

LIBRARY MANAGEMENT SYSTEM SQL ANALYSIS

Data Modeling

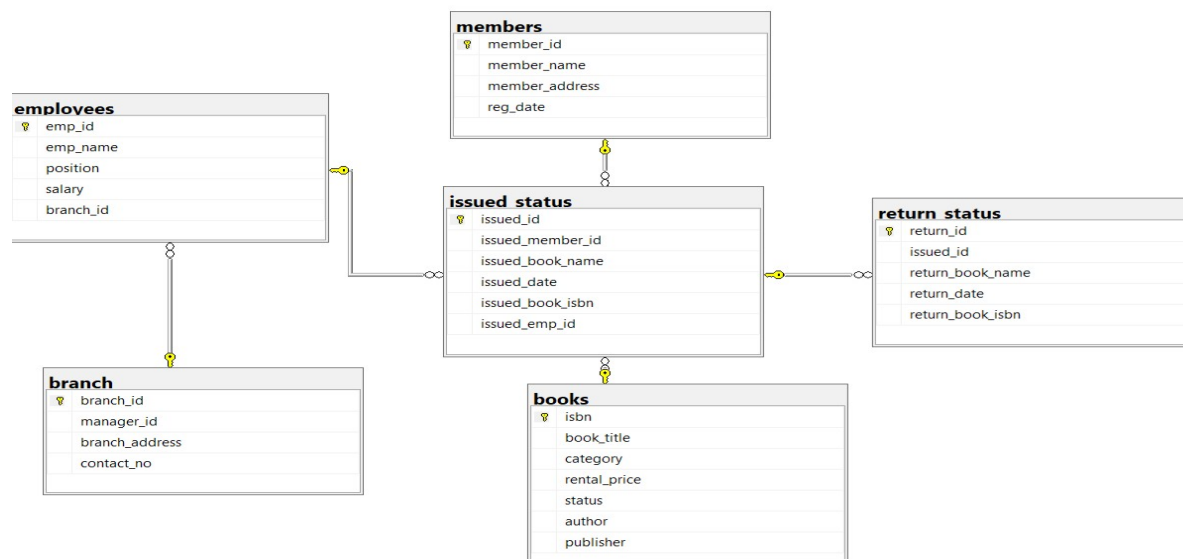
```
ALTER TABLE issued_status  
ADD CONSTRAINT fk_members  
FOREIGN KEY (issued_member_id)  
REFERENCES members (member_id);
```

```
ALTER TABLE issued_status  
ADD CONSTRAINT fk_books  
FOREIGN KEY (issued_book_isbn)  
REFERENCES books (isbn);
```

```
ALTER TABLE issued_status  
ADD CONSTRAINT fk_employees  
FOREIGN KEY (issued_emp_id)  
REFERENCES employees (emp_id);
```

```
ALTER TABLE employees  
ADD CONSTRAINT fk_branch  
FOREIGN KEY (branch_id)  
REFERENCES branch (branch_id);
```

```
ALTER TABLE return_status  
ADD CONSTRAINT fk_issued_status  
FOREIGN KEY (issued_id)  
REFERENCES issued_status(issued_id);
```



-- While solving above query I got this error
The ALTER TABLE statement conflicted with the FOREIGN KEY constraint "fk_issued_status". The conflict occurred in database "Library_Project_DB", table "dbo.issued_status", column 'issued_id'

Then We found there are return_status.issued_id are not present in issued_status.issued_id so I removed it by Delete query as done below

```
SELECT issued_id
FROM return_status
WHERE issued_id NOT IN (SELECT issued_id FROM issued_status);
```

```
DELETE FROM return_status
WHERE issued_id NOT IN (SELECT issued_id FROM issued_status);
```

```
SELECT * FROM branch
```

	branch_id	manager_id	branch_address	contact_no
1	B001	E109	123 Main St	+919099988676
2	B002	E109	456 Elm St	+919099988677
3	B003	E109	789 Oak St	+919099988678
4	B004	E110	567 Pine St	+919099988679
5	B005	E110	890 Maple St	+919099988680

```
SELECT * FROM books
```

	isbn	book_title	category	rental_price	status	author	publisher
1	978-0-553-29698-2	The Catcher in the Rye	Classic	7.00	yes	J.D. Salinger	Little, Brown and Company
2	978-0-330-25864-8	Animal Farm	Classic	5.50	yes	George Orwell	Penguin Books
3	978-0-14-118776-1	One Hundred Years of Solitude	Literary Fiction	6.50	yes	Gabriel Garcia Marquez	Penguin Books
4	978-0-525-47535-5	The Great Gatsby	Classic	8.00	yes	F. Scott Fitzgerald	Scribner
5	978-0-141-44171-6	Jane Eyre	Classic	4.00	yes	Charlotte Bronte	Penguin Classics
6	978-0-307-37840-1	The Alchemist	Fiction	2.50	yes	Paulo Coelho	HarperOne
7	978-0-679-76489-8	Harry Potter and the Sorcerers Stone	Fantasy	7.00	yes	J.K. Rowling	Scholastic
8	978-0-7432-4722-4	The Da Vinci Code	Mystery	8.00	yes	Dan Brown	Doubleday
9	978-0-09-957807-9	A Game of Thrones	Fantasy	7.50	yes	George R.R. Martin	Bantam
10	978-0-393-05081-8	A Peoples History of the United States	History	9.00	yes	Howard Zinn	Harper Perennial
11	978-0-19-280551-1	The Guns of August	History	7.00	yes	Barbara W. Tuchman	Oxford University Press
12	978-0-307-58837-1	Sapiens: A Brief History of Humankind	History	8.00	no	Yuval Noah Harari	Harper Perennial
13	978-0-375-41398-8	The Diary of a Young Girl	History	6.50	no	Anne Frank	Bantam
14	978-0-14-044930-3	The Histories	History	5.50	yes	Herodotus	Penguin Classics
15	978-0-393-91257-8	Guns, Germs, and Steel: The Fates ...	History	7.00	yes	Jared Diamond	W. W. Norton & Company
16	978-0-7432-7357-1	1491: New Revelations of the Ameri...	History	6.50	no	Charles C. Mann	Vintage Books
17	978-0-679-64115-3	1984	Dystopian	6.50	yes	George Orwell	Penguin Books
18	978-0-14-143951-8	Pride and Prejudice	Classic	5.00	yes	Jane Austen	Penguin Classics
19	978-0-452-28240-7	Brave New World	Dystopian	6.50	yes	Aldous Huxley	Harper Perennial
20	978-0-670-81302-4	The Road	Dystopian	7.00	yes	Cormac McCarthy	Knopf
21	978-0-385-33312-0	The Shining	Horror	6.00	yes	Stephen King	Doubleday
22	978-0-451-52993-5	Fahrenheit 451	Dystopian	5.50	yes	Ray Bradbury	Ballantine Books
23	978-0-345-39180-3	Dune	Science Fict...	8.50	yes	Frank Herbert	Ace
24	978-0-375-50167-0	The Road	Dystopian	7.00	yes	Cormac McCarthy	Vintage
25	978-0-06-025492-6	Where the Wild Things Are	Children	3.50	yes	Maurice Sendak	HarperCollins

```
SELECT * FROM employees
```

	emp_id	emp_name	position	salary	branch_id
1	E101	John Doe	Clerk	60000.00	B001
2	E102	Jane Smith	Clerk	45000.00	B002
3	E103	Mike Johnson	Librarian	55000.00	B001
4	E104	Emily Davis	Assistant	40000.00	B001
5	E105	Sarah Brown	Assistant	42000.00	B001
6	E106	Michelle Ramirez	Assistant	43000.00	B001
7	E107	Michael Thompson	Clerk	62000.00	B005
8	E108	Jessica Taylor	Clerk	46000.00	B004
9	E109	Daniel Anderson	Manager	57000.00	B003
10	E110	Laura Martinez	Manager	41000.00	B005
11	E111	Christopher Lee	Assistant	65000.00	B005

