

Peer to Peer Rental Application Platform

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B. Tech. Project (BTP) Report

BTP Mode: **On Campus - in a Group***

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Abstract—In this new world of the internet, everyone expects that most services should be available through just a single tap on their device. In today's world, there's a large percentage of people who can't afford a product or they only need it for a very less duration of time. Hence, renting becomes an easy option, but it becomes easier if there is a single platform where you can rent/list any product you like. After doing research and discussing the problems and solutions, we developed a user-friendly peer-to-peer rental application that allows a user to either lend their products or seek rental products on our platform.

Index Terms—Business Model, Business Research, UI/UX, Web Development, React.js, HTML, Javascript, CSS, Google Firebase, Postman, Figma, GitHub.

I. INTRODUCTION

Renting products has become an increasingly popular trend among consumers due to its many advantages over traditional buying and owning. Renting a product allows users to access it for a specific duration without committing to the long-term costs and responsibilities of ownership, such as maintenance and storage. Additionally, renting can often be a more cost-effective option for infrequently used items or for those with high upfront costs. It is better for a seeker or a lender to look at all the products in one place rather than looking for a particular product in the market, use contacts to know about places where the product is available, and reach those places to make a deal. All these problems can be resolved through a user-friendly web application that allows peer-to-peer lending and renting of products in a safe and secure way. The development of a web-based P2P rental platform provides an ideal solution for users who are seeking a streamlined and accessible way to rent products. Such a platform can connect renters with lenders in their area, allowing for a simple and efficient rental process. By leveraging modern technologies, such a platform can also provide secure and transparent transactions, reducing the risk of fraud and improving the overall rental experience for users. We conducted business research, which included surveys to understand people's thoughts on renting products and the potential problems they may encounter while using a P2P rental platform. We then discussed the solutions with our mentor, who provided valuable insights and guidance on

how to overcome these challenges. Once we had a clear understanding of the potential issues and solutions, we designed the UI/UX using Figma, a web-based design tool that allowed us to create a modern and user-friendly interface. We then developed the application using React.JS and Google Firebase, which allowed us to build a scalable and secure platform that could handle user data and transactions.

Overall, our project represents a comprehensive approach to building a successful P2P rental platform, from conducting business research and developing solutions to designing the user interface and implementing the technology stack.

II. CONTRIBUTIONS

My teammate and I divided the work so that we could work independently without depending on each other for a long time. The work was being done simultaneously to increase the efficiency of the team.

A. My Individual Contribution

- Created the business model.
- Provided solutions for the problems analyzed through the survey.
- Designed the application Infrastructure.
- Implemented the UI/UX design into the application through HTML and CSS.
- Implemented the Application Workflow and functioning through ReactJS.
- Git
- Documentation

B. Other Members' Contributions

- Designed Business Survey (Google Forms and analytics).
- Public Interaction along with my partner to get survey responses and ideas.
- Contributed to UI/UX designing.
- Designed the database architecture using Google Firebase and connected it to the front end for data communication in the system.
- Documentation.

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III. SURVEY FOR BUSINESS MODEL

We conducted a survey to understand the opinions of consumers on different types of rental methods. The survey was conducted online, and a total of 100 responses were collected.

A. Methodology

The survey included ten questions related to the types of rental methods consumers have used in the past, the advantages and disadvantages of each method, and their willingness to use a peer-to-peer rental method.

B. Charts for analytics

These charts provided important information to improve our business model:

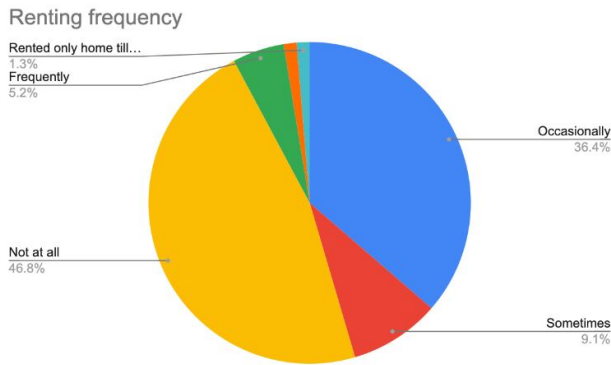


Fig. 1. Renting Frequency

1) **Chart 1:** The majority of respondents (over 50%) rent products at least once a month. A significant proportion of respondents (over 30%) rent products a few times a year. A small percentage of respondents (less than 20%) rent products once a year or less.

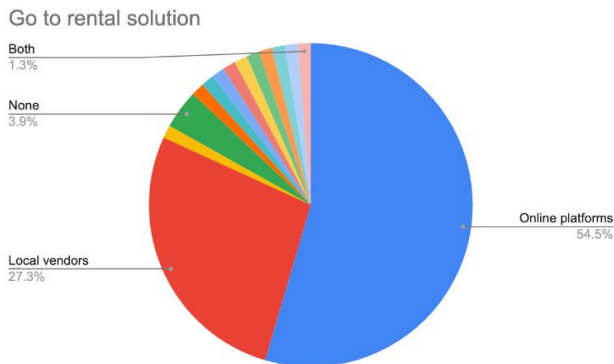


Fig. 2. Rental Solutions

2) **Chart 2:** Respondents generally prefer to rent from online platforms, with over 50% of respondents having rented from an online platform. Traditional brick-and-mortar rental stores are the second most

popular option, with just over 30% of respondents having rented from a physical store.

