

Assignment Number: 4

Title:

Implement Nested queries DDL,DML

Problem statement :

Following tables are created in the previous assignment.

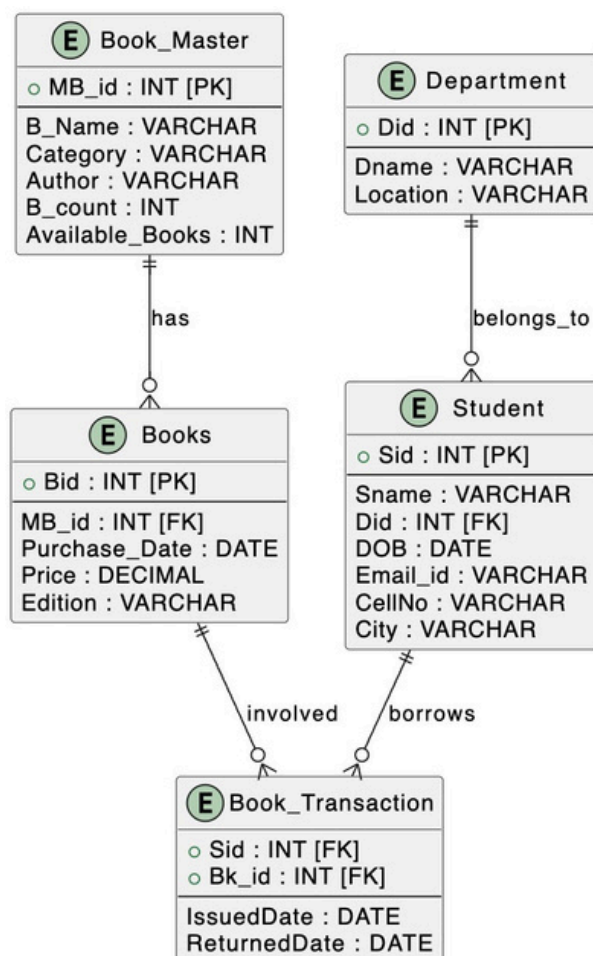
Book_Master (MB_id, B_Name, Category, Author, B_count, Available_Books)

Books (Bid, MB_id, Purchase_Date, Price, Edition)

Book_Transaction(Sid, Bk_id, IssuedDate, ReturnedDate)

Student(Sid, Sname, Did, DOB, Email_id, CellNo, City)

Department(Did, Dname, Location)



Queries:

1. Add a book in transaction which is not present in Books . What's your observation?

```
mysql> Select * from book_transaction;
+-----+-----+-----+-----+-----+
| Transaction_ID | Sid | Bk_ID | IssuedDate | ReturnedDate |
+-----+-----+-----+-----+-----+
| T1001         | 81500 | B001 | 2025-01-10 | 2025-01-20 |
| T1002         | 81501 | B002 | 2025-01-15 | 2025-01-25 |
| T1003         | 81503 | B003 | 2025-01-12 | 2025-01-22 |
| T1004         | 81504 | B004 | 2025-01-18 | 2025-01-28 |
| T1005         | 81505 | B005 | 2025-01-20 | NULL |
| T1006         | 81506 | B007 | 2025-01-14 | 2025-01-24 |
| T1007         | 81507 | B007 | 2025-01-11 | 2025-01-21 |
| T1008         | 81500 | B010 | 2025-01-13 | 2025-01-23 |
| T1010         | 81503 | B003 | 2025-01-22 | NULL |
| T1011         | 81503 | B006 | 2025-02-01 | 2025-02-05 |
| T1012         | 81503 | B010 | 2025-02-03 | NULL |
| T1013         | 81500 | B002 | 2025-02-04 | 2025-02-07 |
| T1014         | 81509 | B005 | 2025-02-04 | 2025-02-11 |
+-----+-----+-----+-----+-----+
13 rows in set (0.00 sec)

mysql> Select * from book;
+-----+-----+-----+-----+-----+-----+
| Book_ID | Copies | Price | Purchase_Date | Edition | MB_ID |
+-----+-----+-----+-----+-----+-----+
| B001    | 50     | 1550  | 2023-01-10    | 1st Edition | 1 |
| B002    | 20     | 1250  | 2023-01-15    | 2nd Edition | 2 |
| B003    | 30     | 2200  | 2023-01-20    | 3rd Edition | 3 |
| B004    | 10     | 1900  | 2023-01-25    | 1st Edition | 4 |
| B005    | 23     | 1650  | 2023-02-01    | 2nd Edition | 5 |
| B006    | 35     | 1850  | 2023-02-10    | 1st Edition | 1 |
| B007    | 70     | 2100  | 2023-02-10    | 4th Edition | 7 |
| B009    | 13     | 1800  | 2023-02-20    | 2nd Edition | 9 |
| B010    | 19     | 1600  | 2023-02-25    | 3rd Edition | 10 |
+-----+-----+-----+-----+-----+-----+
9 rows in set (0.00 sec)

mysql> Insert Into book_transaction
-> Value
-> ('T1015','B1509','B008','2025-02-11',NULL);
[ERROR 1052 (23000): Cannot add or update a child row: a foreign key constraint fails ('lib_manag','book_transaction', CONSTRAINT 'book_transaction_book' FOREIGN KEY ('Bk_ID') REFERENCES 'book' ('Book_ID'))
mysql>
```

Since 'B008' is not present in the book table, the insert statement's attempt to add a record for transaction 'T1015' involving student 'B1509' and book 'B008' may violate any applicable foreign key constraints.

2. Make sure MB_id field in Books will have only those values which are present in MB_id in Book_Master;

```
mysql> Describe book;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Book_ID | varchar(10) | NO | PRI | NULL | |
| Copies | int | YES | | NULL | |
| Price | bigint | YES | | NULL | |
| Purchase_Date | date | YES | | NULL | |
| Edition | varchar(20) | YES | | NULL | |
| MB_ID | int | YES | MUL | NULL | |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql> Describe book_master;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| MB_ID | int | NO | PRI | NULL | |
| Title | varchar(50) | YES | | NULL | |
| Author | varchar(100) | YES | | NULL | |
| ISBN | varchar(50) | YES | | NULL | |
| Category | varchar(50) | YES | | NULL | |
| B_Count | int | YES | | NULL | |
| Available_Book | int | YES | | NULL | |
| Publisher | varchar(50) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
8 rows in set (0.00 sec)
```

```
+-----+-----+-----+-----+-----+-----+-----+
| MB_ID | Title | Author | ISBN | Category | B_Count | Available_Book | Publisher |
+-----+-----+-----+-----+-----+-----+-----+
| 1 | Artificial Intelligence: A Modern Approach | Stuart Russell | 9780134610994 | Computer Science | 30 | 20 | Pearson |
| 2 | Introduction to Machine Learning | Stuart Russell | 9780262041232 | Computer Science | 25 | 15 | MIT Press |
| 3 | Database System Concepts | Abraham Silberschatz | 9780078022159 | Computer Science | 40 | 30 | McGraw-Hill |
| 4 | Operating System Concepts | Abraham Silberschatz | 9781119880368 | Computer Science | 35 | 25 | Wiley |
| 5 | Computer Networks | Andrew S. Tanenbaum | 9780132126953 | Computer Science | 20 | 18 | Prentice Hall |
| 6 | Modern Operating Systems | Andrew S. Tanenbaum | 9780133591623 | Computer Science | 30 | 22 | Pearson |
| 7 | Power Electronics | M.H. Rashid | 9789353066211 | Electrical Engineering | 22 | 10 | Pearson |
| 8 | Engineering Thermodynamics | P.K. Nag | 9781259029565 | Mechanical Engineering | 30 | 20 | McGraw-Hill |
| 9 | Structural Analysis | R.C. Hibbeler | 9780134610980 | Civil Engineering | 25 | 18 | Pearson |
| 10 | Electronic Devices and Circuit Theory | Robert L. Boylestad | 9780130826491 | Electronics Engineering | 28 | 22 | Pearson |
| 11 | Python Programming | John Doe | 9781234567890 | Computer Science | 40 | 30 | Pearson |
| 12 | Python Programming | Jane Smith | 9780987654321 | Computer Science | 35 | 25 | McGraw-Hill |
| 13 | Python Programming | Mike Johnson | 9781122334455 | Computer Science | 50 | 40 | Wiley |
+-----+-----+-----+-----+-----+-----+-----+
13 rows in set (0.00 sec)

mysql> Select * from book;
+-----+-----+-----+-----+-----+-----+
| Book_ID | Copies | Price | Purchase_Date | Edition | MB_ID |
+-----+-----+-----+-----+-----+-----+
| B001    | 50     | 1550  | 2023-01-10    | 1st Edition | 1 |
| B002    | 20     | 1250  | 2023-01-15    | 2nd Edition | 2 |
| B003    | 30     | 2200  | 2023-01-20    | 3rd Edition | 3 |
| B004    | 10     | 1900  | 2023-01-25    | 1st Edition | 4 |
| B005    | 23     | 1650  | 2023-02-01    | 2nd Edition | 5 |
| B006    | 35     | 1850  | 2023-02-10    | 1st Edition | 1 |
| B007    | 70     | 2100  | 2023-02-15    | 2nd Edition | 1 |
| B008    | 40     | 2000  | 2023-02-20    | 3rd Edition | 2 |
| B009    | 22     | 1700  | 2023-02-25    | 1st Edition | 2 |
| B010    | 15     | 2100  | 2023-02-28    | 2nd Edition | 3 |
+-----+-----+-----+-----+-----+-----+
10 rows in set (0.00 sec)
```

