTER JOIN DEPT
      ON EMPLOYEE.DEPTNO = DEPT.DEPTNO;
```

```
+-----------+---------+---------+--------------+
|    NAME   |  DEPTNO |  DEPTNO |   DEPTNAME   |
+-----------+---------+---------+--------------+
|     F     |    1    |    1    |  ACCOUNTING  |
|     E     |    1    |    1    |  ACCOUNTING  |
|     B     |    1    |    1    |  ACCOUNTING  |
|     D     |    2    |    2    |    FINANCE   |
|     A     |    2    |    2    |    FINANCE   |
|     C     |    3    |         |              |
|     H     |    4    |         |              |
|     G     |    4    |         |              |
+-----------+---------+---------+--------------+
```

RIGHT OUTER JOIN◦

```
SELECT
      ENAME,
      DNAME,
      EMP.DEPTNO,
      DEPT.DEPTNO
FROM
      SCOTT.EMP RIGHT OUTER JOIN SCOTT.DEPT
      ON EMP.DEPTNO = DEPT.DEPTNO;
```

SCOTT.DEPTSCOTT.EMPLEFT OUTER JOIN◦

```
SELECT
      ENAME,
      DNAME,
      EMP.DEPTNO,
      DEPT.DEPTNO
FROM
      SCOTT.DEPT RIGHT OUTER JOIN SCOTT.EMP
      ON DEPT.DEPTNO = EMP.DEPTNO;
```

```
+-----------+---------+
|    NAME   |  DEPTNO |
+-----------+---------+
|     A     |    2    |
|     B     |    1    |
|     C     |    3    |
|     D     |    2    |
|     E     |    1    |
|     F     |    1    |
|     G     |    4    |
|     H     |    4    |
+-----------+---------+
```

DEPT

```
+---------+--------------+
|  DEPTNO |   DEPTNAME   |
+---------+--------------+
|    1    |  ACCOUNTING  |
|    2    |    FINANCE   |
|    5    |   MARKETING  |
|    6    |      HR      |
+---------+--------------+
```

```
SELECT
      *
FROM
      EMPLOYEE RIGHT OUTER JOIN DEPT
      ON EMPLOYEE.DEPTNO = DEPT.DEPTNO;
```

```
+-----------+---------+---------+--------------+
|    NAME   |  DEPTNO |  DEPTNO |   DEPTNAME   |
+-----------+---------+---------+--------------+
|     A     |    2    |    2    |    FINANCE   |
|     B     |    1    |    1    |  ACCOUNTING  |
|     D     |    2    |    2    |    FINANCE   |
|     E     |    1    |    1    |  ACCOUNTING  |
|     F     |    1    |    1    |  ACCOUNTING  |
|           |         |    5    |   MARKETING  |
|           |         |    6    |      HR      |
+-----------+---------+---------+--------------+
```

Oracle+

```
SELECT *
FROM EMPLOYEE, DEPT
WHERE EMPLOYEE.DEPTNO(+) = DEPT.DEPTNO;
```

FULL OUTER JOIN◦ ◦

```
SELECT
      *
FROM
      EMPLOYEE FULL OUTER JOIN DEPT
      ON EMPLOYEE.DEPTNO = DEPT.DEPTNO;
```

```
+-----------+---------+
|    NAME   |  DEPTNO |
+-----------+---------+
|     A     |    2    |
|     B     |    1    |
|     C     |    3    |
|     D     |    2    |
|     E     |    1    |
|     F     |    1    |
|     G     |    4    |
|     H     |    4    |
+-----------+---------+
```

DEPT

```
+---------+--------------+
|  DEPTNO |   DEPTNAME   |
+---------+--------------+
|    1    |  ACCOUNTING  |
|    2    |    FINANCE   |
|    5    |   MARKETING  |
|    6    |      HR      |
+---------+--------------+
```

```
SELECT
      *
FROM
      EMPLOYEE FULL OUTER JOIN DEPT
      ON EMPLOYEE.DEPTNO = DEPT.DEPTNO;
```

```
+-----------+---------+---------+--------------+
|    NAME   |  DEPTNO |  DEPTNO |   DEPTNAME   |
+-----------+---------+---------+--------------+
|     A     |    2    |    2    |    FINANCE   |
|     B     |    1    |    1    |  ACCOUNTING  |
|     C     |    3    |         |              |
|     D     |    2    |    2    |    FINANCE   |
|     E     |    1    |    1    |  ACCOUNTING  |
|     F     |    1    |    1    |  ACCOUNTING  |
|     G     |    4    |         |              |
|     H     |    4    |         |              |
|           |         |    6    |      HR      |
|           |         |    5    |   MARKETING  |
+-----------+---------+---------+--------------+
```

NULL。

。NOT IN。

```
SELECT * FROM employees
   WHERE department_id NOT IN
   (SELECT department_id FROM departments
       WHERE location_id = 1700)
   ORDER BY last_name;
```

Anti Join

```
+-----------+---------+
|    NAME   |  DEPTNO |
+-----------+---------+
|     A     |    2    |
|     B     |    1    |
|     C     |    3    |
|     D     |    2    |
|     E     |    1    |
|     F     |    1    |
|     G     |    4    |
|     H     |    4    |
+-----------+---------+
```

DEPT

```
+---------+--------------+
|  DEPTNO |   DEPTNAME   |
+---------+--------------+
|    1    |  ACCOUNTING  |
|    2    |    FINANCE   |
|    5    |   MARKETING  |
|    6    |      HR      |
+---------+--------------+
```

```
SELECT
      *
FROM
      EMPLOYEE WHERE DEPTNO NOT IN
      (SELECT DEPTNO FROM DEPT);
```

```
+-----------+---------+
|    NAME   |  DEPTNO |
+-----------+---------+
|     C     |    3    |
|     H     |    4    |
|     G     |    4    |
+-----------+---------+
```

EMPLOYEEDEPTNODEPT。

2500。

```
SELECT * FROM departments
   WHERE EXISTS
   (SELECT 1 FROM employees
       WHERE departments.department_id = employees.department_id
       AND employees.salary > 2500)
   ORDER BY department_name;
```

2500where。 n3000 `select * from departments, employees`idswheren。

`JOIN`。 Oracle 9i `JOININNER JOIN` 。 `CROSS JOINNATURAL JOIN`。

```
select t1.*,
       t2.DeptId
  from table_1 t1
  join table_2 t2 on t2.DeptNo = t1.DeptNo
```

Oracle

- 10
- 11
- 12

NATURAL JOINexplitic join;。

```
create table tab1(id number,  descr varchar2(100));
create table tab2(id number,  descr varchar2(100));
insert into tab1 values(1, 'one');
insert into tab1 values(2, 'two');
insert into tab1 values(3, 'three');
insert into tab2 values(1, 'ONE');
insert into tab2 values(3, 'three');
```

IDDESCR

```
SQL> select *
  2  from tab1
  3       natural join
  4      tab2;

        ID DESCR
---------- ----------
         3 three
```

JOIN

```
SQL> select *
  2  from (select id as id, descr as descr1 from tab1)
  3       natural join
  4       (select id as id, descr as descr2 from tab2);

        ID DESCR1     DESCR2
---------- ---------- ----------
         1 one        ONE
         3 three      three
```

JOIN

```
SQL> select *
  2  from (select id as id1, descr as descr1 from tab1)
  3       natural join
  4       (select id as id2, descr as descr2 from tab2);

       ID1 DESCR1            ID2 DESCR2
---------- ---------- ---------- ----------
         1 one                 1 ONE
         2 two                 1 ONE
         3 three               1 ONE
         1 one                 3 three
         2 two                 3 three
         3 three               3 three
```

JOINS https://riptutorial.com/zh-TW/oracle/topic/4192/joins

4: Oracle MAF

Examples

Binding

```
        ValueExpression ve = AdfmfJavaUtilities.getValueExpression(<binding>, String.class);
       String <variable_name> = (String) ve.getValue(AdfmfJavaUtilities.getELContext());
```

“”EL。

“variable_name”

```
        ValueExpression ve = AdfmfJavaUtilities.getValueExpression(<binding>, String.class);
        ve.setValue(AdfmfJavaUtilities.getELContext(), <value>);
```

“”EL。

“value”

```
    AdfELContext adfELContext = AdfmfJavaUtilities.getAdfELContext();
    MethodExpression me;
    me = AdfmfJavaUtilities.getMethodExpression(<binding>, Object.class, new Class[] { });
    me.invoke(adfELContext, new Object[] { });
```

“binding”EL

javaScript

```
AdfmfContainerUtilities.invokeContainerJavaScriptFunction(AdfmfJavaUtilities.getFeatureId(),
<function>, new Object[] {
                                                                    });
```

“function”js

Oracle MAF https://riptutorial.com/zh-TW/oracle/topic/6352/oracle-maf

5: OracleAQ

- `dbms_aqadm.create_queue_table`DDLDML。 dbms_aqadmdbms_aq。 Oracle。 DDLDMLOracle。
- `dbms_aq.forever`。 OracleOracle Doc ID 2001165.1。
- 10.1AQ_TM_PROCESSES。 QMON。 Oracle。 `alter system reset aq_tm_processes scope=spfile sid='*';`

Examples

/

。 Oracle。 。

Oracle Database 12c12.1.0.2.0--64。

。 。 AQ3600。 48。

