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## Creating Functions

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In Oracle, you can create your own functions.

The syntax for a function is:

```
CREATE [OR REPLACE] FUNCTION function_name
  [ (parameter [,parameter]) ]
  RETURN return_datatype
IS | AS
  [declaration_section]
BEGIN
  executable_section
[EXCEPTION
  exception_section]
END [function_name];
```

When you create a procedure or function, you may define parameters. There are three types of parameters that can be declared:

1. **IN** - The parameter can be referenced by the procedure or function. The value of the parameter can not be overwritten by the procedure or function.
2. **OUT** - The parameter can not be referenced by the procedure or function, but the value of the parameter can be overwritten by the procedure or function.
3. **IN OUT** - The parameter can be referenced by the procedure or function and the value of the parameter can be overwritten by the procedure or function.

The following is a simple example of a function:

```
CREATE OR REPLACE Function FindCourse
  ( name_in IN varchar2 )
  RETURN number
IS
  cnumber number;

  cursor c1 is
  select course_number
  from courses_tbl
  where course_name = name_in;

BEGIN
```

```
open c1;
fetch c1 into cnumber;

if c1%notfound then
    cnumber := 9999;
end if;

close c1;

RETURN cnumber;

EXCEPTION
WHEN OTHERS THEN
    raise_application_error(-20001,'An error was encountered - '||SQLCODE||' -ERROR-
'||SQLERRM);
END;
```

This function is called FindCourse. It has one parameter called *name\_in* and it returns a number. The function will return the course number if it finds a match based on course name. Otherwise, it returns a 99999.

You could then reference your new function in an SQL statement as follows:

```
select course_name, FindCourse(course_name) as course_id
from courses
where subject = 'Mathematics';
```