

ASSIGNMENT - 4

-Yash Yadav(107)

DROP DATABASE IF EXISTS bookstore;

CREATE DATABASE bookstore;

USE bookstore;

CREATE TABLE authors (author_id INT AUTO_INCREMENT PRIMARY KEY, author_name VARCHAR(50), country VARCHAR(30));

CREATE TABLE books (book_id INT AUTO_INCREMENT PRIMARY KEY, title VARCHAR(100), author_id INT, price DECIMAL(10,2), stock INT, published_year INT, FOREIGN KEY (author_id) REFERENCES authors(author_id));

INSERT INTO authors (author_name, country) VALUES ('Chetan Bhagat', 'India'), ('J.K. Rowling', 'UK'), ('George R.R. Martin', 'USA'), ('R.K. Narayan', 'India'), ('Agatha Christie', 'UK');

INSERT INTO books (title, author_id, price, stock, published_year) VALUES ('Five Point Someone', 1, 250, 10, 2004), ('2 States', 1, 300, 5, 2009), ('Harry Potter', 2, 800, 15, 1997), ('Game of Thrones', 3, 1200, 8, 1996), ('Malgudi Days', 4, 200, 12, 1943), ('Murder on the Orient Express', 5, 500, 6, 1934);

Question 1:

Write a function to return the total number of books in stock.

```
mysql> DELIMITER $$  
mysql>  
mysql> CREATE FUNCTION total_books_in_stock()  
-> RETURNS INT  
-> DETERMINISTIC  
-> BEGIN  
->     DECLARE total INT;  
->     SELECT SUM(stock) INTO total FROM books;  
->     RETURN total;  
-> END $$  
Query OK, 0 rows affected (0.04 sec)  
  
mysql>  
mysql> DELIMITER ;  
mysql> SELECT total_books_in_stock();  
+-----+  
| total_books_in_stock() |  
+-----+  
|                  56 |  
+-----+  
1 row in set (0.03 sec)
```

Question 2:

Write a function to return the price of a given book title.

```
mysql> DELIMITER $$  
mysql>  
mysql> CREATE FUNCTION get_book_price(bookTitle VARCHAR(100))  
-> RETURNS DECIMAL(10,2)  
-> DETERMINISTIC  
-> BEGIN  
->     DECLARE bookPrice DECIMAL(10,2);  
->  
->     SELECT price  
->         INTO bookPrice  
->        FROM books  
->       WHERE title = bookTitle  
->      LIMIT 1;  
->  
->     RETURN bookPrice;  
-> END $$  
Query OK, 0 rows affected (0.04 sec)  
  
mysql>  
mysql> DELIMITER ;  
mysql> SELECT get_book_price('Harry Potter');  
+-----+  
| get_book_price('Harry Potter') |  
+-----+  
|           800.00 |  
+-----+  
1 row in set (0.03 sec)
```

Question 3:

Write a function to find how many books an author has written.

```
mysql> DELIMITER $$  
mysql>  
mysql> CREATE FUNCTION books_by_author(authorName VARCHAR(50))  
-> RETURNS INT  
-> DETERMINISTIC  
-> BEGIN  
->     DECLARE bookCount INT;  
->  
->     SELECT COUNT(*)  
->     INTO bookCount  
->     FROM books b  
->     JOIN authors a ON b.author_id = a.author_id  
->     WHERE a.author_name = authorName;  
->  
->     RETURN bookCount;  
-> END $$  
Query OK, 0 rows affected (0.03 sec)  
  
mysql>  
mysql> DELIMITER ;  
mysql> SELECT books_by_author('Chetan Sharma');  
+-----+  
| books_by_author('Chetan Sharma') |  
+-----+  
| 0 |  
+-----+  
1 row in set (0.00 sec)
```

Question 4:

Write a function to return whether a book is "Old" or "New" based on its published year (before 2000 → Old, else → New).

```

mysql> DELIMITER $$

mysql>
mysql> CREATE FUNCTION book_age_status(bookTitle VARCHAR(100))
->     RETURNS VARCHAR(10)
->     DETERMINISTIC
->     BEGIN
->         DECLARE bookYear INT;
->         DECLARE status VARCHAR(10);
->
->         -- Get the published year of the book
->         SELECT published_year
->             INTO bookYear
->             FROM books
->             WHERE title = bookTitle
->             LIMIT 1;
->
->         -- Determine if the book is Old or New
->         IF bookYear < 2000 THEN
->             SET status = 'Old';
->         ELSE
->             SET status = 'New';
->         END IF;
->         RETURN status;
->     END $$

Query OK, 0 rows affected (0.04 sec)

mysql>
mysql> DELIMITER ;
mysql> SELECT book_age_status('Harry Potter');
+-----+
| book_age_status('Harry Potter') |
+-----+
| Old |
+-----+
1 row in set (0.00 sec)

mysql> SELECT book_age_status('2 States');
+-----+
| book_age_status('2 States') |
+-----+

```

Question 5:

Write a function to calculate a 10% discount on the price of a given book.

```
DELIMITER ;  
mysql> DELIMITER $$  
mysql>  
mysql> CREATE FUNCTION discounted_price(bookTitle VARCHAR(100))  
-> RETURNS DECIMAL(10,2)  
-> DETERMINISTIC  
-> BEGIN  
->     DECLARE originalPrice DECIMAL(10,2);  
->     DECLARE discountPrice DECIMAL(10,2);  
->  
->     -- Get the original price of the book  
->     SELECT price  
->     INTO originalPrice  
->     FROM books  
->     WHERE title = bookTitle  
->     LIMIT 1;  
->  
->     -- Calculate 10% discount  
->     SET discountPrice = originalPrice - (originalPrice * 0.10);  
->  
->     RETURN discountPrice;  
-> END $$  
ERROR 1304 (42000): FUNCTION discounted_price already exists  
mysql>  
mysql> DELIMITER ;  
mysql> SELECT discounted_price('Harry Potter');  
+-----+  
| discounted_price('Harry Potter') |  
+-----+  
|                720.00 |  
+-----+  
1 row in set (0.03 sec)
```

Question 6:

Write a function to return the author's country for a given book.

```
mysql> DELIMITER $$  
mysql>  
mysql> CREATE FUNCTION get_author_country(bookTitle VARCHAR(100))  
-> RETURNS VARCHAR(30)  
-> DETERMINISTIC  
-> BEGIN  
->     DECLARE authorCountry VARCHAR(30);  
->  
->     SELECT a.country  
->        INTO authorCountry  
->       FROM books b  
->      JOIN authors a ON b.author_id = a.author_id  
->     WHERE b.title = bookTitle  
->     LIMIT 1;  
->  
->     RETURN authorCountry;  
-> END $$  
Query OK, 0 rows affected (0.04 sec)  
  
mysql>  
mysql> DELIMITER ;  
mysql> SELECT get_author_country('Harry Potter');  
+-----+  
| get_author_country('Harry Potter') |  
+-----+  
| UK |  
+-----+  
1 row in set (0.03 sec)
```

Question 7:

Write a function to find the total value of all books in stock (price × stock).

```
mysql> DELIMITER $$  
mysql>  
mysql> CREATE FUNCTION total_stock_value()  
-> RETURNS DECIMAL(15,2)  
-> DETERMINISTIC  
-> BEGIN  
->     DECLARE totalValue DECIMAL(15,2);  
->  
->     SELECT SUM(price * stock)  
->     INTO totalValue  
->     FROM books;  
->  
->     RETURN totalValue;  
-> END $$  
Query OK, 0 rows affected (0.04 sec)  
  
mysql>  
mysql> DELIMITER ;  
mysql> SELECT total_stock_value();  
+-----+  
| total_stock_value() |  
+-----+  
|           31000.00 |  
+-----+  
1 row in set (0.00 sec)
```

Question 8:

Write a function to return the oldest book title in the store.

```
mysql> DELIMITER $$  
mysql>  
mysql> CREATE FUNCTION oldest_book_title()  
-> RETURNS VARCHAR(100)  
-> DETERMINISTIC  
-> BEGIN  
->     DECLARE oldestTitle VARCHAR(100);  
->  
->     SELECT title  
->         INTO oldestTitle  
->         FROM books  
->         ORDER BY published_year ASC  
->         LIMIT 1;  
->  
->     RETURN oldestTitle;  
-> END $$  
Query OK, 0 rows affected (0.04 sec)  
  
mysql>  
mysql> DELIMITER ;  
mysql> SELECT oldest_book_title();  
+-----+  
| oldest_book_title() |  
+-----+  
| Murder on the Orient Express |  
+-----+  
1 row in set (0.00 sec)
```

Question 9:

Write a function to check if a given book is in stock or not.

```

mysql>
mysql> CREATE FUNCTION is_book_in_stock(bookTitle VARCHAR(100))
-> RETURNS VARCHAR(20)
-> DETERMINISTIC
-> BEGIN
->     DECLARE bookStock INT;
->     DECLARE status VARCHAR(20);
->
->     -- Get the stock quantity of the given book
->     SELECT stock
->         INTO bookStock
->         FROM books
->         WHERE title = bookTitle
->         LIMIT 1;
->
->     -- Check if stock is available
->     IF bookStock > 0 THEN
->         SET status = 'In Stock';
->     ELSE
->         SET status = 'Out of Stock';
->     END IF;
->     RETURN status;
-> END $$
```

Query OK, 0 rows affected (0.01 sec)

```

mysql>
mysql> DELIMITER ;
mysql> SELECT is_book_in_stock('Harry Potter');
+-----+
| is_book_in_stock('Harry Potter') |
+-----+
| In Stock                         |
+-----+
```

1 row in set (0.00 sec)

```

mysql> SELECT is_book_in_stock('2 States');
+-----+
| is_book_in_stock('2 States') |
+-----+
| In Stock                      |
+-----+
```

Question 10:

Write a function to return the total number of books available by authors from a specific country.

```
mysql> DELIMITER $$  
mysql>  
mysql> CREATE FUNCTION total_books_by_country(authorCountry VARCHAR(30))  
-> RETURNS INT  
-> DETERMINISTIC  
-> BEGIN  
->     DECLARE totalBooks INT;  
->  
->     SELECT SUM(b.stock)  
->     INTO totalBooks  
->     FROM books b  
->     JOIN authors a ON b.author_id = a.author_id  
->     WHERE a.country = authorCountry;  
->  
->     RETURN totalBooks;  
-> END $$  
Query OK, 0 rows affected (0.03 sec)  
  
mysql>  
mysql> DELIMITER ;  
mysql> SELECT total_books_by_country('India');  
+-----+  
| total_books_by_country('India') |  
+-----+  
|                27 |  
+-----+
```