Database Management Systems

Lab 7

Oracle Indexing and Oracle PL/SQL Exceptions

Lab Topics

- ☐ How to manage an index for a table in Oracle Database.
- PL/SQL exceptions and exception handling.

在一些ppt页面上方,我们给出了相关内容详细介绍的网址。

Managing Indexes

Create index

create unique index CourseNameIndex on Course (courseName);

The unique keyword specifies that the attribute courseName must have unique values.

- Drop index drop index index_name;
- Display information about an index select index_name from user_indexes;

RECALL: Oracle PL/SQL Basic Structure

create or replace procedure procedure_name [as | is]

Declarative section: declaration of variables, types, and local subprograms go here.

begin Executable section: procedural and SQL statements go here. This is the only required section of the block.

exception Exception handling section: error handling statements go here.

end;

Oracle PL/SQL Exceptions

http://docs.oracle.com/cd/B10501 01/appdev.920/a96624/07 errs.htm

- □ Predefined exceptions are raised *implicitly* by Oracle PL/SQL if the exception occurs. 系统定义的异常类型,用户不需要指定异常触发条件,会自动报错。
- □ User-defined exceptions are raised *explicitly* by the command. 用户自定义异常类型, 需要用户自己指定异常出发调教, 并且手动触发异常如下:

raise exception_name;

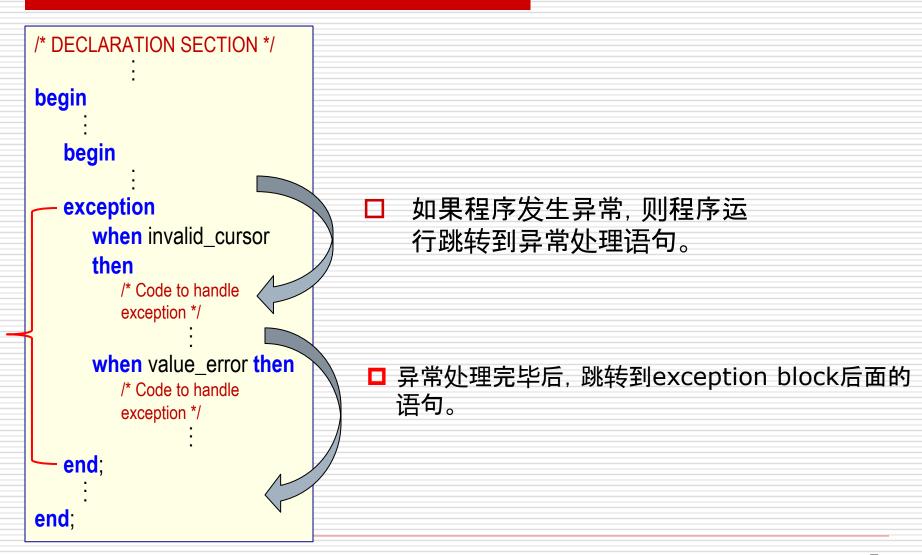
Predefined Exceptions

ACCESS_INTO_NULL	ORA-06530
CASE_NOT_FOUND	ORA-06592
COLLECTION_IS_NULL	ORA-06531
CURSOR_ALREADY_OPEN	ORA-06511
DUP_VAL_ON_INDEX	ORA-00001
INVALID_CURSOR	ORA-01001
INVALID_NUMBER	ORA-01722
LOGIN_DENIED	ORA-01017
NO_DATA_FOUND	ORA-01403
NOT_LOGGED_ON	ORA-01012
PROGRAM_ERROR	ORA-06501
ROWTYPE_MISMATCH	ORA-06504
SELF_IS_NULL	ORA-30625
STORAGE_ERROR	ORA-06500
SUBSCRIPT_BEYOND_COUNT	ORA-06533
SUBSCRIPT_OUTSIDE_LIMIT	ORA-06532
SYS_INVALID_ROWID	ORA-01410
TIMEOUT_ON_RESOURCE	ORA-00051
TOO_MANY_ROWS	ORA-01422
VALUE_ERROR	ORA-06502
ZERO_DIVIDE	ORA-01476

User-defined Exceptions

Declare the exception in the /* DECLARATION SECTION */ declaration section. myException exception; myException exception; begin Raise it within a begin...end block. begin if condition then if condition then raise myException; raise myException; endif: end if exception Define the exception-handling code when myException then /* Code to handle exception */ in the exception section within the begin...end block. -- end; exception end when myException then

Continuing After An Exception (1)



Continuing After An Exception (2)

```
nvl(表达式1, 表达式2):如果表达式1为空值, nvl返回值为表达式2
declare
                                的值, 否则返回表达式1的值。
  peRatio number(3,1);
begin
  delete from stats where symbol = 'xyz';
  begin -- sub-block begins
     -- The select statement will throw an exception if nvl(earnings, 0) is zero
     select price / nvl(earnings, 0) into peRatio from stocks where symbol = 'xyz';
  exception
                                       After the zero_divide exception is handled,
     when zero_divide then
                                    execution continues with the insert statement,
        peRatio := 0;
                                     which is outside the inner begin...end block.
  end; -- sub-block ends
  insert into stats (symbol, ratio) values ('xyz', peRatio);
exception
  when others then
                        Note: others指代其他异常类型
end;
```

Exception Handling Examples

