oracle notes

关于 *oracle* 的笔记

屈庆磊

quqinglei@icloud.com

2013 年 *5* 月

目录

1 常识

(1) 在 windows 下安装完毕后，可以在命令提示符里输入：sqlplus "/as sysdba" 可直接进入其 shell。

(2) 如果需要在命令提示符内执行某个脚本：脚本文件位置:D://sqlscripts/test.sql 执行步骤：SQL> @D://sqlscripts/test.sql

(3) 打开服务端的标准输出命令：SQL> set serveroutput on

2 常用函数

nvl(x, 0) 如果 x 为空，则替换为 0

3 常用语句

3.1 JOIN

```
-- create tc td
create tc(id number, name varchar2(20), address varchar2(50));
create td(id number, sex varchar2(5), job varchar2(50));

-- insert data to tc td
insert into tc values(1, ' 张三', ' 北京市昌平区');
insert into td values(1, ' 男', ' 程序员');

-- query from tc td
select tc.id, tc.name, tc.address, td.sex, td.job from tc left join
td on td.id = tc.id;
```

4 存储过程

4.1 简单的例子

4.1.1 匿名块的例子

```
--hello.sql
declare
        message varchar2(20) := 'Hello world';
begin
        dbms_output.put_line(message);
end;
/
```

4.1.2 标准的存储过程

```
--hello.sql
create or replace procedure test
as
        message varchar2(20) := 'Hello world';
begin
        dbms_output.put_line(message);
end test;
```

4.2 变量声明

```
declare
        num1 integer;
        num2 real;
        num3 double precision;
begin
        null;
end;
/
```

4.3 自定义类型

```
declare
        subtype name IS char(20);
        subtype message IS varchar2(100);
        salutation name;
        greeting message;
begin
        salutation := 'Reader ';
        greeting := 'Welcome to the World of PL/SQL';
        dbms_output.put_line('Hello ' || salutation || greetings);
end
/
```

4.4 变量初始化

```
declare
        a integer := 10;
        b integer := 20;
        c integer;
        f real;
begin
        c := a + b;
        dbms_output.put_line('Value of c: ' || c);
        f := 70.0/3.0;
        dbms_output.put_line('Value of f: || f);
```

```
end;
/
```

4.5 局部变量和全局变量

```
declare
        -- Global variables
        num1 number := 95;
        num2 number := 85;
begin
        dbms_output.put_line('Outer Variable num1: ' || num1);
        dbms_output.put_line('Outer Variable num2: ' || num2);
        --<
        declare
                -- Local variables
                num1 number := 195;
                num2 number := 185;
        begin
                dbms_output.put_line('Inner Variable num1: ' || num1);
                dbms_output.put_line('Inner Variable num2: ' || num2);
        end;
        -->
end;
/
```

4.6 指定查询结果为变量的值

返回到 if02 处 4.14.2

```
-- create a table
create table customers (
        ID int not null,
        name varchar(20) not null,
        age int not null,
        address char(25),
        salary decimal(18, 2),
        primary key (ID)
);

-- insert values to this table
insert into customers (id,name,age,address,salary)
values (1, 'Ramesh', 32, 'Ahmedabad', 2000.00 );
insert into customers (id,name,age,address,salary)
values (2, 'Khilan', 25, 'Delhi', 1500.00 );
insert into customers (id,name,age,address,salary)
values (3, 'kaushik', 23, 'Kota', 2000.00 );
insert into customers (id,name,age,address,salary)
values (4, 'Chaitali', 25, 'Mumbai', 6500.00 );
```

```
insert into customers (id,name,age,address,salary)
values (5, 'Hardik', 27, 'Bhopal', 8500.00 );
insert into customers (id,name,age,address,salary)
values (6, 'Komal', 22, 'MP', 4500.00 );

-- procedure
declare
        c_id customers.id%type := 1;
        c_name customer.name%type;
        c_addr customer.address%type;
        c_sal customer.salary%type;
begin
        select name, address, salary into c_name, c_addr, c_sal
        from customers
        where id = c_id;

        dbms_output.put_line
        ('Customer ' || c_name || ' from ' || c_addr || ' earns ' || c_sal);
end;
/
```

4.7 声明常量

```
declare
        -- constant declaration
        pi constant number := 3.141592654;
        -- other declaration
        radius number(5, 2);
        dia number(5, 2);
        circumference number(7, 2);
        area number(10, 2);
begin
        -- processing
        radius := 9.5;
        dia := radius * 2;
        circumference := 2.0 * pi * radius;
        area := pi * radius * radius;
        -- output
        dbms_output.put_line('Radius: ' || radius);
        dbms_output.put_line('Diameter: ' || dia);
        dbms_output.put_line('Circumference: ' || circumference);
        dbms_output.put_line('Area: ' || area);
end;
/
```

