

Program 7 : Book Database

BOOK (Book_id, Title, Publisher_Name, Pub_Year)

BOOK_AUTHORS (Book_id, Author_Name)

PUBLISHER (Name, Address, Phone)

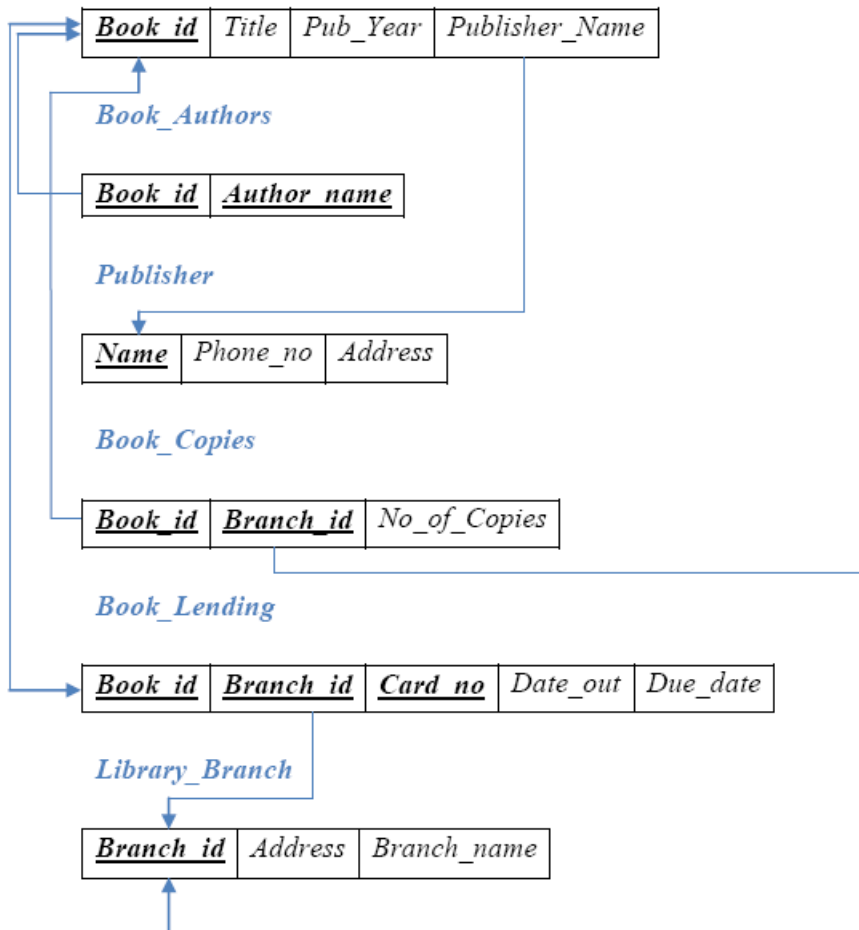
BOOK_COPIES (Book_id, Branch_id, No-of_Copies)

BOOK_LENDING (Book_id, Branch_id, Card_No, Date_Out, Due_Date)

LIBRARY_BRANCH (Branch_id, Branch_Name, Address)

Schema Diagram

Book



```
create database Lab7;
```

```
use Lab7;
```

```
create table publisher (
```

```
    name varchar (20) primary key,
```

```
    phone integer,
```

```
    address varchar (20)
```

```
);
```

```
desc publisher;
```

	Field	Type	Null	Key	Default	Extra
►	name	varchar(20)	NO	PRI	NULL	
	phone	int	YES		NULL	
	address	varchar(20)	YES		NULL	

```
create table book (
```

```
    book_id integer primary key,
```

```
    title varchar (20),
```

```
    pub_year varchar (20),
```

```
    publisher_name varchar (20),
```

```
    foreign key (publisher_name) references publisher (name) on delete cascade
```

```
);
```

```
desc book;
```

	Field	Type	Null	Key	Default	Extra
►	book_id	int	NO	PRI	NULL	
	title	varchar(20)	YES		NULL	
	pub_year	varchar(20)	YES		NULL	
	publisher_name	varchar(20)	YES	MUL	NULL	

```
create table book_authors (
```

```
    author_name varchar (20),
```

```

        book_id integer,
        foreign key (book_id) references book (book_id) on delete cascade,
        primary key (book_id, author_name)
    );

desc book_authors;