```
create type message_t as object
   (
   sender  varchar2 ( 50 ),
   message varchar2 ( 512 )
   );
/
-- Type MESSAGE_T compiled
begin dbms_aqadm.create_queue_table(
     queue_table        => 'MESSAGE_Q_TBL',
     queue_payload_type => 'MESSAGE_T',
     sort_list          => 'PRIORITY,ENQ_TIME',
     multiple_consumers =>  false,
     compatible         => '10.0.0');
  end;
/
-- PL/SQL procedure successfully completed.
begin dbms_aqadm.create_queue(
     queue_name          => 'MESSAGE_Q',
     queue_table         => 'MESSAGE_Q_TBL',
     queue_type          =>  0,
     max_retries         =>  48,
     retry_delay         =>  3600,
     dependency_tracking =>  false);
  end;
/
-- PL/SQL procedure successfully completed.
```

。

```
create or replace package message_worker_pkg
is
   queue_name_c constant varchar2(20) := 'MESSAGE_Q';
```

```
   -- allows the workers to process messages in the queue
   procedure enable_dequeue;

   -- prevents messages from being worked but will still allow them to be created and enqueued
   procedure disable_dequeue;

   -- called only by Oracle Advanced Queueing.  Do not call anywhere else.
   procedure on_message_enqueued (context        in raw,
                                  reginfo        in sys.aq$_reg_info,
                                  descr          in sys.aq$_descriptor,
                                  payload        in raw,
                                  payloadl       in number);

   -- allows messages to be worked if we missed the notification (or a retry
   -- is pending)
   procedure work_old_messages;

end;
/

create or replace package body message_worker_pkg
is
   -- raised by Oracle when we try to dequeue but no more messages are ready to
   -- be dequeued at this moment
   no_more_messages_ex          exception;
   pragma exception_init (no_more_messages_ex,
                          -25228);

   -- allows the workers to process messages in the queue
   procedure enable_dequeue
   as
   begin
      dbms_aqadm.start_queue (queue_name => queue_name_c, dequeue => true);
   end enable_dequeue;

   -- prevents messages from being worked but will still allow them to be created and enqueued
   procedure disable_dequeue
   as
   begin
      dbms_aqadm.stop_queue (queue_name => queue_name_c, dequeue => true, enqueue => false);
   end disable_dequeue;

   procedure work_message (message_in in out nocopy message_t)
   as
   begin
      dbms_output.put_line ( message_in.sender || ' says ' || message_in.message );
   end work_message;

   -- called only by Oracle Advanced Queueing.  Do not call anywhere else.

   procedure on_message_enqueued (context        in raw,
                                  reginfo        in sys.aq$_reg_info,
                                  descr          in sys.aq$_descriptor,
                                  payload        in raw,
                                  payloadl       in number)
   as
      pragma autonomous_transaction;
      dequeue_options_l      dbms_aq.dequeue_options_t;
      message_id_l           raw (16);
      message_l              message_t;
```

```
      message_properties_l   dbms_aq.message_properties_t;
   begin
      dequeue_options_l.msgid         := descr.msg_id;
      dequeue_options_l.consumer_name := descr.consumer_name;
      dequeue_options_l.wait          := dbms_aq.no_wait;
      dbms_aq.dequeue (queue_name           => descr.queue_name,
                       dequeue_options      => dequeue_options_l,
                       message_properties   => message_properties_l,
                       payload              => message_l,
                       msgid                => message_id_l);
      work_message (message_l);
      commit;
   exception
      when no_more_messages_ex
      then
         -- it's possible work_old_messages already dequeued the message
         commit;
      when others
      then
         -- we don't need to have a raise here.  I just wanted to point out that
         -- since this will be called by AQ throwing the exception back to it
         -- will have it put the message back on the queue and retry later
         raise;
   end on_message_enqueued;

   -- allows messages to be worked if we missed the notification (or a retry
   -- is pending)
   procedure work_old_messages
   as
      pragma autonomous_transaction;
      dequeue_options_l      dbms_aq.dequeue_options_t;
      message_id_l           raw (16);
      message_l              message_t;
      message_properties_l   dbms_aq.message_properties_t;
   begin
      dequeue_options_l.wait       := dbms_aq.no_wait;
      dequeue_options_l.navigation := dbms_aq.first_message;

      while (true) loop -- way out is no_more_messages_ex
         dbms_aq.dequeue (queue_name           => queue_name_c,
                          dequeue_options      => dequeue_options_l,
                          message_properties   => message_properties_l,
                          payload              => message_l,
                          msgid                => message_id_l);
         work_message (message_l);
         commit;
      end loop;
   exception
      when no_more_messages_ex
      then
         null;
   end work_old_messages;
end;
```

AQMESSAGE_Q。 AQ。

```
begin
  dbms_aq.register (
     sys.aq$_reg_info_list (
        sys.aq$_reg_info (user || '.' || message_worker_pkg.queue_name_c,
```

```
                          dbms_aq.namespace_aq,
                          'plsql://' || user || '.message_worker_pkg.on_message_enqueued',
                          hextoraw ('FF'))),
     1);
  commit;
end;
```

```
declare
   enqueue_options_l      dbms_aq.enqueue_options_t;
   message_properties_l   dbms_aq.message_properties_t;
   message_id_l           raw (16);
   message_l              message_t;
begin
   -- only need to do this next line ONCE
   dbms_aqadm.start_queue (queue_name => message_worker_pkg.queue_name_c, enqueue => true ,
dequeue => true);

   message_l := new message_t ( 'Jon', 'Hello, world!' );
   dbms_aq.enqueue (queue_name           => message_worker_pkg.queue_name_c,
                    enqueue_options      => enqueue_options_l,
                    message_properties   => message_properties_l,
                    payload              => message_l,
                    msgid                => message_id_l);
   commit;
end;
```

OracleAQ https://riptutorial.com/zh-TW/oracle/topic/4362/oracle-aq-

6: Oracle Database 12C

Examples

CONNECT BY Caluse

```
SELECT E.EMPLOYEE_ID,E.LAST_NAME,E.MANAGER_ID FROM HR.EMPLOYEES E
CONNECT BY PRIOR E.EMPLOYEE_ID = E.MANAGER_ID;
```

CONNECT BY◦

```
SELECT E.LAST_NAME|| ' reports to ' ||
PRIOR E.LAST_NAME "Walk Top Down"
FROM HR.EMPLOYEES E
START WITH E.MANAGER_ID IS NULL
CONNECT BY PRIOR E.EMPLOYEE_ID = E.MANAGER_ID;
```

Oracle Database 12C https://riptutorial.com/zh-TW/oracle/topic/8777/oracle-database-12c

7: WITHAKA

Oracle 11g R2。

Examples

```
WITH generator ( value ) AS (
  SELECT 1 FROM DUAL
UNION ALL
  SELECT value + 1
  FROM   generator
  WHERE  value < 10
)
SELECT value
FROM   generator;
```

```
VALUE
-----
    1
    2
    3
    4
    5
    6
    7
    8
    9
   10
```

```
CREATE TABLE table_name ( value VARCHAR2(50) );

INSERT INTO table_name ( value ) VALUES ( 'A,B,C,D,E' );
```

```
WITH items ( list, item, lvl ) AS (
  SELECT value,
         REGEXP_SUBSTR( value, '[^,]+', 1, 1 ),
         1
  FROM   table_name
UNION ALL
  SELECT value,
         REGEXP_SUBSTR( value, '[^,]+', 1, lvl + 1 ),
         lvl + 1
  FROM   items
  WHERE  lvl < REGEXP_COUNT( value, '[^,]+' )
)
SELECT * FROM items;
```

```
LIST      ITEM LVL
--------- ---- ---
A,B,C,D,E    A   1
A,B,C,D,E    B   2
A,B,C,D,E    C   3
A,B,C,D,E    D   4
```

```
A,B,C,D,E    E   5
```

WITHAKA https://riptutorial.com/zh-TW/oracle/topic/3506/with-aka-

8:

Examples

firm's_address*;

“firm's_address”*;

table“table”

*;◦

“”*;

https://riptutorial.com/zh-TW/oracle/topic/6553/

9:

- [schema。][OR REPLACE] CONTEXT;
- CREATE [OR REPLACE] CONTEXT[schema。]INITIALIZED EXTERNALLY;
- CREATE [OR REPLACE] CONTEXT[schema。]INITIALIZED GLOBALLY;
- [schema。][OR REPLACE] CONTEXT;

OR REPLACE	
	- SYS_CONTEXT
	。 。
INITIALIZED	Oracle。
EXTERNALLY	OCI。
GLOBALLY	LDAP。
ACCESSED GLOBALLY	- ID。

Oracle12cR1 http //docs.oracle.com/database/121/SQLRF/statements_5003.htm

Examples

```
CREATE CONTEXT my_ctx USING my_pkg;
```

my_pkg

```
CREATE PACKAGE my_pkg AS
  PROCEDURE set_ctx;
END my_pkg;

CREATE PACKAGE BODY my_pkg AS
  PROCEDURE set_ctx IS
  BEGIN
    DBMS_SESSION.set_context('MY_CTX','THE KEY','Value');
    DBMS_SESSION.set_context('MY_CTX','ANOTHER','Bla');
  END set_ctx;
END my_pkg;
```

