



Inspiring Excellence

CSE370 : Database Systems Project Report

Project Title : ShareKori - Rental Platform

Group No : 01, CSE370 Lab Section : 01, Summer 2025		
ID	Name	Contribution
23301431	Sheikh Fatin Aman	Frontend, Backend, Database
23141023	Md Roby	Frontend, Database

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Introduction

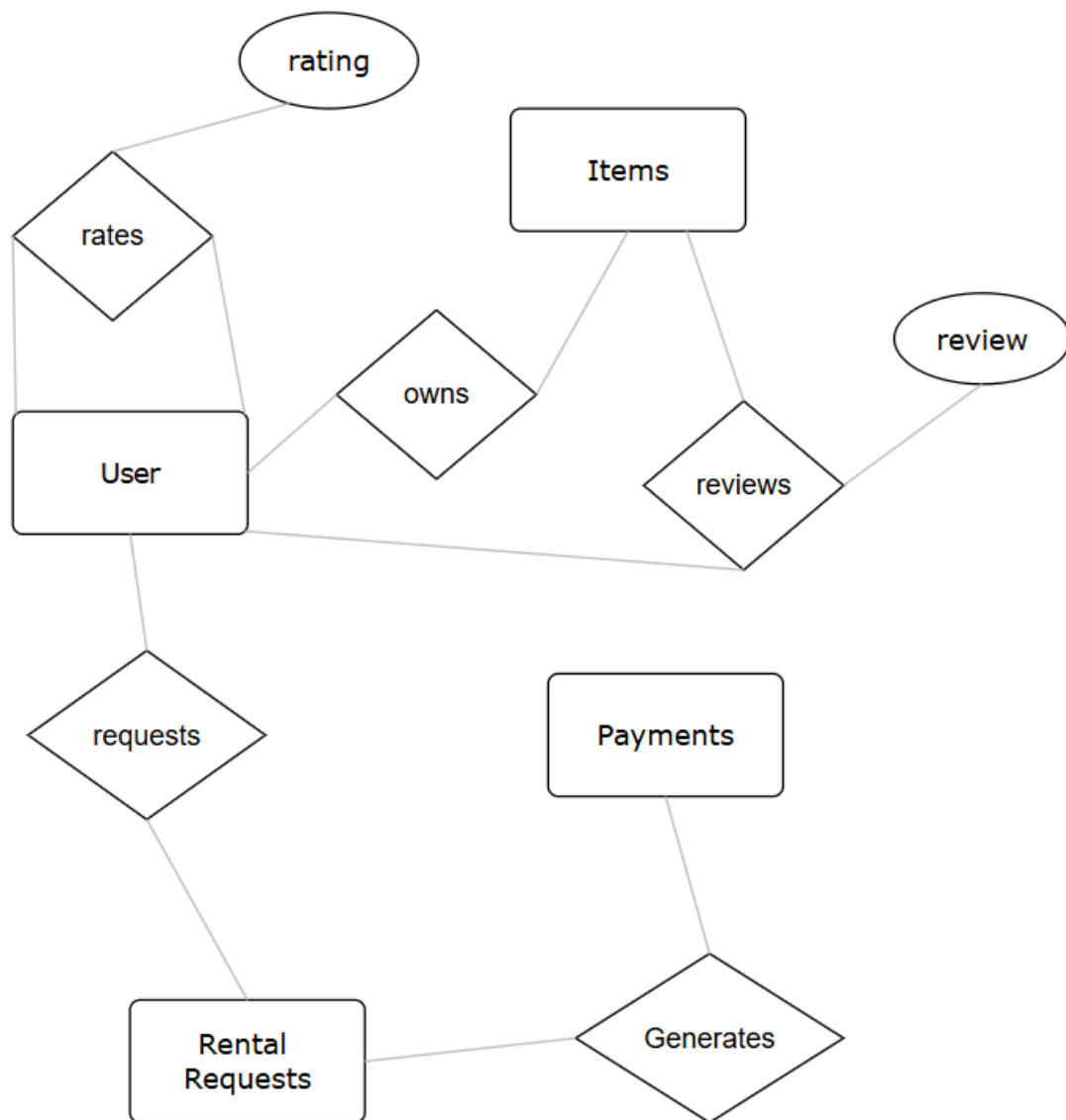
ShareKori is a peer-to-peer item rental platform where users can list items for rent or rent items from others. It focuses on secure transactions, transparent reviews, and efficient rental management. The platform provides user authentication, item listings, rental requests, ratings, and demo payment integration.