3. Display all mechanical student names

```
mysql> Select * from student;
```

S_ID	Name	Email	Mobile_No	DOB	Dep_ID
B1500	Aarav Sharma	aarav.sharma@gmail.com	9876543210	2000-01-15	D001
B1501	Vivaan Patel	Vivaan@gmail.com	9123456789	1999-02-20	D003
B1503	Vihaan Gupta	vihaan.gupta@gmail.com	9871234567	2002-04-25	D002
B1504	Arjun Rao	arjun.rao@gmail.com	9988776655	1998-05-30	D001
B1505	Sai Kumar	sai.kumar@gmail.com	9876543210	2000-06-15	D005
B1506	Reyansh Singh	reyansh.singh@gmail.com	9123456789	2003-07-20	D004
B1507	Krishna Iyer	krishna.iyer@gmail.com	9988776655	1997-08-05	D003
B1508	Rohan Mehta	rohan.mehta@gmail.com	9871234567	2001-09-12	D002
B1509	Anaya Joshi	anaya.joshi@gmail.com	9123456789	2002-10-30	D001

9 rows in set (0.00 sec)

```
mysql> Select * from department;
```

Dep_ID	Department_Name	Location	Budget_Cr
D001	Computer Science	6th Floor	20.00
D002	Electrical Engineering	2nd Floor	10.00
D003	Mechanical Engineering	2nd Floor	5.00
D004	Civil Engineering	3rd Floor	3.00
D005	Electronics Engineering	7th Floor	2.00

5 rows in set (0.00 sec)

```
mysql> Select Name from Student Where Dep_ID=
-> (Select Dep_ID From Department
-> Where Department_Name="Mechanical Engineering");
```

Name
Vivaan Patel
Krishna Iyer

2 rows in set (0.00 sec)

4. Which is the costliest Book in the library.

```
mysql> Select * from book;
```

Book_ID	Copies	Price	Purchase_Date	Edition	MB_ID
B001	50	1550	2023-01-10	1st Edition	1
B002	20	1250	2023-01-15	2nd Edition	2
B003	30	2200	2023-01-20	3rd Edition	3
B004	10	1900	2023-01-25	1st Edition	4
B005	23	1650	2023-02-01	2nd Edition	5
B006	35	1850	2023-02-10	1st Edition	1
B007	25	1600	2023-02-15	2nd Edition	3
B008	40	2000	2023-02-20	3rd Edition	2
B009	22	1700	2023-02-25	1st Edition	2
B010	15	2100	2023-02-28	2nd Edition	5

10 rows in set (0.00 sec)

```
mysql> Select * from book_Master;
```

MB_ID	Title	Author	ISBN	Category	B_Count	Available_Book	Publisher
1	Artificial Intelligence: A Modern Approach	Stuart Russell	9780134610994	Computer Science	30	20	Pearson
2	Introduction to Machine Learning	Stuart Russell	9780262041232	Computer Science	25	15	MIT Press
3	Database System Concepts	Abraham Silberschatz	9780078022159	Computer Science	40	30	McGraw-Hill
4	Operating System Concepts	Abraham Silberschatz	9781119800368	Computer Science	35	25	Wiley
5	Computer Networks	Andrew S. Tanenbaum	9780132126953	Computer Science	28	18	Prentice Hall
6	Modern Operating Systems	Andrew S. Tanenbaum	9780133591623	Computer Science	30	22	Pearson
7	Power Electronics	M.H. Rashid	9789353066211	Electrical Engineering	22	18	Pearson
8	Engineering Thermodynamics	P.K. Nag	9781259829565	Mechanical Engineering	30	20	McGraw-Hill
9	Structural Analysis	R.C. Hibbeler	9780134610980	Civil Engineering	25	18	Pearson
10	Electronic Devices and Circuit Theory	Robert L. Boylestad	9780135026401	Electronics Engineering	28	22	Pearson
11	Python Programming	John Doe	9781234567890	Computer Science	40	30	Pearson
12	Python Programming	Jane Smith	9780987654321	Computer Science	35	25	McGraw-Hill
13	Python Programming	Mike Johnson	9781122334455	Computer Science	50	40	Wiley

13 rows in set (0.00 sec)

```
mysql> Select Title from Book_master Where MB_ID=
-> (Select MB_ID from book where Price=
-> (Select Max(Price) from book));
```

Title
Database System Concepts

1 row in set (0.00 sec)

5. Display the books information costlier than the price of the 'Operating System Concepts' book.

```
mysql> select * from book_master;
```

MB_ID	Title	Author	ISBN	Category	B_Count	Available_Book	Publisher
1	Artificial Intelligence: A Modern Approach	Stuart Russell	9780134610994	Computer Science	30	20	Pearson
2	Introduction to Machine Learning	Stuart Russell	9780262041232	Computer Science	25	15	MIT Press
3	Database System Concepts	Abraham Silberschatz	9780078822159	Computer Science	40	30	McGraw-Hill
4	Operating System Concepts	Abraham Silberschatz	9781119800368	Computer Science	35	25	Wiley
5	Computer Networks	Andrew S. Tanenbaum	9780132126953	Computer Science	28	18	Prentice Hall
6	Modern Operating Systems	Andrew S. Tanenbaum	9780133591623	Computer Science	30	22	Pearson
7	Power Electronics	M.H. Rashid	9789353066211	Electrical Engineering	22	18	Pearson
8	Engineering Thermodynamics	P.K. Nag	9781259029565	Mechanical Engineering	30	20	McGraw-Hill
9	Structural Analysis	R.C. Hibbeler	9780134610980	Civil Engineering	25	18	Pearson
10	Electronic Devices and Circuit Theory	Robert L. Boylestad	9780135026491	Electronics Engineering	28	22	Pearson
11	Python Programming	John Doe	9781234567890	Computer Science	40	30	Pearson
12	Python Programming	Jane Smith	9780987654321	Computer Science	35	25	McGraw-Hill
13	Python Programming	Mike Johnson	9781122334455	Computer Science	50	40	Wiley

```
13 rows in set (0.00 sec)

mysql> select * from book;
```