```
my_pkg.set_ctx;
```

```
SELECT SYS_CONTEXT('MY_CTX','THE KEY') FROM dual;

Value
```

https://riptutorial.com/zh-TW/oracle/topic/2088/

10: SQL

SQLSQL。 。 。 PL / SQL。 PL / SQLDDLSQL。

1. 。

```
execute immediate 'select value from my_table where id = ' ||
     id_valiable into result_variable;
```

```
execute immediate 'select value from my_table where id = :P '
    using id_valiable into result_variable;
```

。 。 SQL。 `1 or 1 = 1 UPDATE`

```
execute immediate 'update my_table set value = ''I have bad news for you'' where id = '
|| id;
```

。 Oracle。

2. DDL。

Examples

SQL

。 。

```
 function get_value(p_table_name varchar2, p_id number) return varchar2 is
    value varchar2(100);
  begin
    execute immediate 'select column_value from ' || p_table_name ||
                      ' where id = :P' into value using p_id;
    return value;
  end;
```

```
declare
  table_name varchar2(30) := 'my_table';
  id number := 1;
begin
  dbms_output.put_line(get_value(table_name, id));
end;
```

```
create table my_table (id number, column_value varchar2(100));
insert into my_table values (1, 'Hello, world!');
```

SQL

```
declare
  query_text varchar2(1000) := 'insert into my_table(id, column_value) values (:P_ID,
:P_VAL)';
  id number := 2;
  value varchar2(100) := 'Bonjour!';
begin
  execute immediate query_text using id, value;
end;
/
```

SQL

```
declare
  query_text varchar2(1000) := 'update my_table set column_value = :P_VAL where id = :P_ID';
  id number := 2;
  value varchar2(100) := 'Bonjour le monde!';
begin
  execute immediate query_text using value, id;
end;
/
```

DDL

```
begin
  execute immediate 'create table my_table (id number, column_value varchar2(100))';
end;
/
```

- SQL

```
declare
  query_text varchar2(1000) := 'begin :P_OUT := cos(:P_IN); end;';
  in_value number := 0;
  out_value number;
begin
  execute immediate query_text using out out_value, in in_value;
  dbms_output.put_line('Result of anonymous block: ' || to_char(out_value));
end;
/
```

SQL https://riptutorial.com/zh-TW/oracle/topic/10905/sql

11: PL / SQL

。

Examples

```
DECLARE
    -- declare a variable
    message varchar2(20);
BEGIN
  -- assign value to variable
  message := 'HELLO WORLD';

  -- print message to screen
  DBMS_OUTPUT.PUT_LINE(message);
END;
/
```

PL / SQL https://riptutorial.com/zh-TW/oracle/topic/6451/pl---sql

12:

Examples

||concat

Oracle SQLPL / SQL `||`。

`customers`

```
 id  firstname    lastname
---  -----------  ----------
  1  Thomas       Woody
```

```
 SELECT firstname || ' ' || lastname || ' is in my database.' as "My Sentence"
   FROM customers;
```

```
My Sentence
--------------------------------
Thomas Woody is in my database.
```

OracleSQL `CONCAT(str1, str2)`

```
 SELECT CONCAT(firstname, ' is in my database.') from customers;
```

```
Expr1
--------------------------------
Thomas is in my database.
```

UPPER。

```
SELECT UPPER('My text 123!') AS result FROM dual;
```

```
RESULT
------------
MY TEXT 123!
```

INITCAP

`INITCAP`。

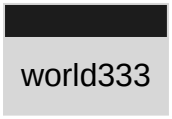
```
SELECT INITCAP('HELLO mr macdonald!') AS NEW FROM dual;
```

```
NEW
-------------------
```

```
Hello Mr Macdonald!
```

LOWER。

```
SELECT LOWER('HELLO World123!') text FROM dual;
```



2(\d\d)

```
SELECT REGEXP_REPLACE ('2, 5, and 10 are numbers in this example', '(\d\d)', '#')
FROM dual;
```

```
'2, 5, and # are numbers in this example'
```

\1 \2 \3

```
 SELECT REGEXP_REPLACE ('swap around 10 in that one ', '(.*)(\d\d )(.*)', '\3\2\1\3')
 FROM dual;
```

SUBSTR

SUBSTR

```
SELECT SUBSTR('abcdefg',2,3) FROM DUAL;
```

```
bcd
```

SUBSTR

```
SELECT SUBSTR('abcdefg',-4,2) FROM DUAL;
```

```
de
```

SUBSTR(mystring,-1,1)

LTRIM / RTRIM

LTRIMRTRIM◦ ◦

```
select LTRIM('<===>HELLO<===>', '=<>')
      ,RTRIM('<===>HELLO<===>', '=<>')
from dual;
```

```
HELLO<===>
```

```
<===>HELLO
```

https://riptutorial.com/zh-TW/oracle/topic/1518/

13:

- SCHEMA.SEQUENCE {|INTEGER| MAXVALUE INTEGER | NOMAXVALUE INTEGER | MINVALUE INTEGER | NOMINVALUE INTEGER | CYCLE INTEGER | NOCYCLE INTEGER | CACHE | NOCACHE || NOODER}

...	
MAXVALUE	
NOMAXVALUE	
MINVALUE	
NOMINVALUE	
NOCYCLE	
NOORDER	

Examples

CREATE SEQUENCE。。

。 。 。 。

。 。 。

CURRVALSQLNEXTVAL。

CREATE SEQUENCE。

CREATE ANY SEQUENCE。

oecustomers_seq。customersID。

```
CREATE SEQUENCE customers_seq
START WITH     1000
INCREMENT BY   1
NOCACHE
NOCYCLE;
```

customers_seq.nextval1000.1001.1。

https://riptutorial.com/zh-TW/oracle/topic/3709/

14:

Examples

```
CREATE TABLE table_name ( id, list ) AS
SELECT 1, 'a,b,c,d' FROM DUAL UNION ALL -- Multiple items in the list
SELECT 2, 'e'       FROM DUAL UNION ALL -- Single item in the list
SELECT 3, NULL      FROM DUAL UNION ALL -- NULL list
SELECT 4, 'f,,g'    FROM DUAL;          -- NULL item in the list
```

```
WITH bounds ( id, list, start_pos, end_pos, lvl ) AS (
  SELECT id, list, 1, INSTR( list, ',' ), 1 FROM table_name
UNION ALL
  SELECT id,
         list,
         end_pos + 1,
         INSTR( list, ',', end_pos + 1 ),
         lvl + 1
  FROM   bounds
  WHERE  end_pos > 0
)
SELECT id,
       SUBSTR(
         list,
         start_pos,
         CASE end_pos
           WHEN 0
           THEN LENGTH( list ) + 1
           ELSE end_pos
         END - start_pos
       ) AS item,
      lvl
FROM   bounds
ORDER BY id, lvl;
```

```
        ID ITEM            LVL
---------- ------- ----------
         1 a                 1
         1 b                 2
         1 c                 3
         1 d                 4
         2 e                 1
         3 (NULL)            1
         4 f                 1
         4 (NULL)            2
         4 g                 3
```

PL / SQL

PL / SQL

```
CREATE OR REPLACE FUNCTION split_String(
  i_str    IN  VARCHAR2,
```

```
  i_delim  IN  VARCHAR2 DEFAULT ','
) RETURN SYS.ODCIVARCHAR2LIST DETERMINISTIC
AS
  p_result       SYS.ODCIVARCHAR2LIST := SYS.ODCIVARCHAR2LIST();
  p_start        NUMBER(5) := 1;
  p_end          NUMBER(5);
  c_len CONSTANT NUMBER(5) := LENGTH( i_str );
  c_ld  CONSTANT NUMBER(5) := LENGTH( i_delim );
BEGIN
  IF c_len > 0 THEN
    p_end := INSTR( i_str, i_delim, p_start );
    WHILE p_end > 0 LOOP
      p_result.EXTEND;
      p_result( p_result.COUNT ) := SUBSTR( i_str, p_start, p_end - p_start );
      p_start := p_end + c_ld;
      p_end := INSTR( i_str, i_delim, p_start );
    END LOOP;
    IF p_start <= c_len + 1 THEN
      p_result.EXTEND;
      p_result( p_result.COUNT ) := SUBSTR( i_str, p_start, c_len - p_start + 1 );
    END IF;
  END IF;
  RETURN p_result;
END;
/
```

```
CREATE TABLE table_name ( id, list ) AS
SELECT 1, 'a,b,c,d' FROM DUAL UNION ALL -- Multiple items in the list
SELECT 2, 'e'       FROM DUAL UNION ALL -- Single item in the list
SELECT 3, NULL      FROM DUAL UNION ALL -- NULL list
SELECT 4, 'f,,g'    FROM DUAL;          -- NULL item in the list
```

```
SELECT t.id,
       v.column_value AS value,
       ROW_NUMBER() OVER ( PARTITION BY id ORDER BY ROWNUM ) AS lvl
FROM   table_name t,
       TABLE( split_String( t.list ) ) (+) v
```

```
        ID ITEM           LVL
---------- ------- ----------
         1 a                1
         1 b                2
         1 c                3
         1 d                4
         2 e                1
         3 (NULL)           1
         4 f                1
         4 (NULL)           2
         4 g                3
```

