

```
DECLARE
  v_name VARCHAR2(100) := 'Hello ';

  c_name CONSTANT VARCHAR2(100) := 'OCP';
BEGIN
  v_name := '你好';
  dbms_output.put_line(v_name || ',World !');

  dbms_output.put_line(c_name || ', Good !');

  --c_name:='Hi '; --常量值不能更新
  --dbms_output.put_line(c_name || ', Good !');
END;
```

```
SELECT * FROM scott.emp;
```

```
DECLARE
  v_empno NUMBER := 73691;
BEGIN
  UPDATE scott.emp SET sal = 1000 WHERE empno = v_empno;

  IF SQL%ROWCOUNT >= 1
  THEN
    dbms_output.put_line('更新成功! ' || SQL%ROWCOUNT);
    COMMIT;
  ELSE
    dbms_output.put_line('更新失败! ' || SQL%ROWCOUNT);
    ROLLBACK;
  END IF;
END;
```

```
DECLARE
  v_empno NUMBER := 7369;

  v_ename VARCHAR2(10);
```

```

v_job VARCHAR2(9);
BEGIN
SELECT ename, job
  INTO v_ename, v_job
  FROM scott.emp
 WHERE empno = v_empno;

dbms_output.put_line('员工姓名: ' || v_ename || ',工作: ' || v_job);
END;

ALTER TABLE scott.emp modify ename VARCHAR2(15);

UPDATE scott.emp SET ename = 'SMITHSMITHSMITH' WHERE empno = 7369;
COMMIT;

```

```

DECLARE
v_empno NUMBER := 7369;

v_ename scott.emp.ename%TYPE;
v_job VARCHAR2(9);
BEGIN
SELECT ename, job
  INTO v_ename, v_job
  FROM scott.emp
 WHERE empno = v_empno;

dbms_output.put_line('员工姓名: ' || v_ename || ',工作: ' || v_job);
END;

```

```

DECLARE
v_empno NUMBER := 7369;

v_ename scott.emp.ename%TYPE;
v_job scott.emp.job%TYPE;
v_sal scott.emp.sal%TYPE;

```

```

BEGIN
  SELECT ename, job, sal
     INTO v_ename, v_job, v_sal
    FROM scott.emp
   WHERE empno = v_empno;

  dbms_output.put_line('员工姓名: ' || v_ename || ',工作: ' || v_job || ',工资: ' ||
                        v_sal);
END;

```

```

DECLARE
  v_empno NUMBER := 7369;

  TYPE typ_emp IS RECORD(
    ename scott.emp.ename%TYPE,
    job   scott.emp.job%TYPE,
    sal   scott.emp.sal%TYPE);

```

```

  v_emp typ_emp;

```

```

BEGIN
  SELECT ename, job, sal INTO v_emp FROM scott.emp WHERE empno = v_empno;

  dbms_output.put_line('员工名字: ' || v_emp.ename || ', 员工工作: ' || v_emp.job ||
                        ', 员工工资: ' || v_emp.sal);
END;

```

```

DECLARE
  v_empno NUMBER := 7369;

  v_emp scott.emp%ROWTYPE;

```

```

BEGIN
  SELECT * INTO v_emp FROM scott.emp WHERE empno = 7369;

  dbms_output.put_line('员工名字: ' || v_emp.ename || ', 员工工作: ' || v_emp.job ||
                        ', 员工工资: ' || v_emp.sal || ', 部门号: ' || v_emp.deptno);

```

END;

--SELECT * from scott.emp;

--SELECT * from scott.salgrade;

DECLARE

v_empno NUMBER := 7788;

v_sal NUMBER;

BEGIN

SELECT sal INTO v_sal FROM scott.emp WHERE empno = v_empno;

dbms_output.put_line('员工工资为:' || v_sal);

IF v_sal >= 700 AND v_sal <= 1200

THEN

dbms_output.put_line('工资等级为一');

