

```
CREATE TABLE book (  
    book_id INT PRIMARY KEY,  
    book_title VARCHAR2(100),  
    author_id INT,  
    genre_id INT,  
    publication_year INT,  
    available_copies INT,  
    CONSTRAINT fk_author FOREIGN KEY (author_id) REFERENCES author(author_id),  
    CONSTRAINT fk_genre FOREIGN KEY (genre_id) REFERENCES genre(genre_id)  
);
```

```
INSERT INTO book (book_id, book_title, author_id, genre_id, publication_year,  
available_copies)  
VALUES (1, 'The Girl with the Dragon Tattoo', 1, 1, 2005, 10);
```

```
INSERT INTO book (book_id, book_title, author_id, genre_id, publication_year,  
available_copies)  
VALUES (2, 'The Shining', 2, 2, 1977, 21);
```

```
INSERT INTO book (book_id, book_title, author_id, genre_id, publication_year,  
available_copies)  
VALUES (3, 'Pride and Prejudice', 3, 3, 1813, 5);
```

```
INSERT INTO book (book_id, book_title, author_id, genre_id, publication_year,  
available_copies)  
VALUES (4, 'Gone Girl', 4, 4, 2012, 29);
```

```
INSERT INTO book (book_id, book_title, author_id, genre_id, publication_year,  
available_copies)  
VALUES (5, 'The Name of the Wind', 5, 5, 2007, 11);
```

```
INSERT INTO book (book_id, book_title, author_id, genre_id, publication_year,  
available_copies)  
VALUES (6, 'Sapiens: A Brief History of Humankind', 6, 6, 2014, 5);
```

```
INSERT INTO book (book_id, book_title, author_id, genre_id, publication_year,  
available_copies)  
VALUES (7, 'Astrophysics for People in a Hurry', 7, 7, 2017, 16);
```

```
INSERT INTO book (book_id, book_title, author_id, genre_id, publication_year,  
available_copies)  
VALUES (8, 'Thinking, Fast and Slow', 8, 8, 2011, 18);
```

```
INSERT INTO book (book_id, book_title, author_id, genre_id, publication_year,
available_copies)
VALUES (9, 'The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma', 9, 9,
2014, 2);
```

```
INSERT INTO book (book_id, book_title, author_id, genre_id, publication_year,
available_copies)
VALUES (10, 'Start with Why: How Great Leaders Inspire Everyone to Take Action', 10, 10,
2009, 7);
```

BOOK_ID	BOOK_TITLE	AUTHOR_ID	GENRE_ID	PUBLICATION_YEAR	AVAILABLE_COPIES
1	The Girl with the Dragon Tattoo	1	1	2005	10
2	The Shining	2	2	1977	21
3	Pride and Prejudice	3	3	1813	5
4	Gone Girl	4	4	2012	29
5	The Name of the Wind	5	5	2007	11
6	Sapiens: A Brief History of Humankind	6	6	2014	5
7	Astrophysics for People in a Hurry	7	7	2017	16
8	Thinking, Fast and Slow	8	8	2011	18
9	The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma	9	9	2014	2
10	Start with Why: How Great Leaders Inspire Everyone to Take Action	10	10	2009	7

```
CREATE TABLE author (  
  author_id INT PRIMARY KEY,  
  first_name VARCHAR2(50),  
  last_name VARCHAR2(50)  
);
```

```
INSERT INTO author (author_id, first_name, last_name)  
VALUES (1, 'Stieg', 'Larsson');
```

```
INSERT INTO author (author_id, first_name, last_name)  
VALUES (2, 'Stephen', 'King');
```

```
INSERT INTO author (author_id, first_name, last_name)  
VALUES (3, 'Jane', 'Austen');
```

```
INSERT INTO author (author_id, first_name, last_name)  
VALUES (4, 'Gillian', 'Flynn');
```

```
INSERT INTO author (author_id, first_name, last_name)  
VALUES (5, 'Patrick', 'Rothfuss');
```

```
INSERT INTO author (author_id, first_name, last_name)  
VALUES (6, 'Yuval', 'Harari');
```

```
INSERT INTO author (author_id, first_name, last_name)  
VALUES (7, 'Neil', 'Tyson');
```

```
INSERT INTO author (author_id, first_name, last_name)  
VALUES (8, 'Daniel', 'Kahneman');
```

```
INSERT INTO author (author_id, first_name, last_name)  
VALUES (9, 'Bessel', 'van der Kolk');
```

```
INSERT INTO author (author_id, first_name, last_name)  
VALUES (10, 'Simon', 'Sinek');
```