Book_ID	Copies	Price	Purchase_Date	Edition	MB_ID
B001	50	1550	2023-01-10	1st Edition	1
B002	20	1250	2023-01-15	2nd Edition	2
B003	30	2200	2023-01-20	3rd Edition	3
B004	10	1900	2023-01-25	1st Edition	4
B005	23	1650	2023-02-01	2nd Edition	5
B006	35	1850	2023-02-10	1st Edition	1
B007	25	1600	2023-02-15	2nd Edition	3
B008	40	2000	2023-02-20	3rd Edition	2
B009	22	1700	2023-02-25	1st Edition	2
B010	15	2100	2023-02-28	2nd Edition	5

```
10 rows in set (0.00 sec)

mysql> Select Title from book_master where MB_ID IN
-> (Select MB_ID from book where Price>
-> (Select Price From book Where MB_ID=
-> (Select MB_ID From book_Master Where Title="Operating System Concepts")));
```

Title
Database System Concepts
Introduction to Machine Learning
Computer Networks

```
3 rows in set (0.00 sec)
```

6. List the names of the students who have accessed library book. (without duplicates)

```
mysql> Select * from student;
```

S_ID	Name	Email	Mobile_No	DOB	Dep_ID
B1500	Aarav Sharma	aarav.sharma@gmail.com	9876543210	2000-01-15	D001
B1501	Vivaan Patel	Vivaan@gmail.com	9123456789	1999-02-20	D003
B1503	Vihaan Gupta	vihaan.gupta@gmail.com	9871234567	2002-04-25	D002
B1504	Arjun Rao	arjun.rao@gmail.com	9988776655	1998-05-30	D001
B1505	Sai Kumar	sai.kumar@gmail.com	9876543210	2000-06-15	D005
B1506	Reyansh Singh	reyansh.singh@gmail.com	9123456789	2003-07-20	D004
B1507	Krishna Iyer	krishna.iyer@gmail.com	9988776655	1997-08-05	D003
B1508	Rohan Mehta	rohan.mehta@gmail.com	9871234567	2001-09-12	D002
B1509	Anaya Joshi	anaya.joshi@gmail.com	9123456789	2002-10-30	D001
B1510	Janmesh Raut	janmesh.raut@gmail.com	7414970972	2004-06-07	D001

```
10 rows in set (0.00 sec)

mysql> Select * from book_transaction;
```

Transaction_ID	Sid	Bk_ID	IssuedDate	ReturnedDate
T1001	B1500	B001	2025-01-10	2025-01-20
T1002	B1501	B002	2025-01-15	2025-01-25
T1003	B1503	B003	2025-01-12	2025-01-22
T1004	B1504	B004	2025-01-18	2025-01-28
T1005	B1505	B005	2025-01-20	NULL
T1006	B1506	B007	2025-01-14	2025-01-24
T1007	B1507	B007	2025-01-11	2025-01-21
T1009	B1509	B010	2025-01-13	2025-01-23
T1010	B1503	B003	2025-01-22	NULL
T1011	B1503	B006	2025-02-01	2025-02-05
T1012	B1503	B010	2025-02-03	NULL
T1013	B1500	B002	2025-02-04	2025-02-07
T1014	B1509	B005	2025-02-04	2025-02-11

```
13 rows in set (0.00 sec)

mysql> Select Name from student Where S_ID IN
-> (Select SID From book_transaction);
```

Name
Aarav Sharma
Vivaan Patel
Vihaan Gupta
Arjun Rao
Sai Kumar
Reyansh Singh
Krishna Iyer
Anaya Joshi

```
8 rows in set (0.00 sec)
```


7. List the student Names who have not accessed a single book from Library.

```
mysql> Select * from student;
```

S_ID	Name	Email	Mobile_No	DOB	Dep_ID
B1500	Aarav Sharma	aarav.sharma@gmail.com	9876543210	2000-01-15	D001
B1501	Vivaan Patel	Vivaan@gmail.com	9123456789	1999-02-20	D003
B1503	Vihaan Gupta	vihaan.gupta@gmail.com	9871234567	2002-04-25	D002
B1504	Arjun Rao	arjun.rao@gmail.com	9988776655	1998-05-30	D001
B1505	Sai Kumar	sai.kumar@gmail.com	9876543210	2000-06-15	D005
B1506	Reyansh Singh	reyansh.singh@gmail.com	9123456789	2003-07-20	D004
B1507	Krishna Iyer	krishna.iyer@gmail.com	9988776655	1997-08-05	D003
B1508	Rohan Mehta	rohan.mehta@gmail.com	9871234567	2001-09-12	D002
B1509	Anaya Joshi	anaya.joshi@gmail.com	9123456789	2002-10-30	D001
B1510	Janmesh Raut	janmesh.raut@gmail.com	7414970972	2004-06-07	D001

10 rows in set (0.00 sec)

```
mysql> Select * from book_transaction;
```

Transaction_ID	Sid	Bk_ID	IssuedDate	ReturnedDate
T1001	B1500	B001	2025-01-10	2025-01-20
T1002	B1501	B002	2025-01-15	2025-01-25
T1003	B1503	B003	2025-01-12	2025-01-22
T1004	B1504	B004	2025-01-18	2025-01-28
T1005	B1505	B005	2025-01-20	NULL
T1006	B1506	B007	2025-01-14	2025-01-24
T1007	B1507	B007	2025-01-11	2025-01-21
T1009	B1509	B010	2025-01-13	2025-01-23
T1010	B1503	B003	2025-01-22	NULL
T1011	B1503	B006	2025-02-01	2025-02-05
T1012	B1503	B010	2025-02-03	NULL
T1013	B1500	B002	2025-02-04	2025-02-07
T1014	B1509	B005	2025-02-04	2025-02-11

13 rows in set (0.00 sec)

```
mysql> Select Name from student Where S_ID NOT IN
-> (Select SID From book_transaction);
```

Name
Rohan Mehta
Janmesh Raut

8. Display the book names which are returned today(13-2-2025).(remove duplication)

```
mysql> Select * from book_master;
```

MB_ID	Title	Author	ISBN	Category	B_Count	Available_Book	Publisher
1	Artificial Intelligence: A Modern Approach	Stuart Russell	9780134610994	Computer Science	30	20	Pearson
2	Introduction to Machine Learning	Stuart Russell	9780262041232	Computer Science	25	15	MIT Press
3	Database System Concepts	Abraham Silberschatz	9780078022159	Computer Science	40	30	McGraw-Hill
4	Operating System Concepts	Abraham Silberschatz	9781119800368	Computer Science	35	25	Wiley
5	Computer Networks	Andrew S. Tanenbaum	9780132126953	Computer Science	28	18	Prentice Hall
6	Modern Operating Systems	Andrew S. Tanenbaum	9780133591623	Computer Science	30	22	Pearson
7	Power Electronics	M.H. Rashid	9789353066211	Electrical Engineering	22	18	Pearson
8	Engineering Thermodynamics	P.K. Nag	9781259029565	Mechanical Engineering	30	20	McGraw-Hill
9	Structural Analysis	R.C. Hibbeler	9780134610980	Civil Engineering	25	18	Pearson
10	Electronic Devices and Circuit Theory	Robert L. Boylestad	9780135026491	Electronics Engineering	28	22	Pearson
11	Python Programming	John Doe	9781234567890	Computer Science	40	30	Pearson
12	Python Programming	Jane Smith	9780987654321	Computer Science	35	25	McGraw-Hill
13	Python Programming	Mike Johnson	9781122334455	Computer Science	50	40	Wiley

