TRIDENT MCA LIBRARY MANAGEMENT SYSTEM

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SQL PROJECT

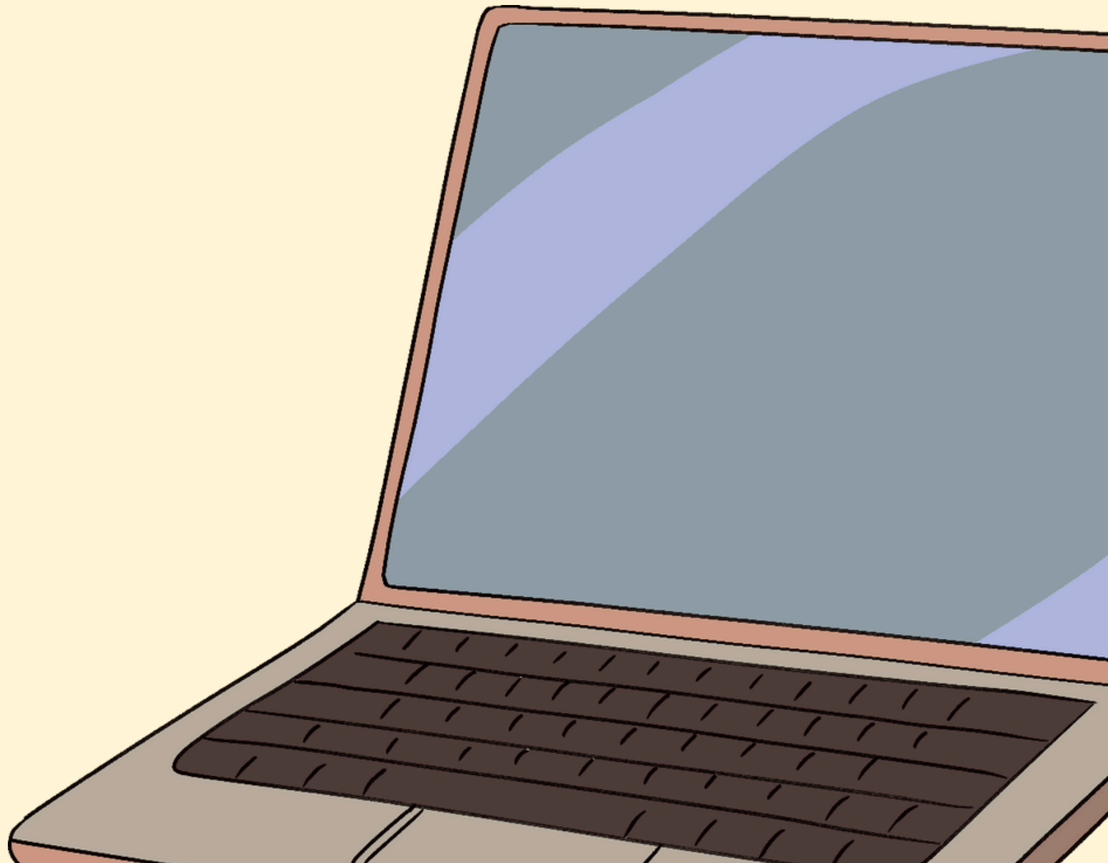
HELLO, I'M SUPRIYA PANIGRAHI, AND I'VE APPLIED SQL QUERIES TO ADDRESS INQUIRIES PERTAINING TO THE MANAGEMENT OF MY DEPARTMENTAL LIBRARY.