SELECT * FROM members

	member_id	member_name	member_address	reg_date
1	C101	Alice Johnson	123 Main St	2021-05-15
2	C102	Bob Smith	456 Elm St	2021-06-20
3	C103	Carol Davis	789 Oak St	2021-07-10
4	C104	Dave Wilson	567 Pine St	2021-08-05
5	C105	Eve Brown	890 Maple St	2021-09-25
6	C106	Frank Thomas	234 Cedar St	2021-10-15
7	C107	Grace Taylor	345 Walnut St	2021-11-20
8	C108	Henry Anderson	456 Birch St	2021-12-10
9	C109	Ivy Martinez	567 Oak St	2022-01-05
10	C110	Jack Wilson	678 Pine St	2022-02-25
11	C118	Sam	133 Pine St	2024-06-01
12	C119	John	143 Main St	2024-05-01

SELECT * FROM return_status;

	return_id	issued_id	return_book_name	return_date	return_book_isbn
1	RS101	IS101	NULL	2023-06-06	NULL
2	RS102	IS105	NULL	2023-06-07	NULL
3	RS103	IS103	NULL	2023-08-07	NULL
4	RS104	IS106	NULL	2024-05-01	NULL
5	RS105	IS107	NULL	2024-05-03	NULL
6	RS106	IS108	NULL	2024-05-05	NULL
7	RS107	IS109	NULL	2024-05-07	NULL
8	RS108	IS110	NULL	2024-05-09	NULL
9	RS109	IS111	NULL	2024-05-11	NULL
10	RS110	IS112	NULL	2024-05-13	NULL
11	RS111	IS113	NULL	2024-05-15	NULL
12	RS112	IS114	NULL	2024-05-17	NULL
13	RS113	IS115	NULL	2024-05-19	NULL
14	RS114	IS116	NULL	2024-05-21	NULL
15	RS115	IS117	NULL	2024-05-23	NULL
16	RS116	IS118	NULL	2024-05-25	NULL
17	RS117	IS119	NULL	2024-05-27	NULL
18	RS118	IS120	NULL	2024-05-29	NULL

SELECT * FROM issued_status

	issued_id	issued_member_id	issued_book_name	issued_date	issued_book_isbn	issued_emp_id
1	IS106	C106	Animal Farm	2024-03-10	978-0-330-25864-8	E104
2	IS107	C107	One Hundred Years of Solitude	2024-03-11	978-0-14-118776-1	E104
3	IS108	C108	The Great Gatsby	2024-03-12	978-0-525-47535-5	E104
4	IS109	C109	Jane Eyre	2024-03-13	978-0-141-44171-6	E105
5	IS110	C110	The Alchemist	2024-03-14	978-0-307-37840-1	E105
6	IS111	C109	Harry Potter and the Sorcerer's Stone	2024-03-15	978-0-679-76489-8	E105
7	IS112	C109	A Game of Thrones	2024-03-16	978-0-09-957807-9	E106
8	IS113	C109	A People's History of the United States	2024-03-17	978-0-393-05081-8	E106
9	IS114	C109	The Guns of August	2024-03-18	978-0-19-280551-1	E106
10	IS115	C109	The Histories	2024-03-19	978-0-14-044930-3	E107
11	IS116	C110	Guns, Germs, and Steel: The Fates of Human Societies	2024-03-20	978-0-393-91257-8	E107
12	IS117	C110	1984	2024-03-21	978-0-679-64115-3	E107
13	IS118	C101	Pride and Prejudice	2024-03-22	978-0-14-143951-8	E108
14	IS119	C110	Brave New World	2024-03-23	978-0-452-28240-7	E108
15	IS120	C110	The Road	2024-03-24	978-0-670-81302-4	E108
16	IS121	C102	The Shining	2024-03-25	978-0-385-33312-0	E109
17	IS122	C102	Fahrenheit 451	2024-03-26	978-0-451-52993-5	E109
18	IS123	C103	Dune	2024-03-27	978-0-345-39180-3	E109
19	IS124	C104	Where the Wild Things Are	2024-03-28	978-0-06-025492-6	E110
20	IS125	C105	The Kite Runner	2024-03-29	978-0-06-112241-5	E110
21	IS126	C105	Charlotte's Web	2024-03-30	978-0-06-440055-8	E110
22	IS127	C105	Beloved	2024-03-31	978-0-679-77644-3	E110
23	IS128	C105	A Tale of Two Cities	2024-04-01	978-0-14-027526-3	E110
24	IS129	C105	The Stand	2024-04-02	978-0-7434-7679-3	E110
25	IS130	C106	Moby Dick	2024-04-03	978-0-451-52994-2	F101

Project TASK

CRUD Operations

Task 1. Create a New Book Record

```
"978-1-60129-456-2", 'To Kill a Mockingbird', 'Classic', 6.00, 'yes',
'Harper Lee',
'J.B. Lippincott & Co.')
```

```
SELECT TOP (1000) [isbn]
, [book_title]
, [category]
, [rental_price]
, [status]
, [author]
, [publisher]
FROM [Library_Project_DB].[dbo].[books]
-- Before we have 35 records
```

