

Task 2 : Data Insertion and Handling Nulls:-

INSERT Statements

-- Insert authors

```
INSERT INTO Authors (Name, Bio) VALUES  
( 'Chetan Bhagat', 'Indian author of bestselling novels.' ),  
( 'J.K. Rowling', NULL ),  
( 'George Orwell', 'British novelist and essayist.' );
```

-- Insert categories

```
INSERT INTO Categories (CategoryName) VALUES  
( 'Fiction' ),  
( 'Non-Fiction' ),  
( 'Science' );
```

-- Insert books

```
INSERT INTO Books (Title, AuthorID, CategoryID, ISBN, PublishedYear) VALUES  
( 'Half Girlfriend', 1, 1, '9788129135728', 2014 ),  
( '1984', 3, 1, '9780451524935', 1949 ),  
( 'Harry Potter', 2, 1, NULL, 1997 ), -- ISBN is NULL  
( 'Brief History of Time', NULL, 3, '9780553176988', 1988 ); -- Author is NULL
```

-- Insert members

```
INSERT INTO Members (FullName, Email) VALUES  
( 'Rohit Sharma', 'rohit@example.com' ),  
( 'Priya Verma', 'priya@example.com' ),  
( 'Amit Khanna', 'amit@example.com' );
```

-- Insert loans

```
INSERT INTO Loans (BookID, MemberID, LoanDate, ReturnDate) VALUES  
( 1, 1, '2025-08-01', NULL ),  
( 2, 2, '2025-08-03', '2025-08-06' ),  
( 3, 3, '2025-08-04', NULL );
```

UPDATE Statements

-- Update book to assign missing author

```
UPDATE Books  
SET AuthorID = 4  
WHERE BookID = 4;
```

-- Update return date

```
UPDATE Loans  
SET ReturnDate = '2025-08-08'  
WHERE LoanID = 1;
```

-- Update member name

```
UPDATE Members  
SET FullName = 'Rohit Kumar Sharma'  
WHERE MemberID = 1;
```

DELETE Statements

-- Delete a book with no ISBN (assuming it's invalid)

```
DELETE FROM Books  
WHERE ISBN IS NULL;
```

-- Delete a member who hasn't borrowed any books

```
DELETE FROM Members  
WHERE MemberID NOT IN (SELECT DISTINCT MemberID FROM Loans);
```

Interview Questions:

1.Difference between NULL and 0?

Ans:: NULL = unknown value, 0 = numeric value.

2.What is a default constraint?

Ans:: Provides a default value if none is specified during insertion.

3.How does IS NULL work?

Ans:: It checks whether a value is NULL: WHERE column IS NULL.

4.How do you update multiple rows?

Ans:: Using UPDATE ... WHERE condition that matches multiple rows.

5.Can we insert partial values?

Ans:: Yes, if missing columns allow NULL or have DEFAULT values.

6.What happens if a NOT NULL field is left empty?

Ans:: Error is thrown – the insert/update fails.

7.How do you rollback a deletion?

Ans:: Use ROLLBACK if within a transaction block before COMMIT.

8.Can we insert values into specific columns only?

Ans:: Yes, by specifying columns: INSERT INTO table(col1, col2) VALUES(val1, val2);

9.How to insert values using SELECT?

Ans:: Example:

```
INSERT INTO NewTable (col1, col2)  
SELECT col1, col2 FROM OldTable WHERE condition;
```

10.What is ON DELETE CASCADE?

Ans:: If a parent row is deleted, its related child rows are automatically deleted.