OBJECTIVE

LEVERAGING MYSQL DATABASE FOR LIBRARY MANAGEMENT

SQL SOLUTIONS FOR LIBRARY MANAGEMENT QUERIES

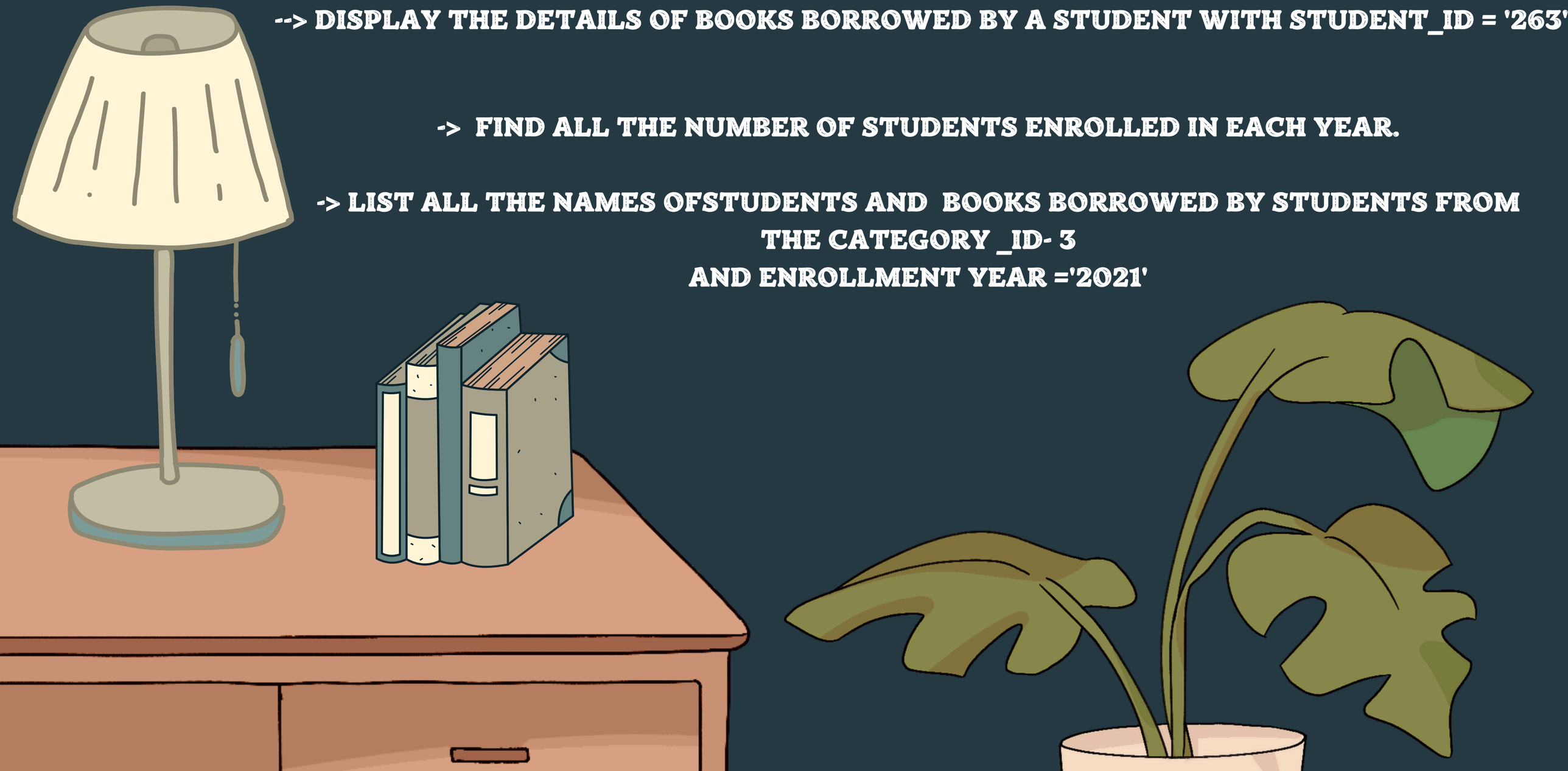
- Select first 5 students who enrolled in the year 2020.
- List all the names and email adress of the student where first_name orlast_name starts with 'A'.
- Find all the book published by'Pearson'.
- Show the name of the HOD of the MCA Department.
- List all the Category of Books available in the libraray.



--> DISPLAY THE DETAILS OF BOOKS BORROWED BY A STUDENT WITH STUDENT_ID = '263'

-> FIND ALL THE NUMBER OF STUDENTS ENROLLED IN EACH YEAR.

-> LIST ALL THE NAMES OFSTUDENTS AND BOOKS BORROWED BY STUDENTS FROM THE CATEGORY _ID- 3
AND ENROLLMENT YEAR ='2021'



-> GET THE NAMES OF THE STUDENTS WHO HAVE BORROWED BOOKS MORE THAN 2 TIMES

->FIND THE TOTAL NUMBER OF BOOKS IN EACH CATEGORY

-> LIST THE NAMES OF A STAFF MEMBERS ALONG WITH THE TITLES OF BOOKS THEY HAVE PROCESSED FOR BORROWING .