	isbn	book_title	category	rental_price	status	author	publisher
1	978-0-06-025492-6	Where the Wild Things Are	Children	5.00	yes	Maurice Sendak	HarperCollins
2	978-0-06-112008-4	To Kill a Mockingbird	Classic	5.00	yes	Harper Lee	J.B. Lippincott & Co.
3	978-0-06-112241-5	The Kite Runner	Fiction	5.50	yes	Khaled Hosseini	Riverhead Books
4	978-0-06-440055-8	Charlotte's Web	Children	4.00	yes	E.B. White	Harper & Row
5	978-0-09-957807-9	A Game of Thrones	Fantasy	7.50	yes	George R.R. Martin	Bantam
6	978-0-14-027526-3	A Tale of Two Cities	Classic	4.50	yes	Charles Dickens	Penguin Books
7	978-0-14-044930-3	The Histories	History	5.50	yes	Herodotus	Penguin Classics
8	978-0-14-118776-1	One Hundred Years of Solitude	Literary Fiction	6.50	yes	Gabriel Garcia Marquez	Penguin Books
9	978-0-14-143951-8	Pride and Prejudice	Classic	5.00	yes	Jane Austen	Penguin Classics
10	978-0-141-44171-6	Jane Eyre	Classic	4.00	yes	Charlotte Brontë	Penguin Classics
11	978-0-19-280551-1	The Guns of August	History	7.00	yes	Barbara W. Tuchman	Oxford University Press
12	978-0-307-37840-1	The Alchemist	Fiction	2.50	yes	Paulo Coelho	HarperOne
13	978-0-307-58831-1	Sapiens: A Brief History of Humankind	History	8.00	no	Yuval Noah Harari	Harper Perennial
14	978-0-330-25864-8	Animal Farm	Classic	5.50	yes	George Orwell	Penguin Books
15	978-0-345-39180-3	Dune	Science Fiction	8.50	yes	Frank Herbert	Ace
16	978-0-375-41366-8	The Diary of a Young Girl	History	6.50	no	Anne Frank	Bantam
17	978-0-375-50157-0	The Road	Dystopian	7.00	yes	Cormac McCarthy	Vintage
18	978-0-385-33312-0	The Shining	Horror	6.00	yes	Stephen King	Doubleday
19	978-0-393-05081-8	A People's History of the United States	History	9.00	yes	Howard Zinn	Harper Perennial
20	978-0-393-91257-8	Guns, Germs, and Steel: The Fates of Human Societies	History	7.00	yes	Jared Diamond	W. W. Norton & Company
21	978-0-451-52993-5	Fahrenheit 451	Dystopian	6.50	yes	Ray Bradbury	Bantam Books
22	978-0-451-52994-2	Moby Dick	Classic	6.50	yes	Herman Melville	Penguin Books
23	978-0-452-28240-7	Brave New World	Dystopian	6.50	yes	Aldous Huxley	Harper Perennial
24	978-0-525-47535-5	The Great Gatsby	Classic	8.00	yes	F. Scott Fitzgerald	Scribner
25	978-0-553-26666-2	The Catcher in the Rye	Classic	7.00	yes	J.D. Salinger	Little, Brown and Co.

```
INSERT INTO books([isbn], [book_title], [category], [rental_price],
[status], [author], [publisher])
VALUES ('978-1-60129-456-2', 'To Kill a Mockingbird', 'Classic', 6.00,
'yes', 'Harper Lee', 'J.B. Lippincott & Co.')
```

	isbn	book_title	category	rental_price	status	author	publisher
14	978-0-330-25864-8	Animal Farm	Classic	5.50	yes	George Orwell	Penguin Books
15	978-0-345-39180-3	Dune	Science Fict...	8.50	yes	Frank Herbert	Ace
16	978-0-375-41398-8	The Diary of a Young Girl	History	6.50	no	Anne Frank	Bantam
17	978-0-375-50167-0	The Road	Dystopian	7.00	yes	Cormac McCarthy	Vintage
18	978-0-385-33312-0	The Shining	Horror	6.00	yes	Stephen King	Doubleday
19	978-0-393-05081-8	A Peoples History of the Unite...	History	9.00	yes	Howard Zinn	Harper Perennial
20	978-0-393-91257-8	Guns, Germs, and Steel: The ...	History	7.00	yes	Jared Diamond	W. W. Norton & Com...
21	978-0-451-52993-5	Fahrenheit 451	Dystopian	5.50	yes	Ray Bradbury	Ballantine Books
22	978-0-451-52994-2	Moby Dick	Classic	6.50	yes	Herman Melville	Penguin Books
23	978-0-452-28240-7	Brave New World	Dystopian	6.50	yes	Aldous Huxley	Harper Perennial
24	978-0-525-47535-5	The Great Gatsby	Classic	8.00	yes	F. Scott Fitzgerald	Scribner
25	978-0-553-29698-2	The Catcher in the Rye	Classic	7.00	yes	J.D. Salinger	Little, Brown and Co...
26	978-0-553-57340-1	1984	Dystopian	6.50	yes	George Orwell	Penguin Books
27	978-0-670-81302-4	The Road	Dystopian	7.00	yes	Cormac McCarthy	Knopf
28	978-0-679-64115-3	1984	Dystopian	6.50	yes	George Orwell	Penguin Books
29	978-0-679-76489-8	Harry Potter and the Sorcerer...	Fantasy	7.00	yes	J.K. Rowling	Scholastic
30	978-0-679-77644-3	Beloved	Fiction	6.50	yes	Toni Morrison	Knopf
31	978-0-7432-4722-4	The Da Vinci Code	Mystery	8.00	yes	Dan Brown	Doubleday
32	978-0-7432-4722-5	Angels & Demons	Mystery	7.50	yes	Dan Brown	Doubleday
33	978-0-7432-7356-4	The Hobbit	Fantasy	7.00	yes	J.R.R. Tolkien	Houghton Mifflin Har...
34	978-0-7432-7357-1	1491: New Revelations of the ...	History	6.50	no	Charles C. Mann	Vintage Books
35	978-0-7434-7679-3	The Stand	Horror	7.00	yes	Stephen King	Doubleday
36	978-1-60129-456-2	To Kill a Mockingbird	Classic	6.00	yes	Harper Lee	J.B. Lippincott & Co.

Task 2: Update an Existing Member's Address

UPDATE members

SET member_address = '125 Main st'

Where member_id= 'C101'

SELECT * FROM members

	member_id	member_name	member_address	reg_date
1	C101	Alice Johnson	125 Main st	2021-05-15
2	C102	Bob Smith	456 Elm St	2021-06-20
3	C103	Carol Davis	789 Oak St	2021-07-10
4	C104	Dave Wilson	567 Pine St	2021-08-05
5	C105	Eve Brown	890 Maple St	2021-09-25
6	C106	Frank Thomas	234 Cedar St	2021-10-15
7	C107	Grace Taylor	345 Walnut St	2021-11-20
8	C108	Henry Anderson	456 Birch St	2021-12-10
9	C109	Ivy Martinez	567 Oak St	2022-01-05
10	C110	Jack Wilson	678 Pine St	2022-02-25
11	C118	Sam	133 Pine St	2024-06-01
12	C119	John	143 Main St	2024-05-01

Task 3: Delete a Record from the Issued Status Table

Objective: Delete the record with issued_id = 'IS104' from the issued_status table.

Select * from issued_status-- There were 35 rows

DELETE FROM issued_status

WHERE issued_id = 'IS121';

Select * from issued_status-- Now there are 34 Rows

	issued_id	issued_member_id	issued_book_name	issued_date	issued_book_isbn	issued_emp_id
6	IS111	C109	Harry Potter and the Sorcerers Stone	2024-03-15	978-0-679-76489-8	E105
7	IS112	C109	A Game of Thrones	2024-03-16	978-0-09-957807-9	E106
8	IS113	C109	A Peoples History of the United States	2024-03-17	978-0-393-05081-8	E106
9	IS114	C109	The Guns of August	2024-03-18	978-0-19-280551-1	E106
10	IS115	C109	The Histories	2024-03-19	978-0-14-044930-3	E107
11	IS116	C110	Guns, Germs, and Steel: The Fates of Human Soci...	2024-03-20	978-0-393-91257-8	E107
12	IS117	C110	1984	2024-03-21	978-0-679-64115-3	E107
13	IS118	C101	Pride and Prejudice	2024-03-22	978-0-14-143951-8	E108
14	IS119	C110	Brave New World	2024-03-23	978-0-452-28240-7	E108
15	IS120	C110	The Road	2024-03-24	978-0-670-81302-4	E108
16	IS122	C102	Fahrenheit 451	2024-03-26	978-0-451-52993-5	E109
17	IS123	C103	Dune	2024-03-27	978-0-345-39180-3	E109
18	IS124	C104	Where the Wild Things Are	2024-03-28	978-0-06-025492-6	E110
19	IS125	C105	The Kite Runner	2024-03-29	978-0-06-112241-5	E110
20	IS126	C105	Charlotte's Web	2024-03-30	978-0-06-440055-8	E110
21	IS127	C105	Beloved	2024-03-31	978-0-679-77644-3	E110
22	IS128	C105	A Tale of Two Cities	2024-04-01	978-0-14-027526-3	E110

