BOOKWORM LIBRARY INTERFACE

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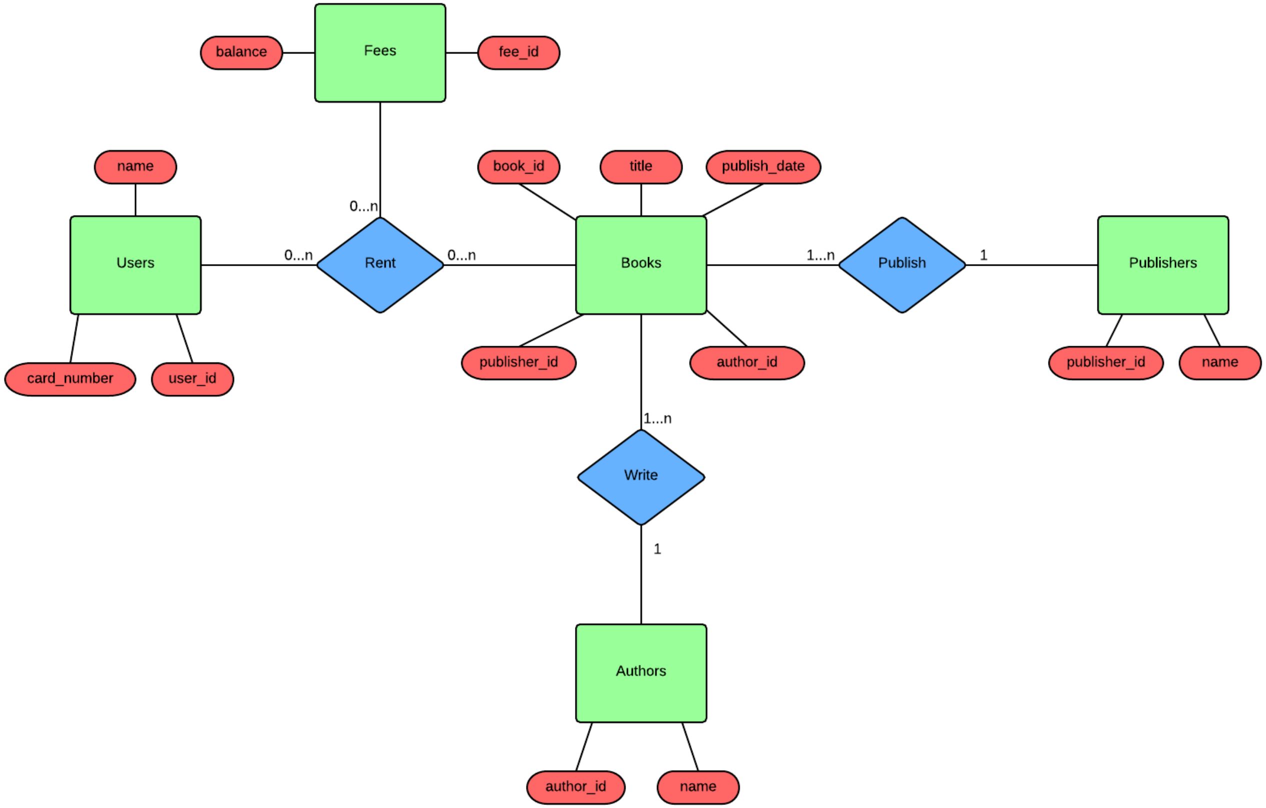
E-R Diagram


Fees
balance
fee_id
name
Users
card_number
user_id
0...n
0...n
Rent
0...n
book_id
title
publish_date
Books
publisher_id
author_id
1...n
Publish
1
Publishers
publisher_id
name
1...n
Write
1
Authors
author_id
name

Select the users with a fee balance greater than $1

Query :

```
SELECT user_id, sum(balance) AS total_balance,
count(fee_id) AS fee_count
FROM Users NATURAL JOIN Rentals NATURAL JOIN
Fees
GROUP BY user_id
HAVING sum(balance) > 100
ORDER BY total_balance DESC;
```

Select the users with books that are overdue

Query :

```
SELECT user_id, name, count(rental_id) AS
num_overdue_books
FROM Users NATURAL JOIN Rentals
WHERE active = 1 AND CURDATE() > due_date
GROUP BY user_id
ORDER BY num_overdue_books DESC;
```

Select users with a book checked out by author Alysson Stark

Query :

```
SELECT DISTINCT user_id, Users.name, book_id, title
FROM Users NATURAL JOIN  Rentals NATURAL JOIN
Books JOIN Authors ON (Books.author_id =
Authors.author_id)
WHERE Authors.name = 'Alysson Stark';
```

Select all users who have a rental

Query :

```
SELECT DISTINCT Users.user_id, Users.name
FROM Users NATURAL JOIN Rental;
```

Select all unique author and publisher pairs

Query :

```
SELECT r1.author_id, Authors.name as author_name,
        r1.publisher_id, Publishers.name as
publisher_name
FROM (SELECT DISTINCT author_id, publisher_id
        FROM Books) as r1, Authors, Publishers
WHERE r1.author_id=Authors.author_id AND
        r1.publisher_id=Publishers.publisher_id;
```

Select all users who have checked out a book in the past n days

Query :

```
SELECT user_id, book_id, checkout_date
FROM Rentals
WHERE datediff(curdate(), checkout_date) <= 7;
```

Select users with more than 0 fees in order from most fees to least fees

Query :

```
SELECT user_id, name, COUNT(fee_id) AS fee_count
FROM Users NATURAL JOIN Rentals
GROUP BY user_id
HAVING COUNT(fee_id) > 0
ORDER BY fee_count DESC;
```

Users the have checked out at least 5 books

Query :

```
SELECT user_id, name, COUNT(book_id) AS
books_rented
FROM Books NATURAL JOIN Rentals NATURAL JOIN
Users
GROUP BY user_id
HAVING COUNT(book_id) >= 5
ORDER BY books_rented DESC;
```

Users that have checked out at more than 1 book by the same author

Query :

```
SELECT user_id, Users.name AS user_name,
Authors.name as     author_name, COUNT(book_id) AS
books_rented
FROM Books NATURAL JOIN Rentals NATURAL JOIN
Users JOIN   Authors ON (Books.author_id =
Authors.author_id)
GROUP BY user_id, Authors.author_id
HAVING COUNT(book_id) > 1
ORDER BY books_rented DESC;
```

Books that have never been rented

Query :

```
SELECT book_id, title, name AS author
FROM Books NATURAL JOIN Authors
WHERE book_id NOT IN
  (SELECT book_id FROM Books NATURAL JOIN
Rentals);
```

Select every author that has written a book checked out by user_id = 22

Query :

```
SELECT DISTINCT Authors.author_id, Authors.name
FROM Authors JOIN Books ON (Books.author_id =
        Authors.author_id) NATURAL JOIN Rentals JOIN
Users ON (Rentals.user_id = Users.user_id)
WHERE Users.user_id = 22;
```

Change rental from active to inactive

Query :

```
UPDATE Rentals
SET active = 0
WHERE rental_id = 3;
```

Change book title

Query :

```
UPDATE Books
SET title = "Pygmalion"
WHERE title = "Pigmalion";
```

Change user name

Query :

```
UPDATE Users
SET name = "John Snow"
WHERE name = "Jon Snow";
```

Update a fee's balance

Query :

```
UPDATE Fees
SET balance = 200
WHERE fee_id = 15;
```

Change rental due date

Query :

```
UPDATE Rentals
SET due_date = TIMESTAMP '2015-01-01'
WHERE rental_id = 10;
```