13 rows in set (0.00 sec)

```
mysql> Select * from book;
```

Book_ID	Copies	Price	Purchase_Date	Edition	MB_ID
8001	50	1550	2023-01-10	1st Edition	1
8002	20	1250	2023-01-15	2nd Edition	2
8003	30	2200	2023-01-20	3rd Edition	3
8004	10	1900	2023-01-25	1st Edition	4
8005	23	1650	2023-02-01	2nd Edition	5
8006	35	1850	2023-02-10	1st Edition	1
8007	25	1600	2023-02-15	2nd Edition	3
8008	40	2000	2023-02-20	3rd Edition	2
8009	22	1700	2023-02-25	1st Edition	2
8010	15	2100	2023-02-28	2nd Edition	5

10 rows in set (0.00 sec)

```
mysql> Select * from book_transaction;
```

Transaction_ID	Sid	Bk_ID	IssuedDate	ReturnedDate
T1001	81500	8001	2025-01-10	2025-01-20
T1002	81501	8002	2025-01-15	2025-01-25
T1003	81503	8003	2025-01-12	2025-01-22
T1004	81504	8004	2025-01-18	2025-01-28
T1005	81505	8005	2025-01-20	NULL
T1006	81506	8007	2025-01-14	2025-01-24
T1007	81507	8007	2025-01-11	2025-01-21
T1009	81509	8010	2025-01-13	2025-01-23
T1010	81503	8003	2025-01-22	NULL
T1011	81503	8006	2025-02-01	2025-02-05
T1012	81503	8010	2025-02-03	NULL
T1013	81500	8002	2025-02-04	2025-02-07
T1014	81509	8005	2025-02-04	2025-02-11
T1015	81501	8004	2025-02-03	2025-02-13

14 rows in set (0.00 sec)

```
mysql> Select Title From book_master Where MB_ID IN
-> (Select MB_ID from book Where Book_ID IN
-> (Select Bk_ID from book_transaction where ReturnedDate=Current_Date));
```

Title
Operating System Concepts

1 row in set (0.00 sec)

9. Display BookNames which are issued today(13-2-2025) .(remove duplication)

```
mysql> select * from book_master;
```

MB_ID	Title	Author	ISBN	Category	B_Count	Available_Book	Publisher
1	Artificial Intelligence: A Modern Approach	Stuart Russell	9780134610994	Computer Science	30	20	Pearson
2	Introduction to Machine Learning	Stuart Russell	9780262041232	Computer Science	25	15	MIT Press
3	Database System Concepts	Abraham Silberschatz	9780078022159	Computer Science	40	30	McGraw-Hill
4	Operating System Concepts	Abraham Silberschatz	9781119800368	Computer Science	35	25	Wiley
5	Computer Networks	Andrew S. Tanenbaum	9780132126953	Computer Science	28	18	Prentice Hall
6	Modern Operating Systems	Andrew S. Tanenbaum	9780133591623	Computer Science	30	22	Pearson
7	Power Electronics	M.H. Rashid	9789353066211	Electrical Engineering	22	18	Pearson
8	Engineering Thermodynamics	P.K. Nag	9781259029565	Mechanical Engineering	30	20	McGraw-Hill
9	Structural Analysis	R.C. Hibbeler	9780134610980	Civil Engineering	25	18	Pearson
10	Electronic Devices and Circuit Theory	Robert L. Boylestad	9780135026491	Electronics Engineering	28	22	Pearson
11	Python Programming	John Doe	9781234567890	Computer Science	40	30	Pearson
12	Python Programming	Jane Smith	9780987654321	Computer Science	35	25	McGraw-Hill
13	Python Programming	Mike Johnson	9781122334455	Computer Science	50	40	Wiley

13 rows in set (0.00 sec)

```
mysql> Select * from book;
```

Book_ID	Copies	Price	Purchase_Date	Edition	MB_ID
8001	50	1550	2023-01-10	1st Edition	1
8002	20	1250	2023-01-15	2nd Edition	2
8003	30	2200	2023-01-20	3rd Edition	3
8004	10	1900	2023-01-25	1st Edition	4
8005	23	1650	2023-02-01	2nd Edition	5
8006	35	1850	2023-02-10	1st Edition	1
8007	25	1600	2023-02-15	2nd Edition	3
8008	40	2000	2023-02-20	3rd Edition	2
8009	22	1700	2023-02-25	1st Edition	2
8010	15	2100	2023-02-28	2nd Edition	5

10 rows in set (0.00 sec)

```
mysql> Select * from book_transaction;
```

Transaction_ID	Sid	Bk_ID	IssuedDate	ReturnedDate
T1001	81500	8001	2025-01-10	2025-01-20
T1002	81501	8002	2025-01-15	2025-01-25
T1003	81503	8003	2025-01-12	2025-01-22
T1004	81504	8004	2025-01-18	2025-01-28
T1005	81505	8005	2025-01-20	NULL
T1006	81506	8007	2025-01-14	2025-01-24
T1007	81507	8007	2025-01-11	2025-01-21
T1009	81509	8010	2025-01-13	2025-01-23
T1010	81503	8003	2025-01-22	NULL
T1011	81503	8006	2025-02-01	2025-02-05
T1012	81503	8010	2025-02-03	NULL
T1013	81500	8002	2025-02-04	2025-02-07
T1014	81509	8005	2025-02-04	2025-02-11
T1015	81501	8004	2025-02-03	2025-02-13
T1016	81505	8005	2025-02-13	NULL

15 rows in set (0.00 sec)

```
mysql> Select Title From book_master Where MB_ID IN
-> (Select MB_ID from book Where Book_ID IN
-> (Select Bk_ID from book_transaction where IssuedDate=Current_Date));
```

Title
Computer Networks

1 row in set (0.00 sec)

10. Display the Book names which are read by student B1503.

```
mysql> Select * from book_master;
```

MB_ID	Title	Author	ISBN	Category	B_Count	Available_Book	Publisher
1	Artificial Intelligence: A Modern Approach	Stuart Russell	9780134610994	Computer Science	30	20	Pearson
2	Introduction to Machine Learning	Stuart Russell	9780262041232	Computer Science	25	15	MIT Press
3	Database System Concepts	Abraham Silberschatz	9780078022159	Computer Science	40	30	McGraw-Hill
4	Operating System Concepts	Abraham Silberschatz	9781119800368	Computer Science	35	25	Wiley
5	Computer Networks	Andrew S. Tanenbaum	9780132126953	Computer Science	28	18	Prentice Hall
6	Modern Operating Systems	Andrew S. Tanenbaum	9780133591623	Computer Science	30	22	Pearson
7	Power Electronics	M.H. Rashid	9789353066211	Electrical Engineering	22	18	Pearson
8	Engineering Thermodynamics	P.K. Nag	9781259029565	Mechanical Engineering	30	20	McGraw-Hill
9	Structural Analysis	R.C. Hibbeler	9780134610980	Civil Engineering	25	18	Pearson
10	Electronic Devices and Circuit Theory	Robert L. Boylestad	9780135026491	Electronics Engineering	28	22	Pearson
11	Python Programming	John Doe	9781234567890	Computer Science	40	30	Pearson
12	Python Programming	Jane Smith	9780987654321	Computer Science	35	25	McGraw-Hill
13	Python Programming	Mike Johnson	9781122334455	Computer Science	50	40	Wiley

13 rows in set (0.00 sec)

```
mysql> Select * from book;
```

Book_ID	Copies	Price	Purchase_Date	Edition	MB_ID
B001	50	1550	2023-01-10	1st Edition	1
B002	20	1250	2023-01-15	2nd Edition	2
B003	30	2200	2023-01-20	3rd Edition	3
B004	10	1900	2023-01-25	1st Edition	4
B005	23	1650	2023-02-01	2nd Edition	5
B006	35	1850	2023-02-10	1st Edition	1
B007	25	1600	2023-02-15	2nd Edition	3
B008	40	2000	2023-02-20	3rd Edition	2
B009	22	1700	2023-02-25	1st Edition	2
B010	15	2100	2023-02-28	2nd Edition	5

