

Hector Trevino

Muna Bhattarai

Kosuke Satake

## Project 2 Library DB Part 2

**Honor code:** I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or that I contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

Omega platform was used to create dataset and insert data.

CREATE and INSERT statements were used to create tables and manually insert the data into the dataset. The screenshots and commands of the tables are below:

### **CREATE Statements:**

```
CREATE TABLE PUBLISHER (  
    Publisher_Name VARCHAR(255) PRIMARY KEY,  
    Address VARCHAR(255),  
    Phone VARCHAR(15)  
);
```

```
CREATE TABLE LIBRARY_BRANCH (  
    Branch_Id INTEGER PRIMARY KEY,  
    Branch_Name VARCHAR(255),  
    Branch_Address VARCHAR(255)  
);
```

```
CREATE TABLE BORROWER (  
    Card_No INTEGER PRIMARY KEY AUTOINCREMENT,  
    Name VARCHAR(255),
```

```
Address VARCHAR(255),  
Phone VARCHAR(15)  
);
```

```
CREATE TABLE BOOK (  
    Book_Id INTEGER PRIMARY KEY,  
    Title VARCHAR(255),  
    Publisher_name VARCHAR(255),  
    FOREIGN KEY (Publisher_name) REFERENCES PUBLISHER(Publisher_Name)  
);
```

```
CREATE TABLE BOOK_LOANS (  
    Book_Id INTEGER,  
    Branch_Id INTEGER,  
    Card_No INTEGER,  
    Date_Out DATE,  
    Due_Date DATE,  
    Returned_date DATE,  
    PRIMARY KEY (Book_Id, Branch_Id, Card_No),  
    FOREIGN KEY (Book_Id) REFERENCES BOOK(Book_Id),  
    FOREIGN KEY (Branch_Id) REFERENCES LIBRARY_BRANCH(Branch_Id),  
    FOREIGN KEY (Card_No) REFERENCES BORROWER(Card_No)  
);
```

```
CREATE TABLE BOOK_COPIES (  
    Book_Id INTEGER,  
    Branch_Id INTEGER,  
    No_Of_Copies INT,
```

```
PRIMARY KEY (Book_Id, Branch_Id),  
FOREIGN KEY (Book_Id) REFERENCES BOOK(Book_Id),  
FOREIGN KEY (Branch_Id) REFERENCES LIBRARY_BRANCH(Branch_Id)  
);
```

```
CREATE TABLE BOOK_AUTHORS (  
    Book_Id INTEGER PRIMARY KEY,  
    Author_Name VARCHAR(255),  
    FOREIGN KEY (Book_Id) REFERENCES BOOK(Book_Id)  
);
```

### **INSERT Statements:**

#### **BORROWER Table:**

```
INSERT INTO BORROWER (Card_No, Name, Address, Phone)  
VALUES  
(123456, 'John Smith', '456 Oak St, Arizona, AR 70010', '205-555-5555'),  
(789012, 'Jane Doe', '789 Maple Ave, New Jersey, NJ 32542', '555-235-5556'),  
(345678, 'Bob Johnson', '12 Elm St, Arizona, AR 70345', '545-234-5557'),  
(901234, 'Sarah Kim', '345 Pine St, New York, NY 10065', '515-325-2158'),  
(567890, 'Tom Lee', '678 S Oak St, New York, NY 10045', '209-525-5559'),  
(234567, 'Emily Lee', '389 Oakley St, Arizona, AR 70776', '231-678-5560'),  
(890123, 'Michael Park', '123 Pinewood St, New Jersey, NJ 32954', '655-890-2161'),  
(456789, 'Laura Chen', '345 Mapman Ave, Arizona, AR 70776', '565-985-9962'),  
(111111, 'Alex Kim', '983 Sine St, Arizona, AR 70451', '678-784-5563'),  
(222222, 'Rachel Lee', '999 Apple Ave, Arizona, AR 70671', '231-875-5564'),  
(333333, 'William Johnson', '705 Paster St, New Jersey, NJ 32002', '235-525-5567'),  
(444444, 'Ethan Martinez', '466 Deeplm St, New York, NY 10062', '555-555-5569'),  
(555555, 'Grace Hernandez', '315 Babes St, Arizona, AR 70862', '455-567-5587'),
```