Task 4: Retrieve All Books Issued by a Specific Employee

Objective: Select all books issued by the employee with emp_id = 'E101'.

```
SELECT * FROM issued_status
WHERE issued_emp_id = 'E101'
```

	issued_id	issued_member_id	issued_book_name	issued_date	issued_book_isbn	issued_emp_id
1	IS130	C106	Moby Dick	2024-04-03	978-0-451-52994-2	E101
2	IS131	C106	To Kill a Mockingbird	2024-04-04	978-0-06-112008-4	E101

Task 5: List Members Who Have Issued More Than One Book

Objective: Use GROUP BY to find members who have issued more than one book.

```
SELECT * FROM
(
    SELECT issued_member_id, COUNT(*) AS Total_book_Issued FROM
    issued_status
    Group by issued_member_id
)t
WHERE Total_book_Issued >1
```

	issued_member_id	Total_book_Issued
1	C105	5
2	C106	4
3	C107	6
4	C108	2
5	C109	7
6	C110	6

CTAS (Create Table As Select)

Task 6: Create Summary Tables**: Used CTAS to generate new tables based on query results each book and total book_issued_cnt

```

SELECT
b.isbn,
b.book_title,
COUNT(isst.issued_id) AS Total_book_Issued
INTO Total_Books_Issued_by_Each_book
FROM books as b
JOIN issued_status as isst
ON isst.issued_book_isbn = b.isbn
Group by b.isbn, b.book_title

Select * from Total_Books_Issued_by_Each_book

```

	isbn	book_title	Total_book_Issued
1	978-0-06-025492-6	Where the Wild Things Are	1
2	978-0-06-112008-4	To Kill a Mockingbird	1
3	978-0-06-112241-5	The Kite Runner	1
4	978-0-06-440055-8	Charlotte's Web	1
5	978-0-09-957807-9	A Game of Thrones	1
6	978-0-14-027526-3	A Tale of Two Cities	1
7	978-0-14-044930-3	The Histories	1
8	978-0-14-118776-1	One Hundred Years of Solitude	1
9	978-0-14-143951-8	Pride and Prejudice	1
10	978-0-141-44171-6	Jane Eyre	1
11	978-0-19-280551-1	The Guns of August	1
12	978-0-307-37840-1	The Alchemist	1
13	978-0-307-58837-1	Sapiens: A Brief History of Hu...	1
14	978-0-330-25864-8	Animal Farm	2
15	978-0-345-39180-3	Dune	1
16	978-0-375-41398-8	The Diary of a Young Girl	1
17	978-0-393-05081-8	A Peoples History of the Unite...	1
18	978-0-393-91257-8	Guns, Germs, and Steel: The ...	1
19	978-0-451-52993-5	Fahrenheit 451	1
20	978-0-451-52994-2	Moby Dick	1
21	978-0-452-28240-7	Brave New World	1
22	978-0-525-47535-5	The Great Gatsby	2
23	978-0-553-29698-2	The Catcher in the Rye	1
24	978-0-670-81302-4	The Road	1
25	978-0-679-64115-3	1984	1

Data Analysis & Findings

Task 7. Retrieve All Books in a Specific Category:

Objective: Category is Classic

```

SELECT
category,
book_title FROM books
WHERE category = 'Classic'

```

	category	book_title
1	Classic	To Kill a Mockingbird
2	Classic	A Tale of Two Cities
3	Classic	Pride and Prejudice
4	Classic	Jane Eyre
5	Classic	Animal Farm
6	Classic	Moby Dick
7	Classic	The Great Gatsby
8	Classic	The Catcher in the Rye
9	Classic	To Kill a Mockingbird

Task 8: Find Total Rental Income by Category:

```
SELECT
b.category,
SUM(b.rental_price) AS Rental_Income,
COUNT(*) No_of_items_sold
FROM books AS b
JOIN issued_status as isst
ON isst.issued_book_isbn = b.isbn
GROUP BY category
ORDER BY Rental_Income DESC
```

	category	Rental_Income	No_of_items_sold
1	Classic	59.00	10
2	History	49.50	7
3	Fantasy	28.50	4
4	Dystopian	25.50	4
5	Fiction	14.50	3
6	Science Fiction	8.50	1
7	Children	7.50	2
8	Mystery	7.50	1
9	Horror	7.00	1
10	Literary Fiction	6.50	1

Task 9. List Members Who Registered in the Last 180 Days:

```
SELECT *
FROM members
WHERE reg_date > DATEADD(DAY, -300, GETDATE());
```

	member_id	member_name	member_address	reg_date
1	C118	Sam	133 Pine St	2024-06-01
2	C119	John	143 Main St	2024-05-01

Task 10: List Employees with Their Branch Manager's Name and their branch details:

```
SELECT
e1.*,
br.manager_id,
e2.emp_name as Manager
FROM employees as e1
JOIN branch br
ON e1.branch_id = br.branch_id
JOIN employees e2
ON e2.emp_id = br.manager_id
```


	emp_id	emp_name	position	salary	branch_id	manager_id	Manager
1	E101	John Doe	Clerk	60000.00	B001	E109	Daniel Anderson
2	E102	Jane Smith	Clerk	45000.00	B002	E109	Daniel Anderson
3	E103	Mike Johnson	Librarian	55000.00	B001	E109	Daniel Anderson
4	E104	Emily Davis	Assistant	40000.00	B001	E109	Daniel Anderson
5	E105	Sarah Brown	Assistant	42000.00	B001	E109	Daniel Anderson
6	E106	Michelle Ramirez	Assistant	43000.00	B001	E109	Daniel Anderson
7	E107	Michael Thompson	Clerk	62000.00	B005	E110	Laura Martinez
8	E108	Jessica Taylor	Clerk	46000.00	B004	E110	Laura Martinez
9	E109	Daniel Anderson	Manager	57000.00	B003	E109	Daniel Anderson
10	E110	Laura Martinez	Manager	41000.00	B005	E110	Laura Martinez
11	E111	Christopher Lee	Assistant	65000.00	B005	E110	Laura Martinez

Task 11. Create a Table of Books with Rental Price Above a Certain Threshold

```
SELECT * INTO Books_Price_Greater_than_Seven
FROM books
WHERE rental_price > 7
```

