DBMS PROJECT REPORT

Book Rental System

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Abstract:

The Project entitles “Online Book Rental System” is very effective, feasible online portal that allows the readers to read the books, magazines, journals on a reliable rent. If a reader wants to read a book, he/she has to purchase the boo and pay higher amounts or as a second option have to go to library issue a book where there is a long procedure to follow like first be a member than follow each and every rule and regulation as their member-one such rule is to return book on a specified date. The disadvantage for this is lot of time and money is consumed, but the solution for these is proposed i.e., online book rental system with this the work becomes easier. The person who is the owner of the book can give it on rent for some days at his/her reasonable rate and gain money and with the same procedure the person who wants to issue that book can contact the giver through this system.

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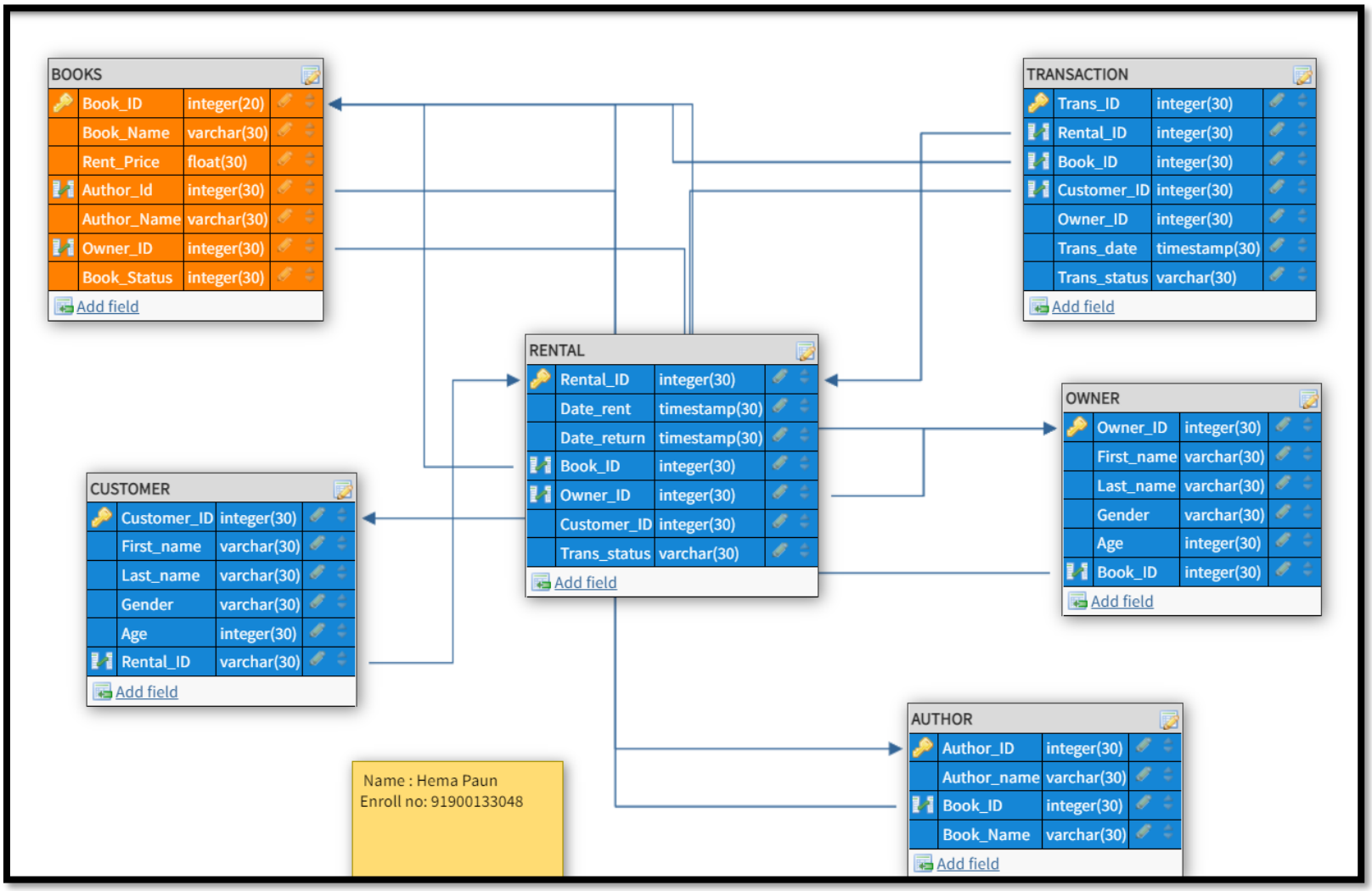
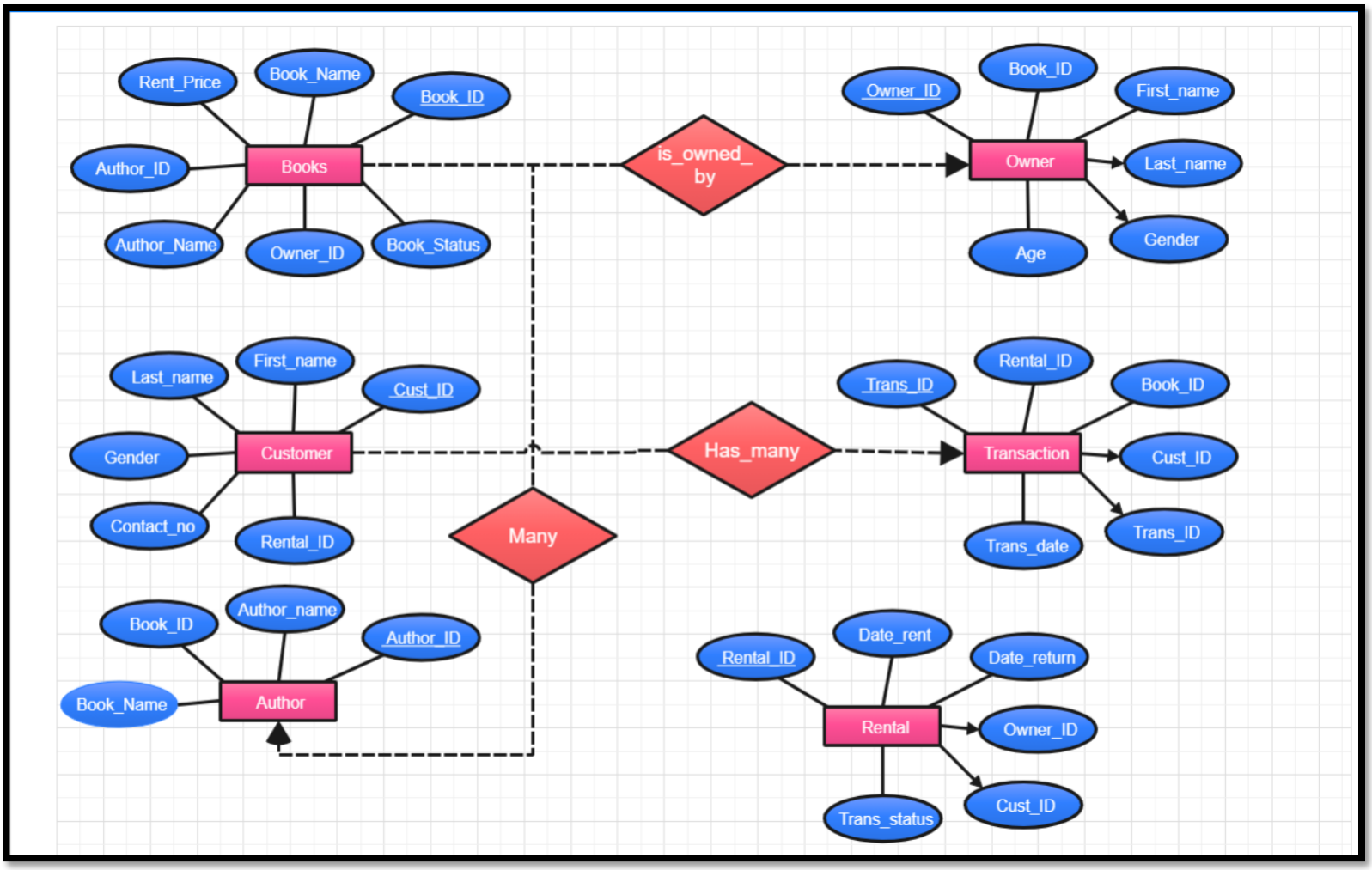
Schema Diagram