Rental services provided by individuals are the least popular option, with less than 20% of respondents having rented from an individual.

C. Key Findings

- It's been concluded through conversations with vendors that theft is the primary cause of their losses, accounting for the majority of incidents, while damages only make up around 5% of losses. To address this issue, a strategy is being developed to minimize theft by implementing a generic verification process that can identify stable members of society who are less likely to steal and by avoiding highly damage-prone goods such as cameras and electronics until a system is in place to insure against damages. While this approach is a positive step towards reducing losses, it's worth noting that even stable members of society can sometimes be driven to theft.
- Out of 100 respondents, 32% have used rental services through traditional rental companies, while 25% have rented products from family or friends.
- 67% of respondents mentioned that they find peer-to-peer rental methods more affordable than traditional rental methods.
- 45% of respondents mentioned that they find it easier to rent products from traditional rental companies, while only 20% found it easier to rent from peer-to-peer rental methods.
- When asked about their willingness to use a peer-to-peer rental method, 68% of respondents mentioned that they are willing to use such a method.

D. Inference

- The survey results suggest that a significant number of consumers have used traditional rental services in the past. However, the majority of respondents found peer-to-peer rental methods more affordable. This indicates that peer-to-peer rental services have the potential to gain more popularity in the future.
- Furthermore, while respondents found traditional rental services easier to use, a considerable percentage of them were still willing to use a peer-to-peer rental method. This suggests that peer-to-peer rental companies can improve their user experience and gain a competitive advantage.
- Overall, the survey results suggest that there is a growing interest in peer-to-peer rental methods among consumers, and businesses operating in this space have a potential opportunity for growth and success.

E. Conclusion

The survey results indicate that peer-to-peer rental methods are becoming more popular among consumers. Most found peer-to-peer rental methods more affordable, and a significant percentage of them were willing to use such methods. Businesses operating in this space can capitalize on this growing

interest by improving their user experience and offering affordable services.

IV. BUSINESS MODEL

A. Problem Statement

The difficulty and high cost of accessing desired goods and equipment. The traditional rental model, where people rent from local vendors or online rental companies, can be expensive and may not always have the desired item available for rent because of the following reasons:

- **Overhead costs:** Rental companies have high overhead costs, such as rent for their physical locations, salaries for their employees, and maintenance and upkeep of their equipment. These costs are typically passed on to seekers through higher rental prices.
- **Limited inventory:** Traditional rental companies often have limited inventory and may not always have the desired item available, which can lead to longer wait times and higher rental prices.
- **Lack of flexibility:** Traditional rental companies may have strict rental policies and procedures, such as minimum rental periods and restricted usage, which can limit the flexibility of seekers.
- **Inconvenient locations:** Traditional rental companies may have inconvenient locations, making it difficult for renters to access the necessary equipment.
- **Limited competition:** Traditional rental companies often have limited competition, limiting the choices available to renters and driving up rental prices.

B. The Solution

Peer-to-peer rental marketplaces aim to solve the problems associated with the traditional rental model in the following ways:

- **Lower costs:** By connecting renters directly with individual lenders, peer-to-peer rental marketplaces can reduce overhead costs and pass on the savings to seekers in the form of lower rental prices.
- **Increased inventory:** Peer-to-peer rental marketplaces have a larger pool of inventory as they aggregate items from individual lenders, making it more likely that seekers will be able to find the item they need.
- **Increased flexibility:** Peer-to-peer rental marketplaces allow individual lenders to set their own rental policies and procedures, which can result in greater flexibility for seekers.
- **Increased convenience:** Peer-to-peer rental marketplaces allow seekers to find and rent items from lenders in their local area, making it more convenient for seekers to access the equipment they need.
- **Increased competition:** By connecting seekers with multiple lenders, peer-to-peer rental marketplaces increase competition, which can drive down rental prices and provide more options for seekers.

C. Comparing the model to Traditional Renting System

Both peer-to-peer renting and traditional rental companies provide an alternative way for individuals and businesses to rent the equipment they need without having to buy it outright. However, there are some key differences between the two models.

