EXERCISE-16 : PROCEDURES AND FUNCTIONS

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Program 1

FACTORIAL OF A NUMBER USING FUNCTION

Statement details

Statement

Executed on: Nov 3, 2025, 1:14:17 PM

```
DECLARE
    v_number NUMBER := 5; -- Input number (e.g., 5! = 120)
    v_result NUMBER;
BEGIN
    v_result := calculate_factorial(v_number);

    IF v_result IS NOT NULL THEN
        DBMS_OUTPUT.PUT_LINE('The Factorial of ' || v_number || ' is ' ||
v_result);
    ELSE
        DBMS_OUTPUT.PUT_LINE('Factorial is undefined for negative numbers.');
    END IF;
END;
```

Insert Into Editor

Result

```
The Factorial of 5 is 120

PL/SQL procedure successfully completed.

Elapsed: 00:00:00.007
```
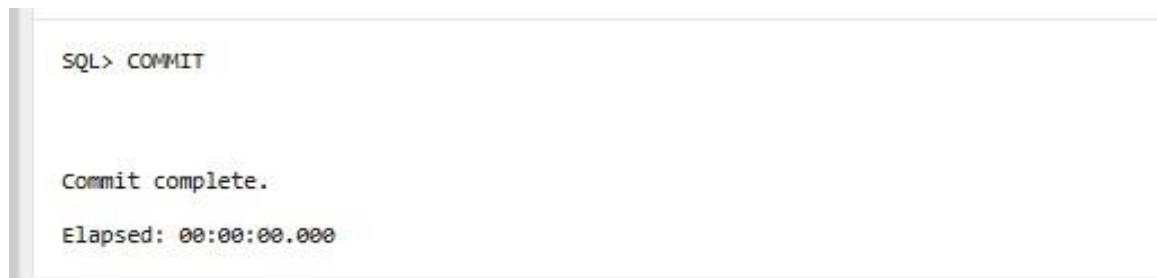
Close

Program 2

Write a PL/SQL program using Procedures IN,INOUT,OUT parameters to retrieve the corresponding book information in library

```sql
CREATE TABLE LIBRARY_BOOKS (
book_id NUMBER(4) PRIMARY KEY,
title VARCHAR2(100),   author
VARCHAR2(100),   stock_count
NUMBER(3)
);

INSERT INTO LIBRARY_BOOKS VALUES (101, 'The Grapes of Wrath', 'John Steinbeck', 5);
INSERT INTO LIBRARY_BOOKS VALUES (102, '1984', 'George Orwell', 2);
INSERT INTO LIBRARY_BOOKS VALUES (103, 'Moby Dick', 'Herman Melville', 10);
COMMIT;
```

```
SQL> COMMIT


Commit complete.
Elapsed: 00:00:00.000
```

```sql
SET SERVEROUTPUT ON;

CREATE OR REPLACE PROCEDURE manage_book_stock (
p_book_id IN LIBRARY_BOOKS.book_id%TYPE,   p_title
OUT LIBRARY_BOOKS.title%TYPE,   p_stock_update IN
OUT NUMBER
)
IS
```

```sql
    v_current_stock NUMBER; BEGIN

    SELECT title, stock_count

    INTO p_title, v_current_stock

    FROM LIBRARY_BOOKS

    WHERE book_id = p_book_id;


    v_current_stock := v_current_stock + p_stock_update;


    UPDATE LIBRARY_BOOKS

    SET stock_count = v_current_stock

    WHERE book_id = p_book_id;


    p_stock_update := v_current_stock;


    COMMIT;

EXCEPTION

    WHEN NO_DATA_FOUND THEN

        p_title := 'Book not found';

p_stock_update := -1;

END;

/
```

Statement details

Statement

Executed on: Nov 3, 2025, 1:19:13 PM

```
CREATE OR REPLACE PROCEDURE manage_book_stock (
    p_book_id IN LIBRARY_BOOKS.book_id%TYPE,
    p_title OUT LIBRARY_BOOKS.title%TYPE,
    p_stock_update IN OUT NUMBER
)
IS
    v_current_stock NUMBER;
BEGIN
    SELECT title, stock_count
    INTO p_title, v_current_stock
    FROM LIBRARY_BOOKS
    WHERE book_id = p_book_id;

    v_current_stock := v_current_stock + p_stock_update;

    UPDATE LIBRARY_BOOKS
    SET stock_count = v_current_stock
    WHERE book_id = p_book_id;

    p_stock_update := v_current_stock;

    COMMIT;

EXCEPTION
    WHEN NO_DATA_FOUND THEN
        p_title := 'Book not found';
        p_stock_update := -1;
END;
```

Close

Statement details

Statement

Executed on: Nov 3, 2025, 1:27:22 PM

```
DECLARE
    v_book_id_in NUMBER := 102;
    v_title_out VARCHAR2(100);
    v_stock_inout NUMBER := 3;
BEGIN
    manage_book_stock(
        p_book_id        => v_book_id_in,
        p_title          => v_title_out,
        p_stock_update   => v_stock_inout
    );

    DBMS_OUTPUT.PUT_LINE('--- Procedure Results ---');
    DBMS_OUTPUT.PUT_LINE('Input Book ID (IN): ' || v_book_id_in);
    DBMS_OUTPUT.PUT_LINE('Retrieved Title (OUT): ' || v_title_out);
    DBMS_OUTPUT.PUT_LINE('New Stock Total (INOUT): ' ||
 v_stock_inout);
END;
```

Insert Into Editor

Result

```
--- Procedure Results ---
Input Book ID (IN): 102
Retrieved Title (OUT): 1984
New Stock Total (INOUT): 5


PL/SQL procedure successfully completed.

Elapsed: 00:00:00.028
```

Close