Link:-https://dbdesigner.page.link/64yEDEHe5xcWw6Vv9



E-R Diagram

Link:-
https://www.edrawmax.com/online/share.html?code=50ad8ade1e1e11eca7c20a54be41f961



Schema-Desiging

- BOOKS (Book_ID, Book_Name, Rent_Price ,Author_ID, Author_Name ,Owner_ID ,Book_Status)
- CUSTOMER(Customer_ID , First_name, Last_name ,Gender, Age, Rental_ID)
- RENTAL(Rental_ID, Date_rent, Date_return, Book_ID, Owner_ID ,Customer_ID ,Trans_status)
- TRANSACTION(Trans_ID, Rental_ID, Book_ID, Customer_ID, Owner_ID, Trans_date, Trans_status)
- OWNER(Owner_ID,First_name,Last_name,Gender,Age,Book_ID)
- AUTHOR(Author_ID,Author_name,Book_name,Book_ID)

Tables and Queries

Table-1: BOOKS

Query Editor | Query History

```
3  ----TABLE BOOKS------
4  CREATE TABLE BOOKS (
5      Book_ID INTEGER,
6      Book_Name varchar(50) NOT NULL,
7      Rent_Price FLOAT(30) NOT NULL,
8      Author_Id INTEGER,
9      Author_Name varchar(50) NOT NULL,
10     Owner_ID  INTEGER,
11     Book_Status VARCHAR(30),
12     PRIMARY KEY (Book_ID)
13 );
14 SELECT * FROM BOOKS;
```

Data Output | Explain | Messages | Notifications

	book_id [PK] integer	book_name character varying (50)	rent_price double precision	author_id integer	author_name character varying (50)	owner_id integer	book_status character varying (30)
1	1	Politics of Opportunism	250	1001	R P N Singh	101	Rented
2	2	Malayalam poetry	200	1002	Akk Achuthan Namboodri	102	Not-Rented
3	3	The Testaments	300	1003	Margaret Atwood	103	Rented
4	4	Celestial Bodies	150	1004	Jokha Alharthi	104	Rented
5	5	Mind-Master	250	1005	Viswanathan Anand and Sus...	105	Not-Rented
6	6	"Courts of India"	250	1006	Chief Justice of India (CJI) R...	106	Not-rented
7	7	Bridgital Nation	350	1007	Shri N Chandrasekaran	107	Rented
8	8	My Life, My Mission	200	1008	Baba Ramdev	108	Rented

Table 2: RENTAL

Query Editor | Query History

```
----TABLE RENTAL-----
CREATE TABLE RENTAL (
    Rental_ID INTEGER,
    Date_rent TIMESTAMP NOT NULL,
    Date_return TIMESTAMP NOT NULL,
    Book_ID INTEGER,
    Owner_ID INTEGER,
    Customer_ID varchar(30),
    Trans_status varchar(30) NOT NULL,
    PRIMARY KEY (Rental_ID)
);
INSERT INTO RENTAL(Rental_ID,Date_rent,Date_return,Book_ID,Owner_ID,Customer_ID,Trans_status) VALUES (001, '2020-11-24' , '2
```

Data Output | Explain | Messages | Notifications

	rental_id [PK] integer	date_rent timestamp without time zone	date_return timestamp without time zone	book_id integer	owner_id integer	customer_id character varying (30)	trans_status character varying (30)
1	1	2020-11-24 00:00:00	2020-12-24 00:00:00	2	102	A1	Complete
2	2	2021-01-23 00:00:00	2021-02-23 00:00:00	4	104	A2	Complete
3	3	2021-01-05 00:00:00	2021-02-05 00:00:00	1	101	A3	Complete
4	4	2021-02-11 00:00:00	2021-03-11 00:00:00	7	107	A4	Complete
5	5	2021-01-05 00:00:00	2021-02-05 00:00:00	2	102	A5	InComplete
6	6	2021-04-15 00:00:00	2021-05-16 00:00:00	8	108	A6	Complete
7	7	2021-03-19 00:00:00	2021-04-19 00:00:00	3	103	A7	InComplete
8	8	2021-06-05 00:00:00	2021-07-05 00:00:00	4	104	A8	Complete