- **Affordability:** Peer-to-peer rental platforms often have lower rental rates compared to traditional rental companies because owners can set their own rental rates.
- **Flexibility:** Peer-to-peer rental platforms offer more flexibility in terms of rental periods and rental terms compared to traditional rental companies. This means that renters can customize their rental experience to meet their specific needs.
- **Wider variety:** Peer-to-peer rental platforms often offer a wider variety of items to rent compared to traditional rental companies.
- **Ease of use:** Peer-to-peer rental platforms offer a convenient and user-friendly platform for renters to search, book, and manage their rentals.
- **Direct communication:** Peer-to-peer rental platforms allow renters to communicate directly with the equipment owners, which can result in better service and a more personalized rental experience.
- **Sustainability:** Peer-to-peer rental platforms promote sustainability by reducing the need for individuals and businesses to purchase new equipment, which reduces waste and contributes to a more environmentally-friendly way of living.

D. Comparing the model to an existing Rental Application

Rentomojo is an online rental service provider based in India that allows users to rent furniture, appliances, and other household items on a monthly basis. They offer a range of items, including beds, sofas, dining tables, refrigerators, washing machines, televisions, and more. Additionally, Rentomojo offers services like free relocation, free maintenance, and easy upgrades or downgrades of rental items. To ensure that users meet their eligibility criteria, Rentomojo requires the submission of KYC (Know Your Customer) documents such as Aadhar card, PAN card, and passport. The Rentomojo team verifies these documents as a part of their verification process. Most of the ideology is similar to our model, but there are some key differences between both:

- **Ownership:** Our rental application is a peer-to-peer rental platform that allows individuals to rent out their own equipment, while Rentomojo is a traditional rental company that owns the equipment it rents out.
- **Inventory:** Rentomojo has a larger inventory of equipment available for rent, as they own and maintain a fleet of equipment. In contrast, the availability of equipment on our application depends on how many individuals are renting out their equipment at a given time.
- **Pricing:** Rentomojo offers competitive rental rates and package deals for longer rental periods. Our model may

have lower rental rates as owners can set their own rates but may not offer package deals or discounts.

- **Customization:** Our application offers more flexibility in terms of rental periods and rental terms compared to Rentmojo. This means that renters can customize their rental experience to meet their specific needs.
- **Quality:** Rentmojo is responsible for maintaining and repairing their equipment, which can result in a more consistent level of quality. The quality of equipment rented through our application can vary, as the condition and maintenance of the equipment depends on the owner.
- **Verification:** Rentmojo verifies the identity of their renters through Aadhaar, PAN card, and other forms of identification. On the other side, we are currently following the same verification method but we're still researching the best ways to gain trust and security. Verification is still in our future scope.

Overall, Rentmojo and our peer-to-peer rental application have different strengths and weaknesses. Rentmojo may be a better option for renters who prioritize consistent quality, larger inventory, and reliable customer service. Our peer-to-peer rental application may be a better option for renters who prioritize lower rental rates and greater customization options.

E. Challenges in this model

After taking a long and detailed survey of about 100 people, we came up with some conclusions and common problems that should be addressed as these problems were the business challenges that we had to solve to make a better platform that is more user-oriented :

- **Trust:** Seekers may have concerns about trust and reliability when renting from individual lenders, as they may not have the same level of security and protection as they would when renting from a traditional rental company.
- **Insurance:** Seekers may have concerns about insurance coverage for their rental items, as peer-to-peer rental marketplaces may not provide the same level of protection as traditional rental companies.
- **Maintenance and upkeep:** Seekers may be responsible for maintaining and repairing rented items, which can be time-consuming and expensive.
- **Liability:** Seekers may be concerned about liability issues, such as accidents or injuries that occur while using rental items.

F. Countering the challenges faced

We came up with the following ideas that could counter the challenges faced and make the rental application better:

- **Building trust:** To build trust with seekers, we can establish robust security and protection systems, such as secure payment systems and dispute resolution processes. They can also verify the identities of their users and provide ratings and reviews to help seekers make informed decisions.
- **Providing insurance coverage:** To address seekers' concerns about insurance coverage, we can offer insurance

options, such as damage protection or liability coverage, to help protect seekers and lenders.

- **Streamlining maintenance and upkeep:** To streamline the process of maintaining and repairing rented items, we can provide resources and support to help seekers and lenders manage their equipment.
- **Managing liability issues:** To manage liability issues, we can establish clear policies and procedures for using rental items and provide resources and support to help seekers understand their responsibilities.
- **Innovating and improving:** To stay competitive, we will continuously innovate and improve our services to provide a better user experience and address the challenges of the peer-to-peer rental model.

V. THE APPLICATION

The development of this Peer-to-Peer Rental application is the second half of our B.Tech Project. We have built a user-friendly and responsive web application that can be used by both lenders as well as seekers to communicate and get the desired transaction done.

A. Technology Stack

The technology stack used is given below:

- **HTML:** To give structure to the front end.
- **Tailwind CSS:** To give looks and style to the front end.
- **React.js:** To implement the functionalities of the front end.
- **Google Firebase:** To design the back-end schemas and connect them to the front end, thus storing and retrieving data from it.
- **Postman:** To see the workflow of the API endpoints when the application is in the development stage.
- **Figma:** To design the working UI/UX prototype and understand the workflow better.
- **GitHub:** To keep all the source code safe and secure in a single place(repositories) so that it can be accessed easily and the progress can be tracked.
- **GitHub action:** To keep up the development and production environment in sync with CI/CD
- **Javascript:** Basic Javascript for completing the functions of the application.