10 rows in set (0.00 sec)

```
mysql> Select * from book_transaction;
```

Transaction_ID	Sid	Bk_ID	IssuedDate	ReturnedDate
T1001	B1500	B001	2025-01-10	2025-01-20
T1002	B1501	B002	2025-01-15	2025-01-25
T1003	B1503	B003	2025-01-12	2025-01-22
T1004	B1504	B004	2025-01-18	2025-01-28
T1005	B1505	B005	2025-01-20	NULL
T1006	B1506	B007	2025-01-14	2025-01-24
T1007	B1507	B007	2025-01-11	2025-01-21
T1009	B1509	B010	2025-01-13	2025-01-23
T1010	B1503	B003	2025-01-22	NULL
T1011	B1503	B006	2025-02-01	2025-02-05
T1012	B1503	B010	2025-02-03	NULL
T1013	B1500	B002	2025-02-04	2025-02-07
T1014	B1509	B005	2025-02-04	2025-02-11
T1015	B1501	B004	2025-02-03	2025-02-13
T1016	B1505	B005	2025-02-13	NULL

15 rows in set (0.00 sec)

```
mysql> Select * from student;
```

S_ID	Name	Email	Mobile_No	DOB	Dep_ID
B1500	Aarav Sharma	aarav.sharma@gmail.com	9876543210	2000-01-15	D001
B1501	Vivaan Patel	Vivaan@gmail.com	9123456789	1999-02-20	D003
B1503	Vihaan Gupta	vihaan.gupta@gmail.com	9871234567	2002-04-25	D002
B1504	Arjun Rao	arjun.rao@gmail.com	9988776655	1998-05-30	D001
B1505	Sai Kumar	sai.kumar@gmail.com	9876543210	2000-06-15	D005
B1506	Reyansh Singh	reyansh.singh@gmail.com	9123456789	2003-07-20	D004
B1507	Krishna Iyer	krishna.iyer@gmail.com	9988776655	1997-08-05	D003
B1508	Rohan Mehta	rohan.mehta@gmail.com	9871234567	2001-09-12	D002
B1509	Anaya Joshi	anaya.joshi@gmail.com	9123456789	2002-10-30	D001
B1510	Janmesh Raut	janmesh.raut@gmail.com	7414970972	2004-06-07	D001

10 rows in set (0.00 sec)

```
mysql> Select Title from book_Master Where MB_ID IN
-> (Select MB_ID from book Where Book_ID IN
-> (Select Bk_ID from book_Transaction Where SID="B1503"));
```

Title
Database System Concepts
Artificial Intelligence: A Modern Approach
Computer Networks

3 rows in set (0.00 sec)

11. Display the Book names which are read by “Sai Kumar”.

```
mysql> Select * from book_master;
```

MB_ID	Title	Author	ISBN	Category	B_Count	Available_Book	Publisher
1	Artificial Intelligence: A Modern Approach	Stuart Russell	9780134610994	Computer Science	30	20	Pearson
2	Introduction to Machine Learning	Stuart Russell	9780262041232	Computer Science	25	15	MIT Press
3	Database System Concepts	Abraham Silberschatz	9780078022159	Computer Science	40	30	McGraw-Hill
4	Operating System Concepts	Abraham Silberschatz	978119800368	Computer Science	35	25	Wiley
5	Computer Networks	Andrew S. Tanenbaum	9780132126953	Computer Science	28	18	Prentice Hall
6	Modern Operating Systems	Andrew S. Tanenbaum	9780133591623	Computer Science	30	22	Pearson
7	Power Electronics	M.H. Rashid	9789353066211	Electrical Engineering	22	18	Pearson
8	Engineering Thermodynamics	P.K. Nag	9781259029565	Mechanical Engineering	30	20	McGraw-Hill
9	Structural Analysis	R.C. Hibbeler	9780134610980	Civil Engineering	25	18	Pearson
10	Electronic Devices and Circuit Theory	Robert L. Boylestad	9780135026491	Electronics Engineering	28	22	Pearson
11	Python Programming	John Doe	9781234567890	Computer Science	40	30	Pearson
12	Python Programming	Jane Smith	9780987654321	Computer Science	35	25	McGraw-Hill
13	Python Programming	Mike Johnson	9781122334455	Computer Science	50	40	Wiley

13 rows in set (0.00 sec)

```
mysql> Select * from book;
```

Book_ID	Copies	Price	Purchase_Date	Edition	MB_ID
8001	50	1550	2023-01-10	1st Edition	1
8002	20	1250	2023-01-15	2nd Edition	2
8003	30	2200	2023-01-20	3rd Edition	3
8004	10	1900	2023-01-25	1st Edition	4
8005	23	1650	2023-02-01	2nd Edition	5
8006	35	1850	2023-02-10	1st Edition	1
8007	25	1600	2023-02-15	2nd Edition	3
8008	40	2000	2023-02-20	3rd Edition	2
8009	22	1700	2023-02-25	1st Edition	2
8010	15	2100	2023-02-28	2nd Edition	5

10 rows in set (0.00 sec)

```
mysql> Select * from book_transaction;
```

Transaction_ID	Sid	Bk_ID	IssuedDate	ReturnedDate
T1001	B1500	8001	2025-01-10	2025-01-20
T1002	B1501	8002	2025-01-15	2025-01-25
T1003	B1503	8003	2025-01-12	2025-01-22
T1004	B1504	8004	2025-01-18	2025-01-28
T1005	B1505	8005	2025-01-20	NULL
T1006	B1506	8007	2025-01-14	2025-01-24
T1007	B1507	8007	2025-01-11	2025-01-21
T1009	B1509	8010	2025-01-13	2025-01-23
T1010	B1503	8003	2025-01-22	NULL
T1011	B1503	8006	2025-02-01	2025-02-05
T1012	B1503	8010	2025-02-03	NULL
T1013	B1500	8002	2025-02-04	2025-02-07
T1014	B1509	8005	2025-02-04	2025-02-11
T1015	B1501	8004	2025-02-03	2025-02-13
T1016	B1505	8006	2025-02-13	NULL

15 rows in set (0.00 sec)

```
mysql> Select * from student;
```

S_ID	Name	Email	Mobile_No	DOB	Dep_ID
B1500	Aarav Sharma	aarav.sharma@gmail.com	9876543210	2000-01-15	D001
B1501	Vivaan Patel	Vivaan@gmail.com	9123456789	1999-02-20	D003
B1503	Vihaan Gupta	vihaan.gupta@gmail.com	9871234567	2002-04-25	D002
B1504	Arjun Rao	arjun.rao@gmail.com	9988776655	1998-05-30	D001
B1505	Sai Kumar	sai.kumar@gmail.com	9876543210	2000-06-15	D005
B1506	Reyansh Singh	reyansh.singh@gmail.com	9123456789	2003-07-20	D004
B1507	Krishna Iyer	krishna.iyer@gmail.com	9988776655	1997-08-05	D003
B1508	Rohan Mehta	rohan.mehta@gmail.com	9871234567	2001-09-12	D002
B1509	Anaya Joshi	anaya.joshi@gmail.com	9123456789	2002-10-30	D001
B1510	Janmesh Raut	janmesh.raut@gmail.com	7414970972	2004-06-07	D001

10 rows in set (0.00 sec)

```
mysql> Select Title from book_Master Where MB_ID IN
-> (Select MB_ID from book Where Book_ID IN
-> (Select Bk_ID from book_Transaction Where SID=
-> (Select S_ID from Student Where Name="Sai Kumar")));
```