(565656, 'Sophia Park', '678 Dolphin St, New York, NY 10062', '675-455-5568'),  
 (676767, 'Olivia Lee', '345 Spine St, New York, NY 10092', '435-878-5569'),  
 (787878, 'Noah Thompson', '189 GreenOak Ave, New Jersey, NJ 32453', '245-555-5571'),  
 (989898, 'Olivia Smith', '178 Elm St, New Jersey, NJ 32124', '325-500-5579'),  
 (121212, 'Chloe Park', '345 Shark St, Arizona, AR 72213', '755-905-5572'),  
 (232323, 'William Chen', '890 Sting St, New York, NY 10459', '406-755-5580'),  
 (343434, 'Olivia Johnson', '345 Pine St, New Jersey, NJ 32095', '662-554-5575'),  
 (454545, 'Dylan Kim', '567 Cowboy way St, New Jersey, NJ 32984', '435-254-5578');

Card_No	Name	Address	Phone
-----	-----	-----	-----
123456	John Smith	456 Oak St, Arizona, AR 70010	205-555-5555
789012	Jane Doe	789 Maple Ave, New Jersey, NJ	555-235-5556
345678	Bob Johnso	12 Elm St, Arizona, AR 70345	545-234-5557
901234	Sarah Kim	345 Pine St, New York, NY 100	515-325-2158
567890	Tom Lee	678 S Oak St, New York, NY 10	209-525-5559
234567	Emily Lee	389 Oakley St, Arizona, AR 70	231-678-5560
890123	Michael Pa	123 Pinewood St, New Jersey,	655-890-2161
456789	Laura Chen	345 Mapman Ave, Arizona, AR 7	565-985-9962
111111	Alex Kim	983 Sine St, Arizona, AR 7045	678-784-5563
222222	Rachel Lee	999 Apple Ave, Arizona, AR 70	231-875-5564
333333	William Jo	705 Paster St, New Jersey, NJ	235-525-5567
444444	Ethan Mart	466 Deepm St, New York, NY 1	555-555-5569
555555	Grace Hern	315 Babes St, Arizona, AR 708	455-567-5587
565656	Sophia Par	678 Dolphin St, New York, NY	675-455-5568
676767	Olivia Lee	345 Spine St, New York, NY 10	435-878-5569
787878	Noah Thomp	189 GreenOak Ave, New Jersey,	245-555-5571
989898	Olivia Smi	178 Elm St, New Jersey, NJ 32	325-500-5579
121212	Chloe Park	345 Shark St, Arizona, AR 722	755-905-5572
232323	William Ch	890 Sting St, New York, NY 10	406-755-5580
343434	Olivia Joh	345 Pine St, New Jersey, NJ 3	662-554-5575
454545	Dylan Kim	567 Cowboy way St, New Jersey	435-254-5578

### BOOK\_COPIES Table:

INSERT INTO BOOK\_COPIES (Book\_Id, Branch\_Id, No\_Of\_Copies)

VALUES

(1, 1, 3),

(2, 1, 2),

(3, 2, 1),

(4, 3, 4),

(5, 1, 5),

(6, 2, 3),

(7, 2, 2),

(8, 3, 1),

(9, 1, 4),

(10, 2, 2),

(11, 1, 3),

(12, 3, 2),

(13, 3, 1),

(14, 1, 5),

(15, 3, 1),

(16, 2, 3),

(17, 3, 2),

(18, 3, 2),

(19, 1, 5),

(20, 3, 1),

(21, 3, 1);

Book_Id	Branch_Id	No_Of_Copies
1	1	3
2	1	2
3	2	1
4	3	4
5	1	5
6	2	3
7	2	2
8	3	1
9	1	4
10	2	2
11	1	3
12	3	2
13	3	1
14	1	5
15	3	1
16	2	3
17	3	2
18	3	2
19	1	5
20	3	1
21	3	1

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### BOOK Table:

INSERT INTO BOOK (Book\_Id, Title, Publisher\_name)