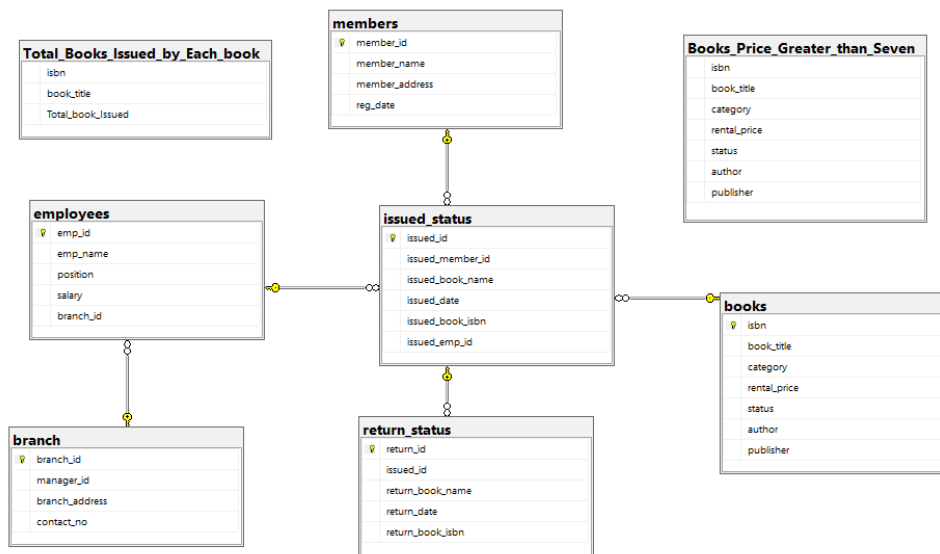
```
SELECT * FROM Books_Price_Greater_than_Seven
```

	isbn	book_title	category	rental_price	status	author	publisher
1	978-0-09-957807-9	A Game of Thrones	Fantasy	7.50	yes	George R.R. Martin	Bantam
2	978-0-307-58837-1	Sapiens: A Brief History of Humankind	History	8.00	no	Yuval Noah Harari	Harper Perennial
3	978-0-345-39180-3	Dune	Science Fiction	8.50	yes	Frank Herbert	Ace
4	978-0-393-05081-8	A Peoples History of the United States	History	9.00	yes	Howard Zinn	Harper Perennial
5	978-0-525-47535-5	The Great Gatsby	Classic	8.00	yes	F. Scott Fitzgerald	Scribner
6	978-0-7432-4722-4	The Da Vinci Code	Mystery	8.00	yes	Dan Brown	Doubleday
7	978-0-7432-4722-5	Angels & Demons	Mystery	7.50	yes	Dan Brown	Doubleday

Task 12: Retrieve the List of Books Not Yet Returned

```
SELECT
DISTINCT isst.issued_book_name
FROM issued_status isst
LEFT JOIN [return_status] rs
ON isst.issued_id = rs.issued_id
WHERE rs.return_id IS NULL
```

	issued_book_name
1	1491: New Revelations of the Americas Before Colu...
2	A Tale of Two Cities
3	Angels & Demons
4	Animal Farm
5	Beloved
6	Charlotte's Web
7	Dune
8	Fahrenheit 451
9	Harry Potter and the Sorcerers Stone
10	Moby Dick
11	Sapiens: A Brief History of Humankind
12	The Catcher in the Rye
13	The Diary of a Young Girl
14	The Great Gatsby
15	The Hobbit
16	The Kite Runner
17	The Stand
18	To Kill a Mockingbird
19	Where the Wild Things Are



SOME CHANGES BEFORE DOING ADVANCE SQL OPERATIONS

-- Inserting records into issued_status table

```

INSERT INTO issued_status (issued_id, issued_member_id, issued_book_name,
issued_date, issued_book_isbn, issued_emp_id)
VALUES
('IS151', 'C118', 'The Catcher in the Rye', DATEADD(DAY, -144, GETDATE()), '978-0-553-29698-2', 'E108'),
('IS152', 'C119', 'The Catcher in the Rye', DATEADD(DAY, -133, GETDATE()), '978-0-553-29698-2', 'E109'),
('IS153', 'C106', 'Pride and Prejudice', DATEADD(DAY, -127, GETDATE()), '978-0-14-143951-8', 'E107'),
('IS154', 'C105', 'The Road', DATEADD(DAY, -152, GETDATE()), '978-0-375-50167-0', 'E101');
  
```

SELECT * FROM issued_status

	issued_id	issued_member_id	issued_book_name	issued_date	issued_book_isbn	issued_emp_id
14	IS119	C110	Brave New World	2024-03-23	978-0-452-28240-7	E108
15	IS120	C110	The Road	2024-03-24	978-0-670-81302-4	E108
16	IS122	C102	Fahrenheit 451	2024-03-26	978-0-451-52993-5	E109
17	IS123	C103	Dune	2024-03-27	978-0-345-39180-3	E109
18	IS124	C104	Where the Wild Things Are	2024-03-28	978-0-06-025492-6	E110
19	IS125	C105	The Kite Runner	2024-03-29	978-0-06-112241-5	E110
20	IS126	C105	Charlotte's Web	2024-03-30	978-0-06-440055-8	E110
21	IS127	C105	Beloved	2024-03-31	978-0-679-77644-3	E110
22	IS128	C105	A Tale of Two Cities	2024-04-01	978-0-14-027526-3	E110
23	IS129	C105	The Stand	2024-04-02	978-0-7434-7679-3	E110
24	IS130	C106	Moby Dick	2024-04-03	978-0-451-52994-2	E101
25	IS131	C106	To Kill a Mockingbird	2024-04-04	978-0-06-112008-4	E101
26	IS132	C106	The Hobbit	2024-04-05	978-0-7432-7356-4	E106
27	IS133	C107	Angels & Demons	2024-04-06	978-0-7432-4722-5	E106
28	IS134	C107	The Diary of a Young Girl	2024-04-07	978-0-375-41398-8	E106
29	IS135	C107	Sapiens: A Brief History of Hu...	2024-04-08	978-0-307-58837-1	E108
30	IS136	C107	1491: New Revelations of the ...	2024-04-09	978-0-7432-7357-1	E102
31	IS137	C107	The Catcher in the Rye	2024-04-10	978-0-553-29698-2	E103
32	IS138	C108	The Great Gatsby	2024-04-11	978-0-525-47535-5	E104
33	IS139	C109	Harry Potter and the Sorcerer...	2024-04-12	978-0-679-76489-8	E105
34	IS140	C110	Animal Farm	2024-04-13	978-0-330-25864-8	E102
35	IS151	C118	The Catcher in the Rye	2024-08-21	978-0-553-29698-2	E108
36	IS152	C119	The Catcher in the Rye	2024-09-01	978-0-553-29698-2	E109
37	IS153	C106	Pride and Prejudice	2024-09-07	978-0-14-143951-8	E107
38	IS154	C105	The Road	2024-08-13	978-0-375-50167-0	E101

-- Adding a new column to return_status table

```

ALTER TABLE return_status
ADD book_quality VARCHAR(15) DEFAULT 'Good';

-- Updating the book_quality column for specific issued IDs
UPDATE [return_status ]
SET book_quality = 'Damaged'
WHERE issued_id IN ('IS112', 'IS117', 'IS118');

-- Selecting all records from return_status table
SELECT * FROM [return_status ];

