



NATIONAL INSTITUTE OF TECHNOLOGY PUDUCHERRY

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KARAIKAL – 609 609

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Class: BTech. 3rd Year

Subject Code: CS309

Subject Name: DBMS Lab

Assignment 3

Schema for a Library 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)

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.
2. Get the particulars of borrowers who have borrowed more than 3 books, but from Jan 2021 to Jun 2021
3. Delete a book in BOOK table. Update the contents of other tables to reflect this data manipulation operation.
4. Partition the BOOK table based on year of publication. Demonstrate its working with a simple query.
5. Create a view of all books and its number of copies that are currently available in the Library.

```
1 CREATE TABLE book(  
2 book_id INT NOT NULL ,  
3 title STRING,  
4 publisher_name VARCHAR(15),  
5 pub_year INT,  
6 PRIMARY KEY(book_id))
```

book_id	title	publisher_name	pub_year
1	God of Small Thi...	RB	1991
2	Harry Potter	lion	1995
3	Malgudi Days	FT	1989
4	Deadly Hallows	FT	2000

```

1 CREATE TABLE book_author(
2   book_id INT,
3   author_name STRING,
4   FOREIGN KEY(book_id) REFERENCES book(book_id)
5 )

```

book_id	author_name
1	Arundathi Roy
3	RK Narayan
2	JK Rowling
4	JK Rowling

```

1 CREATE TABLE library_branch(
2   branch_id INT,
3   branch_name STRING,
4   branch_address STRING,
5   PRIMARY KEY(branch_id)
6 )

```

branch_id	branch_name	branch_address
1	PY	Pondicherry
2	KA	Karaikal
3	MH	Mahe

```

1 CREATE TABLE book_copies(
2   book_id INT,
3   branch_id INT,
4   no_of_copies INT,
5   FOREIGN KEY (book_id) REFERENCES book(book_id)
6   FOREIGN KEY(branch_id) REFERENCES library_branch(branch_id)
7 )

```

book_id	branch_id	no_of_copies
1	2	50
1	1	3
1	3	17
2	2	NULL
2	1	10
2	3	7
3	2	14
3	1	NULL
3	3	3
4	2	3
4	1	9
4	3	1

```

1 CREATE TABLE book_lending(
2   book_id INT,
3   branch_id INT,
4   card_no VARCHAR(5),
5   date_out DATE,
6   due_date DATE ,
7   FOREIGN KEY (book_id) REFERENCES book(book_id)
8   FOREIGN KEY(branch_id) REFERENCES book_copies(branch_id)
9 )

```

book_id	branch_id	card_no	date_out	due_date
3	3	60b3	2021-09-20	2021-09-30
4	2	50b3	2020-05-10	2020-05-24
2	2	50b1	2021-06-10	2021-02-24
2	1	40b1	2021-02-12	2021-02-28
1	1	40b1	2021-02-12	2021-02-28

1.)

```

1 SELECT book.book_id, book.title, book.publisher_name,
2 book_author.author_name, book_copies.no_of_copies,
3 library_branch.branch_id
4 FROM book , book_author, book_copies,library_branch
5 WHERE book.book_id = book_author.book_id
6 AND book.book_id= book_copies.book_id
7 AND library_branch.branch_id= book_copies.branch_id

```

book_id	title	publisher_na...	author_name	no_of_copies	branch_id
1	God of Small T...	RB	Arundathi Roy	50	2
2	Harry Potter	lion	JK Rowling	NULL	2
3	Malgudi Days	FT	RK Narayan	14	2
4	Deadly Hallows	FT	JK Rowling	3	2
1	God of Small T...	RB	Arundathi Roy	3	1
2	Harry Potter	lion	JK Rowling	10	1
3	Malgudi Days	FT	RK Narayan	NULL	1
4	Deadly Hallows	FT	JK Rowling	9	1
4	Deadly Hallows	FT	JK Rowling	1	3
3	Malgudi Days	FT	RK Narayan	3	3
2	Harry Potter	lion	JK Rowling	7	3
1	God of Small T...	RB	Arundathi Roy	17	3

2.)

```

1 SELECT card_no FROM book_lending
2 WHERE date_out BETWEEN '2020-05-10' AND '2021-06-10'
3 GROUP BY card_no
4 HAVING COUNT(*)>1

```

card_no

40b1

3.)

```
1 DELETE FROM book WHERE book_id=1
```

```
1 SELECT * FROM book
```

book_id	title	publisher_name	pub_year
2	Harry Potter	lion	1995
3	Malgudi Days	FT	1989
4	Deadly Hallows	FT	2000

4.)

```
1 CREATE VIEW year_of_publication AS SELECT
2 pub_year
3 FROM book
```

pub_year
1995
1989
2000

5.)

```
1 CREATE VIEW v_of_books AS
2 SELECT book.book_id, book.title, book_copies.no_of_copies
3 FROM book, book_copies, library_branch
4 WHERE book.book_id = book_copies.book_id
5 AND book_copies.branch_id= library_branch.branch_id
```

book_id	title	no_of_copies
2	Harry Potter	NULL
3	Malgudi Days	14
4	Deadly Hallows	3
2	Harry Potter	10
3	Malgudi Days	NULL
4	Deadly Hallows	9
4	Deadly Hallows	1
3	Malgudi Days	3
2	Harry Potter	7