

```

mysql> use clever;
Database changed
mysql> DELIMITER //
mysql>
mysql> CREATE FUNCTION factorial(n INT) RETURNS BIGINT
-> DETERMINISTIC
-> BEGIN
->     DECLARE result BIGINT DEFAULT 1;
->     DECLARE i INT DEFAULT 1;
->
->     WHILE i <= n DO
->         SET result = result * i;
->         SET i = i + 1;
->     END WHILE;
->
->     RETURN result;
-> END //
Query OK, 0 rows affected (0.01 sec)

mysql>
mysql> DELIMITER ;

```

```

mysql> SELECT factorial(5) AS factorial_of_5;
+-----+
| factorial_of_5 |
+-----+
|          120 |
+-----+
1 row in set (0.00 sec)

mysql>
mysql> -- Calculate the factorial of 10
mysql> SELECT factorial(10) AS factorial_of_10;
+-----+
| factorial_of_10 |
+-----+
|       3628800 |
+-----+
1 row in set (0.00 sec)

```

```

mysql> use clever;
Database changed
mysql> CREATE TABLE books(book_id INT PRIMARY KEY,title VARCHAR(100),author VARCHAR(100),published_year INT);
Query OK, 0 rows affected (0.02 sec)

mysql> INSERT INTO books (book_id, title, author, published_year) VALUES (1, '1984', 'George Orwell', 1949);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO books (book_id, title, author, published_year) VALUES (2, 'To Kill a Mockingbird', 'Harper Lee', 1960);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO books (book_id, title, author, published_year) VALUES (3, 'The Great Gatsby', 'F. Scott Fitzgerald', 1925);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO books (book_id, title, author, published_year) VALUES (4, 'Pride and Prejudice', 'Jane Austen', 1813);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO books (book_id, title, author, published_year) VALUES (5, 'The Catcher in the Rye', 'J.D. Salinger', 1951);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO books (book_id, title, author, published_year) VALUES (6, 'The Hobbit', 'J.R.R. Tolkien', 1937);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO books (book_id, title, author, published_year) VALUES (7, 'Moby Dick', 'Herman Melville', 1851);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO books (book_id, title, author, published_year) VALUES (8, 'War and Peace', 'Leo Tolstoy', 1869);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO books (book_id, title, author, published_year) VALUES (9, 'Crime and Punishment', 'Fyodor Dostoevsky', 1866);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO books (book_id, title, author, published_year) VALUES (10, 'The Brothers Karamazov', 'Fyodor Dostoevsky', 1880);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO books (book_id, title, author, published_year) VALUES (11, 'Brave New World', 'Aldous Huxley', 1932);
Query OK, 1 row affected (0.00 sec)

```

```

Database changed
mysql> DELIMITER //
mysql>
mysql> CREATE PROCEDURE get_book_info (
->     IN p_book_id INT,
->     OUT p_title VARCHAR(100),
->     OUT p_author VARCHAR(100),
->     OUT p_published_year INT,
->     INOUT p_message VARCHAR(200)
-> )
-> BEGIN
->     DECLARE CONTINUE HANDLER FOR NOT FOUND SET p_message = 'No book found with the given book_id.';
->
->     -- Retrieve the book information
->     SELECT title, author, published_year
->     INTO p_title, p_author, p_published_year
->     FROM books
->     WHERE book_id = p_book_id;
->
->     -- Set success message
->     SET p_message = 'Book information retrieved successfully.';
-> END //
Query OK, 0 rows affected (0.01 sec)

mysql>
mysql> DELIMITER ;

```

```

mysql> -- Define variables
mysql> SET @book_id = 1;
Query OK, 0 rows affected (0.00 sec)

mysql> SET @title = '';
Query OK, 0 rows affected (0.00 sec)

mysql> SET @author = '';
Query OK, 0 rows affected (0.00 sec)

mysql> SET @published_year = 0;
Query OK, 0 rows affected (0.00 sec)

mysql> SET @message = 'Initial message';
Query OK, 0 rows affected (0.00 sec)

mysql>
mysql> -- Call the stored procedure
mysql> CALL get_book_info(@book_id, @title, @author, @published_year, @message);
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> -- Display the results
mysql> SELECT @title AS Title, @author AS Author, @published_year AS Published_Year, @message AS Message;
+-----+-----+-----+-----+
| Title | Author | Published_Year | Message |
+-----+-----+-----+-----+
| 1984 | George Orwell | 1949 | Book information retrieved successfully. |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

```