4.8 判断语句

```
declare
        a number (2) := 21;
        b number (2) := 10;
begin
        if (a = b) then
                dbms_output.put_line('Line 1: a is equal to b');
        else
                dbms_output.put_line('Line 1: a is not equal to b');
        end if;

        if (a < b) then
                dbms_output.put_line('Line 2: a is less than b');
        else
                dbms_output.put_line('Line 2: a is not less than b');
        end if;

        if (a > b) then
                dbms_output.put_line('Line 3: a is greater than b');
        else
                dbms_output.put_line('Line 3: a is not greater than b');
        end if;

        -- Lets change value of a and b
        a := 5;
        b := 20;
        if (a <= b) then
                dbms_output.put_line('Line 4: a is either equal or less than b');
        end if;

        if (b >= a) then
                dbms_output.put_line('Line 5: b is either equal or greater than a');
        end if;

        if (a <> b) then
                dbms_output.put_line('Line 5: a is not equal to b');
        end if;
end;
/
```

4.9 LIKE

```
declare procedure compare (value varchar2, pattern varchar2) is
begin
        if value like pattern then
                dbms_output.put_line('True');
        else
                dbms_output.put_line('False');
```

```
        end if;
end;

begin
        compare('Zara Ali', 'Z%A_i');
        compare('Nuha Ali', 'Z%A_i');
end;
/
```

4.10 BETWEEN

```
declare
        x number(2) := 10;
begin
        if (x between 5 and 20) then
                dbms_output.put_line('True');
        else
                dbms_output.put_line('False');
        end if;
```

4.11 IN and IS NULL

```
declare
        letter varchar2(1) := 'm';
begin
        if (letter in ('a', 'b', 'c')) then
                dbms_output.put_line('True');
        else
                dbms_output.put_line('False');
        end if;

        if (letter in ('m', 'n', 'o')) then
                dbms_output.put_line('True');
        else
                dbms_output.put_line('False');
        end if;

        if (letter is null) then
                dbms_output.put_line('True');
        else
                dbms_output.put_line('False');
        end if;
end;
/
```

4.12 Logic Operators: and/or/not

```
declare
        a boolean := true;
        b boolean := false;
begin
        if (a and b) then
                dbms_output.put_line('Line 1: Condition is true');
        end if;

        if (a or b) then
                dbms_output.put_line('Line 2: Condition is true');
        end if;

        if (not a) then
                dbms_output.put_line('Line 3: a is not true');
        end if;

        if (not b) then
                dbms_output.put_line('Line 4: b is not true');
        else
                dbms_output.put_line('Line 4: b is true');
        end if;
```

4.13 算术操作

```
declare
        a number(2) := 20;
        b number(2) := 10;
        c number(2) := 15;
        d number(2) := 5;
        e number(2);

begin
        e := (a + b) * c / d;         --(30 * 15) / 5
        dbms_output.put_line('Value of (a + b) * c / d is: ' || e);

        e := ((a + b) * c) / d;         --(30 * 15) / 5
        dbms_output.put_line('Value of ((a + b) * c) / d is: ' || e);

        e := (a + b) * (c / d);         -- (30) * (15 / 5)
        dbms_output.put_line('Value of (a + b) * (c / d) is: ' || e);

        e := a + (b * c) / d;         -- 20 + (150 / 5)
        dbms_output.put_line('Value of a + (b * c) / d is: ' || e);

end;
/
```

4.14 条件

4.14.1 if-then-endif

```
declare
        a number(2) := 10;
begin
        a := 10;
        -- check the boolean condition using if statement
        if (a < 20) then
                dbms_output.put_line('a is less than 20');
        end if;
        dbms_output.put_line('value of a is: ' || a);
end;
/
```

4.14.2 if02

关于表请参考 4.6处的例子

```
declare
        c_id customers.id%type := 1;
        c_sal customers.salary%type;
begin
        select salary
        into c_sal
        from customers
        where id = c_id;
        if (c_sal <= 2000) then
                update customers
                set salary = salary + 1000
                where id = c_id;
                dbms_output.put_line('Salary updated');
        end if;
end;
/
```

4.14.3 if-then-elsif-else-end if

```
declare
        a number(3) := 100;
begin
        if (a = 10) then
                dbms_output.put_line('Value of a is 10');
        elsif (a = 20) then
                dbms_output.put_line('Value of a is 20');
        elsif (a = 30) then
                dbms_output.put_line('Value of a is 30');
        else
```

```
                dbms_output.put_line('None of the values is matching');
        end if;
        dbms_output.put_line('Exact value of a is: ' || a);
end;
/
```

5 附录

6 尾注

6.1 参考

(1) 本文的所有例子基本来自网络，如有侵权请联系本人，本文档按照 GPL 协议发布。

(2) 参考网站：http://tutorialspoint.com