B. Use-case Model

1) Actors:

- Lender
- Seeker
- Administrator

2) Use Case:

- **Lender:**
 - Make a profile.
 - List Items.
 - Update Item details
 - De-List Items.
 - View Requests.
 - Approve/Decline Rental Requests.

- View Orders
- Give Review
- Handout the items for delivery.

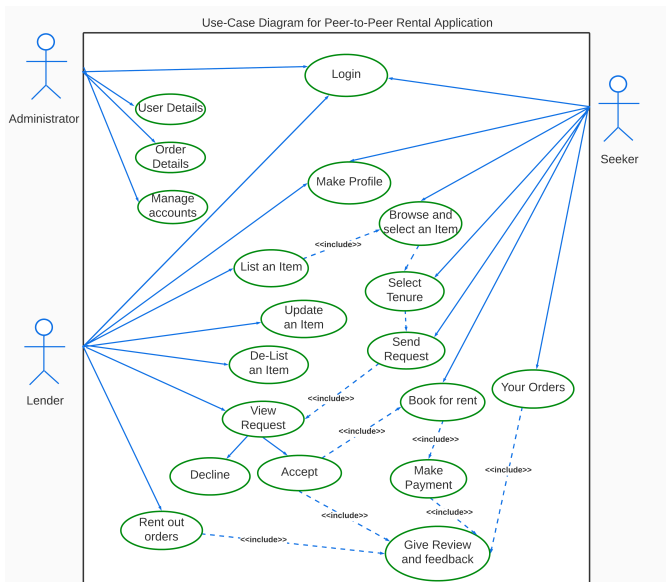
- **Seeker:**

- Make a profile.
- Browse items.
- Select tenure for booking.
- Request to book an item.
- Book an item for rent.
- Make Payment
- View Orders
- Give Review
- Return the item after tenure completion

- **Administrator:**

- View User Details
- View Order Details
- Manage user accounts and permissions.

3) Use-Case Diagram:



C. Main Features

An essential aspect of any web application is its features and workflow. These components determine how users interact with the application and what tasks they can accomplish. All the necessary functionalities for users to navigate through the app and perform different functions are implemented. The main features of the application are:

- **User authentication:** The ability for users to create an account, log in and log out, and update their profile information.
- **Listing management:** A platform for owners to list their rental items, including descriptions, images, and rental prices.
- **Search and filter:** A search and filter functionality to allow seekers to search for rental items based on various criteria, such as location, price, and availability.

- **Request an item:** Send a request to the Lender asking for an item to rent for a particular amount of time.
- **Accept/Reject the request:** The lender has full authority to accept the rental request.
- **Payment:** Once the deal is finalized, seeker can complete the transaction through this payment feature.
- **Mobile Responsiveness:** A mobile-responsive design to ensure a seamless user experience on mobile devices.
- **Admin Dashboard:** An admin dashboard to manage the website, monitor activity, and handle disputes.
- **View Orders:** A user can view all their orders and give their reviews
- **Reviews and Feedback:** A user can give a review to the opposite party and give their experiences through a rating system. This feature also contains a feedback area to put in additional feedbacks about the rental process.

D. UI/UX and its workflow

To understand the workflow and then implement it into functioning, we first created the functioning prototype using Figma. The prototype made it very clear how a user will navigate through the screens and what needs to be done in the real application. The Workflow of this model is explained below: The UI/UX design is given below with its functioning:

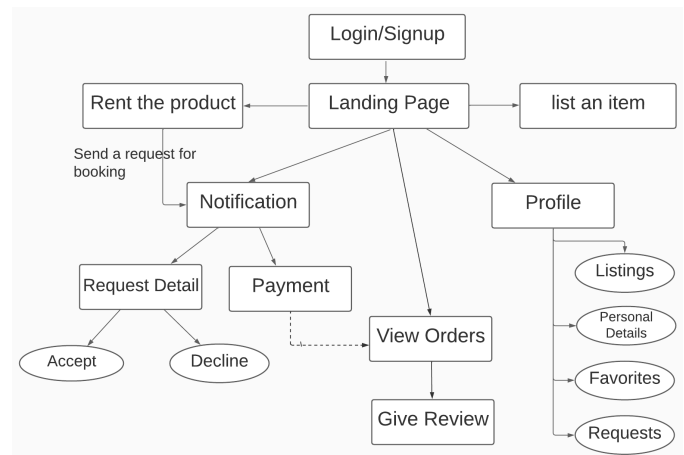


Fig. 3. Application Workflow

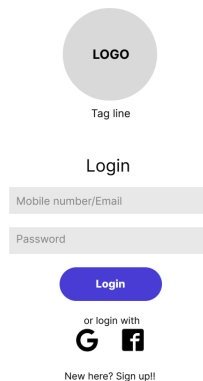
1) Sign Up:



A sign-up form with a circular logo placeholder at the top, followed by a tag line. Below is a 'Register' heading and four input fields for Name, Email, Mobile number, and Password. A blue 'Sign Up' button is at the bottom, with a link 'Or sign up with' below it.