Title
Computer Networks
Artificial Intelligence: A Modern Approach

2 rows in set (0.00 sec)

12. Find out the department of Janmesh Raut.

```
mysql> Select * from student;
```

S_ID	Name	Email	Mobile_No	DOB	Dep_ID
B1500	Aarav Sharma	aarav.sharma@gmail.com	9876543210	2000-01-15	D001
B1501	Vivaan Patel	Vivaan@gmail.com	9123456789	1999-02-20	D003
B1503	Vihaan Gupta	vihaan.gupta@gmail.com	9871234567	2002-04-25	D002
B1504	Arjun Rao	arjun.rao@gmail.com	9988776655	1998-05-30	D001
B1505	Sai Kumar	sai.kumar@gmail.com	9876543210	2000-06-15	D005
B1506	Reyansh Singh	reyansh.singh@gmail.com	9123456789	2003-07-20	D004
B1507	Krishna Iyer	krishna.iyer@gmail.com	9988776655	1997-08-05	D003
B1508	Rohan Mehta	rohan.mehta@gmail.com	9871234567	2001-09-12	D002
B1509	Anaya Joshi	anaya.joshi@gmail.com	9123456789	2002-10-30	D001
B1510	Janmesh Raut	janmesh.raut@gmail.com	7414970972	2004-06-07	D001

10 rows in set (0.00 sec)

```
mysql> Select * from department;
```

Dep_ID	Department_Name	Location	Budget_Cr
D001	Computer Science	6th Floor	20.00
D002	Electrical Engineering	2nd Floor	10.00
D003	Mechanical Engineering	2nd Floor	5.00
D004	Civil Engineering	3rd Floor	3.00
D005	Electronics Engineering	7th Floor	2.00

5 rows in set (0.00 sec)

```
mysql> Select Department_Name from Department Where Dep_ID=
-> (Select Dep_ID from Student Where Name="Janmesh Raut");
```

Department_Name
Computer Science

1 row in set (0.00 sec)

13. Find out which Books have been returned most recently.

```
mysql> Select * from book_master;
```

MB_ID	Title	Author	ISBN	Category	B_Count	Available_Book	Publisher
1	Artificial Intelligence: A Modern Approach	Stuart Russell	9780134610994	Computer Science	30	20	Pearson
2	Introduction to Machine Learning	Stuart Russell	9780262041232	Computer Science	25	15	MIT Press
3	Database System Concepts	Abraham Silberschatz	9780078022159	Computer Science	40	30	McGraw-Hill
4	Operating System Concepts	Abraham Silberschatz	9781119800368	Computer Science	35	25	Wiley
5	Computer Networks	Andrew S. Tanenbaum	9780132126953	Computer Science	28	18	Prentice Hall
6	Modern Operating Systems	Andrew S. Tanenbaum	9780133591623	Computer Science	30	22	Pearson
7	Power Electronics	M.H. Rashid	9789353066211	Electrical Engineering	22	18	Pearson
8	Engineering Thermodynamics	P.K. Nag	9781259029565	Mechanical Engineering	30	20	McGraw-Hill
9	Structural Analysis	R.C. Hibbeler	9780134610980	Civil Engineering	25	18	Pearson
10	Electronic Devices and Circuit Theory	Robert L. Boylestad	9780135026491	Electronics Engineering	28	22	Pearson
11	Python Programming	John Doe	9781234567890	Computer Science	40	30	Pearson
12	Python Programming	Jane Smith	9780987654321	Computer Science	35	25	McGraw-Hill
13	Python Programming	Mike Johnson	9781122334455	Computer Science	50	40	Wiley

13 rows in set (0.00 sec)

```
mysql> Select * from book;
```

Book_ID	Copies	Price	Purchase_Date	Edition	MB_ID
8001	50	1550	2023-01-10	1st Edition	1
8002	20	1250	2023-01-15	2nd Edition	2
8003	30	2200	2023-01-20	3rd Edition	3
8004	10	1900	2023-01-25	1st Edition	4
8005	23	1650	2023-02-01	2nd Edition	5
8006	35	1850	2023-02-10	1st Edition	1
8007	25	1600	2023-02-15	2nd Edition	3
8008	40	2000	2023-02-20	3rd Edition	2
8009	22	1700	2023-02-25	1st Edition	2
8010	15	2100	2023-02-28	2nd Edition	5

10 rows in set (0.00 sec)

```
mysql> Select * from book_transaction;
```

Transaction_ID	Sid	Bk_ID	IssuedDate	ReturnedDate
T1001	B1500	B001	2025-01-10	2025-01-20
T1002	B1501	B002	2025-01-15	2025-01-25
T1003	B1503	B003	2025-01-12	2025-01-22
T1004	B1504	B004	2025-01-18	2025-01-28
T1005	B1505	B005	2025-01-20	NULL
T1006	B1506	B007	2025-01-14	2025-01-24
T1007	B1507	B007	2025-01-11	2025-01-21
T1009	B1509	B010	2025-01-13	2025-01-23
T1010	B1503	B003	2025-01-22	NULL
T1011	B1503	B006	2025-02-01	2025-02-05
T1012	B1503	B010	2025-02-03	NULL
T1013	B1500	B002	2025-02-04	2025-02-07
T1014	B1509	B005	2025-02-04	2025-02-11
T1015	B1501	B004	2025-02-03	2025-02-13
T1016	B1505	B006	2025-02-13	NULL

```
15 rows in set (0.00 sec)
```

```
mysql> Select * from book_master where MB_ID IN
-> (Select MB_ID from book where Book_ID IN
-> (Select Bk_ID from book_transaction where ReturnedDate=
-> (Select MAX(ReturnedDate) from book_transaction)));
```

MB_ID	Title	Author	ISBN	Category	B_Count	Available_Book	Publisher
4	Operating System Concepts	Abraham Silberschatz	9781119800368	Computer Science	35	25	Wiley

```
1 row in set (0.00 sec)
```

15. What is the name of recently purchased book.

```
mysql> Select * from book_master;
```

MB_ID	Title	Author	ISBN	Category	B_Count	Available_Book	Publisher
1	Artificial Intelligence: A Modern Approach	Stuart Russell	9780134610994	Computer Science	30	20	Pearson
2	Introduction to Machine Learning	Stuart Russell	9780262041232	Computer Science	25	15	MIT Press
3	Database System Concepts	Abraham Silberschatz	97800778022159	Computer Science	40	30	McGraw-Hill
4	Operating System Concepts	Abraham Silberschatz	9781119800368	Computer Science	35	25	Wiley
5	Computer Networks	Andrew S. Tanenbaum	9780132126953	Computer Science	28	18	Prentice Hall
6	Modern Operating Systems	Andrew S. Tanenbaum	9780133591623	Computer Science	30	22	Pearson
7	Power Electronics	M.H. Rashid	9789353066211	Electrical Engineering	22	18	Pearson
8	Engineering Thermodynamics	P.K. Nag	9781259029565	Mechanical Engineering	30	20	McGraw-Hill
9	Structural Analysis	R.C. Hibbeler	9780134610980	Civil Engineering	25	18	Pearson
10	Electronic Devices and Circuit Theory	Robert L. Boylestad	97801335026491	Electronics Engineering	28	22	Pearson
11	Python Programming	John Doe	9781234567890	Computer Science	40	30	Pearson
12	Python Programming	Jane Smith	9780987654321	Computer Science	35	25	McGraw-Hill
13	Python Programming	Mike Johnson	9781122334455	Computer Science	50	40	Wiley

```
13 rows in set (0.00 sec)
```

```
mysql> Select * from book;
```

