

DDL Assignment 2

Task / Problems:

1) Create the table Member, Books and Issue without any constraints as mentioned in the schema description above.

```
CREATE TABLE Member (  
    Member_Id INT,  
    Member_Name VARCHAR(30),  
    Member_address VARCHAR(50),  
    Acc_Open_Date DATE,  
    Membership_type VARCHAR(20),  
    Fees_paid INT,  
    Max_Books_Allowed INT,  
    Penalty_Amount DECIMAL(7,2)  
);
```


```
CREATE TABLE Books (  
    Book_No INT,  
    Book_Name VARCHAR(30),  
    Author_name VARCHAR(30),  
    Cost DECIMAL(7,2),  
    Category CHAR(10)  
);
```


```
CREATE TABLE Issue (  
    Lib_Issue_Id INT,  
    Book_No INT,  
    Member_Id INT,  
    Issue_Date DATE,  
    Return_date DATE  
);
```


2) View the structure of the tables.

4
5 • `describe member;`

Result Grid


Filter Rows:

Export:


Wrap Cell Content:


	Field	Type	Null	Key	Default	Extra
▶	Member_Id	int	YES		NULL	
	Member_Name	varchar(30)	YES		NULL	
	Member_address	varchar(50)	YES		NULL	
	Acc_Open_Date	date	YES		NULL	
	Membership_type	varchar(20)	YES		NULL	
	Fees_paid	int	YES		NULL	
	Max_Books_Allowed	int	YES		NULL	
	Penalty_Amount	decimal(7,2)	YES		NULL	

6 • `desc books;`

Result Grid

Filter Rows:

Export:


Wrap Cell Content:


	Field	Type	Null	Key	Default	Extra
▶	Book_No	int	YES		NULL	
	Book_Name	varchar(30)	YES		NULL	
	Author_name	varchar(30)	YES		NULL	
	Cost	decimal(7,2)	YES		NULL	
	Category	char(10)	YES		NULL	

8 • `desc issue;`

Result Grid

Filter Rows:

Export: 

Wrap Cell Content: 

	Field	Type	Null	Key	Default	Extra
▶	Lib_Issue_Id	int	YES		NULL	
	Book_No	int	YES		NULL	
	Member_Id	int	YES		NULL	
	Issue_Date	date	YES		NULL	
	Return_date	date	YES		NULL	

3) Drop the Member table

drop table member;

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'

```
12 • CREATE TABLE Member (  
13     Member_Id INT PRIMARY KEY,  
14     Member_Name VARCHAR(30),  
15     Member_address VARCHAR(50),  
16     Acc_Open_Date DATE,  
17     Membership_type VARCHAR(20) CHECK (Membership_type IN ('Lifetime', 'Annual', 'Half Yearly', 'Quarterly')),  
18     Fees_paid INT,  
19     Max_Books_Allowed INT,  
20     Penalty_Amount DECIMAL(7,2)  
21 );  
22  
23 • select * from member;  
24
```

Result Grid

Member_Id	Member_Name	Member_address	Acc_Open_Date	Membership_type	Fees_paid	Max_Books_Allowed	Penalty_Amount
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

5) Modify the table Member increase the width of the member name to 30 characters.

alter table member modify Member_name varchar(30);

6) Add a column named as Reference of Char(30) to Issue table.

```
28 • select * from issue;  
29
```

Result Grid

Lib_Issue_Id	Book_No	Member_Id	Issue_Date	Return_date
--------------	---------	-----------	------------	-------------

After adding reference

```
0 • select * from issue;  
1 • ALTER TABLE Issue ADD Reference CHAR(30);  
2
```

Result Grid

Lib_Issue_Id	Book_No	Member_Id	Issue_Date	Return_date	Reference
--------------	---------	-----------	------------	-------------	-----------

7) Delete/Drop the column Reference from Issue.

ALTER TABLE Issue DROP COLUMN Reference;

8) Rename the table Issue to Lib_Issue.

```
36 • RENAME TABLE Issue TO Lib_Issue;
37 • select * from Lib_Issue;
38
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
Lib_Issue_Id	Book_No	Member_Id	Issue_Date
Return_date			

9) Insert following data in table Member

```
39 • insert into member values(1, 'Richa Sharma', 'Pune', '2005-12-10', 'Lifetime', 25000, 5, 50.00),
40 (2, 'Garima Sen', 'Pune', '2025-04-30', 'Annual', 1000, 3, NULL);
41
42 • select * from member;
```

Result Grid

Filter Rows:

Edit:

Export/Import:

Wrap Cell Content:

Member_Id	Member_name	Member_address	Acc_Open_Date	Membership_type	Fees_paid	Max_Books_Allowed	Penalty_Amount
1	Richa Sharma	Pune	2005-12-10	Lifetime	25000	5	50.00
2	Garima Sen	Pune	2025-04-30	Annual	1000	3	NULL
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

10) Insert at least 5 records with suitable data.