Project Features

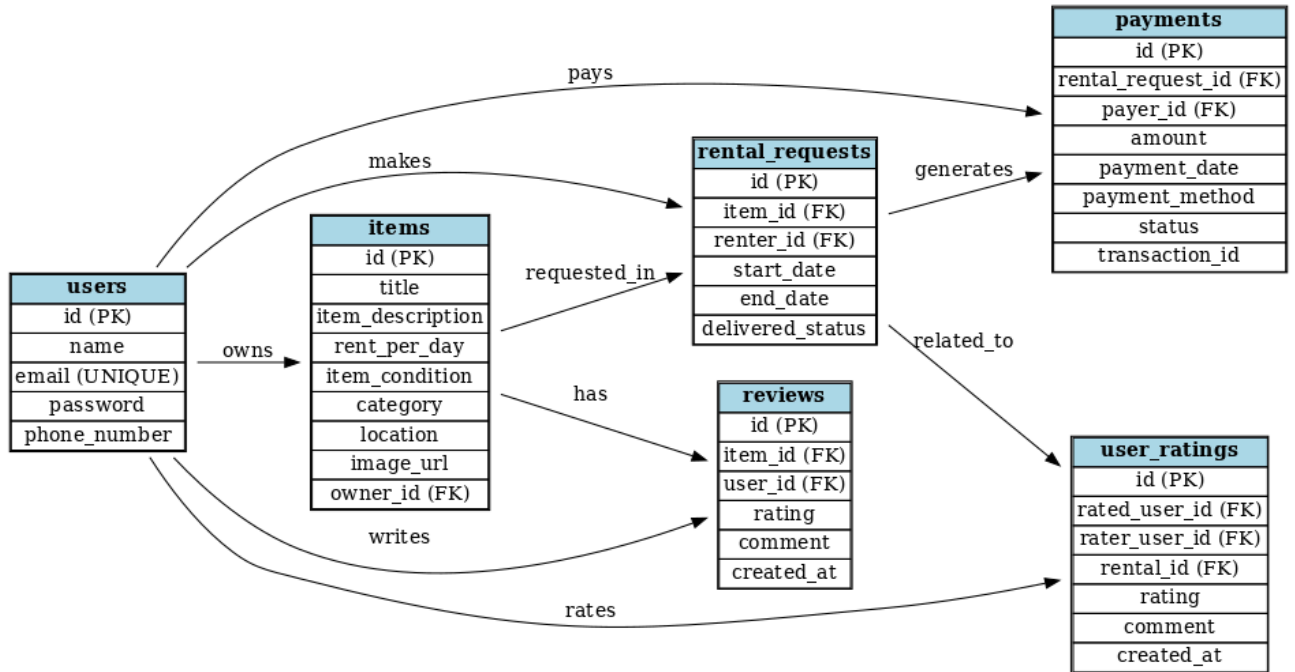
ID, Name	Features [3 per member]	
23301431, Sheikh Fatin Aman	Ft 1	User Authentication & JWT
	Ft 2	Rating, Reviews & Rental Request System
	Ft 3	Search & Filtering
23141023, Md Roby	Ft 1	Product Item Card & Product Page
	Ft 2	Homepage Design
	Ft 3	Login & Register Page

ER/EER Diagram

ER Diagram without Attributes :



Schema Diagram



Normalization

1. First Normal Form (1NF)

Analysis:

- In users, attributes like name, email, password, phone_number are atomic.
- In items, attributes like title, rent_per_day, item_condition, category, etc. are atomic.
- In rental_requests, all attributes are atomic (e.g., start_date, end_date).
- In reviews and user_ratings, attributes like rating, comment are atomic.