-> RETRIEVE THE DETAILS OF BOOKS BORROWED BY STUDENTS THAT WERE RETURNED AFTER 10 DAYS FROM THE BORROW DATE. DISPLAY THE BOOK ID, BOOK NAME, STUDENT ID, AND STUDENT NAME
ALONG WITH THE TOTAL COUNT OF SUCH INSTANCES FOR EACH BOOK.

SELECT FIRST 5 STUDENTS WHO ENROLLED IN THE YEAR 2020.

```sql
SELECT
    *
FROM
    students
WHERE
    enrollment_year = 2020
ORDER BY student_id
LIMIT 5;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: | Fetch rov

Student_ID	First_Name	Last_Name	Email	Enrollment_Year	Course	Year
286	Adyesha	Tripathi	adyeshatripathy01@gmail.com	2020	MCA	2nd
287	Lopamudra	Pradhan	lopamudrapradhan009@gmail.com	2020	MCA	2nd
288	Sibashis	Pal	palsubh@gmail.com	2020	MCA	2nd
289	Ananya	Bal	anibal@gmail.com	2020	MCA	2nd
290	Abhijeet	Sahoo	abhisahoo@gmail.com	2020	MCA	2nd
NULL	NULL	NULL	NULL	NULL	NULL	NULL

LIST ALL THE NAMES AND EMAIL ADRESS OF THE STUDENT WHERE FIRST_NAME OR LAST_NAME STARTS WITH 'A'.

```sql
SELECT
    first_name, last_name, email
FROM
    students
WHERE
    first_name LIKE 'A%'
        OR last_name LIKE 'A%';
```

	first_name	last_name	email
	Ayesha	Firdus	ayeshafirdus23@gmail.com
	Anurag	Sathpathy	anuragsathpathy04@gmail.com
	Adyesha	Tripathi	adyeshatripathy01@gmail.com
	Ananya	Bal	anibal@gmail.com
	Abhijeet	Sahoo	abhisahoo@gmail.com
	Ankita	Prusty	ankita34@gmail.com
	Ashis	Sharma	ashis5@gmail.com
	Aniket	Sharma	aniketsharma17@gmail.com

FIND ALL THE BOOK PUBLISHED BY 'PEARSON'.

```sql
SELECT
    *
FROM
    books
WHERE
    publisher = 'Pearson';
```

Filter Rows: | Edit: | Export/Impo

id	title	author	publisher	year_pu
	Computer Networks	Andrew S. Tanenbaum	Pearson	2016
	Software Engineering	Ian Sommerville	Pearson	2017
	Distributed System	Â George Coulouris	Pearson	2010
	Compiler Design	Alfred V. Aho	Pearson	2013
	C++Programming Language	Dennis Ritchie	Pearson	1988

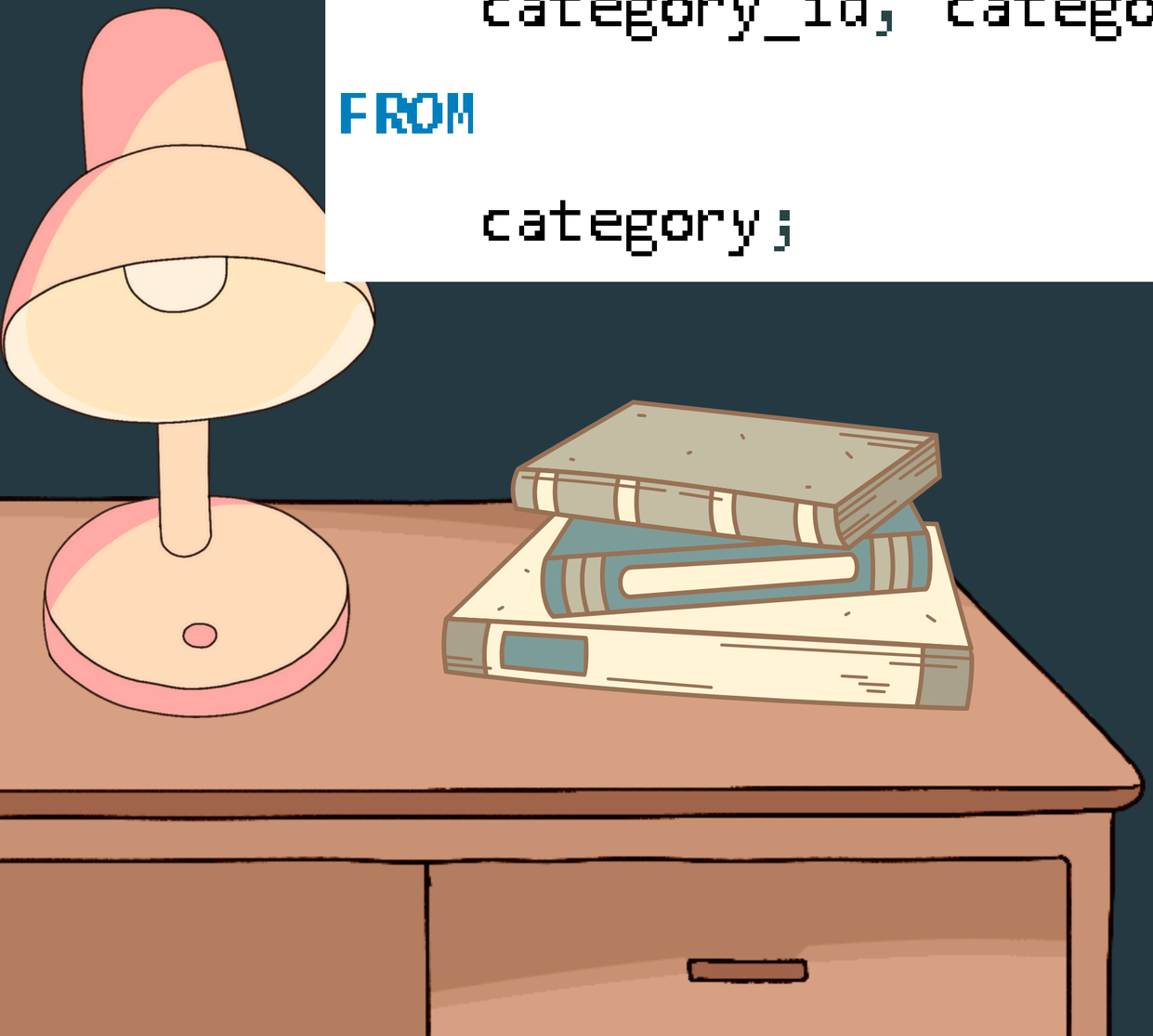
SHOW THE NAME OF THE HOD OF THE MCA DEPARTMENT.