VALUES

(1, 'To Kill a Mockingbird', 'HarperCollins'),

(2, '1984', 'Penguin Books'),

(3, 'Pride and Prejudice', 'Penguin Classics'),

(4, 'The Great Gatsby', 'Scribner'),

(5, 'One Hundred Years of Solitude', 'Harper & Row'),

(6, 'Animal Farm', 'Penguin Books'),

(7, 'The Catcher in the Rye', 'Little, Brown and Company'),

(8, 'Lord of the Flies', 'Faber and Faber'),

(9, 'Brave New World', 'Chatto & Windus'),

(10, 'The Picture of Dorian Gray', 'Ward, Lock and Co.'),

(11, 'The Alchemist', 'HarperCollins'),

(12, 'The God of Small Things', 'Random House India'),  
 (13, 'Wuthering Heights', 'Thomas Cautley Newby'),  
 (14, 'The Hobbit', 'Allen & Unwin'),  
 (15, 'The Lord of the Rings', 'Allen & Unwin'),  
 (16, 'The Hitchhikers Guide to the Galaxy', 'Pan Books'),  
 (17, 'The Diary of a Young Girl', 'Bantam Books'),  
 (18, 'The Da Vinci Code', 'Doubleday'),  
 (19, 'The Adventures of Huckleberry Finn', 'Penguin Classics'),  
 (20, 'The Adventures of Tom Sawyer', 'American Publishing Company'),  
 (21, 'A Tale of Two Cities', 'Chapman and Hall');

```

Book_Id      Title                        Publisher_name
-----
1            To Kill a Mockingbird      HarperCollins
2            1984                          Penguin Books
3            Pride and Prejudice           Penguin Classi
4            The Great Gatsby             Scribner
5            One Hundred Years of         Harper & Row
6            Animal Farm                  Penguin Books
7            The Catcher in the Ry        Little, Brown
8            Lord of the Flies            Faber and Fabe
9            Brave New World              Chatto & Windu
10           The Picture of Dorian        Ward, Lock and
11           The Alchemist                 HarperCollins
12           The God of Small Thin        Random House I
13           Wuthering Heights           Thomas Cautley
14           The Hobbit                   Allen & Unwin
15           The Lord of the Rings        Allen & Unwin
16           The Hitchhikers Guide        Pan Books
17           The Diary of a Young         Bantam Books
18           The Da Vinci Code            Doubleday
19           The Adventures of Huc        Penguin Classi
20           The Adventures of Tom        American Publi
21           A Tale of Two Cities         Chapman and Ha
sqlite>

```

### PUBLISHER Table:

INSERT INTO PUBLISHER (Publisher\_Name, Phone, Address)

VALUES

('HarperCollins', '212-207-7000', '195 Broadway, New York, NY 10007'),

('Penguin Books', '212-366-3000', '475 Hudson St, New York, NY 10014'),

('Penguin Classics', '212-366-2000', '123 Main St, California, CA 01383'),  
 ('Scribner', '212-207-7474', '19 Broadway, New York, NY 10007'),  
 ('Harper & Row', '212-207-7000', '1195 Border street, Montana, MT 59007'),  
 ('Little, Brown and Company', '212-764-2000', '111 Huddle St, New Jersey, NJ 32104'),  
 ('Faber and Faber', '201-797-3800', '463 south centre street, Arizona, AR 71653'),  
 ('Chatto & Windus', '442-727-3800', 'Bloomsbury House, 7477 Great Russell St, Arizona, AR 72965'),  
 ('Ward, Lock & Co.', '647-242-3434', '456 Maple Ave, Texas, TX 76013'),  
 ('Random House India', '291-225-6634', '423 baywatch centre street, Alabama, AL 30513'),  
 ('Thomas Cautley Newby', '243-353-2352', '890 Elmwood Dr, Florida, FL 98238'),  
 ('Allen & Unwin', '212-782-9001', '22 New Wharf Rd, Arizona, AR 70654'),  
 ('Pan Books', '313-243-5353', '567 Pine Tree Rd, Colorado, CO 87348'),  
 ('Bantam Books', '313-243-5354', '1745 Broadway, New York, NY 10019'),  
 ('Doubleday', '212-782-9000', '789 Division St, Minnesota, MN 55344'),  
 ('American Publishing Company', '682-243-3524', '7652 Northgate way lane, Georgia, GA 30054'),  
 ('Chapman and Hall', '833-342-2343', '789 Oak St, Texas, TX 76010');