Table 3: CUSTOMER

Query Editor | Query History

```
54
55  ---TABLE CUSTOMER------
56  CREATE TABLE CUSTOMER (
57      Customer_ID Varchar(30),
58      First_name varchar(30) NOT NULL,
59      Last_name varchar(30) NOT NULL,
60      Gender varchar(30),
61      Age INTEGER NOT NULL,
62      Rental_ID INTEGER,
63      PRIMARY KEY (Customer_ID)
64  );
65  INSERT INTO CUSTOMER(Customer_ID,First_name,Last_name,Gender,Age,Rental_ID ) VALUES ('A1','Shreya','Zen'
```

Data Output | Explain | Messages | Notifications

	customer_id [PK] character varying (30)	first_name character varying (30)	last_name character varying (30)	gender character varying (30)	age integer	rental_id integer
1	A1	Shreya	Zen	Female	23	1
2	A2	Rohit	shah	Male	19	2
3	A3	Vrillina	Das	Female	20	3
4	A4	Priya	Malik	Female	21	4
5	A5	Rohan	Sharma	Male	25	5
6	A6	Shehnaz	Bolim	Female	30	6
7	A7	Mohit	Zen	Male	18	7
8	A8	Priyanshi	Sharma	Female	27	8

Table 4: TRANSACTIONS

Query Editor Query History

```
79  ---TABLE TRANSACTIONS----
80  CREATE TABLE TRANSACTIONS (
81      Trans_ID varchar(30),
82      Rental_ID INTEGER,
83      Book_ID INTEGER,
84      Customer_ID VARCHAR(30),
85      Owner_ID  INTEGER,
86      Trans_date TIMESTAMP,
87      Trans_status varchar(30) NOT NULL,
88      PRIMARY KEY (Trans_ID)
89  );
90
```

Data Output Explain Messages Notifications

	trans_id [PK] character varying (30)	rental_id integer	book_id integer	customer_id character varying (30)	owner_id integer	trans_date timestamp without time zone	trans_status character varying (30)
1	B1	3	1	A3	101	2021-01-05 00:00:00	Complete
2	B2	1	2	A1	102	2021-01-05 00:00:00	Complete
3	B3	2	4	A2	104	2021-01-23 00:00:00	Complete
4	B4	4	7	A4	107	2021-02-11 00:00:00	Complete
5	B5	5	2	A5	102	[null]	Incomplete
6	B6	6	8	A6	108	2021-04-15 00:00:00	Complete
7	B7	7	3	A7	103	[null]	Incomplete
8	B8	8	4	A8	104	2021-07-05 00:00:00	Complete

Table 5: OWNERS

Query Editor | Query History

```
104
105 ----OWNERS----
106 CREATE TABLE OWNERS (
107     Owner_ID INTEGER,
108     First_name varchar(30) NOT NULL,
109     Last_name varchar(30) NOT NULL,
110     Gender varchar(30) NOT NULL,
111     Age INTEGER,
112     Book_ID INTEGER,
113     PRIMARY KEY (Owner_ID)
114 );
115 INSERT INTO OWNERS (Owner_ID,First_name,Last_name,Gender,Age,Book_ID) VALUES(101,'Juan','Iba
```

Data Output | Explain | Messages | Notifications

	owner_id [PK] integer	first_name character varying (30)	last_name character varying (30)	gender character varying (30)	age integer	book_id integer
1	101	Juan	Ibarra	Male	20	1
2	102	Christopher	Hudson	Male	25	2
3	103	Arjun	Rege	Male	19	3
4	104	Rashmi	Bhalla	Female	15	4
5	105	Darika	Pradhan	Female	22	5
6	106	Sameer	Raina	Male	26	6
7	107	Naina	Agarwal	Female	23	7
8	108	Jesika	Chauhan	Female	24	8