```
SELECT
    first_name, last_name, desig
FROM
    staff
WHERE
    staff_id = 1 AND desig = 'HOD'
```

first_name	last_name	desig
Kaustav	Dev	HOD

LIST ALL THE CATEGORY OF BOOKS AVAILABLE IN THE LIBRARAY.

```sql
SELECT
    category_id, category_name
FROM
    category;
```



category_id	category_name
1	Architecure_self
2	Programming_Self
3	Data_Structure_self
4	Reasoning_self
5	Quantitative_self
6	Logical_self

DISPLAY THE DETAILS OF BOOKS BORROWED BY A STUDENT WITH STUDENT_ID = '263'.

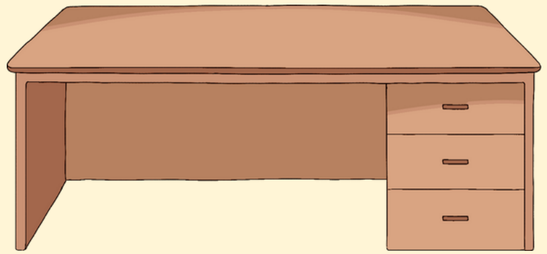
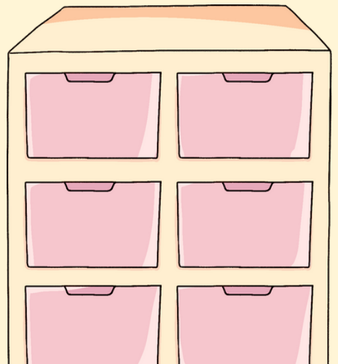
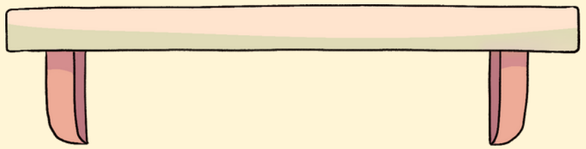
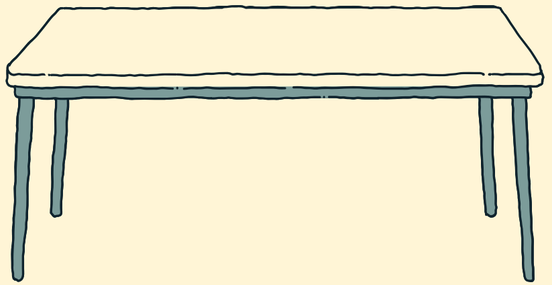
```sql
SELECT
    *
FROM
    borrow
WHERE
    student_id = 263;
```

S_NO	student_id	NAME	department_id	book_id	book_name	borrow_date	return_date
1510	263	Sudarshan	1	1002	Introduction to Algorithms	2023-06-01	2023-06-13
1512	263	Sudarshan	1	1013	DSA in C++	2023-06-01	2023-06-13
1543	263	Sudarshan	1	1006	Software Engineering	2023-06-08	2023-06-21

FIND ALL THE NUMBER OF STUDENTS ENROLLED IN EACH YEAR.