```

	return_id	issued_id	return_book_name	return_date	return_book_isbn	book_quality
1	RS104	IS106	NULL	2024-05-01	NULL	NULL
2	RS105	IS107	NULL	2024-05-03	NULL	NULL
3	RS106	IS108	NULL	2024-05-05	NULL	NULL
4	RS107	IS109	NULL	2024-05-07	NULL	NULL
5	RS108	IS110	NULL	2024-05-09	NULL	NULL
6	RS109	IS111	NULL	2024-05-11	NULL	NULL
7	RS110	IS112	NULL	2024-05-13	NULL	Damaged
8	RS111	IS113	NULL	2024-05-15	NULL	NULL
9	RS112	IS114	NULL	2024-05-17	NULL	NULL
10	RS113	IS115	NULL	2024-05-19	NULL	NULL
11	RS114	IS116	NULL	2024-05-21	NULL	NULL
12	RS115	IS117	NULL	2024-05-23	NULL	Damaged
13	RS116	IS118	NULL	2024-05-25	NULL	Damaged
14	RS117	IS119	NULL	2024-05-27	NULL	NULL
15	RS118	IS120	NULL	2024-05-29	NULL	NULL

ADVANCE SQL OPERATIONS

```

SELECT * FROM books           --36 Records
SELECT * FROM branch          -- 5 Records
SELECT * FROM employees       -- 11 Records
SELECT * FROM issued_status   --38 Records
SELECT * FROM members         -- 12 Records
SELECT * FROM [return_status ] -- 15 Records

```

Task 13: Identify Members with Overdue Books

Write a query to identify members who have overdue books (assume a 30-day return period). Display the member's name, book title, issue date, and days overdue.

```

SELECT CONVERT(date, DATEADD(MONTH, -4, GETDATE()))
Todays_date_Using_Convert_and_DateADD;
-- OR
SELECT CAST(DATEADD(MONTH, -4, GETDATE()) AS date)
Todays_date_Cast_and_DateADD

```

Todays_date_Using_Convert_and_DateADD	
1	2024-09-12

Todays_date_Cast_and_DateADD	
1	2024-09-12

```

SELECT
isst.issued_member_id,
m.member_name,
b.book_title,
isst.issued_date,
--rs.return_date,
CAST(DATEADD(MONTH,-4,GETDATE())AS date) Todays_date,
DATEDIFF(DAY,isst.issued_date,
CAST(DATEADD(MONTH,-4,GETDATE()) AS date)) as Over_due_days
FROM issued_status isst
JOIN members m
ON isst.issued_member_id = m.member_id
JOIN books b
ON isst.issued_book_isbn = b.isbn
LEFT JOIN [return_status] rs
ON isst.issued_id = rs.issued_id
WHERE
rs.return_date is NULL
AND
DATEDIFF(DAY,isst.issued_date,CAST(DATEADD(MONTH,-4,GETDATE()) AS
date)) >30
ORDER BY 1

```

	issued_member_id	member_name	book_title	issued_date	Todays_date	Over_due_days
1	C102	Bob Smith	Fahrenheit 451	2024-03-26	2024-09-12	170
2	C103	Carol Davis	Dune	2024-03-27	2024-09-12	169
3	C104	Dave Wilson	Where the Wild Things Are	2024-03-28	2024-09-12	168
4	C105	Eve Brown	The Kite Runner	2024-03-29	2024-09-12	167
5	C105	Eve Brown	Charlotte's Web	2024-03-30	2024-09-12	166
6	C105	Eve Brown	Beloved	2024-03-31	2024-09-12	165
7	C105	Eve Brown	A Tale of Two Cities	2024-04-01	2024-09-12	164
8	C105	Eve Brown	The Stand	2024-04-02	2024-09-12	163
9	C106	Frank Thomas	Moby Dick	2024-04-03	2024-09-12	162
10	C106	Frank Thomas	To Kill a Mockingbird	2024-04-04	2024-09-12	161
11	C106	Frank Thomas	The Hobbit	2024-04-05	2024-09-12	160
12	C107	Grace Taylor	Angels & Demons	2024-04-06	2024-09-12	159
13	C107	Grace Taylor	The Diary of a Young Girl	2024-04-07	2024-09-12	158
14	C107	Grace Taylor	Sapiens: A Brief History o...	2024-04-08	2024-09-12	157
15	C107	Grace Taylor	1491: New Revelations of...	2024-04-09	2024-09-12	156
16	C107	Grace Taylor	The Catcher in the Rye	2024-04-10	2024-09-12	155
17	C108	Henry Ander...	The Great Gatsby	2024-04-11	2024-09-12	154
18	C109	Ivy Martinez	Harry Potter and the Sorc...	2024-04-12	2024-09-12	153
19	C110	Jack Wilson	Animal Farm	2024-04-13	2024-09-12	152

Task 14: Update Book Status on Return

Write a query to update the status of books in the books table to "available" when they are returned (based on entries in the return_status table).

Store Procedures

GO

-- Stored Procedure for SQL Server

CREATE PROCEDURE add_return_records

@p_return_id VARCHAR(10),

@p_issued_id VARCHAR(10),

@p_book_quality VARCHAR(15)

AS

BEGIN

SET NOCOUNT ON;

DECLARE @v_isbn VARCHAR(50);

DECLARE @v_book_name VARCHAR(100);

-- Inserting Records in return_status table based on user input

INSERT INTO [return_status] (return_id, issued_id, return_date,
book_quality)

VALUES

(@p_return_id, @p_issued_id, CAST(GETDATE() AS DATE), @p_book_quality);

-- Retrieving book details from issued_status

SELECT

@v_isbn = issued_book_isbn,

@v_book_name = issued_book_name

FROM

issued_status

WHERE

issued_id = @p_issued_id;

-- Updating the book status in the books table

UPDATE books

SET status = 'yes'

WHERE isbn = @v_isbn;

-- Output message for successful book return

PRINT 'Thank you for returning the book ' + @v_book_name;

END;

SELECT * FROM issued_status

SELECT * FROM [return_status]

-- Below is the Verification that this isbn 978-0-307-58837-1 book is issued by
IS135 issue_id which has 'no' status as It is not available

SELECT * FROM books

WHERE isbn = '978-0-307-58837-1'

	isbn	book_title	category	rental_price	status	author	publisher
1	978-0-307-58837-1	Sapiens: A Brief History of Humankind	History	8.00	no	Yuval Noah Harari	Harper Perennial