Conclusion: The schema is already in 1NF. No decomposition is required.

2. Second Normal Form (2NF)

Analysis:

- All tables in our schema use a single-column primary key (id).
- Since no table has a composite key, partial dependencies are impossible.

Conclusion: The schema is already in 2NF. No decomposition is required.

3. Third Normal Form (3NF)

Analysis:

- In users, attributes (name, email, password, phone_number) depend only on id.
- In items, attributes (title, rent_per_day, item_condition, etc.) depend only on id. The foreign key owner_id is not a transitive dependency but a valid reference.
- In rental_requests, attributes depend only on id.
- In reviews and user_ratings, attributes like rating, comment, created_at depend only on their respective primary keys.

Conclusion: The schema is already in 3NF. No decomposition is required.

Frontend Development

The frontend development of Sharekori focused on building a responsive, user-friendly interface for browsing items, viewing item details, registration/login, and interacting with the rental system. Key features include:

- **Homepage & Browse Page:** Search bar with filters, featured items, category selection, and responsive design.
- **Item Details Page:** Item information, owner rating, rental booking form, and review section.
- **Authentication Pages:** Login and registration forms with validation and phone number support.
- **Dashboard:** User dashboard for managing items, rental requests, and delivery status.

Contribution of ID : 23301431, Name : Sheikh Fatin Aman

Developed all frontend pages and components except login page and homepage. Implemented Browse Page, Dashboard, search filters, rating display, and interactive elements.

Contribution of ID : 23141023, Name: Md Roby

Designed and implemented Login Page, Item Details Page, Registration Page and Homepage layout/design.

Backend Development

The backend development handled all server-side logic, database integration, authentication, and API management. This includes:

- **User Management:** Registration, login, JWT authentication, password hashing.
- **Item Management:** CRUD operations for items, image uploads, availability tracking.
- **Rental System:** Rental requests, delivery status, rental history, and availability checking.
- **Reviews & Ratings:** Item reviews, user ratings, and feedback system.
- **Payments (Demo):** Payment processing integration for rentals.
- **Database:** MySQL schema design, relationships, and normalization to 3NF.
- **API Endpoints:** RESTful APIs for frontend consumption with error handling and validation.

Contribution of ID : 23301431, Name : Sheikh Fatin Aman

Developed the entire backend, including database schema, all APIs, business logic, JWT authentication, rental/payment/review/rating modules, and server-side integration with frontend.

Contribution of ID : 23141023, Name: Md Roby

No contribution to backend development.

Source Code Repository

HTTPS : <https://github.com/ftnaman/sharekori.git>

SSH : <git@github.com:ftnaman/sharekori.git> (not recommended)

Github CLI : `gh repo clone ftnaman/sharekori`

Conclusion

ShareKori successfully demonstrates how **database-driven systems** can manage **real-world item rentals**. It combines secure authentication, relational database design, and a responsive frontend. This project helped us apply **ER modeling, normalization, SQL, and backend APIs** in practice.

References

1. **MySQL Documentation** – Official MySQL documentation for database management and SQL syntax.
<https://dev.mysql.com/doc/>
2. **Node.js Documentation** – Official Node.js docs for runtime environment and API reference.
<https://nodejs.org/en/docs/>
3. **Express.js Documentation** – Official Express framework documentation for building web applications.
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5. **JWT (JSON Web Token) Documentation** – Official library documentation for authentication tokens.
<https://jwt.io/introduction/>
6. **bcryptjs Documentation** – Official documentation for bcryptjs library for password hashing.
<https://www.npmjs.com/package/bcryptjs>
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9. **MDN Web Docs (Mozilla Developer Network)** – Comprehensive documentation for HTML, CSS, and JavaScript.
<https://developer.mozilla.org/en-US/>