If you're new to the application, Sign Up, and the data will be stored in the user schema.

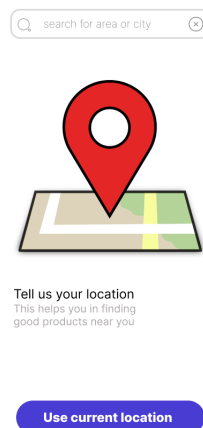
2) Login:



A login form with a circular logo placeholder at the top, followed by a tag line. Below is a 'Login' heading and two input fields for Mobile number/Email and Password. A blue 'Login' button is at the bottom, with a link 'or login with' and social media icons (Google, Facebook) below it. At the very bottom is a link 'New here? Sign up!'.

If you've already registered, log in, and the authentication process will start.

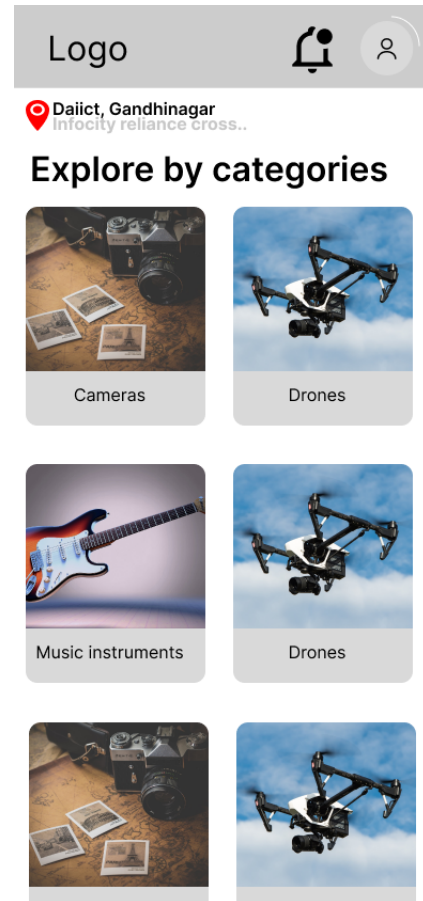
3) Pick Location:



A location selection form with a search bar at the top. Below is a large red location pin icon over a map. Text below the icon says 'Tell us your location' and 'This helps you in finding good products near you'. At the bottom is a blue button labeled 'Use current location'.


Once Logged in, You'll be asked to pick the location so that you're only shown the nearby products.

4) Landing Page:







You can browse the category of items from the landing page. On the top, If we tap the notification icon, we see all the updates like who sent a rental request (user as the lender), And if your request to rent an item is accepted/rejected(user as the seeker). If we tap the profile icon, we go to the navigation page from where we can reach anywhere in the app. If we select the category; camera, then all the cameras listed for that area will be displayed on the browsing page.

5) Listing page:

Logo


New listing

Add photos

Listing title

Category

Description

Postal code

Rent price per

Day
Week
Month

Current market value of item in RS

Quantity

Minimum rental period


Our lender gurantee

Cancel

List new item

List your item by filling in the necessary details (product information, location, duration of availability, rate, etc.), and thus the items listed will be reflected on the browsing page as well as the listing page of the user.

6) Browsing Page:


Logo



Results for Gandhinagar
Change location



Rent cameras in Gandhinagar

Hire a Camera from a fellow photographer in London. Over 50% cheaper than traditional rental houses.

Search



Fujifilm XT4 mirrorless
Devesh 38824
★ (100)
Rs 1500/day



cannon eosdka
UserXYZ 38824
★ (100)
Rs 1500/day

Select the item you like, add it to your favorites, or open the item to book it or to see the item/product page.

7) Product Page:

Logo





Fujifilm xt4 mirror less camera


Daily Rs 1.5K/day
7 day + Rs 1K/day
30 day + Rs 700/day

Description

Photos and videos. The X-T4 uses the "color" that Fujifilm has been studying for over 80 years as a common language, and the powerful hardware housed in a compact body realizes a borderless work production flow. In addition to the latest 4th generation devices, [Read more](#)

 Devesh ★ (100)

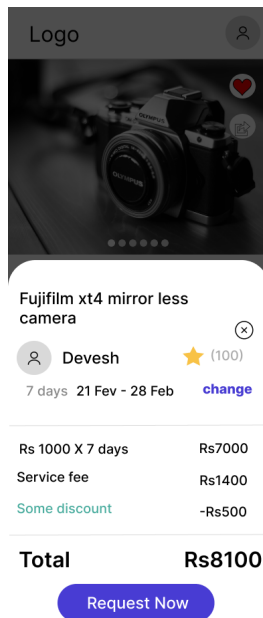
conditions and terms assigned by user for the usage of the item

Location


Check price and availability

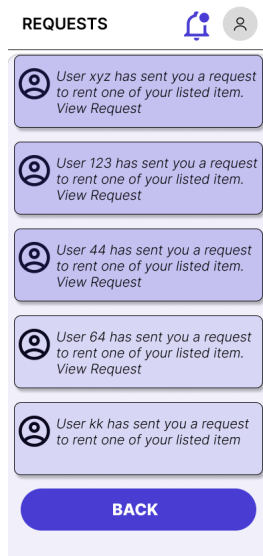
Details of the product and the option to further book it for rent.