```
CREATE TABLE table_name ( id, list ) AS
SELECT 1, 'a,b,c,d' FROM DUAL UNION ALL -- Multiple items in the list
SELECT 2, 'e'       FROM DUAL UNION ALL -- Single item in the list
SELECT 3, NULL      FROM DUAL UNION ALL -- NULL list
SELECT 4, 'f,,g'    FROM DUAL;          -- NULL item in the list
```

```
SELECT t.id,
       v.COLUMN_VALUE AS value,
       ROW_NUMBER() OVER ( PARTITION BY id ORDER BY ROWNUM ) AS lvl
FROM   table_name t,
       TABLE(
         CAST(
           MULTISET(
             SELECT REGEXP_SUBSTR( t.list, '([^,]*)(,|$)', 1, LEVEL, NULL, 1 )
             FROM   DUAL
             CONNECT BY LEVEL < REGEXP_COUNT( t.list, '[^,]*(,|$)' )
           )
           AS SYS.ODCIVARCHAR2LIST
         )
       ) v;
```

```
        ID ITEM           LVL
---------- ------- ----------
         1 a                1
         1 b                2
         1 c                3
         1 d                4
         2 e                1
         3 (NULL)           1
         4 f                1
         4 (NULL)           2
         4 g                3
```

```
CREATE TABLE table_name ( id, list ) AS
SELECT 1, 'a,b,c,d' FROM DUAL UNION ALL -- Multiple items in the list
SELECT 2, 'e'       FROM DUAL UNION ALL -- Single item in the list
SELECT 3, NULL      FROM DUAL UNION ALL -- NULL list
SELECT 4, 'f,,g'    FROM DUAL;          -- NULL item in the list
```

```
SELECT t.id,
       REGEXP_SUBSTR( list, '([^,]*)(,|$)', 1, LEVEL, NULL, 1 ) AS value,
       LEVEL AS lvl
FROM   table_name t
CONNECT BY
       id = PRIOR id
AND    PRIOR SYS_GUID() IS NOT NULL
AND    LEVEL < REGEXP_COUNT( list, '([^,]*)(,|$)' )
```

```
        ID ITEM           LVL
---------- ------- ----------
         1 a                1
         1 b                2
         1 c                3
         1 d                4
         2 e                1
         3 (NULL)           1
         4 f                1
         4 (NULL)           2
         4 g                3
```

XMLTableFLWOR

Oracle 11`ora:tokenize` XQuery 。

```
CREATE TABLE table_name ( id, list ) AS
SELECT 1, 'a,b,c,d' FROM DUAL UNION ALL -- Multiple items in the list
SELECT 2, 'e'       FROM DUAL UNION ALL -- Single item in the list
SELECT 3, NULL      FROM DUAL UNION ALL -- NULL list
SELECT 4, 'f,,g'    FROM DUAL;          -- NULL item in the list
```

```
SELECT t.id,
       x.item,
       x.lvl
FROM   table_name t,
       XMLTABLE(
         'let $list := ora:tokenize(.,","),
              $cnt := count($list)
          for $val at $r in $list
          where $r < $cnt
          return $val'
       PASSING list||','
       COLUMNS
         item VARCHAR2(100) PATH '.',
         lvl FOR ORDINALITY
       ) (+) x;
```

```
        ID ITEM            LVL
---------- ------- ----------
         1 a                 1
         1 b                 2
         1 c                 3
         1 d                 4
         2 e                 1
         3 (NULL)       (NULL)
         4 f                 1
         4 (NULL)            2
         4 g                 3
```

CROSS APPLYOracle 12c

```
CREATE TABLE table_name ( id, list ) AS
SELECT 1, 'a,b,c,d' FROM DUAL UNION ALL -- Multiple items in the list
SELECT 2, 'e'       FROM DUAL UNION ALL -- Single item in the list
SELECT 3, NULL      FROM DUAL UNION ALL -- NULL list
SELECT 4, 'f,,g'    FROM DUAL;          -- NULL item in the list
```

```
SELECT t.id,
       REGEXP_SUBSTR( t.list, '([^,]*)($|,)', 1, l.lvl, NULL, 1 ) AS item,
       l.lvl
FROM   table_name t
       CROSS APPLY
       (
         SELECT LEVEL AS lvl
         FROM   DUAL
         CONNECT BY LEVEL <= REGEXP_COUNT( t.list, ',' ) + 1
       ) l;
```

```
        ID ITEM           LVL
---------- ------- ----------
         1 a                1
         1 b                2
         1 c                3
         1 d                4
         2 e                1
         3 (NULL)           1
         4 f                1
         4 (NULL)           2
         4 g                3
```

XMLTable

```
CREATE TABLE table_name ( id, list ) AS
SELECT 1, 'a,b,c,d' FROM DUAL UNION ALL -- Multiple items in the list
SELECT 2, 'e'       FROM DUAL UNION ALL -- Single item in the list
SELECT 3, NULL      FROM DUAL UNION ALL -- NULL list
SELECT 4, 'f,,g'    FROM DUAL;          -- NULL item in the list
```

```
SELECT t.id,
       SUBSTR( x.item.getStringVal(), 2 ) AS item,
       x.lvl
FROM   table_name t
       CROSS JOIN
       XMLTABLE(
         ( '"#' || REPLACE( t.list, ',', '","#' ) || '"' )
         COLUMNS item XMLTYPE PATH '.',
                 lvl  FOR ORDINALITY
       ) x;
```

#NULL;SUBSTR(item, 2)◦ NULL◦

```
        ID ITEM           LVL
---------- ------- ----------
         1 a                1
         1 b                2
         1 c                3
         1 d                4
         2 e                1
         3 (NULL)           1
         4 f                1
         4 (NULL)           2
         4 g                3
```

https://riptutorial.com/zh-TW/oracle/topic/1968/

15:

DOP	/。2,4,8,16。
	。

Examples

```
SELECT /*+ PARALLEL(8) */ first_name, last_name FROM employee emp;
```

;。

```
SELECT /*+ PARALLEL(emp,8) */ first_name, last_name FROM employee emp;
```

```
SELECT /*+ PARALLEL(table_alias,Degree of Parallelism) */ FROM table_name table_alias;
```

100。DOP2 50。DOP425。

。 。

USE_NL

。

```
use_nl(AB)
```

AB.。NL。

```
SELECT /*+use_nl(e d)*/ *
FROM Employees E
JOIN Departments D on E.DepartmentID = D.ID
```

APPEND

“DIRECT PATH”。

```
APPEND。 。 。
```

- 。
- Oracle sqlldr。
-

。

```
INSERT /*+append*/ INTO Employees
```

```
SELECT *
FROM Employees;
```

USE_HASH

。

```
use_hash(TableA [TableB] ... [TableN])
```

“HASHOracle。。“

。

HASH JOIN。

```
SELECT /*+use_hash(e d)*/ *
FROM Employees E
JOIN Departments D on E.DepartmentID = D.ID
```

FULLOracle。

```
create table fullTable(id) as select level from dual connect by level < 100000;
create index idx on fullTable(id);
```

```
select count(1) from fullTable f where id between 10 and 100;
-------------------------------------------------------------------------------
| Id  | Operation         | Name | Rows  | Bytes | Cost (%CPU)| Time     |
-------------------------------------------------------------------------------
|   0 | SELECT STATEMENT  |      |     1 |    13 |     3   (0)| 00:00:01 |
|   1 |  SORT AGGREGATE   |      |     1 |    13 |            |          |
|*  2 |   INDEX RANGE SCAN| IDX  |     2 |    26 |     3   (0)| 00:00:01 |
-------------------------------------------------------------------------------
```

```
select /*+ full(f) */ count(1) from fullTable f where id between 10 and 100;
-----------------------------------------------------------------------------------
| Id  | Operation          | Name      | Rows  | Bytes | Cost (%CPU)| Time     |
-----------------------------------------------------------------------------------
|   0 | SELECT STATEMENT   |           |     1 |    13 |    47   (3)| 00:00:01 |
|   1 |  SORT AGGREGATE    |           |     1 |    13 |            |          |
|*  2 |   TABLE ACCESS FULL| FULLTABLE |     2 |    26 |    47   (3)| 00:00:01 |
-----------------------------------------------------------------------------------
```

Oracle *11g* SQLSGA。。。

```
SELECT /*+ result_cache */ number FROM main_table;
```

-

```
Number
------
   1
```

```
   2
   3
   4
   5
   6
   7
   8
   9
   10

Elapsed: 00:00:02.20
```

。

-

```
Number
------
   1
   2
   3
   4
   5
   6
   7
   8
   9
   10

Elapsed: 00:00:00.10
```

2.200.10 。

//。 。

https://riptutorial.com/zh-TW/oracle/topic/1490/

16:

USER_ ALL_DBA_USER_ USER_ ALL_ SYSDBA DBA_ ◦ ALL_TABLES◦

V$◦

_PRIVS◦

Oracle/

Examples

USER_SOURCE◦ OWNER◦

```
select * from user_source where type='TRIGGER' and lower(text) like '%order%'
```

ALL_SOURCE◦

```
select * from all_source where owner=:owner
```

DBA_SOURCE◦

```
select * from dba_source
```

Oracle

```
select owner, table_name
from all_tables
```

ALL_TAB_COLUMNS◦ COLSUSER_TAB_COLUMNS◦

```
select *
from all_tab_columns
where table_name = :tname
```

◦

```
select *
from dba_role_privs
where grantee= :username
```

1.

