American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science &Technology (FST)

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Fast-Ride

Software Requirement Engineering

Sec: **B**

Project submitted By

Nouroj Amin (18-39006-3)
Akhirul Islam (19-41208-2)
Mahin-Al-Mukit (18-38421-2)
Shoaib Islam Unmesh (18-38527-2)

Checked By Industry Personnel

Name:

Designation:

Company:

Sign:

Date:

1. PROBLEM DOMAIN

1.1.Background to the Problem

- Bashundhara residential area does not have good transportation system. This mostly effects the people who do not have private transportation. People have to face many challenges regularly. Public transportation is not available in all the corners at all the times. That's why people face problem moving from one place to another in emergency situations.

1.2.Solution to the Problem

- As there are enough public transports available at the area the app will just connect the passengers with the drivers. The main problem is passengers often face problems in finding transport when needed though there are more than enough transports are available. When the passengers will need a transport they'll use the app to request a ride and the driver with the closest distance will get a notification if he wants to accept or reject the ride. If he accepts the ride he will get the passenger info and location or if he rejects the ride the notification will automatically pass on to next closest rider. This app can solve the transportation problem of Bashundhara Residential Area. Passengers will be able to find transports in the fastest way using this app.

2. SOLUTION DESCRIPTION

2.1. System Features

1. Login

1.1 Go to the app

1.2 Enter your email or phone number

2. Create Account

1.1 To download the app from go to the App Store or Google Play.

1.2 Need is an email address and phone number

1.3 when you use phone number for account, then you got OTP code

1.4 You can request a ride from your from the Fast-Ride app

3. Request Rides

3.1 Rickshaw

4. Choose Destination

4.1 Open the app

4.2 Enter where you're going in the where to?

4.3 Tap to confirm your pickup location

4.4 Tap Confirm again to be matched to a driver nearby

5. Meet Driver

5.1 You can track their arrival on the map

5.2 If they are a few minutes away, then wait for them at your pickup location

6. Check Ride

6.1 Please make sure you're getting into the right Rickshaw with the right driver

6.2 Check matching the license plate

6.3 Check Rickshaw make model and colour

6.4 Check driver photo with what's provided in your app.

6.5 Fast-Ride trips can only be requested through the app

7. Payment System

7.1 Cash

7.2 Bkash

7.3 Nagad

7.4 Rocket

8. Rate & Give Trips

8.1 You can add a compliment to your driver

8.2 If you have a good journey, you can rate our app

8.3 You can add a tip in the app

2.2. System Quality Attributes

- Performance:

  The app should be fast and responsive, with low latency and quick load times. Users expect the app to provide a seamless experience without any delays, lag, or buffering while booking a ride or tracking the ride in real-time.

- Reliability:

  The app should be reliable and available to users whenever they need it. The app should not have frequent downtime's, crashes, or errors that prevent users from accessing the service.

- Scalability:

  The app should be able to handle a large volume of users and requests, especially during peak hours or special events, without any degradation in performance. The app should scale horizontally and vertically with increased demand.

- Security:

  The app should ensure the security of user data and transactions, with measures like secure login, encryption, and data privacy policies. Payment processing should be secure, and the app should guard against fraud and unauthorized access.

- Usability:

  The app should have a simple and intuitive user interface, making it easy for users to book rides, track drivers, and pay for rides. The app should be accessible to all users, regardless of their technical expertise.

- Maintainability:

  The app should be easy to maintain and update, with a modular architecture that allows for easy code changes and bug fixes. The app should be built using industry-standard coding practices and tools to ensure long-term maintainability.