```
44 • insert into member values
45 (3, 'Anil Kapoor', 'Mumbai', '2020-01-01', 'Quarterly', 500, 2, 20.00),
46 (4, 'Meena Joshi', 'Delhi', '2019-06-15', 'Half Yearly', 750, 4, NULL),
47 (5, 'Sohan Lal', 'Chennai', '2021-09-10', 'Annual', 1000, 3, 0.00),
48 (6, 'Ravi Kumar', 'Kolkata', '2022-02-20', 'Lifetime', 30000, 6, NULL),
49 (7, 'Kiran Desai', 'Ahmedabad', '2018-11-05', 'Half Yearly', 750, 3, 15.00);
50
```

Result Grid

Filter Rows:

Edit:

Export/Import:

Wrap Cell Content:

	Member_Id	Member_name	Member_address	Acc_Open_Date	Membership_type	Fees_paid	Max_Books_Allowed	Penalty_Amount
▶	1	Richa Sharma	Pune	2005-12-10	Lifetime	25000	5	50.00
	2	Garima Sen	Pune	2025-04-30	Annual	1000	3	NULL
	3	Anil Kapoor	Mumbai	2020-01-01	Quarterly	500	2	20.00
	4	Meena Joshi	Delhi	2019-06-15	Half Yearly	750	4	NULL
	5	Sohan Lal	Chennai	2021-09-10	Annual	1000	3	0.00
	6	Ravi Kumar	Kolkata	2022-02-20	Lifetime	30000	6	NULL
	7	Kiran Desai	Ahmedabad	2018-11-05	Half Yearly	750	3	15.00
•	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

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)

ALTER TABLE Member MODIFY Member_Name VARCHAR(20);

12) Try to insert a record with Max_Books_Allowed = 110, Observe the error that comes.

```

53 • insert into member values
54 (8, 'Test User', 'Test City', '2025-01-01', 'Annual', 1000, 110, 0.00);
55
56
57

```

Result Grid

	Member_Id	Member_name	Member_address	Acc_Open_Date	Membership_type	Fees_paid	Max_Books_Allowed	Penalty_Amount
▶	1	Richa Sharma	Pune	2005-12-10	Lifetime	25000	5	50.00
	2	Garima Sen	Pune	2025-04-30	Annual	1000	3	NULL
	3	Anil Kapoor	Mumbai	2020-01-01	Quarterly	500	2	20.00
	4	Meena Joshi	Delhi	2019-06-15	Half Yearly	750	4	NULL
	5	Sohan Lal	Chennai	2021-09-10	Annual	1000	3	0.00
	6	Ravi Kumar	Kolkata	2022-02-20	Lifetime	30000	6	NULL
	7	Kiran Desai	Ahmedabad	2018-11-05	Half Yearly	750	3	15.00
	8	Test User	Test City	2025-01-01	Annual	1000	110	0.00
•	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

13) Generate another table named Member101 using a Create command along with a simple SQL query on member table.

```

56 • CREATE TABLE Member101 AS SELECT * FROM member where 1=0;
57
58 • DESC Member101;
59

```

Result Grid

	Field	Type	Null	Key	Default	Extra
▶	Member_Id	int	NO		NULL	
	Member_name	varchar(30)	YES		NULL	
	Member_address	varchar(50)	YES		NULL	
	Acc_Open_Date	date	YES		NULL	
	Membership_type	varchar(20)	YES		NULL	
	Fees_paid	int	YES		NULL	
	Max_Books_Allowed	int	YES		NULL	
	Penalty_Amount	decimal(7,2)	YES		NULL	

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.

ALTER TABLE member

ADD CONSTRAINT chk_max_books_allowed

CHECK (max_books_allowed < 100);

alter table member

add constraint chk_Penalty_Amount

check (Penalty_Amount<=1000);

15) Drop the table books.

DROP 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 – System, Fiction, Database, RDBMS, Others.

CREATE TABLE Books (

Book_No INT PRIMARY KEY,

Book_Name VARCHAR(30) NOT NULL,

Author_name VARCHAR(30),





Cost DECIMAL(7,2),

Category VARCHAR(20) CHECK (Category IN ('System', 'Fiction', 'Database', 'RDBMS', 'Others'))

);

17) Insert data in Book table as follows:

```
82 • INSERT INTO Books VALUES
83     (101, 'Let us C', 'Denis Ritchie', 450, 'System'),
84     (102, 'Oracle - Complete Ref', 'Loni', 550, 'Database'),
85     (103, 'Mastering SQL', 'Loni', 250, 'Database'),
86     (104, 'PL SQL-Ref', 'Scott Urman', 750, 'Database');
87
88 • select * from books;
89
90
```

Result Grid					
Filter Rows:					
Edit:    					
Export/Import					
	Book_No	Book_Name	Author_name	Cost	Category
▶	101	Let us C	Denis Ritchie	450.00	System
	102	Oracle - Complete Ref	Loni	550.00	Database
	103	Mastering SQL	Loni	250.00	Database
	104	PL SQL-Ref	Scott Urman	750.00	Database
•	NULL	NULL	NULL	NULL	NULL

18) Insert more records in Book table.