```
select *
from dba_sys_privs
where grantee = :username
```

2.

```
select *
from dba_tab_privs
where grantee = :username
```

◦

◦

```
select *
from role_role_privs
where role in (select granted_role from dba_role_privs where grantee= :username)
```

1.

```
select *
from role_sys_privs
where role in (select granted_role from dba_role_privs where grantee= :username)
```

2.

```
select *
from role_tab_privs
where role in (select granted_role from dba_role_privs where grantee= :username)
```

Oracle

```
select *
from v$version
```

◦

```
select *
from dba_objects
```

```
select * from dict
```

https://riptutorial.com/zh-TW/oracle/topic/7347/

17:

Examples

```
CREATE DATABASE LINK dblink_name
CONNECT TO remote_username
IDENTIFIED BY remote_password
USING 'tns_service_name';
```

```
SELECT * FROM MY_TABLE@dblink_name;
```

```
SELECT * FROM DUAL@dblink_name;
```

USING。

```
USING 'tns_service_name.WORLD'
```

Oracle。

Oracle

- 10g https //docs.oracle.com/cd/B19306_01/server.102/b14200/statements_5005.htm
- 11g https //docs.oracle.com/cd/B28359_01/server.111/b28310/ds_concepts002.htm
- 12g https //docs.oracle.com/database/121/SQLRF/statements_5006.htm#SQLRF01205

“ORA1”“ORA2”。“ORA1”“ORA2”。

CREATE DATABASE LINK。 CREATE PUBLIC DATABASE LINK。

*Oracle Net 。

ORA1

```
SQL> create <public> database link ora2 connect to user1 identified by pass1 using <tns name
of ora2>;
```

DBORA1

```
SQL> Select name from V$DATABASE@ORA2; -- should return ORA2
```

“ORA1”“ORA2”DB`user1`ORA2`SELECT`TABLE1

```
  SELECT COUNT(*) FROM TABLE1@ORA2;
```

requistes

-

    - 。
- 。
- TNS。
- user1ORA2。
- user1`SELECT`ORA2。

https://riptutorial.com/zh-TW/oracle/topic/3859/

18:

/

Examples

Datapump

1.

```
   select * from dba_datapump_jobs;
   SELECT * FROM DBA_DATAPUMP_SESSIONS;
   select username,opname,target_desc,sofar,totalwork,message from V$SESSION_LONGOPS where
username = 'bkpadmin';
```

2.

- /
- **attach**
- /

```
impdp <bkpadmin>/<bkp123> attach=<SYS_IMPORT_SCHEMA_01>
Import> status
```

CTRL + C/

3/6

```
create or replace directory DATAPUMP_REMOTE_DIR as '/oracle/scripts/expimp';
```

7

```
expdp <bkpadmin>/<bkp123>  parfile=<exp.par>
```

<>。/。

-
-
- [exp.par]

```
schemas=<schema>
directory= DATAPUMP_REMOTE_DIR
dumpfile=<dbname>_<schema>.dmp
logfile=exp_<dbname>_<schema>.log
```

-
-

    - *CPU*
- [exp.par]

```
schemas=<schema>
directory= DATAPUMP_REMOTE_DIR
dumpfile=<dbname>_<schema>_%U.dmp
logfile=exp_<dbname>_<schema>.log
compression = all
parallel=5
```

- []
- [exp.par]

```
tables= tname1, tname2, tname3
directory= DATAPUMP_REMOTE_DIR
dumpfile=<dbname>_<schema>.dmp
logfile=exp_<dbname>_<schema>.log
```

9

- 。

```
impdp <bkpadmin>/<bkp123>  parfile=<imp.par>
```

<>。/。

-
-
- [imp.par]

```
schemas=<schema>
directory= DATAPUMP_REMOTE_DIR
dumpfile=<dbname>_<schema>.dmp
logfile=imp_<dbname>_<schema>.log
```

-
- *CPU*
- [imp.par]

```
schemas=<schema>
directory= DATAPUMP_REMOTE_DIR
dumpfile=<dbname>_<schema>_%U.dmp
logfile=imp_<dbname>_<schema>.log
parallel=5
```

- []
- [imp.par]

```
tables= tname1, tname2, tname3
directory= DATAPUMP_REMOTE_DIR
dumpfile=<dbname>_<schema>.dmp
logfile=exp_<dbname>_<schema>.log
TABLE_EXISTS_ACTION= <APPEND /SKIP /TRUNCATE /REPLACE>
```

1.

[]	[]
1.datapump	4.datapump
2.。	5.。
3.1。	6.4。
7.。	
8./ SCP。	
	9.Import
	10.

```
 expdp <bkpadmin>/<bkp123> directory=DATAPUMP_REMOTE_DIR dumpfile=<customer.dmp>


 impdp <bkpadmin>/<bkp123> directory=DATAPUMP_REMOTE_DIR dumpfile=<customer.dmp>
remap_schema=<source schema>:<target schema> remap_tablespace=<source tablespace>:<target
tablespace>
```

https://riptutorial.com/zh-TW/oracle/topic/9391/

19:

Examples

DATE;//。

ANSI DATE ISO 8601

```
SELECT DATE '2000-01-01' FROM DUAL;
```

TO_DATE()

```
SELECT TO_DATE( '2001-01-01', 'YYYY-MM-DD' ) FROM DUAL;
```

Oracle。

```
SELECT TO_DATE(
         'January 1, 2000, 00:00 A.M.',
         'Month dd, YYYY, HH12:MI A.M.',
         'NLS_DATE_LANGUAGE = American'
       )
FROM   DUAL;
```

3nlsparamTO_DATE()。

TO_DATE()

```
SELECT TO_DATE( '2000-01-01 12:00:00', 'YYYY-MM-DD HH24:MI:SS' ) FROM DUAL;
```

TIMESTAMP

```
CREATE TABLE date_table(
  date_value DATE
);

INSERT INTO date_table ( date_value ) VALUES ( TIMESTAMP '2000-01-01 12:00:00' );
```

TIMESTAMPDATEOracleTIMESTAMPDATE ;CAST()DATE

```
SELECT CAST( TIMESTAMP '2000-01-01 12:00:00' AS DATE ) FROM DUAL;
```

Oracle DATE;OracleSQL / PlusSQL / DeveloperToadJavaPythonDATE78。

DATE SYSDATEDUMP()“13”82012-11-26 16:41:09 2012-11-26 16:41:09

```
BYTE VALUE                          EXAMPLE
---- ------------------------------ ---------------------------------------
1    Year modulo 256                220
```

```
2    Year multiples of 256           7   (7 * 256 + 220 = 2012)
3    Month                           11
4    Day                             26
5    Hours                           16
6    Minutes                         41
7    Seconds                         9
8    Unused                          0
```

DATE DUMP()“12”7 2012-11-26 16:41:09

```
BYTE VALUE                          EXAMPLE
---- ------------------------------ ---------------------------------------
1    ( Year multiples of 100 ) + 100 120
2    ( Year modulo 100 ) + 100      112 ((120-100)*100 + (112-100) = 2012)
3    Month                          11
4    Day                            26
5    Hours + 1                      17
6    Minutes + 1                    42
7    Seconds + 1                    10
```

◦ SQL TO_CHAR(date, format_model, nls_params) ◦

TO_CHAR(date [, format_model [, nls_params]])

NLS_DATE_FORMAT ;◦ ◦

```
CREATE TABLE table_name (
  date_value DATE
);

INSERT INTO table_name ( date_value ) VALUES ( DATE '2000-01-01' );
INSERT INTO table_name ( date_value ) VALUES ( TIMESTAMP '2016-07-21 08:00:00' );
INSERT INTO table_name ( date_value ) VALUES ( SYSDATE );
```

```
SELECT TO_CHAR( date_value, 'YYYY-MM-DD' ) AS formatted_date FROM table_name;
```

```
FORMATTED_DATE
--------------
2000-01-01
2016-07-21
2016-07-21
```

```
SELECT TO_CHAR(
         date_value,
         'FMMonth d yyyy, hh12:mi:ss AM',
         'NLS_DATE_LANGUAGE = French'
       ) AS formatted_date
FROM   table_name;
```

```
FORMATTED_DATE
----------------------------
Janvier   01 2000, 12:00:00 AM
Juillet   21 2016, 08:00:00 AM
Juillet   21 2016, 19:08:31 PM
```

OracleDATETO_CHAR()TO_DATE() NLS_DATE_FORMAT。 。

```
SELECT VALUE FROM NLS_SESSION_PARAMETERS WHERE PARAMETER = 'NLS_DATE_FORMAT';
```

```
ALTER SESSION SET NLS_DATE_FORMAT = 'YYYY-MM-DD HH24:MI:SS';
```

。

NLS_DATE_FORMATTO_DATE()TO_CHAR()。

SQL / PlusSQL Developer

SQL / PlusSQL Developer。

NLS_DATE_FORMAT。

- /

oracleDATE/