Table 6: AUTHOR

```
128
129 ----AUTHOR TABLE-----
130 CREATE TABLE AUTHOR (
131     Author_ID INTEGER,
132     Author_name varchar(50) NOT NULL,
133     Book_ID INTEGER,
134     Book_Name varchar(50) NOT NULL,
135     PRIMARY KEY (Author_ID)
136 );
137 INSERT INTO AUTHOR (Author_ID,Author_name,Book_ID,Book_Name) VAL
```

Data Output | Explain | Messages | Notifications

	author_id [PK] integer	author_name character varying (50)	book_id integer	book_name character varying (50)
1	1001	R P N Singh	1	Politics of Opportunism
2	1002	Akkitham Achuthan Nambo...	2	Malayalam poetry
3	1003	Margaret Atwood	3	The Testaments
4	1004	Jokha Alharthi	4	Celestial Bodies
5	1005	Viswanathan Anand and Sus...	5	Mind-Master
6	1006	Chief Justice of India (CJI) R...	6	Courts of India
7	1007	Shri N Chandrasekaran	7	Bridgital Nation
8	1008	Baba Ramdev	8	My Life, My Mission

QUERIES TESTED:

```
173 ---we need to select the book which is not rented by anyone?----
174 SELECT * FROM BOOKS WHERE  Book_Status='Not-Rented';
175
176 ---we need to order the books by its price----
```

Data Output | Explain | Messages | Notifications

	book_id [PK] integer	book_name character varying (50)	rent_price double precision	author_id integer	author_name character varying (50)	owner_id integer	book_status character varying (30)
1	2	Malayalam poetry	200	1002	Akk Achuthan Namboodri	102	Not-Rented
2	5	Mind-Master	250	1005	Viswanathan Anand and Sus...	105	Not-Rented

```
176  ----we need to order the books by its price----
177  SELECT * FROM BOOKS ORDER BY Rent_Price;
178
```

Data Output | Explain | Messages | Notifications

	book_id [PK] integer	book_name character varying (50)	rent_price double precision	author_id integer	author_name character varying (50)	owner_id integer	book_status character varying (30)
1	4	Celestial Bodies	150	1004	Jokha Alharthi	104	Rented
2	2	Malayalam poetry	200	1002	Akk Achuthan Namboodri	102	Not-Rented
3	8	My Life, My Mission	200	1008	Baba Ramdev	108	Rented
4	5	Mind-Master	250	1005	Viswanathan Anand and Sus...	105	Not-Rented
5	1	Politics of Opportunism	250	1001	R P N Singh	101	Rented
6	6	"Courts of India"	250	1006	Chief Justice of India (CJI) R...	106	Not-rented
7	3	The Testaments	300	1003	Margaret Atwood	103	Rented
8	7	Bridgital Nation	350	1007	Shri N Chandrasekaran	107	Rented

```
179  ----we need to display the name of books starting with letter M---
180  SELECT * FROM AUTHOR WHERE Book_Name LIKE 'M%';
181
182  ---we need to select the data from table authors unitl limit of 7 r
```

Data Output | Explain | Messages | Notifications

	author_id [PK] integer	author_name character varying (50)	book_id integer	book_name character varying (50)
1	1002	Akkitham Achuthan Nambo...	2	Malayalam poetry
2	1005	Viswanathan Anand and Sus...	5	Mind-Master
3	1008	Baba Ramdev	8	My Life, My Mission

```
182  ---we need to select the data from table authors unitl limit of 7 rows---
183  SELECT * FROM AUTHOR LIMIT 7;
184
```