2.2. UML Diagrams

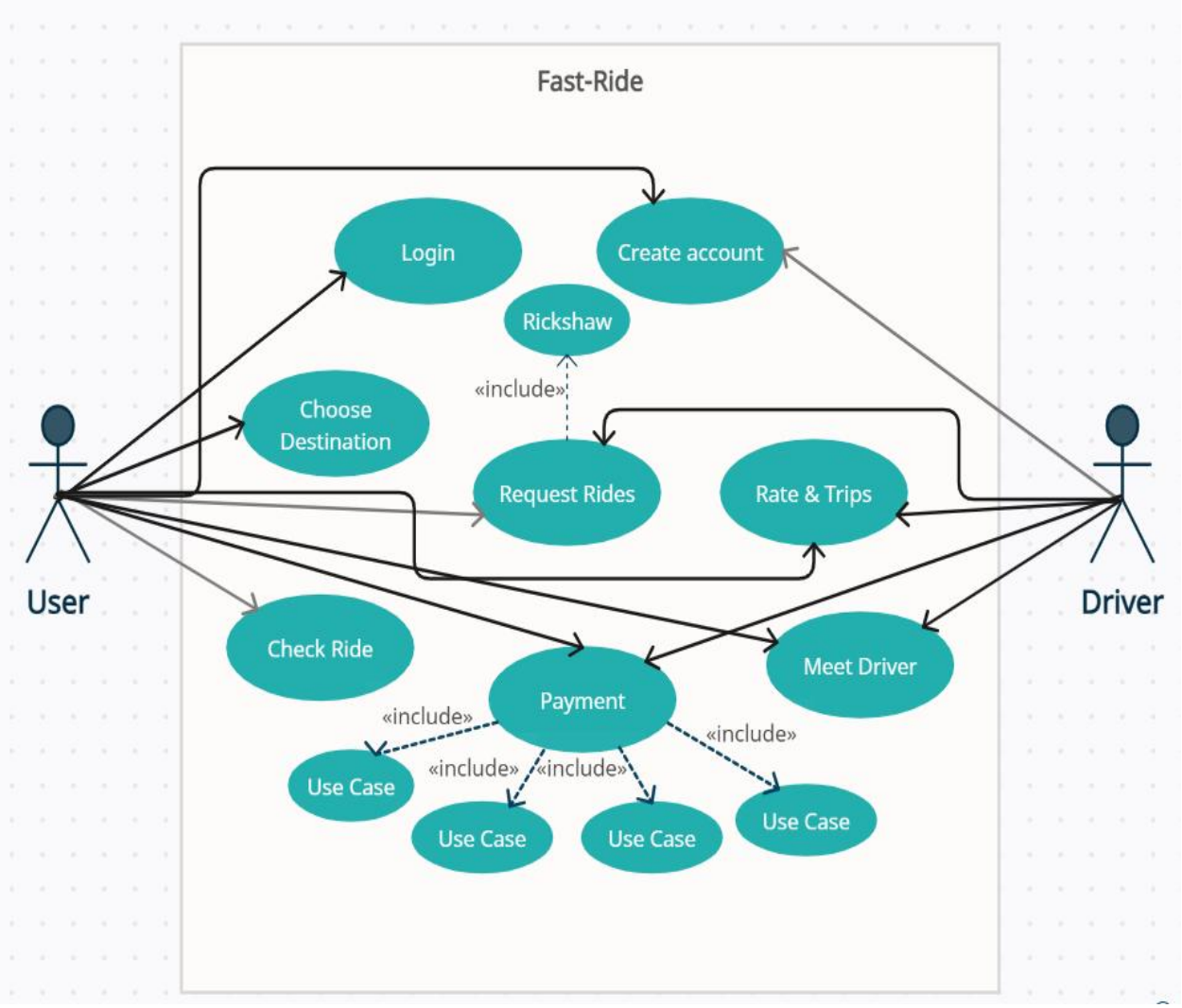


Fig : Use Case Diagram

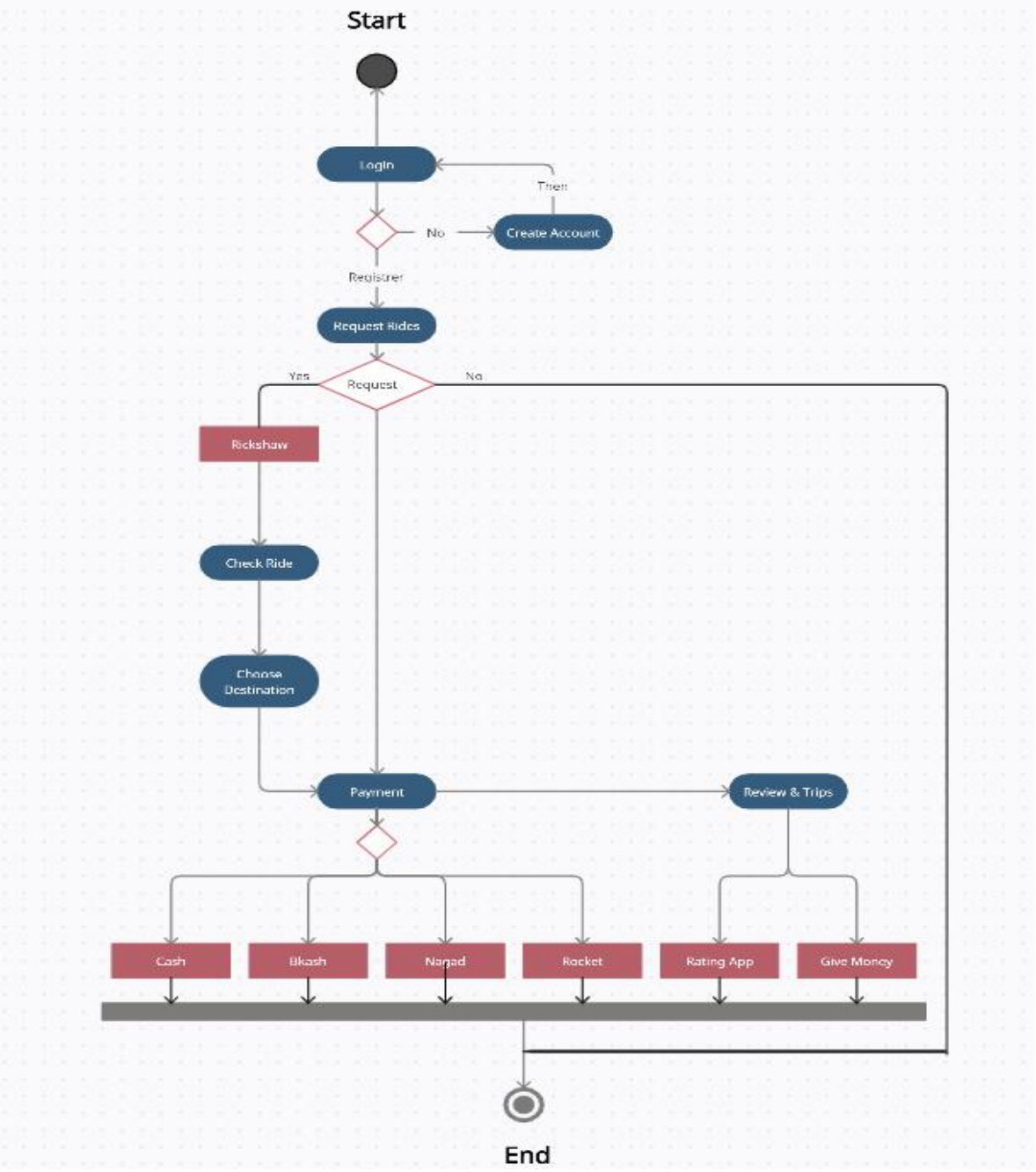


Fig : Activity Diagram

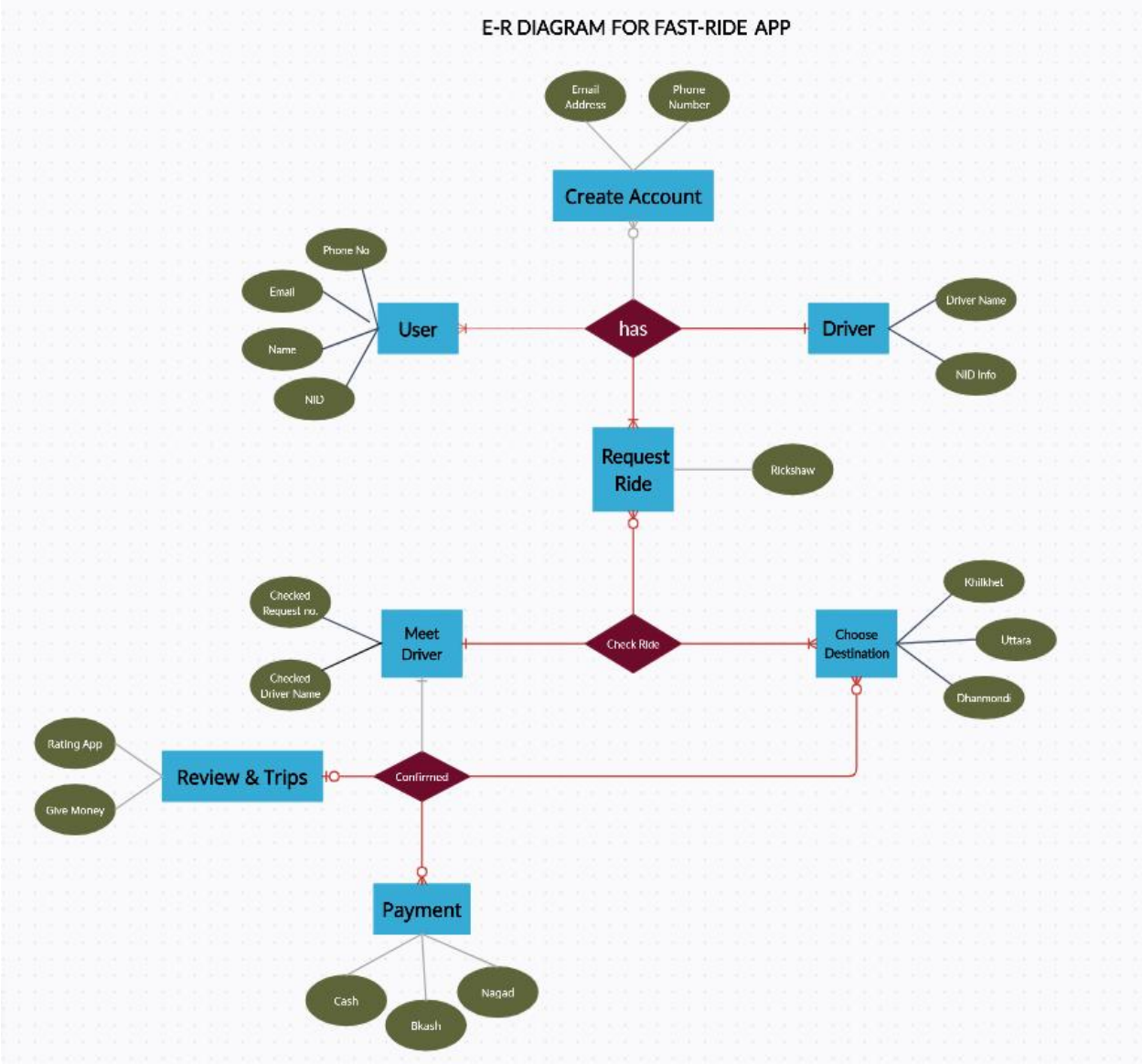


Fig : ER Diagram

3. Social Impact

Solution to solve the transportation problem using an app. The app will connect the passengers with drivers when they request for a ride. The passenger and driver both have to be registered on the app. Now it highlights how the solution will work and if it will be able to solve the problem or not.

- Increased Accessibility: Our ride-sharing rickshaw app can increase accessibility to transportation options for people in the community who may not have access to personal vehicles or public transportation. This can help to improve mobility and access to employment, healthcare, and other essential services. This will make communication easier for people who do not have personal vehicles.