```
SELECT DATE '2016-03-23' - DATE '2015-12-25' AS difference FROM DUAL;
```

```
DIFFERENCE
----------
        89
```

```
SELECT TO_DATE( '2016-01-02 01:01:12', 'YYYY-MM-DD HH24:MI:SS' )
         - TO_DATE( '2016-01-01 00:00:00', 'YYYY-MM-DD HH24:MI:SS' )
         AS difference
FROM   DUAL
```

```
DIFFERENCE
----------
    1.0425
```

24 24*6024*60*60。

```
SELECT TRUNC( difference                       ) AS days,
       TRUNC( MOD( difference * 24,       24 ) ) AS hours,
       TRUNC( MOD( difference * 24*60,    60 ) ) AS minutes,
       TRUNC( MOD( difference * 24*60*60, 60 ) ) AS seconds
FROM   (
  SELECT TO_DATE( '2016-01-02 01:01:12', 'YYYY-MM-DD HH24:MI:SS' )
         - TO_DATE( '2016-01-01 00:00:00', 'YYYY-MM-DD HH24:MI:SS' )
         AS difference
  FROM   DUAL
```

;

TRUNC()FLOOR()。

```
DAYS HOURS MINUTES SECONDS
---- ----- ------- -------
   1     1       1      12
```

NUMTODSINTERVAL()

```
SELECT EXTRACT( DAY    FROM difference ) AS days,
       EXTRACT( HOUR   FROM difference ) AS hours,
       EXTRACT( MINUTE FROM difference ) AS minutes,
       EXTRACT( SECOND FROM difference ) AS seconds
FROM   (
  SELECT NUMTODSINTERVAL(
           TO_DATE( '2016-01-02 01:01:12', 'YYYY-MM-DD HH24:MI:SS' )
             - TO_DATE( '2016-01-01 00:00:00', 'YYYY-MM-DD HH24:MI:SS' ),
           'DAY'
         ) AS difference
  FROM   DUAL
);
```

-

MONTHS_BETWEEN(date1, date2)

```
SELECT MONTHS_BETWEEN( DATE '2016-03-10', DATE '2015-03-10' ) AS difference FROM DUAL;
```

```
DIFFERENCE
----------
        12
```

31

```
SELECT MONTHS_BETWEEN( DATE '2015-02-15', DATE '2015-01-01' ) AS difference FROM DUAL;
```

```
DIFFERENCE
----------
 1.4516129
```

MONTHS_BETWEEN31。

```
SELECT MONTHS_BETWEEN( DATE'2016-02-01', DATE'2016-02-01' - INTERVAL '1' DAY ) AS "JAN-FEB",
       MONTHS_BETWEEN( DATE'2016-03-01', DATE'2016-03-01' - INTERVAL '1' DAY ) AS "FEB-MAR",
       MONTHS_BETWEEN( DATE'2016-04-01', DATE'2016-04-01' - INTERVAL '1' DAY ) AS "MAR-APR",
       MONTHS_BETWEEN( DATE'2016-05-01', DATE'2016-05-01' - INTERVAL '1' DAY ) AS "APR-MAY"
FROM   DUAL;
```

```
JAN-FEB FEB-MAR MAR-APR APR-MAY
------- ------- ------- -------
0.03226 0.09677 0.03226 0.06452
```

12。

EXTRACT([YEAR | MONTH | DAY] FROM datevalue) DATEDATE

```
SELECT EXTRACT (YEAR  FROM DATE '2016-07-25') AS YEAR,
       EXTRACT (MONTH FROM DATE '2016-07-25') AS MONTH,
       EXTRACT (DAY   FROM DATE '2016-07-25') AS DAY
FROM DUAL;
```

```
YEAR MONTH DAY
---- ----- ---
2016     7  25
```

- CAST(datevalue AS TIMESTAMP)DATETIMESTAMP EXTRACT([HOUR | MINUTE | SECOND] FROM timestampvalue) ;
- TO_CHAR(datevalue, format_model)。

```
SELECT EXTRACT( HOUR   FROM CAST( datetime AS TIMESTAMP ) ) AS Hours,
       EXTRACT( MINUTE FROM CAST( datetime AS TIMESTAMP ) ) AS Minutes,
       EXTRACT( SECOND FROM CAST( datetime AS TIMESTAMP ) ) AS Seconds
FROM   (
  SELECT TO_DATE( '2016-01-01 09:42:01', 'YYYY-MM-DD HH24:MI:SS' ) AS datetime FROM DUAL
);
```

```
HOURS MINUTES SECONDS
----- ------- -------
    9      42       1
```

DATE。

- TIMESTAMP WITH TIME ZONE ;
- 。

DATEUTC

```
SELECT FROM_TZ(
         CAST(
           TO_DATE( '2016-01-01 12:00:00', 'YYYY-MM-DD HH24:MI:SS' )
           AS TIMESTAMP
         ),
         'UTC'
       )
       AT LOCAL AS time
FROM   DUAL;
```

```
ALTER SESSION SET TIME_ZONE = '+01:00';
```

```
TIME
-----------------------------------
2016-01-01 13:00:00.000000000 +01:00
```

```
ALTER SESSION SET TIME_ZONE = 'PST';
```

```
TIME
-----------------------------------
2016-01-01 04:00:00.000000000 PST
```

Oracle ◦ My Oracle Support2019397.2730795.1 ◦

`TO_CHAR( date_value, 'D' )`◦

NLS_TERRITORY

```
ALTER SESSION SET NLS_TERRITORY = 'AMERICA';        -- First day of week is Sunday
SELECT TO_CHAR( DATE '1970-01-01', 'D' ) FROM DUAL;
```

5

```
ALTER SESSION SET NLS_TERRITORY = 'UNITED KINGDOM'; -- First day of week is Monday
SELECT TO_CHAR( DATE '1970-01-01', 'D' ) FROM DUAL;
```

4

NLSiso

```
SELECT TRUNC( date_value ) - TRUNC( date_value, 'IW' ) + 1 FROM DUAL
```

https://riptutorial.com/zh-TW/oracle/topic/2087/

20:

- UPDATE table-Name [[AS] correlation-Name] SET column-Name = Value [column-Name = Value}] * [WHERE]
- UPDATE table-Name SET column-Name = Value [column-Name = Value] * WHERE CURRENT OF

Examples

```
UPDATE
      TESTTABLE
SET
      TEST_COLUMN= 'Testvalue',TEST_COLUMN2= 123
WHERE
      EXISTS
          (SELECT MASTERTABLE.TESTTABLE_ID
           FROM MASTERTABLE
           WHERE ID_NUMBER=11);
```

Oracle

```
UPDATE
      (SELECT
            TESTTABLE.TEST_COLUMN AS OLD,
            'Testvalue' AS NEW
       FROM
                TESTTABLE
            INNER JOIN
                MASTERTABLE
            ON TESTTABLE.TESTTABLE_ID = MASTERTABLE.TESTTABLE_ID
       WHERE ID_NUMBER=11) T
SET
      T.OLD        = T.NEW;
```

Merge

```
MERGE INTO
      TESTTABLE
USING
      (SELECT
            T1.ROWID AS RID,
            T2.TESTTABLE_ID
       FROM
                TESTTABLE T1
            INNER JOIN
                MASTERTABLE T2
            ON TESTTABLE.TESTTABLE_ID = MASTERTABLE.TESTTABLE_ID
       WHERE ID_NUMBER=11)
ON
      ( ROWID = RID )
WHEN MATCHED
THEN
    UPDATE SET TEST_COLUMN= 'Testvalue';
```

```
drop table table01;
drop table table02;

create table table01 (
       code int,
       name varchar(50),
       old int
);

create table table02 (
       code int,
       name varchar(50),
       old int
);

truncate table table01;
insert into table01 values (1, 'A', 10);
insert into table01 values (9, 'B', 12);
insert into table01 values (3, 'C', 14);
insert into table01 values (4, 'D', 16);
insert into table01 values (5, 'E', 18);

truncate table table02;
insert into table02 values (1, 'AA', null);
insert into table02 values (2, 'BB', 123);
insert into table02 values (3, 'CC', null);
insert into table02 values (4, 'DD', null);
insert into table02 values (5, 'EE', null);

select * from table01 a order by 2;
select * from table02 a order by 2;

--

merge into table02 a using (
      select b.code, b.old from table01 b
) c on (
  a.code = c.code
)
when matched then update set a.old = c.old
;

--

select a.*, b.* from table01 a
inner join table02 b on a.code = b.codetable01;

select * from table01 a
where
       exists
       (
         select 'x' from table02 b where a.code = b.codetable01
       );

select * from table01 a where a.code in (select b.codetable01 from table02 b);

--

select * from table01 a
where
       not exists
```

```
       (
         select 'x' from table02 b where a.code = b.codetable01
       );

select * from table01 a where a.code not in (select b.codetable01 from table02 b);
```

https://riptutorial.com/zh-TW/oracle/topic/4193/

21:

SOOracle。。。MERGE。

Examples

```
create table tgt ( id, val ) as
  select 1, 'a' from dual union all
  select 2, 'b' from dual
;

Table TGT created.

create table src ( id, val ) as
  select 1, 'x' from dual union all
  select 2, 'y' from dual
;

Table SRC created.

update
  ( select t.val as t_val, s.val as s_val
    from   tgt t inner join src s on t.id = s.id
  )
set t_val = s_val
;