ELSIF v_sal BETWEEN 1201 AND 1400

THEN

dbms_output.put_line('工资等级为二');

ELSIF v_sal BETWEEN 1401 AND 2000

THEN

dbms_output.put_line('工资等级为三');

ELSE

dbms_output.put_line('工资等级为四');

END IF;

END;

DECLARE

v_empno NUMBER := 7788;

v_sal NUMBER;

```
BEGIN
  SELECT sal INTO v_sal FROM scott.emp WHERE empno = v_empno;

  dbms_output.put_line('员工工资为:' || v_sal);

  CASE
    WHEN v_sal >= 700 AND v_sal <= 1200 THEN
      dbms_output.put_line('工资等级为一');
    WHEN v_sal BETWEEN 1201 AND 1400 THEN
      dbms_output.put_line('工资等级为二');
    WHEN v_sal BETWEEN 1401 AND 2000 THEN
      dbms_output.put_line('工资等级为三');
    ELSE
      dbms_output.put_line('工资等级为四');
  END CASE;
END;
```

```
SELECT * from scott.dept;
```

```
DECLARE
  v_empno NUMBER := 7369;

  v_deptname VARCHAR2(100);
```

```
BEGIN
  SELECT decode(deptno,
    10,
    'ACCOUNTING',
    20,
    'RESEARCH',
    30,
    'SALES',
    40,
    'OPERATIONS')
  INTO v_deptname
  FROM scott.emp
```

```
WHERE empno = v_empno;
```

```
dbms_output.put_line('员工' || v_empno || '的部门名称为' || v_deptname);  
END;
```

```
DECLARE
```

```
v_total NUMBER(10) := 0;
```

```
v_count NUMBER(5) := 1;
```

```
BEGIN
```

```
LOOP
```

```
v_total := v_total + v_count;
```

```
EXIT WHEN v_count = 100;
```

```
v_count := v_count + 1;
```

```
END LOOP;
```

```
dbms_output.put_line(v_total);
```

```
END;
```

```
DECLARE
```

```
v_total NUMBER(10) := 0;
```

```
BEGIN
```

```
FOR i IN 1 .. 100
```

```
LOOP
```

```
v_total := v_total + i;
```

```
END LOOP;
```

```
dbms_output.put_line(v_total);
```

```
END;
```

```
DECLARE
```

```
v_total NUMBER(10) := 0;
```

```
v_count NUMBER := 1;
```

```
BEGIN
```

```
WHILE v_count <= 100
```

```
LOOP
```

```
v_total := v_total + v_count;
v_count := v_count + 1;
END LOOP;
dbms_output.put_line(v_total);
END;
```

```
BEGIN
FOR rec IN (SELECT * FROM scott.emp WHERE deptno = 10)
LOOP
dbms_output.put_line('员工姓名: ' || rec.ename || ' 员工工作: ' || rec.job ||
                    ' 员工工资: ' || rec.sal);
END LOOP;
END;
```

```
DECLARE
CURSOR cur_emp IS
SELECT ename, job, sal FROM scott.emp WHERE deptno = 10;

v_ename VARCHAR2(100);
v_job VARCHAR2(100);
v_sal NUMBER;

v_isopen BOOLEAN;
BEGIN
OPEN cur_emp;

v_isopen := cur_emp%ISOPEN;

IF v_isopen
THEN
dbms_output.put_line('游标已打开.....');
ELSE
```

```
    dbms_output.put_line('游标未打开.....');  
END IF;
```

```
LOOP
```

```
    FETCH cur_emp  
        INTO v_ename, v_job, v_sal;  
    EXIT WHEN cur_emp%NOTFOUND;  
    dbms_output.put_line('姓名: ' || v_ename || ' 工作: ' || v_job || ' 工资: ' ||  
        v_sal);
```

```
END LOOP;
```

```
CLOSE cur_emp;
```

```
END;
```

```
DECLARE
```

```
CURSOR cur_emp(pi_deptno NUMBER) IS  
