PROJECT-2

Part-3

Library Management System

CSE3330-004

BY:

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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.

```
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```

Task-1

Query 1:

```
ALTER TABLE Book_Loans

ADD Late INT;

UPDATE Book_Loans

SET Late =

CASE

WHEN (Returned_date IS NULL OR Returned_date = 'NULL') AND

(julianday(Date('now')) > julianday(due_date)) THEN 1

WHEN julianday(Returned_date) > julianday(due_date) THEN 1

ELSE 0

END;
```

```
sqlite> ALTER TABLE Book_Loans
ADD Late INT;
 UPDATE Book_Loans
SET Late =

CASE

WHEN (Returned_date IS NULL OR Returned_date = 'NULL') AND (julianday(Date('now')) > julianday(due_date)) THEN 1

WHEN julianday(Returned_date) > julianday(due_date) THEN 1

ELSE 0
END;
sqlite> SELECT * FROM BOOK_LOANS;
  | Book_id | Branch_id | Card_no |
                                                                                                          Date_out
                                                                                                                                          Due_date
                                                                                                                                                                                   | Returned_date | Late
                                                                                                       2022-01-01
2022-01-02
2022-01-03
2022-01-04
2022-01-06
2022-01-07
2022-01-09
2022-01-10
2022-03-03
2022-03-03
2022-01-15
2022-03-05
                                                                          123456
789012
                                                                                                                                               2022-02-01
2022-02-02
2022-02-04
2022-02-05
2022-02-06
2022-02-06
2022-02-09
2022-02-09
2022-03-10
2022-03-10
2022-03-12
2022-03-12
2022-03-12
2022-03-12
2022-03-12
                                                                                                                                                                                        2022-02-01
      1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
                                                                                                                                                                                       NULL
NULL
2022-02-04
2022-02-09
2022-03-10
2022-03-10
2022-03-10
2022-03-08
2022-03-10
2022-03-10
2022-03-12
2022-03-31
2022-03-31
2022-03-31
2022-03-31
2022-03-34
2022-03-34
                                                                         345678
901234
                                     23122312133132331
                                                                                                                                                                                                                                         101111000001110000
                                                                         567890
234567
890123
                                                                         456789
111111
222222
333333
444444
                                                                         444444
555555
565656
676767
787878
989898
121212
232323
343434
                                                                                                        2022-01-15
2022-03-05
2022-03-23
2022-01-18
2022-03-24
2022-01-21
2022-01-24
                                                                                                                                                2022-03-31
2022-02-21
2022-02-24
                                                                                                                                                                                       2022-03-31
2022-02-21
2022-02-24
                                                                          454545
                                                                                                                                                                                                                                         0
```

Rows Affected = 21

Query 2:

```
ALTER Table LIBRARY_BRANCH

ADD Late_fee REAL;

UPDATE LIBRARY_BRANCH

SET Late_fee =

CASE

WHEN Branch_id = 1 THEN 2

WHEN Branch_id = 2 THEN 5

WHEN Branch_id = 3 THEN 1

ELSE 2 -- Default Late_fee for a branch

END;
```

```
sqlite> ALTER Table LIBRARY_BRANCH
ADD Late_fee REAL;
UPDATE LIBRARY_BRANCH
SET Late_fee =
   CASE
        WHEN Branch_id = 1 THEN 2
        WHEN Branch_id = 2 THEN 5
        WHEN Branch_id = 3 THEN 1
        ELSE 2 -- Default Late_fee for a branch
sqlite> SELECT * FROM LIBRARY_BRANCH;
 Branch_id | Branch_name
                                                              Late_fee
                                     Branch_address
  1
              Main Branch
                            123 Main St, New York, NY 10003
                                                                2.0
  2
                            456 West St, Arizona, AR 70622
                                                                5.0
              West Branch
  3
                            789 East St, New Jersy, NY 32032
              East Branch
                                                                1.0
```

Rows Affected = 3

Query 3:

```
CREATE VIEW BookLoanInfo AS
SELECT BO.Card No, BO.Name AS Borrower name, BL.Date out, BL.Due Date,
BL.Returned Date, B.Title AS Book title,
(CASE
    WHEN (BL.Returned date = 'NULL' OR BL.Returned date IS NULL) THEN
julianday(Date('now')) - julianday(Date out)
    WHEN Returned date > Date out
    THEN julianday (BL.Returned date) - julianday (BL.Date out)
    ELSE
    0
    END
) AS TotalDays,
(CASE
    WHEN (BL.Returned date = 'NULL' OR BL.Returned date IS NULL) AND
(julianday(Date('now')) > julianday(BL.Due date)) THEN
(julianday(Date('now')) - julianday(BL.Due_date))
    WHEN
    julianday(BL.returned date) > julianday(BL.due date) THEN
julianday(BL.returned date) - julianday(BL.Due date)
    ELSE
    \cap
END) AS Late days,
BL.Branch id,
( CASE
```

lite> sel	lect * from BookLoa	anInfo;							
Card_No	Borrower_name Date_out Due_date Returned_dat		Returned_date	Book_title	TotalDays	Late_days	Branch_id	LateFeeBalance	
123456	John Smith	2022-01-01	2022-02-01	2022-02-01	To Kill a Mockingbird	31.0	0	1	0
789012	Jane Doe	2022-01-02	2022-02-02	NULL	1984	1066.0	1035.0	1	2070.0
345678	Bob Johnson	2022-01-03	2022-02-03	NULL	Pride and Prejudice	1065.0	1034.0	2	5170.0
901234	Sarah Kim	2022-01-04	2022-02-04	2022-02-04	The Great Gatsby	31.0	0	3	0
567890	Tom Lee	2022-01-05	2022-02-05	2022-02-09	One Hundred Years of Solitude	35.0	4.0	1	8.0
234567	Emily Lee	2022-01-06	2022-02-06	2022-02-10	Animal Farm	35.0	4.0	2	20.0
890123	Michael Park	2022-01-07	2022-02-07	2022-03-08	The Catcher in the Rye	60.0	29.0	2	145.0
456789	Laura Chen	2022-01-08	2022-02-08	2022-03-10	Lord of the Flies	61.0	30.0	3	30.0
111111	Alex Kim	2022-01-09	2022-02-09	2022-02-06	Brave New World	28.0	0	1	0
222222	Rachel Lee	2022-01-10	2022-02-10	2022-02-07	The Picture of Dorian Gray	28.0	0	2	0
333333	William Johnson	2022-03-01	2022-03-08	2022-03-08	The Alchemist	7.0	0	1	0
444444	Ethan Martinez	2022-03-03	2022-03-10	2022-03-10	The God of Small Things	7.0	0	3	0
555555	Grace Hernandez	2022-02-03	2022-03-03	2022-02-18	Wuthering Heights	15.0	0	3	0
565656	Sophia Park	2022-01-14	2022-02-14	2022-03-31	The Hobbit	76.0	45.0	1	90.0
676767	Olivia Lee	2022-01-15	2022-02-15	2022-02-21	The Lord of the Rings	37.0	6.0	3	6.0
787878	Noah Thompson	2022-03-05	2022-03-12	2022-03-24	The Hitchhiker's Guide to the Galaxy	19.0	12.0	2	60.0
989898	Olivia Smith	2022-03-23	2022-03-30	2022-03-30	The Diary of a Young Girl	7.0	0	3	0
121212	Chloe Park	2022-01-18	2022-02-18	2022-02-18	The Da Vinci Code	31.0	0	3	0
232323	William Chen	2022-03-24	2022-03-31	2022-03-31	The Adventures of Huckleberry Finn	7.0	0	1	0
343434	Olivia Johnson	2022-01-21	2022-02-21	2022-02-21	The Adventures of Tom Sawyer	31.0	0	j 3	0
454545	Dylan Kim	2022-01-24	2022-02-24	2022-02-24	A Tale of Two Cities	31.0	0	3	0

Rows Returned = 21

Task-2

Query 1:

		Checkout Book	_				
Provide Book ID, BranchID, Card_no, Date_out, and Due_date to checkout							
	Book ID:						
	BOOK ID:						
9							
	Branch ID:						
1							
	Card_no						
787878							
	Date_out						
2024-12-	03						
	Due_date						
2024-12-	 08	1					
	Add New Loan						
_	Add New Loan						
Branch ID B	ranch Name	No Of Copies					
	_						
9	1	3					
	Loan Added!						

```
CREATE TRIGGER IF NOT EXISTS UpdateBookCopiesOnLoan

AFTER INSERT ON BOOK_LOANS

FOR EACH ROW

BEGIN

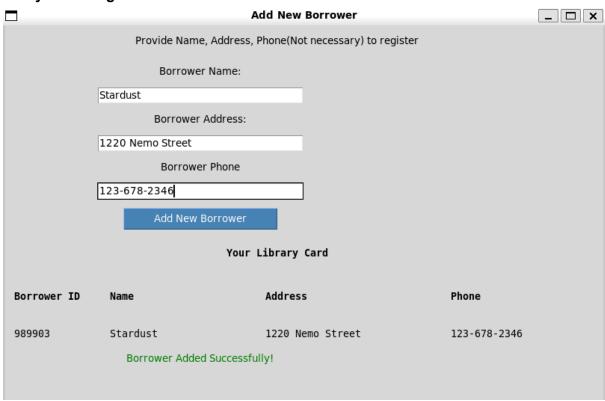
UPDATE BOOK_COPIES

SET No_Of_Copies = No_Of_Copies - 1
```

```
WHERE Book_id = NEW.Book_id AND Branch_id =
NEW.Branch_id;
END;