SQL Error: ORA-01779: cannot modify a column which maps to a non key-preserved table
01779. 00000 -  "cannot modify a column which maps to a non key-preserved table"
*Cause:    An attempt was made to insert or update columns of a join view which
           map to a non-key-preserved table.
*Action:   Modify the underlying base tables directly.
```

`src.id1 src.val`。 - 。 `src.idsrc.id` Oracle - 。 “UPDATE”

Oracle`src.id`Oracle。。 `src.id`PK `tgt.id`PKFKjoin;。

```
alter table src add constraint src_uc unique (id);

Table SRC altered.

update
  ( select t.val as t_val, s.val as s_val
    from   tgt t inner join src s on t.id = s.id
  )
set t_val = s_val
;

2 rows updated.

select * from tgt;

ID  VAL
--  ---
 1  x
```

```
2  y
```

MERGEMERGE“Oracle”。 Oracle 。

https://riptutorial.com/zh-TW/oracle/topic/8061/

22:

Oracle Real Application SecurityOracle 12c。

Examples

Application

`SELECT INSERT UPDATE DELETE ...`。

```
XS$PRIVILEGE(
    name=>'privilege_name'
    [, implied_priv_list=>XS$NAME_LIST('"SELECT"', '"INSERT"', '"UPDATE"', '"DELETE"')]
)

XS$PRIVILEGE_LIST(
    XS$PRIVILEGE(...),
    XS$PRIVILEGE(...),
    ...
);
```

```
BEGIN
    SYS.XS_PRINCIPAL.CREATE_USER('user_name');
END;
```

```
BEGIN
    SYS.XS_PRINCIPAL.CREATE_USER(name => 'user_name', schema => 'schema_name');
END;

BEGIN
    SYS.XS_PRINCIPAL.SET_PASSWORD('user_name', 'password');
END;
CREATE PROFILE prof LIMIT
    PASSWORD_REUSE_TIME 1/4440
    PASSWORD_REUSE_MAX 3
    PASSWORD_VERIFY_FUNCTION Verify_Pass;

BEGIN
    SYS.XS_PRINCIPAL.SET_PROFILE('user_name', 'prof');
END;

BEGIN
    SYS.XS_PRINCIPAL.GRANT_ROLES('user_name', 'XSONNCENT');
END;
```

```
BEGIN
    SYS.XS_PRINCIPAL.SET_VERIFIER('user_name', '6DFF060084ECE67F', XS_PRINCIPAL.XS_SHA512‟);
END;
```

```
DECLARE
    st_date TIMESTAMP WITH TIME ZONE;
    ed_date TIMESTAMP WITH TIME ZONE;
```

```
BEGIN
    st_date := SYSTIMESTAMP;
    ed_date := TO_TIMESTAMP_TZ('2013-06-18 11:00:00 -5:00','YYYY-MM-DD HH:MI:SS');
    SYS.XS_PRINCIPAL.CREATE_ROLE
        (name => 'app_regular_role',
        enabled => TRUE,
        start_date => st_date,
        end_date => ed_date);
END;
```

:(

```
BEGIN
    SYS.XS_PRINCIPAL.CREATE_DYNAMIC_ROLE
        (name => 'app_dynamic_role',
        duration => 40,
        scope => XS_PRINCIPAL.SESSION_SCOPE);
END;
```

- `XSPUBLIC`
- `XSBYPASS`
- `XSSESSIONADMIN`
- `XSNAMESPACEADMIN`
- `XSPROVISIONER`
- `XSCACHEADMIN`
- `XSDISPATCHER`

:(

- `DBMS_AUTH` :(
- `EXTERNAL_DBMS_AUTH` :(
- `DBMS_PASSWD` :(
- `MIDTIER_AUTH` :(
- `XSAUTHENTICATED` :(
- `XSSWITCH` :(

https://riptutorial.com/zh-TW/oracle/topic/10864/

23:

- Ratio_To_ReportexprOVERquery_partition_clause

Examples

RATIO_TO_REPORT

。

```
--Data
CREATE TABLE Employees (Name Varchar2(30), Salary Number(10));
INSERT INTO Employees Values ('Bob',2500);
INSERT INTO Employees Values ('Alice',3500);
INSERT INTO Employees Values ('Tom',2700);
INSERT INTO Employees Values ('Sue',2000);
--Query
SELECT Name, Salary, Ratio_To_Report(Salary) OVER () As Ratio
FROM Employees
ORDER BY Salary, Name, Ratio;
--Output
NAME                             SALARY      RATIO
------------------------------ ---------- ----------
Sue                                2000 .186915888
Bob                                2500  .23364486
Tom                                2700 .252336449
Alice                              3500 .327102804
```

https://riptutorial.com/zh-TW/oracle/topic/6669/

24:

levelN。

Examples

N

```
SELECT ROWNUM NO FROM DUAL CONNECT BY LEVEL <= 10
```

/ *。 1..100 * /

```
select level from dual connect by level <= 100;
```

/ *。 10* /

```
select to_date('01-01-2017','mm-dd-yyyy')+level-1 as  dates from dual connect by level <= 10;
```

01-JAN-17
02-JAN-17
03-JAN-17
04-JAN-17
05-JAN-17
06-JAN-17
07-JAN-17
08-JAN-17
09-JAN-17
10-JAN-17

https://riptutorial.com/zh-TW/oracle/topic/6548/

25:

DML

Examples

b

```
CREATE INDEX ord_customer_ix ON orders (customer_id);
```

oracleb-tree。。 B。index。。

- 。
- **b**。
- DML。
- 。

```
CREATE BITMAP INDEX
emp_bitmap_idx
ON index_demo (gender);
```

- 。
- 。。
- 3。
- 。。。
- OracleRAM。Row-IDOracleRow-ID。

```
CREATE INDEX first_name_idx ON user_data (UPPER(first_name));


SELECT *
FROM   user_data
WHERE  UPPER(first_name) = 'JOHN2';
```

- 。
- searchwhere。
- **Upper**。upper。

https://riptutorial.com/zh-TW/oracle/topic/9978/

26:

Examples

Oracle 10gMEDIAN

```
SELECT MEDIAN(SAL)
FROM EMP
```

DATETIME。

MEDIAN。NOracleRN =1 +0.5 *N-1RN。CRN = CEILINGRNFRN = FLOORRN。

Oracle 9iPERCENTILE_CONT MEDIAN0.5

```
SELECT PERCENTILE_CONT(.5) WITHIN GROUP(order by SAL)
FROM EMP
```

。 - 。

```
SELECT name, salary, VARIANCE(salary) "Variance"
FROM employees
```

STDDEV

STDDEVexpr。。STDDEV_SAMPSTDDEV1STDDEV_SAMPnull。

OracleVARIANCE。

numericnumeric。numeric。

DISTINCTanalytic_clausequery_partition_clause。order_by_clausewindowing_clause。

hr.employees

hrSchema。

```
SELECT STDDEV(salary) "Deviation"
FROM employees;

Deviation
----------
3909.36575
```

hr.employeesDepartment 80hire_date

```
SELECT last_name, salary,
```

```
STDDEV(salary) OVER (ORDER BY hire_date) "StdDev"
FROM employees
WHERE department_id = 30;

LAST_NAME                    SALARY     StdDev
------------------------- ---------- ----------
Raphaely                      11000          0
Khoo                           3100 5586.14357
Tobias                         2800  4650.0896
```

https://riptutorial.com/zh-TW/oracle/topic/2283/

27:

。

1. 。
2. DMLCOMMITROLLBACK。

Examples

。

```
CREATE OR REPLACE PROCEDURE log_errors
(
  p_calling_program IN VARCHAR2,
  p_error_code IN INTEGER,
  p_error_description IN VARCHAR2
)
IS
  PRAGMA AUTONOMOUS_TRANSACTION;
BEGIN
  INSERT INTO error_log
  VALUES
  (
  p_calling_program,
  p_error_code,
  p_error_description,
  SYSDATE,
  USER
  );
  COMMIT;
END log_errors;
```

PLSQLlog_errors。

```
BEGIN
   DELETE FROM dept WHERE deptno = 10;
EXCEPTION
   WHEN OTHERS THEN
      log_errors('Delete dept',sqlcode, sqlerrm);
      RAISE;
END;

SELECT * FROM error_log;

CALLING_PROGRAM    ERROR_CODE    ERROR_DESCRIPTION
ERROR_DATETIME         DB_USER
Delete dept        -2292         ORA-02292: integrity constraint violated - child record found
08/09/2016             APEX_PUBLIC_USER
```

https://riptutorial.com/zh-TW/oracle/topic/6103/

28:

Examples

OracleDATE TIMESTAMP ◦

```
select to_char(sysdate + 1, 'YYYY-MM-DD') as tomorrow from dual;
```

```
select to_char(sysdate - 1, 'YYYY-MM-DD') as yesterday from dual;
```

5

```
select to_char(sysdate + 5, 'YYYY-MM-DD') as five_days_from_now from dual;
```

5

```
select to_char(sysdate + (5/24), 'YYYY-MM-DD HH24:MI:SS') as five_hours_from_now from dual;
```

10

```
select to_char(sysdate + (10/1440), 'YYYY-MM-DD HH24:MI:SS') as ten_mintues_from_now from
dual;
```

7