8) Book and send a request to the lender:



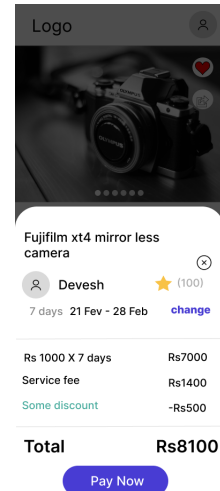
Choose the dates. If the dates are already booked, they will be shown as unavailable of those dates and the date picker will only show the available dates. Then the seeker has to send this rental request to the lender, and thus the lender will get the notification that someone wants to rent your item. He'll reach the request page to review the request.

9) Requests Page:



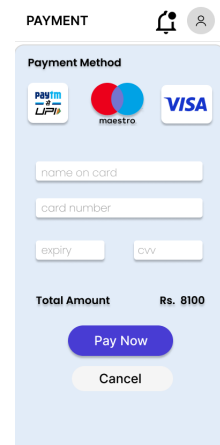
This is a specified requests page for the lenders where they can see the list of requests we're getting, and tapping on the request takes you to the request details page, where you can accept or decline the request. Accept or decline the request, and then you'll be redirected to the ALL REQUESTS page.

10) Booking Page:



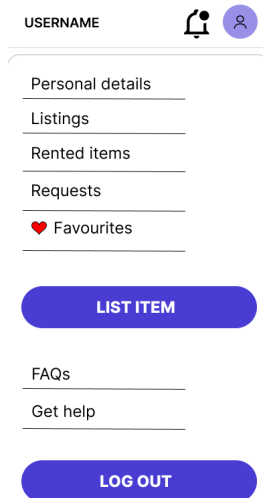
If the lender has accepted your request, you'll be redirected to the booking page, where you confirm everything and finally reach the payment page.

11) Payment Page:



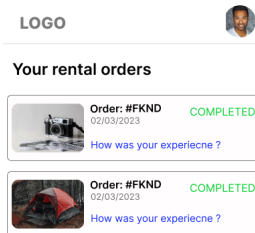
- We integrated the Razorpay payment gateway system into our application by adding the Razorpay SDK to the frontend. This SDK allows us to create payment links, checkout forms, and perform other payment-related actions directly from our application.
- To enable the integration, we obtained the API keys required for authentication and processing of payments. These keys were provided by Razorpay upon creating an account on their platform.
- The integration process involved creating a payment page that is displayed to the user upon checkout. When the user enters their payment details, the payment is processed securely through the Razorpay payment gateway, which communicates with the payment processor and the user's bank to authorize and complete the transaction.
- Complete the transaction and your records will be updated in the database, and you will get redirected to the landing page.

12) Navigation Page:



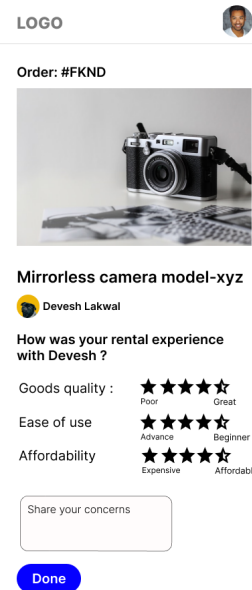
When we tap on the profile icon, we see the navigation page from where we can access our personal details, all the listings, All the items we have rented, All the requests we have received from seekers, and our favorite items. We can list an item here which will take us to the listing page.

13) Your Rental Orders(As a seeker):



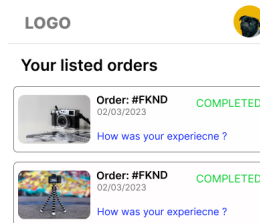
We can navigate to our rented orders and give a review for any of the orders by tapping on 'How was your experience?'

14) Give Review as a Seeker:



Give a detailed review of the product you rented. The review consists of questions that would help us to improve our user experience and services. Here, the seeker can rate the lender and his/her product's quality and different aspects related to the rental process. This page also has a feedback text area to get additional feedback from the seeker.

15) Your Listed Orders(As a lender):



We can navigate to our listed orders and give a review for any of the orders by tapping on 'How was your experience?'

