

Assignment - 4

DBMS

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Course: PG DAC AUGUST 2025

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Problem 1:

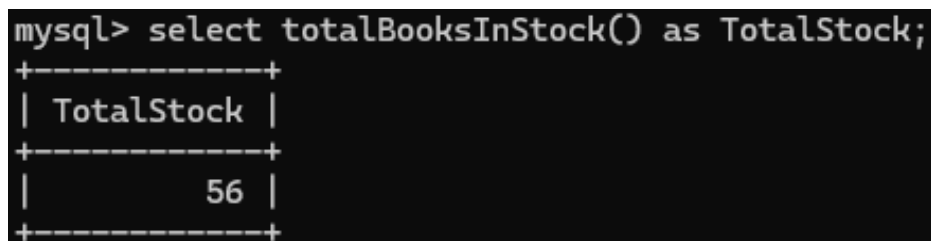
Task: Write a function to return the total number of books in stock.

Code: —

```
delimiter //
create function totalBooksInStock()
returns int deterministic
begin
    declare total int default 0;
    select sum(stock) into total
    from books;
    return total;
end //
delimiter ;

select totalBooksInStock() as TotalStock;
```

Output: —



```
mysql> select totalBooksInStock() as TotalStock;
+-----+
| TotalStock |
+-----+
|          56 |
+-----+
```

Problem 2:

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

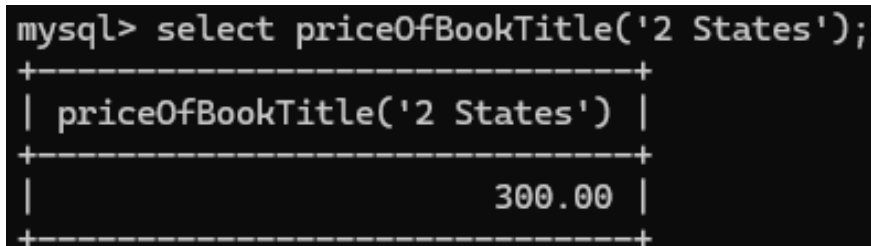
Code: —

```
delimiter //
create function priceOfBookTitle(t varchar(50))
returns decimal(10,2) deterministic
begin
    declare priceBook decimal(10, 2) default 0;
    select price into priceBook
    from books where title = t;

    return priceBook;
end //
delimiter ;

select priceOfBookTitle('2 States');
```

Output: —



```
mysql> select priceOfBookTitle('2 States');
+-----+
| priceOfBookTitle('2 States') |
+-----+
| 300.00 |
+-----+
```

Problem 3:

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

Code: —

```
drop function BookByAuthor;

delimiter //
create function BookByAuthor(authorName varchar(50))
returns int deterministic
begin
    declare bookCount int default 0;

    select count(b.book_id) into bookCount
    from books b
    join authors a on b.author_id = a.author_id
    where a.author_name = authorName;

    return bookCount;
end //
delimiter ;

select BookByAuthor('Chetan Bhagat') as Total_Books;
```

Output: —

```
mysql> select BookByAuthor('Chetan Bhagat') as Total_Books;
+-----+
| Total_Books |
+-----+
|          2 |
+-----+
```

Problem 4:

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

Code: —

```
delimiter //
create function CheckBookOldNew(bookTitle varchar(50))
returns varchar(10) deterministic
begin
    declare yearPublished int;
    declare status varchar(50);

    select published_year into yearPublished
    from books where title = bookTitle;

    if yearPublished < 2000 then
        set status = 'OLD';
    else
        set status = 'NEW';
    end if;

    return status;
end //
delimiter ;

select CheckBookOldNew('Harry Potter') AS Book_Status;

select CheckBookOldNew('Five Point Someone') AS Book_Status;

select * from books;
```

Output: —

```
mysql> select CheckBookOldNew('Harry Potter') AS Book_Status;
+-----+
| Book_Status |
+-----+
| OLD         |
+-----+
1 row in set (0.00 sec)

mysql>
mysql> select CheckBookOldNew('Five Point Someone') AS Book_Status;
+-----+
| Book_Status |
+-----+
| NEW         |
+-----+
```

Problem 5:

Task: Write a function to calculate a 10

Code: —

```
delimiter //
create function discountPrice(bookTitle varchar(50))
returns decimal(10, 2) deterministic
begin
    declare bookPrice decimal(10, 2);

    select price into bookPrice
    from books where title = bookTitle;

    return bookPrice - (bookPrice * 10/100);
end //
delimiter ;

select discountPrice('2 States') as FinalPriceBook;
```