```
select to_char(sysdate + (7/86400), 'YYYY-MM-DD HH24:MI:SS') as seven_seconds_from_now from
dual;
```

hire_date30

```
select * from emp where hire_date < sysdate - 30;
```

last_updated

```
select * from logfile where last_updated >= sysdate - (1/24);
```

OracleINTERVAL 1.5362◦ DATETIMESTAMP◦

```
select * from logfile where last_updated >= sysdate - interval '1' hour;
```

Add_months

```
add_months(p_date, integer) return date;
```

Add_monthsamtp_date◦

```
SELECT add_months(date'2015-01-12', 2) m FROM dual;
```

[redacted]

2015312

◦ amt

```
SELECT add_months(date'2015-01-12', -2) m FROM dual;
```

[redacted]

20141112

◦

```
SELECT to_char( add_months(date'2015-01-31', 1),'YYYY-MM-DD') m FROM dual;
```

[redacted]

2015228

https://riptutorial.com/zh-TW/oracle/topic/768/

29: NULL

NULL。 `a = NULL`NULLUNKNOWN。 `a IS NULL`a `IS NOT NULL`。 NULLNULL。 null。 NULLNULL。 `3 * NULL + 5`。

NULLPRIMARY KEYNOT NULL。 NOVALIDATE

Examples

NULL

```
SELECT 1 NUM_COLUMN, 'foo' VARCHAR2_COLUMN from DUAL
UNION ALL
SELECT NULL, NULL from DUAL;
```

NUM_COLUMN	VARCHAR2_COLUMN
1	FOO

NULL

```
SELECT 1 a, '' b from DUAL;
```

1	

NULLNULL

```
SELECT 3 * NULL + 5, 'Hello ' || NULL || 'world'   from DUAL;
```

3 * NULL + 5	'HELLO'|| NULL ||''

NVL

```
SELECT a column_with_null, NVL(a, 'N/A') column_without_null FROM
  (SELECT NULL a FROM DUAL);
```

COLUMN_WITH_NULL	COLUMN_WITHOUT_NULL
N / A	

NVLNULL

```
SELECT
    CASE WHEN a = b THEN 1 WHEN a <> b THEN 0 else -1 END comparison_without_nvl,
    CASE WHEN NVL(a, -1) = NVL(b, -1) THEN 1 WHEN NVL(a, -1) <> NVL(b, -1) THEN 0 else -1 END
comparison_with_nvl
  FROM
    (select null a, 3 b FROM DUAL
     UNION ALL
     SELECT NULL, NULL FROM DUAL);
```

COMPARISON_WITHOUT_NVL	COMPARISON_WITH_NVL
-1	0
-1	1

nullNVL2

NOT NULLNVL2。。

```
SELECT NVL2(null, 'Foo', 'Bar'), NVL2(5, 'Foo', 'Bar') FROM DUAL;
```

NVL2NULL'"BAR“	NVL25'FOO"BAR'

COALESCENULL

```
SELECT COALESCE(a, b, c, d, 5) FROM
    (SELECT NULL A, NULL b, NULL c, 4 d FROM DUAL);
```

COALESCEABCd5
4

COALESCENVL。NVL。COALESCENULL。NULLCOALESCE。

NULL https://riptutorial.com/zh-TW/oracle/topic/8183/null

30:

。。。 Oracle

。

Examples

。

```
CREATE TABLE orders (
    order_nr NUMBER(15),
    user_id VARCHAR2(2),
    order_value NUMBER(15),
    store_id NUMBER(5)
)
PARTITION BY HASH(store_id) PARTITIONS 8;
```

2。

。

```
CREATE TABLE orders (
    order_nr NUMBER(15),
    user_id VARCHAR2(2),
    order_value NUMBER(15),
    store_id NUMBER(5)
)
PARTITION BY RANGE(order_value) (
    PARTITION p1 VALUES LESS THAN(10),
    PARTITION p2 VALUES LESS THAN(40),
    PARTITION p3 VALUES LESS THAN(100),
    PARTITION p4 VALUES LESS THAN(MAXVALUE)
);
```

Schema

```
SELECT * FROM user_tab_partitions;
```

。

```
CREATE TABLE orders (
    order_nr NUMBER(15),
    user_id VARCHAR2(2),
    order_value NUMBER(15),
    store_id NUMBER(5)
)
PARTITION BY LIST(store_id) (
    PARTITION p1 VALUES (1,2,3),
    PARTITION p2 VALUES(4,5,6),
    PARTITION p3 VALUES(7,8,9),
```

```
    PARTITION p4 VALUES(10,11)
);
```

```
ALTER TABLE table_name DROP PARTITION partition_name;
```

```
SELECT * FROM orders PARTITION(partition_name);
```

```
ALTER TABLE table_name TRUNCATE PARTITION partition_name;
```

```
ALTER TABLE table_name RENAME PARTITION p3 TO p6;
```

```
ALTER TABLE table_name
MOVE PARTITION partition_name TABLESPACE tablespace_name;
```

```
ALTER TABLE table_name
ADD PARTITION new_partition VALUES LESS THAN(400);
```

。

```
ALTER TABLE table_name SPLIT PARTITION old_partition
    AT (new_high_bound) INTO (PARTITION new_partition TABLESPACE new_tablespace,
    PARTITION old_partition)
```

```
ALTER TABLE table_name
  MERGE PARTITIONS first_partition, second_partition
  INTO  PARTITION  splitted_partition TABLESPACE new_tablespace
```

/。“”“insert ... select”“create table ... as select”DDLDML/。

1. “B”“A”

“A”“OLD_VALUES”“B”

```
ALTER TABLE "A" EXCHANGE PARTITION "OLD_VALUES" WITH TABLE "B";
```

“B”“”“OLD_VALUES”

2.

“A”“OLD_VALUES”“B”

```
ALTER TABLE "A" EXCHANGE PARTITION "OLD_VALUES" WITH TABLE "B";
```

“OLD_VALUES”“”“B”

--->“ https://docs.oracle.com/cd/E11882_01/server.112/e25523/part_admin002.htm#i1107555 ”“”

https://riptutorial.com/zh-TW/oracle/topic/3955/

31:

Examples

EXAMPLEOracleERR $ _EXAMPLE

```
EXECUTE DBMS_ERRLOG.CREATE_ERROR_LOG('EXAMPLE', NULL, NULL, NULL, TRUE);
```

SQL

```
insert into EXAMPLE (COL1) values ('example')
LOG ERRORS INTO ERR$_EXAMPLE reject limit unlimited;
```

https://riptutorial.com/zh-TW/oracle/topic/3505/

32:

Examples

Oracle

ID。scrpit。ID“PK_S”

```
begin
  for i in (select a.table_name, c.column_name
              from user_constraints a, user_cons_columns c
             where a.CONSTRAINT_TYPE = 'R'
               and a.R_CONSTRAINT_NAME = 'PK_S'
               and c.constraint_name = a.constraint_name) loop


        execute immediate 'update ' || i.table_name || ' set ' || i.column_name ||
                    '=to_number(''1000'' || ' ||  i.column_name || ') ';



  end loop;

end;
```

oracle

T1“pk_t1”

```
Begin
    For I in (select table_name, constraint_name from user_constraint t where
r_constraint_name='pk_t1') loop

Execute immediate ' alter table ' || I.table_name || ' disable constraint ' ||
i.constraint_name;

   End loop;
End;
```

https://riptutorial.com/zh-TW/oracle/topic/6040/

33:

Examples

N

Oracle 12c R1`FETCH`

```
SELECT   val
FROM     mytable
ORDER BY val DESC
FETCH FIRST 5 ROWS ONLY;
```

FETCH

```
SELECT * FROM (
   SELECT   val
   FROM     mytable
   ORDER BY val DESC
) WHERE ROWNUM <= 5;
```

SQL

```
SELECT val
FROM   (SELECT val, rownum AS rnum
        FROM   (SELECT val
                FROM   rownum_order_test
                ORDER BY val)
        WHERE rownum <= :upper_limit)
WHERE  rnum >= :lower_limit ;
```

web serch

N

rownum

```
select * from
(
  select val from  mytable
) where rownum<=5
```

order by。

```
select * from
(
    select val from  mytable order by val desc
) where rownum<=5
```

```
select * from
(
    select val from  mytable order by val
) where rownum<=5
```

NMOracle 12c

row_number

```
with t as (
  select col1
  , col2
  , row_number() over (order by col1, col2) rn
  from table
)
select col1
, col2
from t
where rn between N and M; -- N and M are both inclusive
```

Oracle 12cOFFSETFETCH◦

Oracle 12g +

```
SELECT Id, Col1
FROM TableName
ORDER BY Id
OFFSET 20 ROWS FETCH NEXT 20 ROWS ONLY;
```

```
SELECT Id,
   Col1
 FROM (SELECT Id,
           Col1,
           row_number() over (order by Id) RowNumber
      FROM TableName)
WHERE RowNumber BETWEEN 21 AND 40
```

Oracle 12g +

```
SELECT Id, Col1
FROM TableName
ORDER BY Id
OFFSET 5 ROWS;
```

```
SELECT Id,
   Col1
 FROM (SELECT Id,
           Col1,
           row_number() over (order by Id) RowNumber
      FROM TableName)
WHERE RowNumber > 20
```

https://riptutorial.com/zh-TW/oracle/topic/4300/--

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