AUTHOR_ID	FIRST_NAME	LAST_NAME
1	Stieg	Larsson
2	Stephen	King
3	Jane	Austen
4	Gillian	Flynn
5	Patrick	Rothfuss
6	Yuval	Harari
7	Neil	Tyson
8	Daniel	Kahneman
9	Bessel	van der Kolk
10	Simon	Sinek

```
CREATE TABLE genre (
  genre_id INT PRIMARY KEY,
  genre_name VARCHAR2(50) UNIQUE NOT NULL,
  fiction_type VARCHAR2(50)
);
```

```
INSERT INTO genre (genre_id, genre_name, fiction_type)
VALUES (1, 'Mystery', 'Fiction');
```

```
INSERT INTO genre (genre_id, genre_name, fiction_type)
VALUES (2, 'Horror', 'Fiction');
```

```
INSERT INTO genre (genre_id, genre_name, fiction_type)
VALUES (3, 'Romance', 'Fiction');
```

```
INSERT INTO genre (genre_id, genre_name, fiction_type)
VALUES (4, 'Thriller', 'Fiction');
```

```
INSERT INTO genre (genre_id, genre_name, fiction_type)
VALUES (5, 'Fantasy', 'Fiction');
```

```
INSERT INTO genre (genre_id, genre_name, fiction_type)
VALUES (6, 'History', 'Non-Fiction');
```

```
INSERT INTO genre (genre_id, genre_name, fiction_type)
VALUES (7, 'Science & Technology', 'Non-Fiction');
```

```
INSERT INTO genre (genre_id, genre_name, fiction_type)
VALUES (8, 'Psychology', 'Non-Fiction');
```

```
INSERT INTO genre (genre_id, genre_name, fiction_type)
VALUES (9, 'Health & Wellness', 'Non-Fiction');
```

```
INSERT INTO genre (genre_id, genre_name, fiction_type)
VALUES (10, 'Business', 'Non-Fiction');
```

GENRE_ID	GENRE_NAME	FICTION_TYPE
1	Mystery	Fiction
2	Horror	Fiction
3	Romance	Fiction
4	Thriller	Fiction
5	Fantasy	Fiction
6	History	Non-Fiction
7	Science & Technology	Non-Fiction
8	Psychology	Non-Fiction
9	Health & Wellness	Non-Fiction
10	Business	Non-Fiction

```
CREATE TABLE member (  
    member_id INT PRIMARY KEY,  
    first_name VARCHAR2(50) NOT NULL,  
    last_name VARCHAR2(50) NOT NULL,  
    email VARCHAR2(100) UNIQUE NOT NULL,  
    phone_number VARCHAR2(15)  
);
```

```
INSERT INTO member (member_id, first_name, last_name, email, phone_number)  
VALUES (1, 'Ahmad', 'Jebril', 'a.jebril@email.com', '704-777-7777');
```

```
INSERT INTO member (member_id, first_name, last_name, email, phone_number)  
VALUES (2, 'John', 'Smith', 'john.smith@email.com', '704-444-4444');
```

```
INSERT INTO member (member_id, first_name, last_name, email, phone_number)  
VALUES (3, 'Emily', 'Johnson', 'emily.johnson@email.com', '704-111-1111');
```

```
INSERT INTO member (member_id, first_name, last_name, email, phone_number)  
VALUES (4, 'Michael', 'Brown', 'michael.brown@email.com', '704-222-2222');
```

```
INSERT INTO member (member_id, first_name, last_name, email, phone_number)  
VALUES (5, 'Sarah', 'Davis', 'sarah.davis@email.com', '704-555-5555');
```

```
INSERT INTO member (member_id, first_name, last_name, email, phone_number)  
VALUES (6, 'Daniel', 'Bryan', 'daniel.bryan@email.com', '704-888-8888');
```

```
INSERT INTO member (member_id, first_name, last_name, email, phone_number)  
VALUES (7, 'Isabella', 'Garcia', 'isabella.garcia@email.com', '704-999-9999');
```

```
INSERT INTO member (member_id, first_name, last_name, email, phone_number)  
VALUES (8, 'Zaid', 'Qurm', 'zaid.qurm@email.com', '704-000-0000');
```

```
INSERT INTO member (member_id, first_name, last_name, email, phone_number)  
VALUES (9, 'Sirin', 'Blan', 'sirin.blan@email.com', '704-333-3333');
```

```
INSERT INTO member (member_id, first_name, last_name, email, phone_number)  
VALUES (10, 'Mohammed', 'Shaker', 'mo.shaker@email.com', '704-123-4567');
```

