**1. List of one sentence business rules for designing library database.**

1. Create database called PLCS
2. Create Library\_Tbl with the following columns: ID, Title, Description, Author, PublishDate, Flag
3. Set constraint for Library\_Tbl with primary key ID, and null values for all the columns defined.
4. Create BooksStatus\_Tbl with following columns: ID, BookID, Status
5. Set constraint for bookstatus\_tbl with ID as primary key, BookID as foreign key, and null values for all the columns defined.
6. Create Members\_Tbl with the following columns: ID, Username, Firstname, Lastname, Initials, Address, City, State, Flag.
7. Set constraint for Members\_Tbl with ID as primary key and null value for all the columns defined.
8. Create BooksRecord\_Tbl with the following columns: UserID, BookID, BorrowDate, Flag.
9. Set constraints for UserID as foreign key, BookID as foreign key, and null values for all columns defined.

**5. Stored procedure returning 5 most borrowed authors for the given year.**

CREATE PROCEDURE dbo.SelectTopFiveBorrowedBooks @Year date

AS

SELECT DISTINCT Top 5 Library\_Tbl.Author AS “Authors”, COUNT(Library\_Tbl.ID) AS “No. Borrowed” FROM ((BooksRecord\_Tbl INNER JOIN Library\_Tbl ON Library\_Tbl.ID = BooksRecord\_Tbl.LibraryID) INNER JOIN Members\_Tbl ON Members\_Tbl.ID = BooksRecord\_Tbl.UserID) WHERE YEAR(BooksRecord\_Tbl.BorrowDate) = @Year GROUP BY Library\_Tbl.Author ORDER BY COUNT(Library\_Tbl.ID) DESC

GO;

**6. Function returning no. of borrowed materials by the specified members during the specified month.**  
  
CREATE FUNCTION BorrowedBooks (@member NVARCHAR(25), @month DATE)

RETURNS TABLE AS

RETURN

SELECT Members\_Tbl.Username AS Username, COUNT(Library\_Tbl.Author) FROM BooksRecord\_Tbl INNER JOIN Library\_Tbl ON BooksRecord\_Tbl.LibraryID = Library\_Tbl.ID INNER JOIN Members\_Tbl ON Members\_Tbl.ID = BooksRecord\_Tbl.UserID WHERE Members\_Tbl.Username = @member AND MONTH(BooksRecord\_Tbl.BorrowDate) = @month