16) Give Review As a lender:

Provide a detailed review of the experience of the lender and how their product was maintained. This page consists of questions that help us to improve our user experience and service workflow. Here, the lender can rate the seeker and other aspects of how good the rental process was. This page has a feedback text area to get additional feedback from the lender

E. Admin Dashboard

Admin panel

Devesh lakwal

Users

Name	Email	Location	Date created	Verification status	Documents
Test user 1	Testuser1@gmail.com	Dalict, Gandhinagar	3 April 2023	Verified	View docs
Test user 2	Testuser2@gmail.com	Dalict, Gandhinagar	3 April 2023	Rejected	View docs
Test user 3	Testuser3@gmail.com	Dalict, Gandhinagar	3 April 2023	Pending	View docs
Test user 4	Testuser4@gmail.com	Dalict, Gandhinagar	3 April 2023	Pending	View docs
Test user 5	Testuser5@gmail.com	Dalict, Gandhinagar	3 April 2023	Pending	View docs
Test user 6	Testuser6@gmail.com	Dalict, Gandhinagar	3 April 2023	Pending	View docs

Admin panel

Devesh lakwal

Orders

RentalID	Customer name	Phone	Time of creation	Rental status	Rental status
#3475	Ihaan madani	+91938273827	3 April 2023, 4:39 pm	Verified	View docs
#3476	Testuser2@gmail.com	Dalict, Gandhinagar	3 April 2023	Rejected	View docs
#3477	Testuser3@gmail.com	Dalict, Gandhinagar	3 April 2023	Pending	View docs
	Testuser4@gmail.com	Dalict, Gandhinagar	3 April 2023	Pending	View docs
	Testuser5@gmail.com	Dalict, Gandhinagar	3 April 2023	Pending	View docs
	Testuser6@gmail.com	Dalict, Gandhinagar	3 April 2023	Pending	View docs

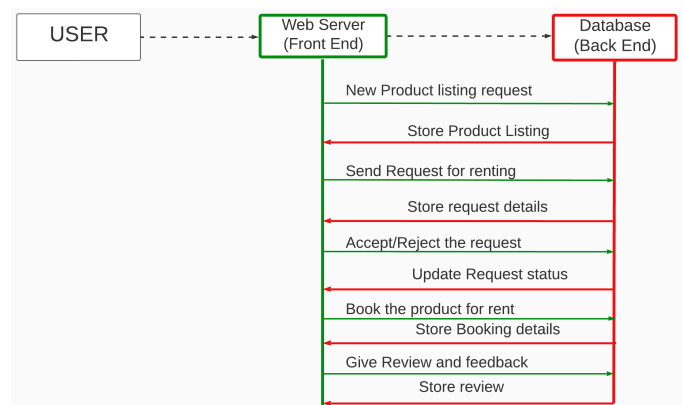
Admin will only be able to access the application through the desktop. The admin panel can look at the user information, confirm the verification, and all the order information.

- With the React-Admin library, we created an admin panel that integrates with our Firebase backend. The `FirestoreDataProvider` and `FirebaseAuthProvider` components allow us to connect to your Firebase Firestore and Authentication services, respectively, and provide CRUD functionality for managing our data.
- With the `UserList` component in our admin panel, we can view, edit, and delete user accounts. We can also create new users, reset passwords, and manage user roles and permissions. This can be very useful for managing our user base and ensuring that your application stays secure.
- The `OrderList` component can provide similar functionality for managing orders. We can view, edit, and delete orders, as well as create new orders and manage order status.
- The `UserVerificationList` component can help us manage user verification status. We can view and edit user verification status, and potentially automate the verification process
- The `ProductList` component displays a list of all products and allows us to view and edit the details of each product
- The `RentalRequestList` component displays a list of all rental requests and allows us to approve or reject each request

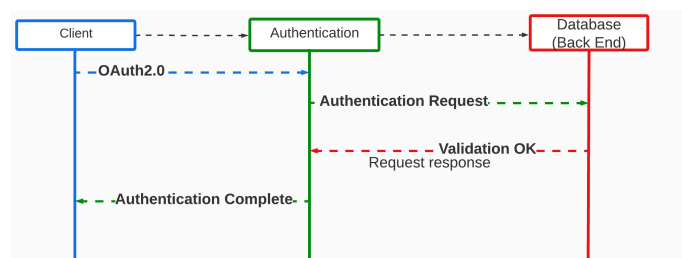
F. API Workflows

There are 4 major flows in which APIs are working to communicate the data:

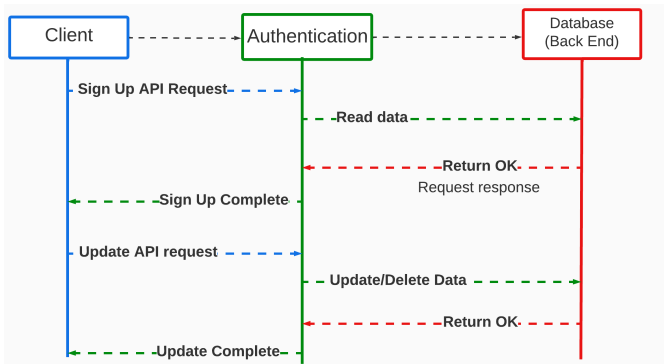
1) Application Flow:



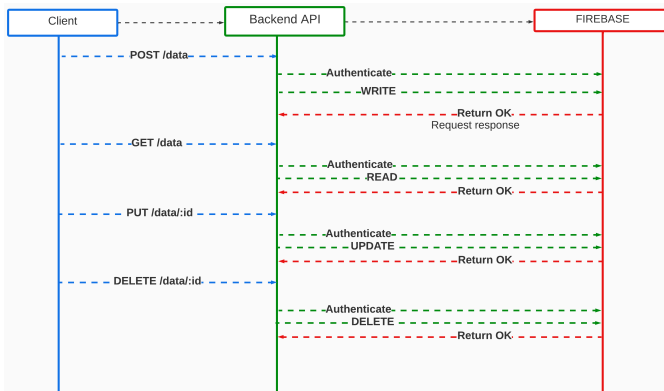
2) Login:



3) Sign-up and Update:



4) Storage:



G. Database Design

We have created schemas for the following information and all the important data can be retrieved from these databases/schemas.

- **User Information:** Every detail about the user will be stored in it.
- **Listings:** All the data for a listing will be stored here(eg. Category, Date of availability, Availability Status, etc).
- **Rental Requests:** Log for the requests sent by the seeker (sent to what user id, sent by whom, details of the item, etc).
- **Orders:** Completed orders and their details will be stored here
- **Transactions:** Transaction details of the completed order will be stored here.
- **Reviews and Feedback:** This will store all the reviews from the lender as well as the seekers with the ratings

H. Challenges faced in development

- We faced various bugs and errors during the development process, which required us to spend time debugging and fixing issues to ensure the application was functioning as intended.
- Some unwanted methods were making the load times really slow and thus it hindered the performance of the application. We found them and got rid of them.

- Ensuring that the application was compatible with a variety of devices and browsers was a challenge that we faced during development.
- We faced API downtimes and authentication problems as we've used Third party API also.
- We faced several challenges when testing our application. Developing and executing test cases took a significant amount of time and required close attention to detail.
- Integrating the back end with the front end, and making everything work together was a difficult task as well.

VI. LEARNING OUTCOMES

Working on this project has taught us a broad range of skills (technical as well as non-technical) that can be applied in many ways in the industry.

Skills developed:

- How business research is initiated through surveys and survey designs and data analysis to understand the user demand, market competition, and potential challenges that could occur in the future.
- Problem-solving skills, as we came up with the solutions to many problems that we faced while making the business model and the working application.
- Project Management Skills, as we distributed the roles between us, managed timelines and deadlines, prioritized our tasks, and worked with coordination.
- Interaction skills, as we interacted with more than 50 people to learn about their points of view and learned the ways to present our idea to the public.
- Designing Skills, as we learned how to design the UI/UX prototype of the application using Figma.
- Learned how to use React.js to develop front-end functionalities.
- Learned how to use HTML and CSS to style the front end and make it look good.
- Learned Google Firebase to connect the front end to the backend database, where all the data from the application will be stored in schemas.
- Learned how APIs work and how they are used to communicate data from one point to another.
- Learned how to use Postman to check the API integration and do the testing and debugging on the API endpoints.
- Learned how to host the source code in the GitHub repository so we could track it later.
- Learned the different methods of testing the application.

VII. FUTURE SCOPE

- **Social score:** We will implement a social scoring system similar to a credit score system. However, this will only be used internally, and users will not have access to it. Our team will assign scores based on a user's behavior, such as how they care for rented items and their cancellation rate. This will help us rank items on our page and give visibility to the best lenders.
- **Proofing method:** Whenever a user requests a rental and when we pick up the goods and deliver them, we will ask

users to check the goods and upload the images of any visible damage and if the damage is internal, describe the damage in words and this information will be stored in our systems for 7 days after the rental tenure ends, this will help us make the right decision and improve the customer experience

- **Messaging:** A messaging system to allow seekers and lenders to communicate with each other before and after a rental.
- **Insurance:** Consider offering insurance options to seekers through third-party insurance providers or by setting aside a portion of rental fees to cover damage and loss.
- **Reviews and ratings:** A system for users to rate and review each other after a rental to build trust and credibility within the community.

ACKNOWLEDGMENT

I would like to express my sincere gratitude towards my project mentor Prof. Jayprakash Lalchandani for guiding and supporting us throughout the project. His experience and teachings helped us better understand how to turn a business idea into a practical model and make it industry-ready. His continuous feedback and valuable suggestions helped us to overcome many challenges during the project and to deliver a better quality outcome. I would also like to express my gratitude towards my Team member Ilhaan Madani, who understood my vision well and coordinated with me.

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