MEMBER_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER
1	Ahmad	Jebril	a.jebril@email.com	704-777-7777
2	John	Smith	john.smith@email.com	704-444-4444
3	Emily	Johnson	emily.johnson@email.com	704-111-1111
4	Michael	Brown	michael.brown@email.com	704-222-2222
5	Sarah	Davis	sarah.davis@email.com	704-555-5555
6	Daniel	Bryan	daniel.bryan@email.com	704-888-8888
7	Isabella	Garcia	isabella.garcia@email.com	704-999-9999
8	Zaid	Qurm	zaid.qurm@email.com	704-000-0000
9	Sirin	Blan	sirin.blan@email.com	704-333-3333
10	Mohammed	Shaker	mo.shaker@email.com	704-123-4567

```

CREATE TABLE rented_book (
  rental_id INT PRIMARY KEY,
  book_id INT,
  member_id INT,
  rental_date DATE,
  due_date DATE,
  CONSTRAINT fk_book2 FOREIGN KEY (book_id) REFERENCES book(book_id),
  CONSTRAINT fk_member2 FOREIGN KEY (member_id) REFERENCES
member(member_id)
);

```

```

INSERT INTO rented_book (rental_id, book_id, member_id, rental_date, due_date)
VALUES (1, 2, 1, DATE '2024-11-01', DATE '2024-12-15');

```

```

INSERT INTO rented_book (rental_id, book_id, member_id, rental_date, due_date)
VALUES (2, 6, 2, DATE '2024-11-10', DATE '2024-12-20');

```

```

INSERT INTO rented_book (rental_id, book_id, member_id, rental_date, due_date)
VALUES (3, 10, 3, DATE '2024-11-04', DATE '2024-12-02');

```

```

INSERT INTO rented_book (rental_id, book_id, member_id, rental_date, due_date)

```

```
VALUES (4, 8, 4, DATE '2024-11-09', DATE '2024-12-14');
```

```
INSERT INTO rented_book (rental_id, book_id, member_id, rental_date, due_date)  
VALUES (5, 7, 5, DATE '2024-11-07', DATE '2024-12-16');
```

```
INSERT INTO rented_book (rental_id, book_id, member_id, rental_date, due_date)  
VALUES (6, 9, 6, DATE '2024-10-29', DATE '2024-11-27');
```

```
INSERT INTO rented_book (rental_id, book_id, member_id, rental_date, due_date)  
VALUES (7, 5, 7, DATE '2024-11-17', DATE '2024-12-08');
```

```
INSERT INTO rented_book (rental_id, book_id, member_id, rental_date, due_date)  
VALUES (8, 4, 8, DATE '2024-10-15', DATE '2024-11-20');
```

```
INSERT INTO rented_book (rental_id, book_id, member_id, rental_date, due_date)  
VALUES (9, 1, 9, DATE '2024-11-29', DATE '2024-12-25');
```

```
INSERT INTO rented_book (rental_id, book_id, member_id, rental_date, due_date)  
VALUES (10, 3, 10, DATE '2024-10-27', DATE '2024-11-26');
```

RENTAL_ID	BOOK_ID	MEMBER_ID	RENTAL_DATE	DUE_DATE
1	2	1	01-NOV-24	15-DEC-24
2	6	2	10-NOV-24	20-DEC-24
3	10	3	04-NOV-24	02-DEC-24
4	8	4	09-NOV-24	14-DEC-24
5	7	5	07-NOV-24	16-DEC-24
6	9	6	29-OCT-24	27-NOV-24
7	5	7	17-NOV-24	08-DEC-24
8	4	8	15-OCT-24	20-NOV-24
9	1	9	29-NOV-24	25-DEC-24
10	3	10	27-OCT-24	26-NOV-24

###JOIN QUERIES

1. List of rented books and the members who rented them, also includes the book information and the member's name. This joins the rented_book, book, author, and member tables together (view is also created to create a virtual table with the results set):

```
CREATE VIEW rented_details AS
SELECT rb.rental_id,
       b.book_title,
       a.first_name || ' ' || a.last_name AS author_name,
       m.first_name || ' ' || m.last_name AS member_name,
       rb.rental_date,
       rb.due_date
FROM rented_book rb
INNER JOIN book b
ON rb.book_id = b.book_id
INNER JOIN author a
ON b.author_id = a.author_id
INNER JOIN member m
ON rb.member_id = m.member_id;
```

RENTAL_ID	BOOK_TITLE	AUTHOR_NAME	MEMBER_NAME	RENTAL_DATE	DUE_DATE
1	The Shining	Stephen King	Ahmad Jebril	01-NOV-24	15-DEC-24
2	Sapiens: A Brief History of Humankind	Yuval Harari	John Smith	10-NOV-24	20-DEC-24
3	Start with Why: How Great Leaders Inspire Everyone to Take Action	Simon Sinek	Emily Johnson	04-NOV-24	02-DEC-24
4	Thinking, Fast and Slow	Daniel Kahneman	Michael Brown	09-NOV-24	14-DEC-24
5	Astrophysics for People in a Hurry	Neil Tyson	Sarah Davis	07-NOV-24	16-DEC-24
6	The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma	Bessel van der Kolk	Daniel Bryan	29-OCT-24	27-NOV-24
7	The Name of the Wind	Patrick Rothfuss	Isabella Garcia	17-NOV-24	08-DEC-24
8	Gone Girl	Gillian Flynn	Zaid Qurm	15-OCT-24	20-NOV-24
9	The Girl with the Dragon Tattoo	Stieg Larsson	Sirin Blan	29-NOV-24	25-DEC-24
10	Pride and Prejudice	Jane Austen	Mohammed Shaker	27-OCT-24	26-NOV-24