Data Output | Explain | Messages | Notifications

	author_id [PK] integer	author_name character varying (50)	book_id integer	book_name character varying (50)
1	1001	R P N Singh	1	Politics of Opportunism
2	1002	Akkitham Achuthan Nambo...	2	Malayalam poetry
3	1003	Margaret Atwood	3	The Testaments
4	1004	Jokha Alharthi	4	Celestial Bodies
5	1005	Viswanathan Anand and Sus...	5	Mind-Master
6	1006	Chief Justice of India (CJI) R...	6	Courts of India
7	1007	Shri N Chandrasekaran	7	Bridgital Nation

```
185  ---we need to set the book id to not null from table books--
186  ALTER TABLE BOOKS ALTER Book_ID SET NOT NULL;
187
188  ---we need to check the ownerid  where it is greater than 2---
```

Data Output | Explain | Messages | Notifications

```
ALTER TABLE

Query returned successfully in 100 msec.
```

```
188  ---we need to check the ownerid  where it is greater than 2---
189  ALTER TABLE OWNERS ADD CONSTRAINT CHECKID CHECK(Owner_ID >= 2);
190
191  SELECT * FROM OWNERS;
```

Data Output | Explain | Messages | Notifications

```
ALTER TABLE

Query returned successfully in 91 msec.
```

```sql
---PERFORM INNER JOIN OPERATION WITH TABLE BOOK AND AUTHOR---
SELECT BOOKS.Book_name, AUTHOR.Author_name FROM
BOOKS INNER JOIN AUTHOR ON BOOKS.Book_ID = AUTHOR.Book_ID;

----Write an SQL query to fetch "FIRST NAME" from owner table
```

Data Output | Explain | Messages | Notifications

	book_name character varying (50)	author_name character varying (50)
1	Politics of Opportunism	R P N Singh
2	Malayalam poetry	Akkitham Achuthan Nambo...
3	The Testaments	Margaret Atwood
4	Celestial Bodies	Jokha Alharthi
5	Mind-Master	Viswanathan Anand and Sus...
6	"Courts of India"	Chief Justice of India (CJI) R...
7	Bridgital Nation	Shri N Chandrasekaran
8	My Life, My Mission	Baba Ramdev

```sql
----Write an SQL query to fetch "FIRST_NAME" from owner table using the alias name as Owner Name.----
SELECT First_name AS Owner_name FROM OWNERS;

--Write an SQL query to print BOOK_ID AND BOOK_NAME of the BOOKS whose RENT_PRICE lies between 200 a
```

Data Output | Explain | Messages | Notifications

	owner_name character varying (30)
1	Juan
2	Christopher
3	Arjun
4	Rashmi
5	Darika
6	Sameer
7	Naina
8	Jesika

Successfully r

```
199
200 ---Write an SQL query to print BOOK IS AND BOOK NAME of the BOOKS whose RENT PRICE lies between 200 and 300---
201 SELECT Book_ID,Book_name FROM BOOKS WHERE Rent_Price BETWEEN 200 AND 300;
202
203 ----Write an SQL query to fetch "CUSTOMER NAME" from CUSTOMERS in upper case.-----
```

Data Output | Explain | Messages | Notifications

	book_id [PK] integer	book_name character varying (50)
1	1	Politics of Opportunism
2	2	Malayalam poetry
3	3	The Testaments
4	5	Mind-Master
5	6	"Courts of India"
6	8	My Life, My Mission

```
203 ----Write an SQL query to fetch "CUSTOMER NAME" from CUSTOMERS in upper case.----
204 SELECT UPPER(First_name) FROM CUSTOMER;
205
206
```

Data Output | Explain | Messages | Notifications

	upper text
1	SHREYA
2	ROHIT
3	VRILLINA
4	PRIYA
5	ROHAN
6	SHEHNAZ
7	MOHIT
8	PRIYANS...

Conclusion

In conclusion, I have created an Online book rental system database by that means, I can say a database is a significantly more efficient system for storing and organizing data than spreadsheets. It provides a centralized facility that can be simply modified and quickly shared among several users. All the tables present in this database have unique ID’s which makes the user easy to access the data. The schema and ER prepared allows users to understand data better with a clear and simple logical view. Tables are created in the database and tested easily by queries, By adding the Foreign key and Primary key the tables connect and develop relationships. This online Book rental system created by me is a very basic rental system we can even add many details for future use in any of the real-time scenarios or any vast projects.