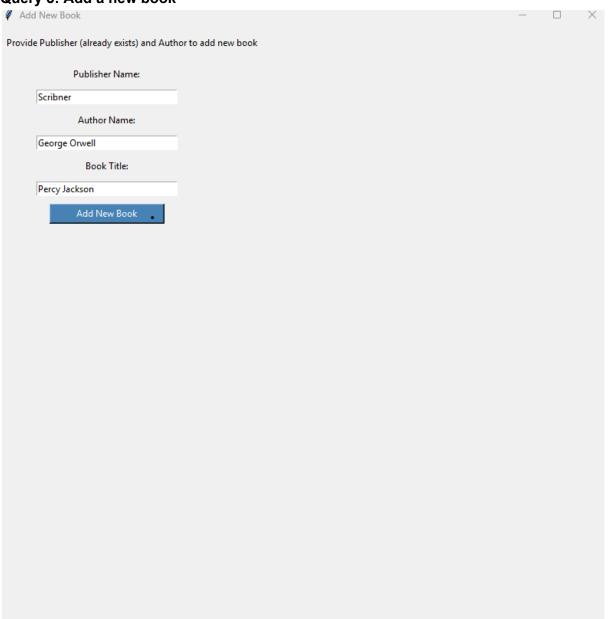
INSERT INTO BOOK_LOANS VALUES (?, ?, ?, ?, ?, ?, ?)
SELECT * FROM BOOK_COPIES WHERE Book_id = ? AND Branch_id = ?
```

Query 2: Adding new borrower



Windows PowerShell X + ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓							
sqlite> select * from borrower;							
Card_No	Name	Address	Phone				
111111	Alex Kim	 983	678-784-5563				
121212	Chloe Park	345 Shark St, Arizona, AR 72213	755–905–5572				
123456	John Smith	456 Oak St, Arizona, AR 70010	205-555-5555				
222222	Rachel Lee	999 Apple Ave, Arizona, AR 70671	231-875-5564				
232323	William Chen	890 Sting St, New York, NY 10459	406-755-5580				
234567	Emily Lee	389 Oaklay St, Arizona, AR 70986	231-678-5560				
333333	William Johnson	705 Paster St, New Jersey 32002	235-525-5567				
343434	Olivia Johnson	345 Pine St, New Jersey, NJ 32095	662-554-5575				
345678	Bob Johnson	12 Elm St, Arizona, AR 70345	545–234–5557				
444444	Ethan Martinez	466 Deeplm St, New York, NY 10321	555-555-5569				
454545	Dylan Kim	567 Cowboy way St, New Jersey, NJ 32984	435–254–5578				
456789	Laura Chen	345 Mapman Ave, Arizona, AR 70776	565–985–9962				
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				
567890	Tom Lee	678	209-525-5559				
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				
789012	Jane Doe	789 Maple Ave, New Jersey, NJ 32542	555-235-5556				
890123	Michael Park	123 Pinewood St, New Jersey, NJ 32954	655-890-2161				
901234	Sarah Kim	345 Pine St, New York, NY 10065	515-325-2158				
989898	Olivia Smith	178 Elm St, New Jersey, NJ 32124	325-500-5579				
989899	Ajay	8785 copper	3339998888				
989900	Austin	5879 mitchell street	682-857-8567				

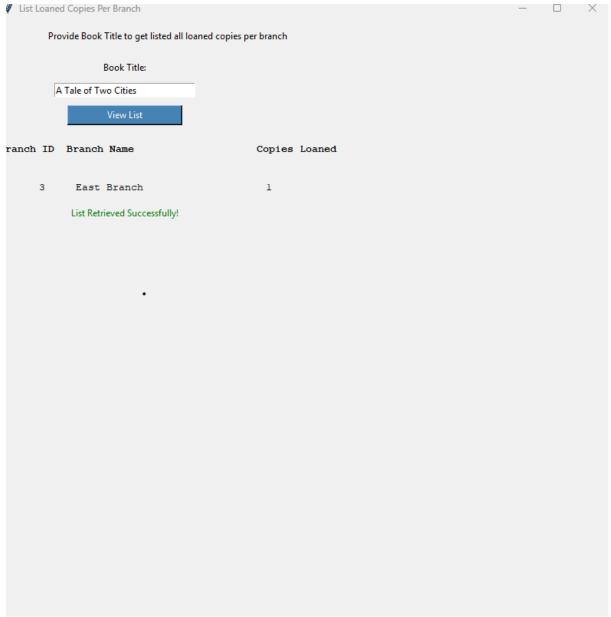
Query 3: Add a new book



Book_id	Title	Publisher_name		
BOOK_10	To Kill a Mockingbird 1984 Pride and Prejudice The Great Gatsby One Hundred Years of Solitude Animal Farm The Catcher in the Rye Lord of the Flies Brave New World The Picture of Dorian Gray The Alchemist The God of Small Things Wuthering Heights The Hobbit The Lord of the Rings The Hitchhiker's Guide to the Galaxy The Diary of a Young Girl The Da Vinci Code The Adventures of Huckleberry Finn The Adventures of Tom Sawyer A Tale of TWO Cities Harry Potter and the Sorcerers Stone	HarperCollins Penguin Books Penguin Classics Scribner Harper & Row Penguin Books Little, Brown and Company Faber and Faber Chatto & Windus Ward, Lock and Co. HarperCollins Random House India Thomas Cautley Newby Allen & Unwin Pan Books Bantam Books Doubleday Penguin Classics American Publishing Company Chapman and Hall		
23 24	Where the wild things are Percy Jackson	HarperCollins Scribner		