Book_ID	Copies	Price	Purchase_Date	Edition	MB_ID
B001	50	1550	2023-01-10	1st Edition	1
B002	20	1250	2023-01-15	2nd Edition	2
B003	30	2200	2023-01-20	3rd Edition	3
B004	10	1900	2023-01-25	1st Edition	4
B005	23	1650	2023-02-01	2nd Edition	5
B006	35	1850	2023-02-10	1st Edition	1
B007	25	1600	2023-02-15	2nd Edition	3
B008	40	2000	2023-02-20	3rd Edition	2
B009	22	1700	2023-02-25	1st Edition	8
B010	15	2100	2023-02-28	2nd Edition	5
B011	40	2000	2023-03-05	1st Edition	6
B012	30	1800	2023-03-10	2nd Edition	7
B013	25	1900	2023-03-15	3rd Edition	8
B014	22	1700	2023-03-20	1st Edition	9
B015	15	2100	2023-03-25	2nd Edition	10
B016	20	2100	2023-04-01	1st Edition	6
B017	30	2200	2023-04-05	2nd Edition	7
B018	35	2000	2023-04-10	1st Edition	8
B019	40	2300	2023-04-15	3rd Edition	9
B020	25	1800	2023-04-20	2nd Edition	10
B021	30	2400	2023-04-25	1st Edition	11
B022	25	2200	2023-04-30	2nd Edition	12
B023	40	2500	2023-05-05	3rd Edition	13
B024	35	2100	2023-05-10	1st Edition	11
B025	50	2300	2023-05-15	2nd Edition	12
B026	20	2400	2023-05-20	3rd Edition	13
B027	30	2500	2023-05-25	1st Edition	11
B028	40	2600	2023-06-05	2nd Edition	5
B029	25	2700	2023-06-05	3rd Edition	1

```
29 rows in set (0.00 sec)
```

```
mysql> Select Title from book_master Where MB_ID IN
-> (Select MB_ID from Book Where Purchase_Date=
-> (Select MAX(Purchase_Date) from book));
```

Title
Computer Networks
Artificial Intelligence: A Modern Approach

```
2 rows in set (0.00 sec)
```

16. Which Books(name) are not issued at all.

```
mysql> Select * from book_Master;
```

MB_ID	Title	Author	ISBN	Category	B_Count	Available_Book	Publisher
1	Artificial Intelligence: A Modern Approach	Stuart Russell	9780134610994	Computer Science	30	20	Pearson
2	Introduction to Machine Learning	Stuart Russell	9780262041232	Computer Science	25	15	MIT Press
3	Database System Concepts	Abraham Silberschatz	9780078022159	Computer Science	40	30	McGraw-Hill
4	Operating System Concepts	Abraham Silberschatz	9781119800368	Computer Science	35	25	Wiley
5	Computer Networks	Andrew S. Tanenbaum	9780132126953	Computer Science	28	18	Prentice Hall
6	Modern Operating Systems	Andrew S. Tanenbaum	9780133591623	Computer Science	30	22	Pearson
7	Power Electronics	M.H. Rashid	9789353066211	Electrical Engineering	22	18	Pearson
8	Engineering Thermodynamics	P.K. Nag	9781259029565	Mechanical Engineering	30	20	McGraw-Hill
9	Structural Analysis	R.C. Hibbeler	9780134610980	Civil Engineering	25	18	Pearson
10	Electronic Devices and Circuit Theory	Robert L. Boylestad	9780135026491	Electronics Engineering	28	22	Pearson
11	Python Programming	John Doe	9781234567890	Computer Science	40	30	Pearson
12	Python Programming	Jane Smith	9780987654321	Computer Science	35	25	McGraw-Hill
13	Python Programming	Mike Johnson	9781122334455	Computer Science	50	40	Wiley

13 rows in set (0.00 sec)

```
mysql> Select * from book_transaction;
```

Transaction_ID	Sid	Bk_ID	IssuedDate	ReturnedDate
T1001	B1500	B001	2025-01-10	2025-01-20
T1002	B1501	B002	2025-01-15	2025-01-25
T1003	B1503	B003	2025-01-12	2025-01-22
T1004	B1504	B004	2025-01-18	2025-01-28
T1005	B1505	B005	2025-01-20	NULL
T1006	B1506	B007	2025-01-14	2025-01-24
T1007	B1507	B007	2025-01-11	2025-01-21
T1009	B1509	B010	2025-01-13	2025-01-23
T1010	B1503	B003	2025-01-22	NULL
T1011	B1503	B006	2025-02-01	2025-02-05
T1012	B1503	B010	2025-02-03	NULL
T1013	B1500	B002	2025-02-04	2025-02-07
T1014	B1509	B005	2025-02-04	2025-02-11
T1015	B1501	B004	2025-02-03	2025-02-13
T1016	B1505	B006	2025-02-13	2025-02-15
T1017	B1507	B001	2025-02-14	2025-02-15
T1018	B1503	B002	2025-02-14	2025-02-16
T1019	B1505	B003	2025-02-14	2025-02-17
T1020	B1504	B004	2025-02-14	2025-02-16
T1021	B1506	B006	2025-02-14	NULL

20 rows in set (0.00 sec)

```
mysql> Select * from book;
```

Book_ID	Copies	Price	Purchase_Date	Edition	MB_ID
B001	50	1550	2023-01-10	1st Edition	1
B002	20	1250	2023-01-15	2nd Edition	2
B003	30	2200	2023-01-20	3rd Edition	3
B004	10	1900	2023-01-25	1st Edition	4
B005	23	1650	2023-02-01	2nd Edition	5
B006	35	1850	2023-02-10	1st Edition	1
B007	25	1600	2023-02-15	2nd Edition	3
B008	40	2000	2023-02-20	3rd Edition	2
B009	22	1700	2023-02-25	1st Edition	8
B010	15	2100	2023-02-28	2nd Edition	5
B011	40	2000	2023-03-05	1st Edition	6
B012	30	1800	2023-03-10	2nd Edition	7
B013	25	1900	2023-03-15	3rd Edition	8
B014	22	1700	2023-03-20	1st Edition	9
B015	15	2100	2023-03-25	2nd Edition	10
B016	20	2100	2023-04-01	1st Edition	6
B017	30	2200	2023-04-05	2nd Edition	7
B018	35	2000	2023-04-10	1st Edition	8
B019	40	2300	2023-04-15	3rd Edition	9
B020	25	1800	2023-04-20	2nd Edition	10
B021	30	2400	2023-04-25	1st Edition	11
B022	25	2200	2023-04-30	2nd Edition	12
B023	40	2500	2023-05-05	3rd Edition	13
B024	35	2100	2023-05-10	1st Edition	11
B025	50	2300	2023-05-15	2nd Edition	12
B026	20	2400	2023-05-20	3rd Edition	13
B027	30	2500	2023-05-25	1st Edition	11
B028	40	2600	2023-06-05	2nd Edition	5
B029	25	2700	2023-06-05	3rd Edition	1

29 rows in set (0.00 sec)


```
mysql> SELECT Title
-> FROM book_master
-> WHERE MB_ID NOT IN (SELECT DISTINCT MB_ID FROM book WHERE Book_ID IN (SELECT DISTINCT Bk_ID FROM book_transaction));
```

Title
Modern Operating Systems
Power Electronics
Engineering Thermodynamics
Structural Analysis
Electronic Devices and Circuit Theory
Python Programming
Python Programming
Python Programming

8 rows in set (0.00 sec)