2. This join includes all members and books both rented and not rented using a full outer join (in our case all books are rented):

```
CREATE VIEW library_book AS
SELECT m.member_id,
       m.first_name || ' ' || m.last_name AS member_name,
       b.book_id,
       b.book_title,
       rb.rental_date,
       rb.due_date
FROM member m
FULL OUTER JOIN rented_book rb
ON m.member_id = rb.member_id
FULL OUTER JOIN book b
ON rb.book_id = b.book_id;
```

MEMBER_ID	MEMBER_NAME	BOOK_ID	BOOK_TITLE	RENTAL_DATE	DUE_DATE
9	Sirin Blan	1	The Girl with the Dragon Tattoo	29-NOV-24	25-DEC-24
1	Ahmad Jebril	2	The Shining	01-NOV-24	15-DEC-24
10	Mohammed Shaker	3	Pride and Prejudice	27-OCT-24	26-NOV-24
8	Zaid Qurm	4	Gone Girl	15-OCT-24	20-NOV-24
7	Isabella Garcia	5	The Name of the Wind	17-NOV-24	08-DEC-24
2	John Smith	6	Sapiens: A Brief History of Humankind	10-NOV-24	20-DEC-24
5	Sarah Davis	7	Astrophysics for People in a Hurry	07-NOV-24	16-DEC-24
4	Michael Brown	8	Thinking, Fast and Slow	09-NOV-24	14-DEC-24
6	Daniel Bryan	9	The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma	29-OCT-24	27-NOV-24
3	Emily Johnson	10	Start with Why: How Great Leaders Inspire Everyone to Take Action	04-NOV-24	02-DEC-24

3. Using an inner join to show how many days are left until books are due (using SYSDATE which shows the current time on the machine and TRUNC which removes the fractional part in days_left):

```
CREATE VIEW books_due AS
SELECT rb.rental_id,
       b.book_title,
       rb.due_date,
       TRUNC(rb.due_date - SYSDATE) AS days_left
FROM rented_book rb
INNER JOIN book b
ON rb.book_id = b.book_id
WHERE rb.due_date > SYSDATE
ORDER BY days_left ASC;
```

RENTAL_ID	BOOK_TITLE	DUE_DATE	DAYS_LEFT
3	Start with Why: How Great Leaders Inspire Everyone to Take Action	02-DEC-24	4
7	The Name of the Wind	08-DEC-24	10
4	Thinking, Fast and Slow	14-DEC-24	16
1	The Shining	15-DEC-24	17
5	Astrophysics for People in a Hurry	16-DEC-24	18
2	Sapiens: A Brief History of Humankind	20-DEC-24	22
9	The Girl with the Dragon Tattoo	25-DEC-24	27

4. Shows how many books are in every genre using a left join:

```
CREATE VIEW genre_books AS
SELECT
       g.genre_name,
       COUNT(b.book_id) AS total_books
FROM genre g
LEFT JOIN book b
ON g.genre_id = b.genre_id
GROUP BY g.genre_name
ORDER BY total_books DESC;
```

GENRE_NAME	TOTAL_BOOKS
Mystery	1
Business	1
Romance	1
Fantasy	1
Psychology	1
Horror	1
Thriller	1
Science & Technology	1
History	1
Health & Wellness	1

5. A list of all books and their details using an inner join:

```
CREATE VIEW book_details AS
SELECT
    b.book_id,
    b.book_title,
    a.first_name || ' ' || a.last_name AS author_name,
    g.genre_name
FROM book b
INNER JOIN author a
ON b.author_id = a.author_id
INNER JOIN genre g
ON b.genre_id = g.genre_id;
```

BOOK_ID	BOOK_TITLE	AUTHOR_NAME	GENRE_NAME
1	The Girl with the Dragon Tattoo	Stieg Larsson	Mystery
2	The Shining	Stephen King	Horror
3	Pride and Prejudice	Jane Austen	Romance
4	Gone Girl	Gillian Flynn	Thriller
5	The Name of the Wind	Patrick Rothfuss	Fantasy
6	Sapiens: A Brief History of Humankind	Yuval Harari	History
7	Astrophysics for People in a Hurry	Neil Tyson	Science & Technology
8	Thinking, Fast and Slow	Daniel Kahneman	Psychology
9	The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma	Bessel van der Kolk	Health & Wellness
10	Start with Why: How Great Leaders Inspire Everyone to Take Action	Simon Sinek	Business