```

	Field	Type	Null	Key	Default	Extra
►	author_name	varchar(20)	NO	PRI	NULL	
	book_id	int	NO	PRI	NULL	

```

create table library_branch (
    branch_id integer primary key,
    branch_name varchar (50),
    address varchar (50)
);

desc library_branch;

```

	Field	Type	Null	Key	Default	Extra
►	branch_id	int	NO	PRI	NULL	
	branch_name	varchar(50)	YES		NULL	
	address	varchar(50)	YES		NULL	

```

create table book_copies (
    no_of_copies integer,
    book_id integer,
    branch_id integer,
    foreign key (book_id) references book (book_id) on delete cascade,
    foreign key (branch_id) references library_branch (branch_id) on delete cascade,
    primary key (book_id, branch_id)
);

desc book_copies;

```

	no_of_copies	book_id	branch_id
▶	10	1	10
	5	1	11
	2	2	12
	5	2	13
	7	3	14
	3	4	11
	1	5	10
*	NULL	NULL	NULL

```
create table card (
    card_no integer primary key
);
desc card;
```

	Field	Type	Null	Key	Default	Extra
▶	card_no	int	NO	PRI	NULL	

```
create table book_lending (
    date_out date,
    due_date date,
    book_id integer,
    branch_id integer,
    card_no integer,
    foreign key (book_id) references book (book_id) on delete cascade,
    foreign key (branch_id) references library_branch (branch_id) on delete cascade,
    foreign key (card_no) references card (card_no) on delete cascade,
    primary key (book_id, branch_id, card_no)
);
desc book_lending;
```

	Field	Type	Null	Key	Default	Extra
►	date_out	date	YES		NULL	
	due_date	date	YES		NULL	
	book_id	int	NO	PRI	NULL	
	branch_id	int	NO	PRI	NULL	
	card_no	int	NO	PRI	NULL	

insert into publisher values ('mcgraw-hill', 99890, 'bangalore');

insert into publisher values ('pearson', 98890, 'newdelhi');

insert into publisher values ('random house', 74556, 'hyderabad');

insert into publisher values ('hachette livre', 897086, 'chenai');

insert into publisher values ('grupo planeta', 77561, 'bangalore');

select * from publisher;

	name	phone	address
►	grupo planeta	77561	bangalore
	hachette livre	897086	chenai
	mcgraw-hill	99890	bangalore
	pearson	98890	newdelhi
	random house	74556	hyderabad
*	NULL	NULL	NULL

insert into book values (1,'dbms','01-2017', 'mcgraw-hill');

insert into book values (2,'adbms','06-2016', 'mcgraw-hill');

insert into book values (3,'cn','09-2016', 'pearson');

insert into book values (4,'cg','09-2015', 'grupo planeta');

insert into book values (5,'os','05-2016', 'pearson');

select * from book;

	book_id	title	pub_year	publisher_name
►	1	dbms	01-2017	mcgraw-hill
	2	adbms	06-2016	mcgraw-hill
	3	cn	09-2016	pearson
	4	cg	09-2015	grupo planeta
	5	os	05-2016	pearson
*	NULL	NULL	NULL	NULL

```

insert into book_authors values ('navathe', 1);
insert into book_authors values ('navathe', 2);
insert into book_authors values ('tanenbaum', 3);
insert into book_authors values ('edward angel', 4);
insert into book_authors values ('galvin', 5);
select * from book_authors;

```

	author_name	book_id
▶	navathe	1
	navathe	2
	tanenbaum	3
	edward angel	4
	galvin	5
•	NULL	NULL

```

insert into library_branch values (10,'rr nagar','bangalore');
insert into library_branch values (11,'rnsit','bangalore');
insert into library_branch values (12,'rajaji nagar', 'bangalore');
insert into library_branch values (13,'nitte','mangalore');
insert into library_branch values (14,'manipal','udupi');
select * from library_branch;

```

	branch_id	branch_name	address
▶	10	rr nagar	bangalore
	11	rnsit	bangalore
	12	rajaji nagar	bangalore
	13	nitte	mangalore
	14	manipal	udupi
•	NULL	NULL	NULL

```

insert into book_copies values (10, 1, 10);
insert into book_copies values (5, 1, 11);
insert into book_copies values (2, 2, 12);

```

insert into book_copies values (5, 2, 13);

insert into book_copies values (7, 3, 14);

insert into book_copies values (1, 5, 10);

insert into book_copies values (3, 4, 11);

select * from book_copies;