- Job Creation: Our app can create job opportunities for rickshaw drivers in the community, providing them with a higher and more reliable source of income and potentially improving their quality of life.

- Sustainability: We have plan on using electric rickshaws or other sustainable transportation options in future, our app can contribute to reducing air pollution and carbon emissions in the community, making it a more environmentally friendly transportation option.

- Improved Safety: Our app can promote safety by providing real-time tracking and monitoring of drivers and vehicles and implementing safety protocols such as driver background checks and vehicle inspections.

Overall, our ride-sharing rickshaw app can have a positive social impact on the community by increasing accessibility, creating job opportunities, promoting sustainability, and improving safety.

4. Marketing Plan

Short-Term Plan:

- Targeted Promotions: We will launch targeted promotions, discounts, and referral programs to attract new riders. We will partner with local businesses to offer discounts or deals to their customers who use our services. This will help to increase brand awareness and drive user acquisition.
- Leverage Social Media: We utilize social media to promote our service, with a focus on platforms that are popular in our target market. We will use engaging visuals and messaging to capture the attention of potential users and drive a trial of our service.
- Provide Incentives for Riders: We will offer incentives to encourage riders to choose our service over competitors, such as free rides for every X number of rides or discounts for referrals. This can help to build a loyal customer base and drive user acquisition.

Long-Term Plan:

- Improve User Experience: We will invest most in user experience improvements such as a more intuitive mobile app, streamlined booking process, and a rewards program. This can help to improve customer satisfaction and loyalty.
- Expand Services: We will explore the possibility of expanding services to include other types of vehicles or transportation options to increase the overall user base and provide a wider range of transportation options to the community.
- Focus on Sustainability: We will consider using electric rickshaws or other sustainable transportation options to appeal to environmentally conscious consumers and create a positive brand image.

Continuous Plan:

- Leverage User Feedback: We will collect and analyze user feedback to identify areas for improvement and make adjustments to the service as necessary. This can help to improve the overall customer experience and drive user loyalty.
- Engage with the Community: We will engage with the local community through sponsorship's, events, and social media. This can help to create a positive brand image and foster a sense of community among your users.
- Monitor Competition: We will monitor the competition and adjust marketing strategies as necessary to remain competitive in the market. Stay up-to-date with the latest trends and innovations in transportation and technology to stay ahead of the competition.

5. Cost and Profit Analysis

Cost Analysis:

Development Costs: The cost of developing Ride-sharing Rickshaw platform will depend on various factors, such as the complexity of the app, the features , and the platform to develop it on. However, we are expecting to spend between 15,00,000 tk to 25,00,000 tk on development costs.

Marketing Costs:

Social media advertising: 50,000 tk per month

Promotions and discounts: 50,000 tk per month

Partnerships and sponsorship's: 50,000 per month

Event sponsorship's and participation: 1,00,000 per month

Operational Costs: Operational costs will include software engineers salaries, app maintenance, server costs, insurance, and administrative expenses. We are expecting to spend monthly 1,00,000-2,00,000 tk per month on operational cost.

Profit Analysis:

Revenue: The revenue for the ride-sharing rickshaw company will come from the rides operated on the app. We are expecting to operate 10,000 rides from our app daily and we will charge 2 tk initially from each ride. So, the monthly revenue we are expecting to hit is 6,00,000 tk.

Profit: Assuming earning 6,00,000 tk monthly revenue. After deducting the operating and marketing expenses of 4,00,000 to 5,00,000 tk per month, we may experience a nearly break-even point in the first year. However, with effective marketing, user acquisition, and retention strategies, we can gradually increase our revenue and profitability over time.

6. Development Plan with Project Schedule

6.1 Development Plan:

1. Planning Phase:

- We will define the project scope, objectives, and requirements.
- We will conduct market research and analyze competitors.
- We will create a project plan and schedule.

Project Schedule: 2 week*s*

2. Analysis Phase:

- We will gather user requirements and document them.
- We will create user personas and scenarios.
- We will define the application architecture and technology stack.