Publisher_Name	Address	Phone
-----	-----	-----
HarperCollins	195 Broadway, New York, NY 10007	212-207-7000
Penguin Books	475 Hudson St, New York, NY 1001	212-366-3000
Penguin Classi	123 Main St, California, CA 0138	212-366-2000
Scribner	19 Broadway, New York, NY 10007	212-207-7474
Harper & Row	1195 Border street, Montana, MT	212-207-7000
Little, Brown	111 Huddle St, New Jersey, NJ 32	212-764-2000
Faber and Fabe	463 south centre street, Arizona	201-797-3800
Chatto & Windu	Bloomsbury House, 7477 Great Rus	442-727-3800
Ward, Lock & C	456 Maple Ave, Texas, TX 76013	647-242-3434
Random House I	423 baywatch centre street, Alab	291-225-6634
Thomas Cautley	890 Elmwood Dr, Florida, FL 9823	243-353-2352
Allen & Unwin	22 New Wharf Rd, Arizona, AR 706	212-782-9001
Pan Books	567 Pine Tree Rd, Colorado, CO 8	313-243-5353
Bantam Books	1745 Broadway, New York, NY 1001	313-243-5354
Doubleday	789 Division St, Minnesota, MN 5	212-782-9000
American Publi	7652 Northgate way lane, Georgia	682-243-3524
Chapman and Ha	789 Oak St, Texas, TX 76010	833-342-2343
sqlite>		



**BOOK\_AUTHORS Table:**

INSERT INTO BOOK\_AUTHORS (Book\_Id, Author\_Name)

VALUES

(1, 'Harper Lee'),  
(2, 'George Orwell'),  
(3, 'Jane Austen'),  
(4, 'F. Scott Fitzgerald'),  
(5, 'Gabriel Garcia Marquez'),  
(6, 'George Orwell'),  
(7, 'J.D. Salinger'),  
(8, 'William Golding'),  
(9, 'Aldous Huxley'),  
(10, 'Oscar Wilde'),  
(11, 'Paulo Coelho'),  
(12, 'Arundhati Roy'),  
(13, 'Emily Bronte'),  
(14, 'J.R.R. Tolkien'),  
(15, 'J.R.R. Tolkien'),  
(16, 'Douglas Adams'),  
(17, 'Anne Frank'),  
(18, 'Dan Brown'),  
(19, 'Mark Twain'),  
(20, 'Mark Twain'),  
(21, 'Charles Dickens');

```

Book_Id      Author_Name
-----
1            Harper Lee
2            George Orwe
3            Jane Austen
4            F. Scott Fi
5            Gabriel Gar
6            George Orwe
7            J.D. Saling
8            William Gol
9            Aldous Huxl
10           Oscar Wilde
11           Paulo Coelh
12           Arundhati R
13           Emily Bront
14           J.R.R. Tolk
15           J.R.R. Tolk
16           Douglas Ada
17           Anne Frank
18           Dan Brown
19           Mark Twain
20           Mark Twain
21           Charles Dic
sqlite>

```

### **BOOK\_LOANS Table:**

```

INSERT INTO BOOK_LOANS (Book_Id, Branch_Id, Card_No, Date_Out, Due_Date,
Returned_date)

```

```

VALUES

```

```

(1, 1, 123456, '2022-01-01', '2022-02-01', '2022-02-01'),
(2, 1, 789012, '2022-01-02', '2022-02-02', NULL),
(3, 2, 345678, '2022-01-03', '2022-02-03', NULL),
(4, 3, 901234, '2022-01-04', '2022-02-04', '2022-02-04'),
(5, 1, 567890, '2022-01-05', '2022-02-05', '2022-02-09'),
(6, 2, 234567, '2022-01-06', '2022-02-06', '2022-02-10'),
(7, 2, 890123, '2022-01-07', '2022-02-07', '2022-03-08'),
(8, 3, 456789, '2022-01-08', '2022-02-08', '2022-03-10'),
(9, 1, 111111, '2022-01-09', '2022-02-09', '2022-02-06'),
(10, 2, 222222, '2022-01-10', '2022-02-10', '2022-02-07'),
(11, 1, 333333, '2022-03-01', '2022-03-08', '2022-03-08'),

```

(12, 3, 444444, '2022-03-03', '2022-03-10', '2022-03-10'),  
 (13, 3, 555555, '2022-02-03', '2022-03-03', '2022-02-18'),  
 (14, 1, 565656, '2022-01-14', '2022-02-14', '2022-03-31'),  
 (15, 3, 676767, '2022-01-15', '2022-02-15', '2022-02-21'),  
 (16, 2, 787878, '2022-03-05', '2022-03-12', '2022-03-24'),  
 (17, 3, 989898, '2022-03-23', '2022-03-30', '2022-03-30'),  
 (18, 3, 121212, '2022-01-18', '2022-02-18', '2022-02-18'),  
 (19, 1, 232323, '2022-03-24', '2022-03-31', '2022-03-31'),  
 (20, 3, 343434, '2022-01-21', '2022-02-21', '2022-02-21'),  
 (21, 3, 454545, '2022-01-24', '2022-02-24', '2022-02-24');

```
sqlite> SELECT * FROM BOOK_LOANS;
```