```
INSERT INTO BOOK_AUTHORS(Book_id, Author_name) VALUES (?, ?)
SELECT Branch_id FROM LIBRARY_BRANCH
INSERT INTO BOOK_COPIES VALUES (?, ?, ?)
```

Query 4: Find loaned out copies



LB.Branch_name

Query 5: Give date range to find due books in this range

Ų Late Books — □ X

Start Date (YYYY-MM-DD):

2022-02-07

End Date (YYYY-MM-DD):

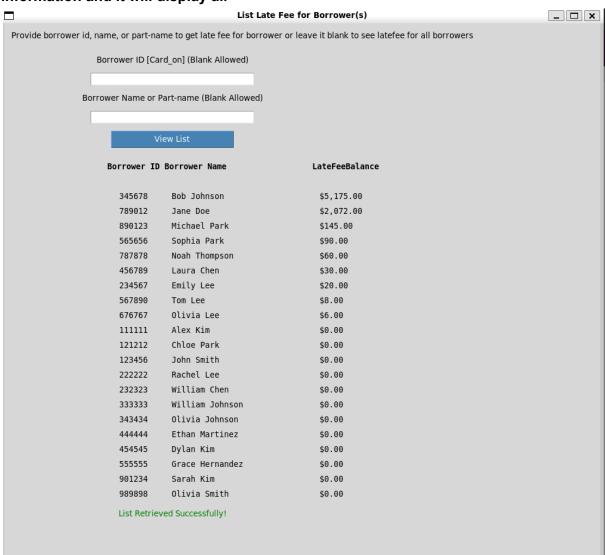
2022-02-09

Find Late Returns

Book_id	Branch_id	Card_no	Date_out	Due_date	Returned_date	Days_Late
8	3	456789	2022-01-08	2022-02-08	2022-03-10	30.0
7	2	890123	2022-01-07	2022-02-07	2022-03-08	29.0

•

Query 6a: Shows late fee of borrowers depending on inserted info or input no information and it will display all



```
SELECT Card_no as Borrower_ID, Borrower_name, SUM(LateFeeBalance) as

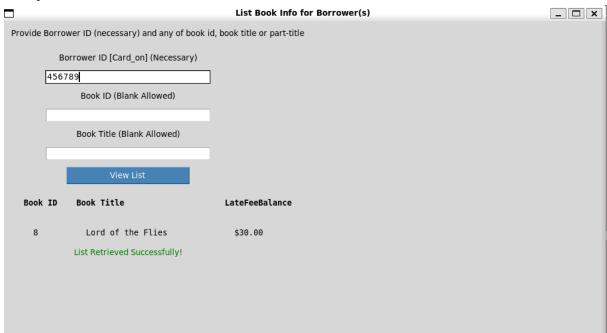
LateFeeBalance

FROM BookLoanInfo

GROUP BY Card_no,

Borrower_name
```

Query 6b: Shows book information when card number of Borrower inserted



Contribution List

Task 1 Query: Sarvesh Ingale, Ajay Ahluwalia, Austin Mitchell Task 2 Gui creation: Sarvesh Ingale, Ajay Ahluwalia, Austin Mitchell Document Creation: Austin Mitchell, Sarvesh Ingale, Ajay Ahluwalia