    SELECT ename, job, sal FROM scott.emp WHERE deptno = pi_deptno;
```

```
v_ename VARCHAR2(100);
```

```
v_job VARCHAR2(100);
```

```
v_sal NUMBER;
```

```
v_isopen BOOLEAN;
```

```
BEGIN
```

```
    OPEN cur_emp(10);
```

```
v_isopen := cur_emp%ISOPEN;
```

```
IF v_isopen
```

```
THEN
```

```
    dbms_output.put_line('游标已打开.....');
```

```
ELSE
```

```
    dbms_output.put_line('游标未打开.....');
```

```
END IF;
```

```
LOOP
  FETCH cur_emp
    INTO v_ename, v_job, v_sal;
  EXIT WHEN cur_emp%NOTFOUND;
  dbms_output.put_line('姓名: ' || v_ename || ' 工作: ' || v_job || ' 工资: ' ||
    v_sal);
```

```
END LOOP;
```

```
CLOSE cur_emp;
```

```
END;
```

```
--游标的批量处理
```

```
DECLARE
```

```
CURSOR cur_emp IS
```

```
  SELECT ename, job, sal FROM scott.emp;
```

```
TYPE typ_emp IS TABLE OF cur_emp%ROWTYPE;
```

```
v_emp typ_emp;
```

```
BEGIN
```

```
  OPEN cur_emp;
```

```
  LOOP
```

```
    FETCH cur_emp BULK COLLECT
```

```
      INTO v_emp;
```

```
    EXIT WHEN v_emp.count = 0;
```

```
    dbms_output.put_line('获取的记录行数为: ' || v_emp.count);
```

```
  FOR i IN v_emp.first .. v_emp.last
```

```
  LOOP
```

```
    dbms_output.put_line('姓名: ' || v_emp(i).ename || ' 工作: ' || v_emp(i).job ||
      ' 工资: ' || v_emp(i).sal);
```

```
END LOOP;
```

```
END LOOP;
```

```
CLOSE cur_emp;
```

```
END;
```

```
--游标的分段、批量处理
```

```
DECLARE
```

```
CURSOR cur_emp IS
```

```
SELECT ename, job, sal FROM scott.emp;
```

```
TYPE typ_emp IS TABLE OF cur_emp%ROWTYPE;
```

```
v_emp typ_emp;
```

```
BEGIN
```

```
OPEN cur_emp;
```

```
LOOP
```

```
FETCH cur_emp BULK COLLECT
```

```
INTO v_emp LIMIT 3;
```

```
EXIT WHEN v_emp.count = 0;
```

```
dbms_output.put_line('获取的记录行数为: ' || v_emp.count);
```

```
FOR i IN v_emp.first .. v_emp.last
```

```
LOOP
```

```
dbms_output.put_line('姓名: ' || v_emp(i).ename || ' 工作: ' || v_emp(i).job ||  
                      ' 工资: ' || v_emp(i).sal);
```

```
END LOOP;
```

```
/*
```

```
FORALL i IN v_emp.first .. v_emp.last
```

```
DELETE .....
```

```

    */
END LOOP;

CLOSE cur_emp;
END;

-----隐式游标-----
--SELECT * from scott.emp;
DECLARE
    v_empno NUMBER := 73691;
    v_cnt NUMBER;
BEGIN
    UPDATE scott.emp SET sal = 3000 WHERE empno = v_empno;

    v_cnt := SQL%ROWCOUNT;

    IF v_cnt > 0
    THEN
        dbms_output.put_line('更新成功...更新的行数为: '||v_cnt);
        COMMIT;
    ELSE
        dbms_output.put_line('更新失败...更新的行数为: '||v_cnt);
        ROLLBACK;
    END IF;
END;

BEGIN
    FOR rec IN (SELECT * FROM scott.emp)
    LOOP
        dbms_output.put_line('EmpNO:.' || rec.empno || ' EName:.' || rec.ename ||
            ' Job:.' || rec.job);
    END LOOP;
END;

DECLARE