	Field	Type	Null	Key	Default	Extra
►	no_of_copies	int	YES		NULL	
	book_id	int	NO	PRI	NULL	
	branch_id	int	NO	PRI	NULL	

insert into card values (100);

insert into card values (101);

insert into card values (102);

insert into card values (103);

insert into card values (104);

select * from card;

	card_no
►	100
	101
	102
	103
	104
*	NULL

insert into book_lending values ('01-01-17','01-06-17', 1, 10, 101);

insert into book_lending values ('11-01-17','11-03-17', 3, 14, 101);

insert into book_lending values ('21-02-17','21-04-17', 2, 13, 101);

insert into book_lending values ('15-03-17','15-07-17', 4, 11, 101);

insert into book_lending values ('12-08-17','12-08-17', 1, 11, 104);

select * from book_lending;

	date_out	due_date	book_id	branch_id	card_no
▶	2001-01-17	2001-06-17	1	10	101
	2012-08-17	2012-08-17	1	11	104
	2021-02-17	2021-04-17	2	13	101
	2011-01-17	2011-03-17	3	14	101
	2015-03-17	2015-07-17	4	11	101
•	NULL	NULL	NULL	NULL	NULL

Write SQL queries to

1.Retrieve details of all books in the library – id, title, name of publisher, authors, number of copies in each branch, etc.

select b.book_id, b.title, b.pub_year, b.publisher_name, bc.no_of_copies, ba.author_name, lb.branch_name from book b, book_authors ba,

library_branch lb, book_copies bc where b.book_id = ba.book_id and b.book_id = bc.book_id and lb.branch_id = bc.branch_id;

	book_id	title	pub_year	publisher_name	no_of_copies	author_name	branch_name
▶	1	dbms	01-2017	mcgraw-hill	10	navathe	rr nagar
	1	dbms	01-2017	mcgraw-hill	5	navathe	rnsit
	2	adbms	06-2016	mcgraw-hill	2	navathe	rajaji nagar
	2	adbms	06-2016	mcgraw-hill	5	navathe	nitte
	3	cn	09-2016	pearson	7	tanenbaum	manipal
	4	cg	09-2015	grupo planeta	3	edward angel	rnsit
	5	os	05-2016	pearson	1	galvin	rr nagar

2.Get the particulars of borrowers who have borrowed more than 3 books, but from Jan 2017 to Jun 2017

select card_no from book_lending where year(date_out) >17 and month(date_out)<7 group by card_no having count(card_no) >2 ;

	card_no
▶	101

3.Delete a book in BOOK table. Update the contents of other tables to reflect this data manipulation operation.

delete from book where book_id = 3;

select * from book;

select * from book_authors;

select * from book_copies;

select * from book_lending;

	book_id	title	pub_year	publisher_name
▶	1	dbms	01-2017	mcgraw-hill
	2	adbms	06-2016	mcgraw-hill
	4	cg	09-2015	grupo planeta
	5	os	05-2016	pearson
•	NULL	NULL	NULL	NULL

	author_name	book_id
▶	navathe	1
	navathe	2
	edward angel	4
	galvin	5
•	NULL	NULL

	no_of_copies	book_id	branch_id
▶	10	1	10
	5	1	11
	2	2	12
	5	2	13
	3	4	11
	1	5	10
•	NULL	NULL	NULL

	date_out	due_date	book_id	branch_id	card_no
▶	2001-01-17	2001-06-17	1	10	101
	2012-08-17	2012-08-17	1	11	104
	2021-02-17	2021-04-17	2	13	101
	2015-03-17	2015-07-17	4	11	101
•	NULL	NULL	NULL	NULL	NULL

4.Partition the BOOK table based on year of publication. Demonstrate its working with a simple query.

```
create view q4_view as select pub_year from book;
```

```
select * from q4_view;
```

	pub_year
▶	01-2017
	06-2016
	09-2015
	05-2016

5.Create a view of all books and its number of copies that are currently available in the Library.

```
create view q5_view as select b.book_id, b.title, bc.no_of_copies from book b,
```

```
book_copies bc where b.book_id = bc.book_id;
```

```
select * from q5_view;
```

	book_id	title	no_of_copies
▶	1	dbms	10
	1	dbms	5
	2	adbms	2
	2	adbms	5
	4	cg	3
	5	os	1