```
88 • select * from books;
89 • INSERT INTO Books VALUES
90     (106, 'DBMS Concepts', 'Korth', 600, 'RDBMS'),
91     (107, 'Database Systems', 'Navathe', 700, 'RDBMS');
92
93
```

Book_No	Book_Name	Author_name	Cost	Category
101	Let us C	Denis Ritchie	450.00	System
102	Orade – Complete Ref	Loni	550.00	Database
103	Mastering SQL	Loni	250.00	Database
104	PL SQL-Ref	Scott Urman	750.00	Database
106	DBMS Concepts	Korth	600.00	RDBMS

19) View the data in the tables using simple SQL query.

SELECT * FROM Member;

SELECT * FROM Books;

SELECT * FROM Lib_Issue;

20) Insert into Book following data.105, National Geographic, Adis Scott, 1000, Science

INSERT INTO Books VALUES

(105, 'National Geographic', 'Adis Scott', 1000, 'Science');

21) Rename the table Lib_Issue to Issue.

RENAME TABLE Lib_Issue TO Issue;

22) Drop table Issue.

DROP TABLE Issue;

23) As per the given structure Create table Issue again with following

CREATE TABLE Issue (

Lib_Issue_Id INT PRIMARY KEY,

Book_No INT,

Member_Id INT,

Issue_Date DATE,

Return_date DATE,

FOREIGN KEY (Book_No) REFERENCES Books(Book_No),

FOREIGN KEY (Member_Id) REFERENCES Member(Member_Id)

);

24) Insert following data into Issue table.

```
115 • INSERT INTO Issue VALUES
116     (7001, 101, 1, '2006-12-10', NULL),
117     (7002, 102, 2, '2006-12-25', NULL),
118     (7003, 104, 1, '2006-01-15', NULL),
119     (7004, 101, 1, '2006-07-04', NULL),
120     (7005, 104, 2, '2006-11-15', NULL),
121     (7006, 101, 3, '2006-02-18', NULL);
122
123 • select * from issue;
124
125
```

Lib_Issue_Id	Book_No	Member_Id	Issue_Date	Return_date
7001	101	1	2006-12-10	NULL
7002	102	2	2006-12-25	NULL
7003	104	1	2006-01-15	NULL
7004	101	1	2006-07-04	NULL
7005	104	2	2006-11-15	NULL

25) Remove the constraints on Issue table

ALTER TABLE Issue DROP FOREIGN KEY Issue_ibfk_1;

ALTER TABLE Issue DROP FOREIGN KEY Issue_ibfk_2;

26) Insert a record in Issue table. The member_id should not exist in

member table.

```
128 • INSERT INTO Issue VALUES
129     (7007, 101, 99, '2025-04-30', NULL);
130
131
132
133
```

Lib_Issue_Id	Book_No	Member_Id	Issue_Date	Return_date
7004	101	1	2006-07-04	NULL
7005	104	2	2006-11-15	NULL
7006	101	3	2006-02-18	NULL
7007	101	99	2025-04-30	NULL
NULL	NULL	NULL	NULL	NULL

27) Now enable the constraints of Issue table. Observe the error

28) Delete the record inserted at Q-27) and enable the constraints.

```
DELETE FROM Issue WHERE Member_Id = 99;
```

```
ALTER TABLE Issue
```

```
ADD CONSTRAINT fk_book FOREIGN KEY (Book_No) REFERENCES Books(Book_No),
```

```
ADD CONSTRAINT fk_member FOREIGN KEY (Member_Id) REFERENCES Member(Member_Id);
```

29) Try to delete the record of member id 1 from member table and

observe the error .

```
DELETE FROM Member WHERE Member_Id = 1;
```

-- This will fail due to foreign key in Issue table

30) View the data and structure of all the three tables Member,

Issue, Book.

```
DESC Member;
```

```
DESC Books;
```

```
DESC Issue;
```

```
SELECT * FROM Member;
```

```
SELECT * FROM Books;
```

```
SELECT * FROM Issue;
```

31) Modify the Return_Date of 7004,7005 to 15 days after the

Issue_date.

```
UPDATE Issue SET Return_date = DATE_ADD(Issue_Date, INTERVAL 15 DAY) WHERE Lib_Issue_Id IN  
(7004, 7005);
```

32) Remove all the records from Issue table where member_ID is 1

and Issue date in before 10-Dec-06.

```
DELETE FROM Issue WHERE Member_Id = 1 AND Issue_Date < '2006-12-10';
```

33) Remove all the records from Book table with category other

than RDBMS and Database.

DELETE FROM Books WHERE Category NOT IN ('RDBMS', 'Database');

34) Remove the table Member.

DROP TABLE Member;

35) Remove the table Book.

DROP TABLE Books;