Output: —

```
mysql> select discountPrice('2 States') as FinalPriceBook;
+-----+
| FinalPriceBook |
+-----+
|          270.00 |
+-----+
```

Problem 6:

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

Code: —

```
delimiter //
```

```
create function authorCountry(bookName varchar(50))
returns varchar(50) deterministic
begin
    declare a_c_name varchar(50);

    select a.country into a_c_name
    from books b
    join authors a on b.author_id = a.author_id
    where title = bookName;

    return a_c_name;
end //
delimiter ;

select authorCountry('Malgudi Days') as AuthorCountry;
select * from authors;
select * from books;
```

Output: —

```
mysql> select authorCountry('Malgudi Days') as AuthorCountry;
+-----+
| AuthorCountry |
+-----+
| India         |
+-----+
```

Problem 7:

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

Code: —

```
delimiter //
create function totalValue()
returns decimal(10, 2) deterministic
begin
    declare t_price decimal(10, 2);
    declare t_stock int;

    select sum(price) into t_price
    from books;

    select sum(stock) into t_stock
    from books;

    return t_price * t_stock;
end //
delimiter ;
```

```
select totalValue() as TotalValueOfAllBooks;
```

Output: —

```
mysql> select totalValue() as TotalValueOfAllBooks;
+-----+
| TotalValueOfAllBooks |
+-----+
|          182000.00   |
+-----+
```

Problem 8:

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

Code: —

```
drop function OldestBook;
delimiter //
create function OldestBook()
returns varchar(50) deterministic
begin
    declare oldBook varchar(50);

    select title into oldBook
    from books where published_year = (select min(published_year)
    from books);

    return oldBook;
end //
delimiter ;

select OldestBook() as OldestBookInBookStore;
```

Output: —

```
mysql> select OldestBook() as OldestBookInBookStore;
+-----+
| OldestBookInBookStore |
+-----+
| Murder on the Orient Express |
+-----+
```

Problem 9:

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

Code: —

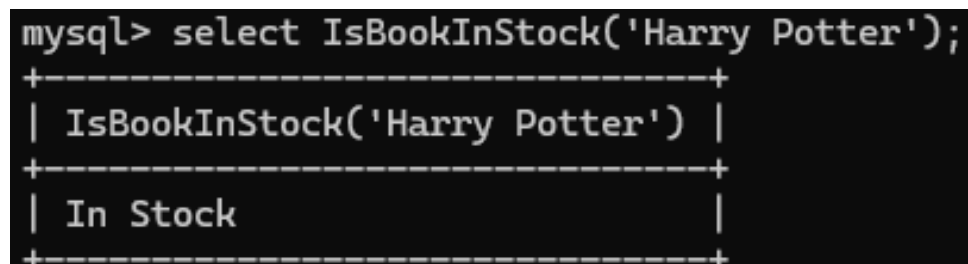
```
delimiter //
create function IsBookInStock(bookTitle varchar(50))
returns varchar(50) deterministic
begin
    declare availble_stock int;
    declare status varchar(50);

    select stock into availble_stock
    from books where title = bookTitle;

    if availble_stock > 0 then
        set status = 'In Stock';
    else
        set status = 'Out of Stock';
    end if;

    return status;
end //
delimiter ;

select IsBookInStock('Harry Potter');
```

Output: —

```
mysql> select IsBookInStock('Harry Potter');
+-----+
| IsBookInStock('Harry Potter') |
+-----+
| In Stock                       |
+-----+
```

Problem 10:

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

Code: —

```
DELIMITER $$

CREATE FUNCTION TotalBooksByCountry(authorCountry VARCHAR(30))
RETURNS INT
DETERMINISTIC
BEGIN
    DECLARE total_books INT;

    SELECT SUM(b.stock)
    INTO total_books
```

```
FROM books b
JOIN authors a ON b.author_id = a.author_id
WHERE a.country = authorCountry;

-- If no authors found from that country, return 0 instead of
  NULL
IF total_books IS NULL THEN
  SET total_books = 0;
END IF;

RETURN total_books;
END $$

DELIMITER ;

SELECT TotalBooksByCountry('India') AS Total_Books_In_Stock;
```

Output: —

```
mysql> SELECT TotalBooksByCountry('India') AS Total_Books_In_Stock;
+-----+
| Total_Books_In_Stock |
+-----+
|                    27 |
+-----+
```