17. Find out which category of books which is most popular.(issued most)

```
mysql> select * from book_Master;
```

MB_ID	Title	Author	ISBN	Category	B_Count	Available_Book	Publisher
1	Artificial Intelligence: A Modern Approach	Stuart Russell	9780134610994	Computer Science	30	20	Pearson
2	Introduction to Machine Learning	Stuart Russell	9780262041232	Computer Science	25	15	MIT Press
3	Database System Concepts	Abraham Silberschatz	9780077082215	Computer Science	40	30	McGraw-Hill
4	Operating System Concepts	Abraham Silberschatz	9781119800368	Computer Science	35	25	Wiley
5	Computer Networks	Andrew S. Tanenbaum	9780132126953	Computer Science	28	18	Prentice Hall
6	Modern Operating Systems	Andrew S. Tanenbaum	9780133591623	Computer Science	30	22	Pearson
7	Power Electronics	M.H. Rashid	9789353066211	Electrical Engineering	22	18	Pearson
8	Engineering Thermodynamics	P.K. Nag	9781259029565	Mechanical Engineering	30	20	McGraw-Hill
9	Structural Analysis	R.C. Hibbeler	9780134610980	Civil Engineering	25	18	Pearson
10	Electronic Devices and Circuit Theory	Robert L. Boylestad	9780135026491	Electronics Engineering	28	22	Pearson
11	Python Programming	John Doe	9781234567890	Computer Science	40	30	Pearson
12	Python Programming	Jane Smith	9780987654321	Computer Science	35	25	McGraw-Hill
13	Python Programming	Mike Johnson	9781122334455	Computer Science	50	40	Wiley

13 rows in set (0.00 sec)

```
mysql> select * from book;
```

Book_ID	Copies	Price	Purchase_Date	Edition	MB_ID
B001	50	1550	2023-01-10	1st Edition	1
B002	20	1250	2023-01-15	2nd Edition	2
B003	30	2200	2023-01-20	3rd Edition	3
B004	10	1900	2023-01-25	1st Edition	4
B005	23	1650	2023-02-01	2nd Edition	5
B006	35	1850	2023-02-10	1st Edition	1
B007	25	1600	2023-02-15	2nd Edition	3
B008	40	2000	2023-02-20	3rd Edition	2
B009	22	1700	2023-02-25	1st Edition	8
B010	15	2100	2023-02-28	2nd Edition	5
B011	40	2000	2023-03-05	1st Edition	6
B012	30	1800	2023-03-10	2nd Edition	7
B013	25	1900	2023-03-15	3rd Edition	8
B014	22	1700	2023-03-20	1st Edition	9
B015	15	2100	2023-03-25	2nd Edition	10
B016	20	2100	2023-04-01	1st Edition	6
B017	30	2200	2023-04-05	2nd Edition	7
B018	35	2000	2023-04-10	1st Edition	8
B019	40	2300	2023-04-15	3rd Edition	9
B020	25	1800	2023-04-20	2nd Edition	10
B021	30	2400	2023-04-25	1st Edition	11
B022	25	2200	2023-04-30	2nd Edition	12
B023	40	2500	2023-05-05	3rd Edition	13
B024	35	2100	2023-05-10	1st Edition	11
B025	50	2300	2023-05-15	2nd Edition	12
B026	20	2400	2023-05-20	3rd Edition	13
B027	30	2500	2023-05-25	1st Edition	11
B028	40	2600	2023-05-30	2nd Edition	5
B029	25	2700	2023-06-05	3rd Edition	1

29 rows in set (0.00 sec)

```
mysql> select * from book_Transaction;
```

Transaction_ID	Sid	Bk_ID	IssuedDate	ReturnedDate
T1001	B1500	B001	2025-01-10	2025-01-20
T1002	B1501	B002	2025-01-15	2025-01-25
T1003	B1503	B003	2025-01-12	2025-01-22
T1004	B1504	B004	2025-01-18	2025-01-28
T1005	B1505	B005	2025-01-20	NULL
T1006	B1506	B007	2025-01-14	2025-01-24
T1007	B1507	B007	2025-01-11	2025-01-21
T1009	B1509	B010	2025-01-13	2025-01-23
T1010	B1503	B003	2025-01-22	NULL
T1011	B1503	B006	2025-02-01	2025-02-05
T1012	B1503	B010	2025-02-03	NULL
T1013	B1500	B002	2025-02-04	2025-02-07
T1014	B1509	B005	2025-02-04	2025-02-11
T1015	B1501	B004	2025-02-03	2025-02-13
T1016	B1505	B006	2025-02-13	NULL

15 rows in set (0.00 sec)

```
mysql> select Category From Book_Master
-> Where MB_ID IN
-> (select MB_ID from book Where Book_ID=
-> (select Bk_ID from book_Transaction group by Bk_ID Order by Count(IssuedDate) DESC Limit 1));
```

Category
Computer Science

1 row in set (0.00 sec)

19. Which student visits library more frequently(assuming he issues a book every time he visits the library)

```
mysql> Select * from student;
```

S_ID	Name	Email	Mobile_No	DOB	Dep_ID
B1500	Aarav Sharma	aarav.sharma@gmail.com	9876543210	2000-01-15	D001
B1501	Vivaan Patel	Vivaan@gmail.com	9123456789	1999-02-20	D003
B1503	Vihaan Gupta	vihaan.gupta@gmail.com	9871234567	2002-04-25	D002
B1504	Arjun Rao	arjun.rao@gmail.com	9988776655	1998-05-30	D001
B1505	Sai Kumar	sai.kumar@gmail.com	9876543210	2000-06-15	D005
B1506	Reyansh Singh	reyansh.singh@gmail.com	9123456789	2003-07-20	D004
B1507	Krishna Iyer	krishna.iyer@gmail.com	9988776655	1997-08-05	D003
B1508	Rohan Mehta	rohan.mehta@gmail.com	9871234567	2001-09-12	D002
B1509	Anaya Joshi	anaya.joshi@gmail.com	9123456789	2002-10-30	D003
B1510	Janmesh Raut	janmesh.raut@gmail.com	7414970972	2004-06-07	D001

```
10 rows in set (0.00 sec)
```

```
mysql> Select * from book_Transaction;
```

Transaction_ID	Sid	Bk_ID	IssuedDate	ReturnedDate
T1001	B1500	B001	2025-01-10	2025-01-20
T1002	B1501	B002	2025-01-15	2025-01-25
T1003	B1503	B003	2025-01-12	2025-01-22
T1004	B1504	B004	2025-01-18	2025-01-28
T1005	B1505	B005	2025-01-20	NULL
T1006	B1506	B007	2025-01-14	2025-01-24
T1007	B1507	B007	2025-01-11	2025-01-21
T1009	B1509	B010	2025-01-13	2025-01-23
T1010	B1503	B003	2025-01-22	NULL
T1011	B1503	B006	2025-02-01	2025-02-05
T1012	B1503	B010	2025-02-03	NULL
T1013	B1500	B002	2025-02-04	2025-02-07
T1014	B1509	B005	2025-02-04	2025-02-11
T1015	B1501	B004	2025-02-03	2025-02-13
T1016	B1505	B006	2025-02-13	2025-02-15
T1017	B1507	B001	2025-02-14	2025-02-15
T1018	B1503	B002	2025-02-14	2025-02-16
T1019	B1505	B003	2025-02-14	2025-02-17
T1020	B1504	B004	2025-02-14	2025-02-16
T1021	B1506	B006	2025-02-14	NULL

```
20 rows in set (0.00 sec)
```

```
mysql> Select Name from Student Where S_ID=
-> (Select Sid from book_Transaction Group by Sid Order By Count(*) Desc Limit 1);
```

Name
Vihaan Gupta

```
1 row in set (0.00 sec)
```

Conclusion:

This assignment deepens our understanding of nested queries using DDL and DML in MySQL. We explored constraints, foreign key dependencies, and complex queries to retrieve meaningful insights. Key learnings include identifying unissued books, tracking frequent library users, filtering data based on conditions, and handling duplicate records, reinforcing practical database management skills.