Book_Id	Branch_Id	Card_No	Date_Out	Due_Date	Returned_date
1	1	123456	2022-01-01	2022-02-01	2022-02-01
2	1	789012	2022-01-02	2022-02-02	
3	2	345678	2022-01-03	2022-02-03	
4	3	901234	2022-01-04	2022-02-04	2022-02-04
5	1	567890	2022-01-05	2022-02-05	2022-02-09
6	2	234567	2022-01-06	2022-02-06	2022-02-10
7	2	890123	2022-01-07	2022-02-07	2022-03-08
8	3	456789	2022-01-08	2022-02-08	2022-03-10
9	1	111111	2022-01-09	2022-02-09	2022-02-06
10	2	222222	2022-01-10	2022-02-10	2022-02-07
11	1	333333	2022-03-01	2022-03-08	2022-03-08
12	3	444444	2022-03-03	2022-03-10	2022-03-10
13	3	555555	2022-02-03	2022-03-03	2022-02-18
14	1	565656	2022-01-14	2022-02-14	2022-03-31
15	3	676767	2022-01-15	2022-02-15	2022-02-21
16	2	787878	2022-03-05	2022-03-12	2022-03-24
17	3	989898	2022-03-23	2022-03-30	2022-03-30
18	3	121212	2022-01-18	2022-02-18	2022-02-18
19	1	232323	2022-03-24	2022-03-31	2022-03-31
20	3	343434	2022-01-21	2022-02-21	2022-02-21
21	3	454545	2022-01-24	2022-02-24	2022-02-24

```
sqlite>
```

### **LIBRARY\_BRANCH Table:**

INSERT INTO LIBRARY\_BRANCH (Branch\_Id, Branch\_Name, Branch\_Address)  
 VALUES

(1, 'Main Branch', '123 Main St, New York, NY 10003'),  
 (2, 'West Branch', '456 West St, Arizona, AR 70622'),  
 (3, 'East Branch', '789 East St, New Jersey, NJ 32032');

Branch_Id	Branch_Name	Branch_Address
1	Main Branch	123 Main St, New York, NY 10003
2	West Branch	456 West St, Arizona, AR 70622
3	East Branch	789 East St, New Jersey, NJ 320

sqlite>

The 10 queries and the screenshots are mentioned below:

**-- Question 1. Insert yourself as a New Borrower. Do not provide the Card\_no in your query.**

INSERT INTO BORROWER (Name, Address, Phone)

VALUES ('Hector Trevino', '1225 S Pecan St, Texas, TX 76010', '830-968-6584');

**-- Question 2. Update your phone number to (837) 721-8965**

UPDATE BORROWER

SET Phone = '837-721-8965'

WHERE Name = 'Hector Trevino';

**-- Question 3. Increase the number of book\_copies by 1 for the 'East Branch'**

UPDATE BOOK\_COPIES

SET No\_Of\_Copies = No\_Of\_Copies + 1

WHERE Branch\_Id = (SELECT Branch\_Id FROM LIBRARY\_BRANCH WHERE Branch\_Name = 'East Branch');

**-- Question 4-a. Insert a new BOOK with the following info: Title: 'Harry Potter and the Sorcerer's Stone' ; Book\_author: 'J.K. Rowling' ; Publisher\_name: 'Oxford Publisheing'**

INSERT INTO PUBLISHER (Publisher\_Name, Phone, Address)

VALUES ('Oxford Publishing', '41865556767', '34 Warnborough Rd Oxford OX2 6JA United Kingdom');

Note: **Publisher\_name** is foreign key to **Publisher\_name** of **PUBLISHER**, thus **PUBLISHER** record for **Publisher\_name: 'Oxford Publisheing'** must be added before inserting to **BOOK** table.

```
INSERT INTO BOOK (Title, Publisher_name)
VALUES ('Harry Potter and the Sorcerer's Stone', 'Oxford Publishing');

INSERT INTO BOOK_AUTHORS (Book_Id, Author_Name)
VALUES ((SELECT Book_Id FROM BOOK WHERE Title = 'Harry Potter and the Sorcerer's
Stone' AND Publisher_name = 'Oxford Publishing'), 'J.K. Rowling');
```