```

```

TYPE cur IS REF CURSOR;
v_cur cur;

v_empno scott.emp.empno%TYPE;
v_ename scott.emp.ename%TYPE;
v_job scott.emp.job%TYPE;
v_sql VARCHAR2(1000);
BEGIN
v_sql := 'SELECT empno,ename,job FROM scott.emp where empno in(7369,7499)';

OPEN v_cur FOR v_sql;

LOOP
  FETCH v_cur
  INTO v_empno, v_ename, v_job;
  EXIT WHEN v_cur%NOTFOUND;
  dbms_output.put_line('EmpNO:.' || v_empno || ' EName:' || v_ename ||
    ' Job:' || v_job);
END LOOP;
CLOSE v_cur;
END;

```

```

DECLARE
v_empno NUMBER := 73698;
v_deptno NUMBER:=10;

v_ename scott.emp.ename%TYPE;
v_job VARCHAR2(9);
BEGIN
SELECT ename, job
  INTO v_ename, v_job
  FROM scott.emp
 --WHERE empno = v_empno;
WHERE deptno=v_deptno;

```

```
dbms_output.put_line('员工姓名: ' || v_ename || ',工作: ' || v_job);
```

```
EXCEPTION
```

```
WHEN no_data_found THEN
```

```
    dbms_output.put_line('未找到员工信息! ');
```

```
/*WHEN too_many_rows THEN
```

```
    dbms_output.put_line('返回数据过多! ');*/
```

```
WHEN OTHERS THEN
```

```
    dbms_output.put_line('Err! ');
```

```
END;
```

```
--查看错误描述 SQLCODE SQLERRM
```

```
DECLARE
```

```
v_empno NUMBER := 73698;
```

```
v_deptno NUMBER := 10;
```

```
v_ename scott.emp.ename%TYPE;
```

```
v_job VARCHAR2(9);
```

```
BEGIN
```

```
SELECT ename, job
```

```
    INTO v_ename, v_job
```

```
    FROM scott.emp
```

```
--WHERE empno = v_empno;
```

```
WHERE deptno = v_deptno;
```

```
dbms_output.put_line('员工姓名: ' || v_ename || ',工作: ' || v_job);
```

```
EXCEPTION
```

```
WHEN OTHERS THEN
```

```
    dbms_output.put_line('Err CODE! ' || SQLCODE);
```

```
    dbms_output.put_line('Err MSG! ' || SQLERRM);
```

```
END;
```

```
---自定义异常----
```

```

DECLARE
  v_no NUMBER(10) := 8888;
BEGIN
  INSERT INTO scott.emp (empno, ename) VALUES (v_no, 'Jims');

  IF v_no < 0
  THEN
    ROLLBACK;
    raise_application_error(-20001, '员工No不能小于0');
  ELSIF v_no > 8000
  THEN
    ROLLBACK;
    raise_application_error(-20002, '员工No不能大于8000');
  ELSE
    COMMIT;
  END IF;
END;

```

```

DECLARE
  exp_user_err EXCEPTION;
  v_ename scott.emp.ename%TYPE;
BEGIN
  BEGIN
    SELECT ename INTO v_ename FROM scott.emp WHERE empno = 8888;
  EXCEPTION
    WHEN OTHERS THEN
      RAISE exp_user_err;
  END;
  dbms_output.put_line('ENAME is : ' || v_ename);

EXCEPTION
  WHEN exp_user_err THEN
    dbms_output.put_line('There is no emp data .');
  WHEN OTHERS THEN

```

```
dbms_output.put_line('SQL Code is ' || SQLCODE);  
dbms_output.put_line('SQL Err is ' || SQLERRM);  
END;
```