SQL Assignment

Library System

Use the following Schema to perform the given set of assignment.

Tables-

Member – It contains information about the members

Column Name	Data Type	Description
Member_Id	Number(5)	Unique Member ID
Member_Name	Varchar2(30)	Name of the Library member
Member_address	Varchar2(50)	Address of the member
Acc_Open_Date	Date	Date of membership
Membership_type	Varchar2(20)	Type of the membership such as 'Lifetime',' Annual', 'Half Yearly',' Quarterly'
Fees_paid	Number(4)	Membership fees paid
Max_Books_Allowed	Number(2)	Total Number of books that can be issued to the member.
Penalty_Amount	Number(7,2)	Penalty amount due

Books- It contains information about the books belongs to the library

Column Name	Data Type	Description
Book_No	Number(6)	Book identification number
Book_Name	VarChar2(30)	Name of the book
Author_name	Varchar2(30)	Author of the book
Cost	Number(7,2)	Cost of the book
Category	Char(10)	Category like Science , Fiction etc.

Issue – It contains the information about issue of the books

Column Name	Data Type	Description
Lib_Issue_Id	Number(10)	Library Book Issue No
Book_No	Number(6)	Number of the book issued
Member_Id	Number(5)	Member that issued the book
Issue_Date	Date	Date of Issue
Return_date	Date	Return date

Day # 1 Assignments (Estimated Time: 2 Hrs)

Concept: SQL Basics,
DDL commands- Create table without constraints and with constraints, Alter, truncate, and Drop
DML commands Insert, Update, Delete,
Transaction Control Commit, Rollback, Savepoint.
Create sequence command

Objective: At the end of the assignments, participants will be able to understand basic DDL / DML/ Transaction Control statements.

Task / Problems:

1) Create the table Member, Books and Issue without any constraints as mentioned in the schema description above.
2) View the structure of the tables.
3) Drop the Member table
4) Create the table Member again as per the schema description with the following constraints.

    a. Member_Id – Primary Key
    b. Membership_type - 'Lifetime',' Annual', 'Half Yearly',' Quarterly'

5) Modify the table Member increase the width of the member name to 30 characters.
6) Add a column named as Reference of Char(30) to Issue table.
7) Delete/Drop the column Reference from Issue.
8) Rename the table Issue to Lib_Issue.
9) Insert following data in table Member

Member ID	Member Name	Member Address	Acc_Open_Date	Membership_type	Fees_Paid	Max_Books_Allowed	Penalty_Amount
1	Richa Sharma	Pune	10-Dec-05	Lifetime	25000	5	50
2	Garima Sen	Pune	current date	Annual	1000	3	Null

10) Insert at least 5 records with suitable data and save it.

11) Modify the column **Member_name**. Decrease the width of the member name to 20 characters. (If it does not allow state the reason for that)

12) Try to insert a record with Max_Books_Allowed = 110, Observe the error that comes. Report the reason for this error.
13) Generate another table named **Member101** using a Create command along with a simple SQL query on member table.

14) Add the constraints on columns max_books_allowed and penalty_amt as follows
    a. max_books_allowed < 100
    b. penalty_amt maximum 1000
    Also give names to the constraints.

15) Drop the table books.
16) Create table Books again as per the schema description with the following constraints.
    a. Book_No – Primary Key
    b. Book_Name – Not Null
    c. Category – Science, Fiction, Database, RDBMS, Others.

17) Insert data in Book table as follows:

Book_No	**Book Name**	**Author**	**Cost**	**Category**
101	Let us C	Denis Ritchie	450	System
102	Oracle – Complete Ref	Loni	550	Database
103	Mastering SQL	Loni	250	Database
104	PL SQL-Ref	Scott Urman	750	Database

18) Insert more records in Book table using & operator in the insert statement.
19) Create table Book101 similar to Book in structure with no data in it.
20) Insert into Book101 all the data in Book table using Select Statement.
21) Save all the data so far inserted in the tables.
22) View the data in the tables using simple SQL query.
23) Insert into Book following data.
    105, National Geographic, Adis Scott, 1000, Science
24) Undo the last changes.
25) Modify the price of book with id 103 to Rs 300 and category to RDBMS.
26) Rename the table Lib_Issue to Issue.
27) Drop table Issue.
28) As per the given structure Create table Issue again with following constraints.
    - Lib_Issue_Id-Primary key
    - Book_No- foreign key
    - Member_id - foreign key
    - Issue_date <= system date.
    - Issue_date < Return_date

29) Insert following data into Issue table. Note leave the column Return_Date blank.

Lib_Issue_Id	Book No	Member ID	Issue Date	Return Date
7001	101	1	10-Dec-06	
7002	102	2	25-Dec-06	
7003	104	1	15-Jan-06	
7004	101	1	04-Jul-06	
7005	104	2	15-Nov-06	
7006	101	3	18-Feb-06	

30) Save the data.
31) Disable the constraints on Issue table
32) Insert a record in Issue table. The member_id should not exist in member table.
33) Now enable the constraints of Issue table. Observe the error
34) Delete the record inserted at Q-32) and enable the constraints.
35) Try to delete the record of member id 1 from member table and observe the error .
36) Modify the Return_Date of 7004,7005 to 15 days after the Issue_date.
37) Modify the Penalty_Amount for Garima Sen to Rs 100.
38) Perform a save point X here.
39) Remove all the records from Issue table where member_ID is 1 and Issue date in before 10-Dec-06.
40) Remove all the records from Book table with category other than RDBMS and Database.
41) Undo the changes done after savepoint X.
42) Save all the changes done before X.
43) Remove the table Member101.
44) Remove the table Book101.
45) View the data and structure of all the three tables Member, Issue, Book.