**-- Question 4-b. Inserting the following branches:**

```
INSERT INTO LIBRARY_BRANCH (Branch_Name, Branch_Address)
VALUES ( 'North Branch 456 NW,', 'Irving, TX 76100');
```

```
INSERT INTO LIBRARY_BRANCH (Branch_Name, Branch_Address)
VALUES ('UTA Branch 123 Cooper St', 'Arlington TX 76101');
```

**-- Question 5. Return all Books that were loaned between March 5, 2022 until March 23, 2022. List Book title and Branch name, and how many days it was borrowed for.**

```
SELECT
    B.Title,
    BR.Branch_Name,
    julianday(BL.Returned_date) - julianday(BL.Date_Out) AS Borrowed_Days
FROM
    BOOK_LOANS BL
JOIN
    BOOK B ON BL.Book_Id = B.Book_Id
JOIN
    LIBRARY_BRANCH BR ON BL.Branch_Id = BR.Branch_Id
WHERE
    BL.Date_Out >= '2022-03-05' AND BL.Date_Out <= '2022-03-23';
```

**-- Question 6. Return a List borrower names, that have books not returned.**

```
SELECT DISTINCT
    B.Name
FROM
    BORROWER B
JOIN
    BOOK_LOANS BL ON B.Card_No = BL.Card_No
WHERE
    BL.Returned_date IS NULL;
```

**-- Question 7. Create a report that will return all branches with the number of books borrowed per branch separated by if they have been returned, still borrowed, or late.**

```
SELECT
    LB.Branch_Id,
    LB.Branch_Name,
    COUNT(CASE WHEN BL.Returned_date IS NOT NULL THEN 1 END) AS
Returned_Books,
    COUNT(CASE WHEN CURRENT_DATE <= BL.Due_Date AND BL.Returned_date IS
NULL THEN 1 END) AS Borrowed_Books,
    COUNT(CASE WHEN CURRENT_DATE > BL.Due_Date AND BL.Returned_date IS
NULL THEN 1 END) AS Late_Books
FROM
    LIBRARY_BRANCH LB
LEFT JOIN
    BOOK_LOANS BL ON LB.Branch_Id = BL.Branch_Id
GROUP BY
    LB.Branch_Id, LB.Branch_Name;
```

**-- Question 8. List all the books (title) and the maximum number of days that they were borrowed.**

```
SELECT B.Title, BL.Returned_date, BL.Date_out, MAX(julianday(BL.Returned_date)-
julianday(BL.Date_out)) AS max_days_borrowed

FROM BOOK B

JOIN BOOK_LOANS BL ON B.Book_ID = BL.Book_ID

GROUP BY B.Title;
```

**-- Question 9. Create a report for Ethan Martinez with all the books they borrowed. List the book title and author. Also, calculate the number of days each book was borrowed for and if any book is late being returned. Order the results by the date\_out.**

```
SELECT Bo.Name, B.Title, BA.Author_Name, BL.Date_out, BL.Returned_date,
JULIANDAY(BL.Returned_date)- JULIANDAY(BL.Date_out) AS days_borrowed

FROM BORROWER Bo

JOIN BOOK_LOANS BL ON Bo.Card_No = BL.Card_No

JOIN BOOK B ON BL.Book_ID = B.Book_ID

JOIN BOOK_AUTHORS BA ON B.Book_ID = BA.Book_ID

WHERE Bo.Name = 'Ethan Martinez'

GROUP BY BL.Date_out;
```

**-- Question 10. Return the names of all borrowers that borrowed a book from the West Branch include their addresses.**

```
SELECT B.Name, B.Address

FROM BORROWER B

JOIN BOOK_LOANS BL ON BL.Card_no = B.Card_no

JOIN LIBRARY_BRANCH LB ON BL.Branch_Id = LB.Branch_Id

WHERE LB.Branch_Name = 'West Branch';
```

```

sqlite> INSERT INTO BORROWER (Name, Address, Phone)
...>
...> VALUES ('Hector Trevino', '1225 S Pecan St, Texas, TX 76010', '830-968-6584');
sqlite> SELECT * FROM BORROWER WHERE Name = 'Hector Trevino';
Card_No      Name                Address                Phone
-----
989899      Hector Trevino    1225 S Pecan St, Texas, TX 76010  830-968-6584
sqlite>

sqlite> UPDATE BORROWER
...>
...> SET Phone = '837-721-8965'
...>
...> WHERE Name = 'Hector Trevino';
sqlite> SELECT * FROM BORROWER WHERE Name = 'Hector Trevino';
Card_No      Name                Address                Phone
-----
989899      Hector Trevino    1225 S Pecan St, Texas, TX 76010  837-721-8965
sqlite>