```sql
SELECT
    enrollment_year, COUNT(*) AS number_of_students
FROM
    students
WHERE
    enrollment_year IN (2020 , 2021)
GROUP BY enrollment_year;
```

enrollment_year	number_of_students
2020	20
2021	26

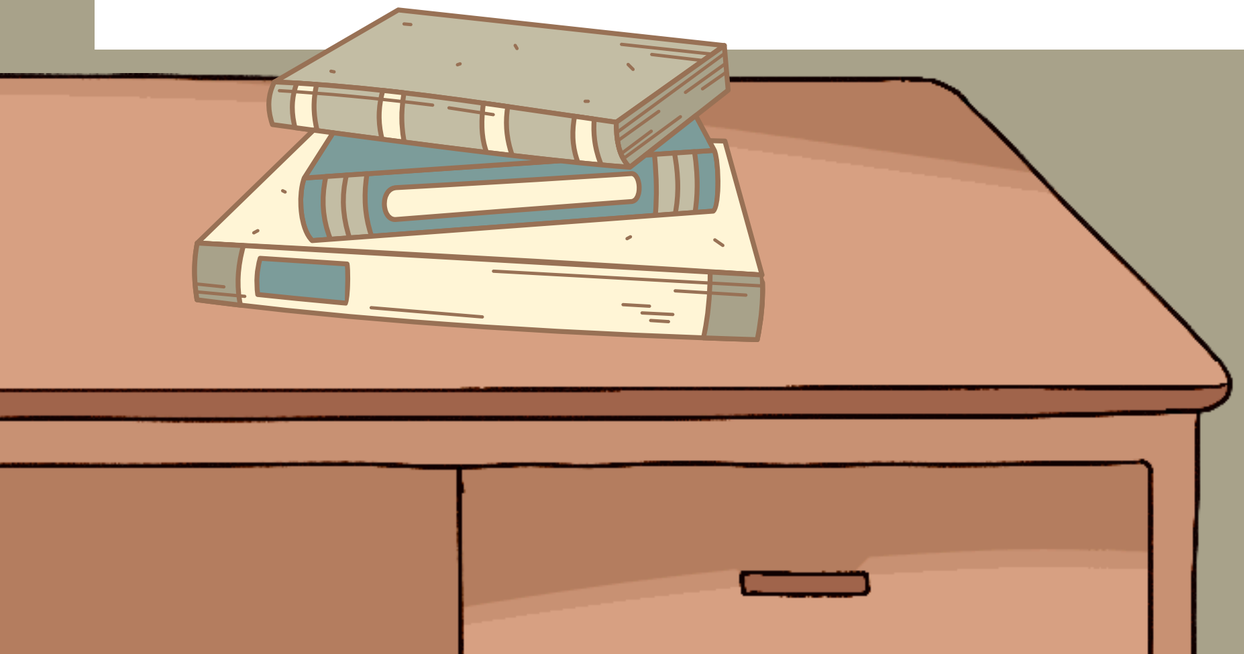
GET THE NAMES OF THE STUDENTS WHO HAVE BORROWED BOOKS MORE THAN 2 TIMES

```sql
SELECT
    st.first_name, st.last_name
FROM
    students st
        JOIN
    borrow bor ON st.student_id = bor.student_id
GROUP BY st.student_id
HAVING COUNT(*) > 2;
```

first_name	last_name
Sudarshan	Nayak
Rashmi	Panda
Ayesha	Firdus
Smitanjali	Dash
Aniket	Sharma

FIND THE TOTAL NUMBER OF BOOKS IN EACH CATEGORY