-- Here you can see book is not returned yet

-- By whom this book is issued

SELECT * FROM issued_status

```
WHERE issued_book_isbn = '978-0-307-58837-1'
```

	issued_id	issued_member_id	issued_book_name	issued_date	issued_book_isbn	issued_emp_id
1	IS135	C107	Sapiens: A Brief History of Humankind	2024-04-08	978-0-307-58837-1	E108

```
-- Issued_id IS135
-- Here below as You can see that no return records is there by issue_id IS135 so
book is still with IS135 person
SELECT * FROM [return_status ]
WHERE issued_id = 'IS135'
```

return_id	issued_id	return_book_name	return_date	return_book_isbn	book_quality

```
-- TESTING FUNCTION add_return_records
EXEC add_return_records 'RS119', 'IS135', 'Good';
```

	isbn	book_title	category	rental_price	status	author	publisher
1	978-0-307-58837-1	Sapiens: A Brief History of Humankind	History	8.00	yes	Yuval Noah Harari	Harper Perennial

	issued_id	issued_member_id	issued_book_name	issued_date	issued_book_isbn	issued_emp_id
1	IS135	C107	Sapiens: A Brief History of Humankind	2024-04-08	978-0-307-58837-1	E108

	return_id	issued_id	return_book_name	return_date	return_book_isbn	book_quality
1	RS119	IS135	Sapiens: A Brief History of Humankind	2025-01-12	978-0-307-58837-1	Good

```
-- Testing of add_return_records procedure
```

```
--UPDATE books
--SET status ='no'
--WHERE isbn = '978-0-330-25864-8'
```

```
SELECT * FROM books
WHERE isbn = '978-0-330-25864-8'
-- Here you can see book is not returned yet
```

	isbn	book_title	category	rental_price	status	author	publisher
1	978-0-330-25864-8	Animal Farm	Classic	5.50	no	George Orwell	Penguin Books

```
-- By whom this book is issued
SELECT * FROM issued_status
WHERE issued_book_isbn = '978-0-330-25864-8'
```

-- Issued_id IS140

	issued_id	issued_member_id	issued_book_name	issued_date	issued_book_isbn	issued_emp_id
1	IS106	C106	Animal Farm	2024-03-10	978-0-330-25864-8	E104
2	IS140	C110	Animal Farm	2024-04-13	978-0-330-25864-8	E102

```
SELECT * FROM [return_status ]
WHERE issued_id = 'IS140'
```

	return_id	issued_id	return_book_name	return_date	return_book_isbn	book_quality

--As You can see there is no Return records of IS140

-- TESTING FUNCTION add_return_records

```
EXEC add_return_records 'RS120', 'IS140', 'Good';
```

	isbn	book_title	category	rental_price	status	author	publisher
1	978-0-330-25864-8	Animal Farm	Classic	5.50	yes	George Orwell	Penguin Books

	issued_id	issued_member_id	issued_book_name	issued_date	issued_book_isbn	issued_emp_id
1	IS106	C106	Animal Farm	2024-03-10	978-0-330-25864-8	E104
2	IS140	C110	Animal Farm	2024-04-13	978-0-330-25864-8	E102

	return_id	issued_id	return_book_name	return_date	return_book_isbn	book_quality
1	RS120	IS140	Animal Farm	2025-01-12	978-0-330-25864-8	Good

Task 15: Branch Performance Report

Create a query that generates a performance report for each branch, showing the number of books issued, the number of books returned, and the total revenue generated from book rentals.


```

SELECT
    br.branch_id,
    br.manager_id,
    COUNT(isst.issued_id) Number_of_Books_Issued,
    COUNT(rs.return_id) Number_of_Books_Returned,
    SUM(b.rental_price) Total_Revenue
INTO Branch_Report
FROM issued_status isst
JOIN employees e
    ON isst.issued_emp_id = e.emp_id
JOIN branch br
    ON br.branch_id = e.branch_id
LEFT JOIN [return_status ] as rs
    ON rs.issued_id = isst.issued_id
JOIN books b
    ON isst.issued_book_isbn = b.isbn
Group by br.branch_id, br.manager_id

```

```
SELECT * FROM Branch_Report
```

	branch_id	manager_id	Number_of_Books_Issued	Number_of_Books_Returned	Total_Revenue
1	B001	E109	18	9	118.50
2	B002	E109	2	1	12.00
3	B003	E109	3	0	21.00
4	B004	E110	5	4	33.50
5	B005	E110	10	3	55.00

Task 16: CTAS: Create a Table of Active Members

Use the CREATE TABLE AS (CTAS) statement to create a new table active_members containing members who have issued at least one book in the last 6 months.

```
SELECT DATEADD(MONTH,-7,CAST(GETDATE() AS date)) Todaysdate
```

	Todaysdate
1	2024-06-12

```

SELECT *,
DATEADD(MONTH,-7,CAST(GETDATE() AS date)) Todaysdate
FROM issued_status
WHERE issued_date > DATEADD(MONTH,-7,CAST(GETDATE() as date))

```

	issued_id	issued_member_id	issued_book_name	issued_date	issued_book_isbn	issued_emp_id	Todaysdate
1	IS151	C118	The Catcher in the Rye	2024-08-21	978-0-553-29698-2	E108	2024-06-12
2	IS152	C119	The Catcher in the Rye	2024-09-01	978-0-553-29698-2	E109	2024-06-12
3	IS153	C106	Pride and Prejudice	2024-09-07	978-0-14-143951-8	E107	2024-06-12
4	IS154	C105	The Road	2024-08-13	978-0-375-50167-0	E101	2024-06-12

```
SELECT DISTINCT issued_member_id
```

```
FROM issued_status
WHERE issued_date > DATEADD(MONTH, -7, CAST(GETDATE() as date))
```

	issued_member_id
1	C105
2	C106
3	C118
4	C119

```
SELECT * INTO Active_Members FROM members
WHERE member_id IN
(
    SELECT DISTINCT issued_member_id
    FROM issued_status
    WHERE issued_date > DATEADD(MONTH, -7, CAST(GETDATE() as date))
)
```

```
SELECT * FROM Active_Members
```

	member_id	member_name	member_address	reg_date
1	C105	Eve Brown	890 Maple St	2021-09-25
2	C106	Frank Thomas	234 Cedar St	2021-10-15
3	C118	Sam	133 Pine St	2024-06-01
4	C119	John	143 Main St	2024-05-01

Task 17: Find Employees with the Most Book Issues Processed

Write a query to find the top 3 employees who have processed the most book issues. Display the employee name, number of books processed, and their branch.

```
SELECT TOP 3
e.emp_name,
br.branch_id,
br.manager_id,
branch_address,
contact_no,
COUNT(isst.issued_id) Number_of_book_issued
FROM issued_status isst
JOIN employees e
    ON e.emp_id = isst.issued_emp_id
JOIN branch br
    ON e.branch_id = br.branch_id
GROUP BY
    emp_name,
    br.branch_id,
    br.manager_id,
    branch_address,
    contact_no
```

ORDER BY COUNT(isst.issued_id) DESC

	emp_name	branch_id	manager_id	branch_address	contact_no	Number_of_book_issued
1	Michelle Ramirez	B001	E109	123 Main St	+919099988676	6
2	Laura Martinez	B005	E110	890 Maple St	+919099988680	6
3	Jessica Taylor	B004	E110	567 Pine St	+919099988679	5

Task 18: Identify Members Issuing High-Risk Books

Write a query to identify members who have issued books more than twice with the status "damaged" in the books table. Display the member name, book title, and the number of times they've issued damaged books.

```
SELECT
    m.member_name,
    isst.issued_book_name,
    COUNT(isst.issued_id) Number_of_time_issued_book
FROM issued_status isst
JOIN members m
    ON isst.issued_member_id = m.member_id
LEFT JOIN [return_status ] rs
    ON rs.issued_id = isst.issued_id
WHERE
    rs.book_quality = 'Damaged'
GROUP BY
    m.member_name,
    isst.issued_book_name
```

Task 19: Stored Procedure

Objective: Create a stored procedure to manage the status of books in a library system.