```

Fig: Queries 1, 2 (1 record returned, 1 record affected)

```

sqlite> UPDATE BOOK_COPIES
...> SET No_Of_Copies = No_Of_Copies + 1
...> WHERE Branch_Id = (SELECT Branch_Id FROM LIBRARY_BRANCH WHERE Branch_Name = 'East Branch');
sqlite> SELECT * FROM BOOK_COPIES;
Book_Id      Branch_Id      No_Of_Copies
-----
1            1              3
2            1              2
3            2              1
4            3              5
5            1              5
6            2              3
7            2              2
8            3              2
9            1              4
10           2              2
11           1              3
12           3              3
13           3              2
14           1              5
15           3              2
16           2              3
17           3              3
18           3              3
19           1              5
20           3              2
21           3              2
sqlite>

```

Fig: Query 3 (21 records returned, 9 records affected)



```

sqlite> SELECT B.Title, BA.Author_Name, B.Publisher_Name
...> FROM BOOK B, BOOK_AUTHORS BA
...> WHERE B.Book_Id = BA.Book_Id AND B.Publisher_name = 'Oxford Publishing';
Title                Author_Name    Publisher_name
-----
Harry Potter and the Sorcerer's Stone  J.K. Rowling  Oxford Publishing
sqlite>

```

Fig : Query 4a (1 record added)

```

sqlite> INSERT INTO LIBRARY_BRANCH (Branch_Name, Branch_Address)
...> VALUES ( 'North Branch 456 NW,', 'Irving, TX 76100');
sqlite> INSERT INTO LIBRARY_BRANCH (Branch_Name, Branch_Address)
...> VALUES ( 'UTA Branch 123 Cooper St', 'Arlington TX 76101');
sqlite> SELECT * FROM LIBRARY_BRANCH;
1|Main Branch|123 Main St, New York, NY 10003
2|West Branch|456 West St, Arizona, AR 70622
3|East Branch|789 East St, New Jersey, NJ 32032
|North Branch 456 NW,|Irving, TX 76100
|UTA Branch 123 Cooper St|Arlington TX 76101
sqlite>

```

Fig: Query 4b (5 records returned, 2 records affected)

```

sqlite> SELECT
...>
...>     B.Title,
...>
...>     BR.Branch_Name,
...>
...>     julianday(BL.Returned_date) - julianday(BL.Date_Out) AS Borrowed_Days
...> FROM
...>
...>     BOOK_LOANS BL
...>
...> JOIN
...>
...>     BOOK B ON BL.Book_Id = B.Book_Id
...>
...> JOIN
...>
...>     LIBRARY_BRANCH BR ON BL.Branch_Id = BR.Branch_Id
...>
...> WHERE
...>
...>     BL.Date_Out >= '2022-03-05' AND BL.Date_Out <= '2022-03-23';
Title                Branch_Name    Borrowed_Days
-----
The Hitchhikers Guide to the Galaxy  West Branch    19.0
The Diary of a Young Girl            East Branch     7.0

```

Fig: Query 5(2 records returned)

```

sqlite> SELECT DISTINCT
...>     B.Name
...> FROM
...>     BORROWER B
...> JOIN
...>     BOOK_LOANS BL ON B.Card_No = BL.Card_No
...> WHERE
...>     BL.Returned_date IS NULL;
Name
-----
Jane Doe
Bob Johnso
sqlite>