```sql
SELECT
    c.category_name, COUNT(b.book_id) AS total_books
FROM
    books b
        JOIN
    category c ON b.category_id = c.category_id
GROUP BY c.category_name;
```



category_name	total_books
Architecure_self	12
Programming_Self	5
Data_Structure_self	3
Reasoning_self	1
Quantitative_self	1
Logical_self	1

LIST ALL THE NAMES OFSTUDENTS AND BOOKS BORROWED BY STUDENTS FROM THE CATEGORY _ID- 3
-- AND ENROLLMENT YEAR ='2021'

```sql
SELECT DISTINCT
    st.first_name, st.last_name, b.book_name
FROM
    borrow bor
        JOIN
    books b ON bor.book_id = b.book_id
        JOIN
    students st ON bor.student_id = st.student_id
WHERE
    b.category_id = 3
        AND st.enrollment_year = '2021';
```

first_name	last_name	book_name
Bhabani	Sahoo	Database System
Sourav	Bhuria	Database System
Rashmi	Panda	Database System
Janmajaya	Ghosh	Database System
Pradosh	Mohanty	Database System

LIST THE NAMES OF A STAFF MEMBERS ALONG WITH THE TITLES OF BOOKS -- THEY HAVE PROCESSED FOR BORROWING

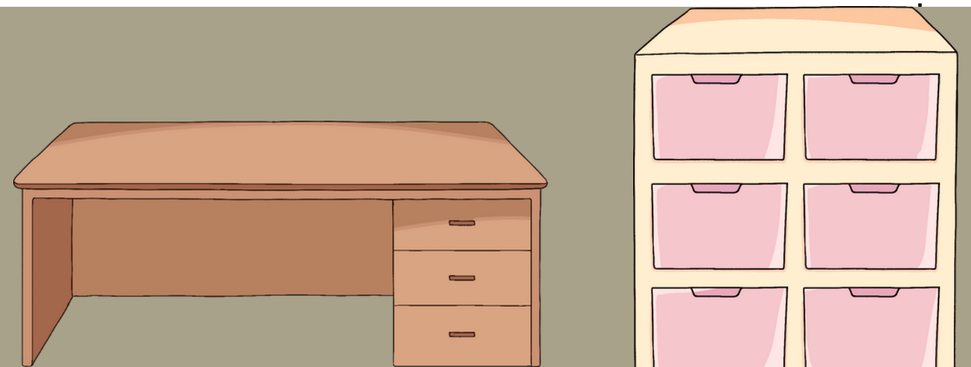
```sql
SELECT
    staff_name, book_name, COUNT(*) AS issue_count
FROM
    borrow
GROUP BY staff_name , book_name;
```

staff_name	book_name	issue_count
Smitanjali	Introduction to Algorithms	1
Smitanjali	Computer Organisation	4
Smitanjali	DSA in C++	5
Smitanjali	Web Technologies	1
Smitanjali	Python Crash Course	2
Smitanjali	Operating System Concept	2
Ajay	DSA in C++	4
Ajay	Operating System Concept	2
Smitanjali	Database System	4
Ajay	Database System	2

RETRIEVE THE DETAILS OF BOOKS BORROWED BY STUDENTS THAT WERE RETURNED AFTER 10 DAYS FROM THE BORROW DATE. DISPLAY THE BOOK ID, BOOK NAME, STUDENT ID, AND STUDENT NAME ALONG WITH THE TOTAL COUNT OF SUCH INSTANCES FOR EACH BOOK.

```sql
SELECT
    b.book_id,
    b.book_name,
    s.student_id,
    CONCAT(s.first_name, ' ', s.last_name) AS student_name,
    COUNT(*) AS overdue_returns
FROM
    borrow b
        JOIN
    students s ON b.student_id = s.student_id
WHERE
    b.return_date > DATE_ADD(b.borrow_date, INTERVAL 10 DAY)
GROUP BY b.book_id , b.book_name , s.student_id , student_name;
```

book_name	student_id	student_name
Introduction to Algorithms	263	Sudarshan Nayak
Computer Organisation	266	Rashmi Panda
DSA in C++	263	Sudarshan Nayak
Computer Organisation	267	Abhishek Swain
Web Technologies	268	Chinmaya Behra
Python Crash Course	305	Snehasis Tripathy
Operating System Concept	292	Smitanjali Dash
DSA in C++	287	Lopamudra Pradhan



THANK YOU