Description: Write a stored procedure that updates the status of a book based on its issuance or return. Specifically:

If a book is issued, the status should change to 'no'.

If a book is returned, the status should change to 'yes'.

```
GO
CREATE PROCEDURE issue_book
    @p_issued_id VARCHAR(10),
    @p_issued_member_id VARCHAR(30),
    @p_issued_book_isbn VARCHAR(50),
    @p_issue_emp_id VARCHAR(10)
AS
BEGIN
    DECLARE @v_status VARCHAR(10);
    DECLARE @v_book_title VARCHAR(100);
```

```

-- Check if the book is available
SELECT @v_status = status,
       @v_book_title = book_title
FROM books
WHERE isbn = @p_issued_book_isbn;

-- Handle case where the book is not found
IF @v_status IS NULL
BEGIN
    PRINT 'No book found with the provided ISBN: ' +
CAST(@p_issued_book_isbn AS VARCHAR);
    RETURN;
END;

-- Check if the book is available
IF @v_status = 'yes'
BEGIN
    -- Insert the issued book record
    INSERT INTO issued_status (issued_id, issued_member_id,
issued_date, issued_book_name, issued_book_isbn, issued_emp_id)
    VALUES (@p_issued_id, @p_issued_member_id, CAST(GETDATE() AS
DATE), @v_book_title, @p_issued_book_isbn, @p_issue_emp_id);

    PRINT 'Book record added successfully for book ISBN: ' +
CAST(@p_issued_book_isbn AS VARCHAR);

    -- Update the book status to 'no'
    UPDATE books
    SET status = 'no'
    WHERE isbn = @p_issued_book_isbn;
END
ELSE
BEGIN
    PRINT 'Sorry to inform you, the book you have requested is
currently unavailable. Book ISBN: ' + CAST(@p_issued_book_isbn AS
VARCHAR);
END
END;
GO

SELECT * FROM books

SELECT * FROM issued_status

EXEC issue_book 'IS155', 'C108', '978-0-06-112008-4', 'E104'

```

```
(1 row affected)
Book record added successfully for book ISBN: 978-0-06-112008-4

(1 row affected)

Completion time: 2025-01-12T21:10:30.4000443+05:30
```

```
SELECT * FROM books
WHERE isbn = '978-0-06-112008-4' -- status yes
```

	isbn	book_title	category	rental_price	status	author	publisher
1	978-0-06-112008-4	To Kill a Mockingbird	Classic	5.00	no	Harper Lee	J.B. Lippincott & Co.

```
SELECT * FROM issued_status
```

	issued_id	issued_member_id	issued_book_name	issued_date	issued_book_isbn	issued_emp_id
29	IS135	C107	Sapiens: A Brief History of Humankind	2024-04-08	978-0-307-58837-1	E108
30	IS136	C107	1491: New Revelations of the Americas Before Col...	2024-04-09	978-0-7432-7357-1	E102
31	IS137	C107	The Catcher in the Rye	2024-04-10	978-0-553-29698-2	E103
32	IS138	C108	The Great Gatsby	2024-04-11	978-0-525-47535-5	E104
33	IS139	C109	Harry Potter and the Sorcerers Stone	2024-04-12	978-0-679-76489-8	E105
34	IS140	C110	Animal Farm	2024-04-13	978-0-330-25864-8	E102
35	IS151	C118	The Catcher in the Rye	2024-08-21	978-0-553-29698-2	E108
36	IS152	C119	The Catcher in the Rye	2024-09-01	978-0-553-29698-2	E109
37	IS153	C106	Pride and Prejudice	2024-09-07	978-0-14-143951-8	E107
38	IS154	C105	The Road	2024-08-13	978-0-375-50167-0	E101
39	IS155	C108	To Kill a Mockingbird	2025-01-12	978-0-06-112008-4	E104

-- Now this book is issued for some now if we another book or suppose this book is issued by some one then

```
EXEC issue_book 'IS155', 'C108', '978-0-06-112008-4', 'E104'
```

```
Sorry to inform you, the book you have requested is currently unavailable. Book ISBN: 978-0-06-112008-4

Completion time: 2025-01-12T21:18:33.1656139+05:30
```

Task 20: Create Table As Select (CTAS)

Objective: Create a CTAS (Create Table As Select) query to identify overdue books and calculate fines.

Description: Write a CTAS query to create a new table that lists each member and the books they have issued but not returned within 30 days. The table should include:

The number of overdue books.

The total fines, with each day's fine calculated at \$0.50.
 The number of books issued by each member.
 The resulting table should show:
 Member ID
 Number of overdue books
 Total fines

*/

```
SELECT
    m.member_id,
    m.member_name,
    COUNT(isst.issued_id) AS Number_of_Overdue_books,
    COUNT(isst.issued_id) * 0.50 AS Total_Fines
INTO Overdue_books_And_Fines
FROM issued_status isst
JOIN members m
    ON isst.issued_member_id = m.member_id
LEFT JOIN [return_status] rs
    ON rs.issued_id = isst.issued_id
JOIN books b
    ON b.isbn = isst.issued_book_isbn
WHERE
    return_date > DATEADD(DAY,30,issued_date)
GROUP BY
    m.member_id,
    m.member_name

SELECT * FROM Overdue_books_And_Fines
```

	member_id	member_name	Number_of_Overdue_books	Total_Fines
1	C101	Alice Johnson	1	0.50
2	C106	Frank Thomas	1	0.50
3	C107	Grace Taylor	2	1.00
4	C108	Henry Anderson	1	0.50
5	C109	Ivy Martinez	6	3.00
6	C110	Jack Wilson	6	3.00

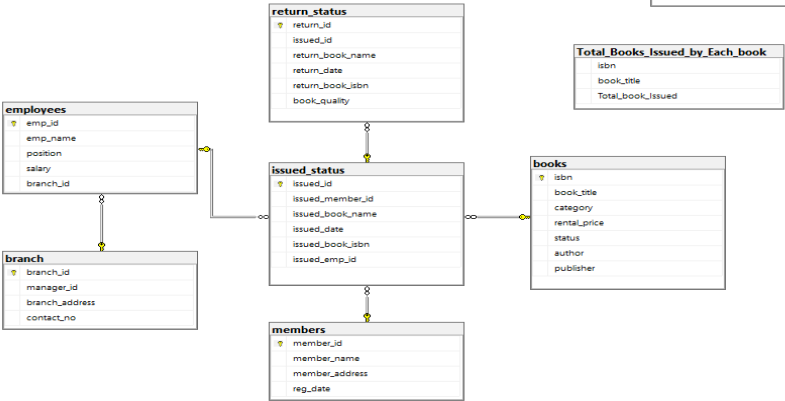
Final ER Diagram of this Project

Overdue_books_And_Fines	
member_id	
member_name	
Number_of_Overdue_books	
Total_Fines	

Branch_Report	
branch_id	
manager_id	
Number_of_Books_Issued	
Number_of_Books_Returned	
Total_Revenue	

Active_Members	
member_id	
member_name	
member_address	
reg_date	

Books_Price_Greater_than_Seven	
isbn	
book_title	
category	
rental_price	
status	
author	
publisher	



Total_Books_Issued_by_Each_book		
isbn		
book_title		
Total_book_Issued		