```

Fig: Query 6 (2 records returned)

```

sqlite> SELECT
...>     LB.Branch_Id,
...>     LB.Branch_Name,
...>     COUNT(CASE WHEN BL.Returned_date IS NOT NULL THEN 1 END) AS Returned_Books,
...>     COUNT(CASE WHEN CURRENT_DATE <= BL.Due_Date AND BL.Returned_date IS NULL THEN 1 END) AS Borrowed_Books,
...>     COUNT(CASE WHEN CURRENT_DATE > BL.Due_Date AND BL.Returned_date IS NULL THEN 1 END) AS Late_Books
...> FROM
...>     LIBRARY_BRANCH LB
...> LEFT JOIN
...>     BOOK_LOANS BL ON LB.Branch_Id = BL.Branch_Id
...> GROUP BY
...>     LB.Branch_Id, LB.Branch_Name;
Branch_Id  Branch_Name      Returned_Books  Borrowed_Books  Late_Books
-----
1          North Branch 456 NW,        0              0              0
2          UTA Branch 123 Coope 0              0              0
3          Main Branch    6              0              1
4          West Branch    4              0              1
5          East Branch    9              0              0
sqlite>

```

Fig: Query 7 (5 records returned)

```

sqlite> SELECT B.Title, BL.Returned_date, BL.Date_out, julianday(BL.Returned_date)-julianday(BL.Date_out) AS max_days_borrowed
...> FROM BOOK B
...> JOIN BOOK_LOANS BL ON B.Book_ID = BL.Book_ID
...> GROUP BY B.Title;
Title      Returned_date  Date_Out      max_days_borrowed
-----
1984       2022-01-02    2022-01-02    0.0
A Tale of  2022-02-24    2022-01-24    31.0
Animal Far 2022-02-10    2022-01-06    35.0
Brave New  2022-02-06    2022-01-09    28.0
Lord of th 2022-03-10    2022-01-08    61.0
One Hundre 2022-02-09    2022-01-05    35.0
Pride and  2022-01-03    2022-01-03    0.0
The Advent  2022-03-31    2022-03-24    7.0
The Advent  2022-02-21    2022-01-21    31.0
The Alchem  2022-03-08    2022-03-01    7.0
The Catche  2022-03-08    2022-01-07    60.0
The Da Vin  2022-02-18    2022-01-18    31.0
The Diary  2022-03-30    2022-03-23    7.0
The God of  2022-03-10    2022-03-03    7.0
The Great  2022-02-04    2022-01-04    31.0
The Hitchh  2022-03-24    2022-03-05    19.0
The Hobbit  2022-03-31    2022-01-14    76.0
The Lord o  2022-02-21    2022-01-15    37.0
The Pictur  2022-02-07    2022-01-10    28.0
To Kill a  2022-02-01    2022-01-01    31.0
Wuthering  2022-02-18    2022-02-03    15.0
sqlite>

```

Fig: Query 8 (21 records returned)

```
sqlite> SELECT Bo.Name, B.Title, BA.Author_Name, BL.Date_out, BL.Returned_date, JULIANDAY(BL.Returned_date)- JULIANDAY(BL.Date_out) AS days_borrowed
...> FROM BORROWER Bo
...> JOIN BOOK_LOANS BL ON Bo.Card_No = BL.Card_No
...> JOIN BOOK B ON BL.Book_ID = B.Book_ID
...> JOIN BOOK_AUTHORS BA ON B.Book_ID = BA.Book_ID
...> WHERE Bo.Name = 'Ethan Martinez'
...> GROUP BY BL.Date_out;
Name      Title      Author_Name  Date_Out  Returned_date  days_borrowed
-----
Ethan Martinez  The God of Small Things  Arundhati Roy  2022-03-03  2022-03-10      7.0
sqlite>
```

Fig: Query 9 (1 record returned)

```
sqlite> SELECT B.Name, B.Address
...> FROM BORROWER B
...> JOIN BOOK_LOANS BL ON BL.Card_no = B.Card_no
...> JOIN LIBRARY_BRANCH LB ON BL.Branch_Id = LB.Branch_Id
...> WHERE LB.Branch_Name = 'West Branch';
Name      Address
-----
Bob Johnson  12 Elm St, Arizona, AR 70345
Emily Lee   389 Oakley St, Arizona, AR 7
Michael Par  123 Pinewood St, New Jersey,
Rachel Lee  999 Apple Ave, Arizona, AR 7
Noah Thomps  189 GreenOak Ave, New Jersey
sqlite>
```

Fig: Query 10 (5 records returned)

### Contribution List:

Hector Trevino – SQL (1,2), CREATE and INSERT statements, Project2Doc File

Muna Bhattarai – SQL (8, 9, 10), Project2Doc File

Kosuke Satake – SQL (3, 4, 5, 6, 7)