Project Schedule: 3 weeks

3. Design Phase:

- We will create wire frames and prototypes of the application's interface.
- We will design the database schema and data flow.
- We will create a detailed design document.

Project Schedule: 4 weeks

4. Development Phase:

- We will develop the back-end and front-end of the application.
- We will integrate third-party APIs and services.
- We will perform unit and integration testing.

Project Schedule: 8 weeks

5. Testing Phase:

- We will conduct system and acceptance testing.
- We will identify and fix bugs and issues.
- We will conduct performance testing and security testing.

Project Schedule: 3 weeks

6. Deployment Phase:

- We will deploy the application to the app store and server environment.
- We will set up server infrastructure and hosting environment.
- We will configure the application for production.

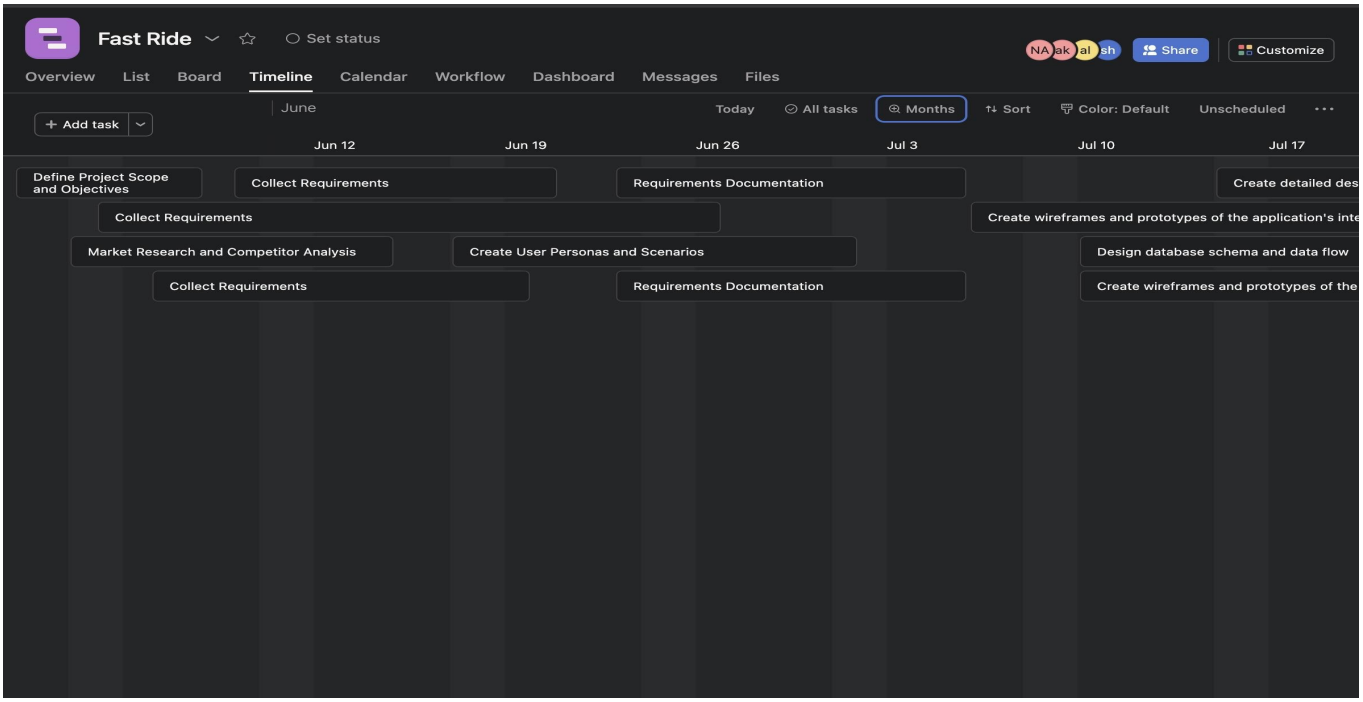
Project Schedule: 2 weeks

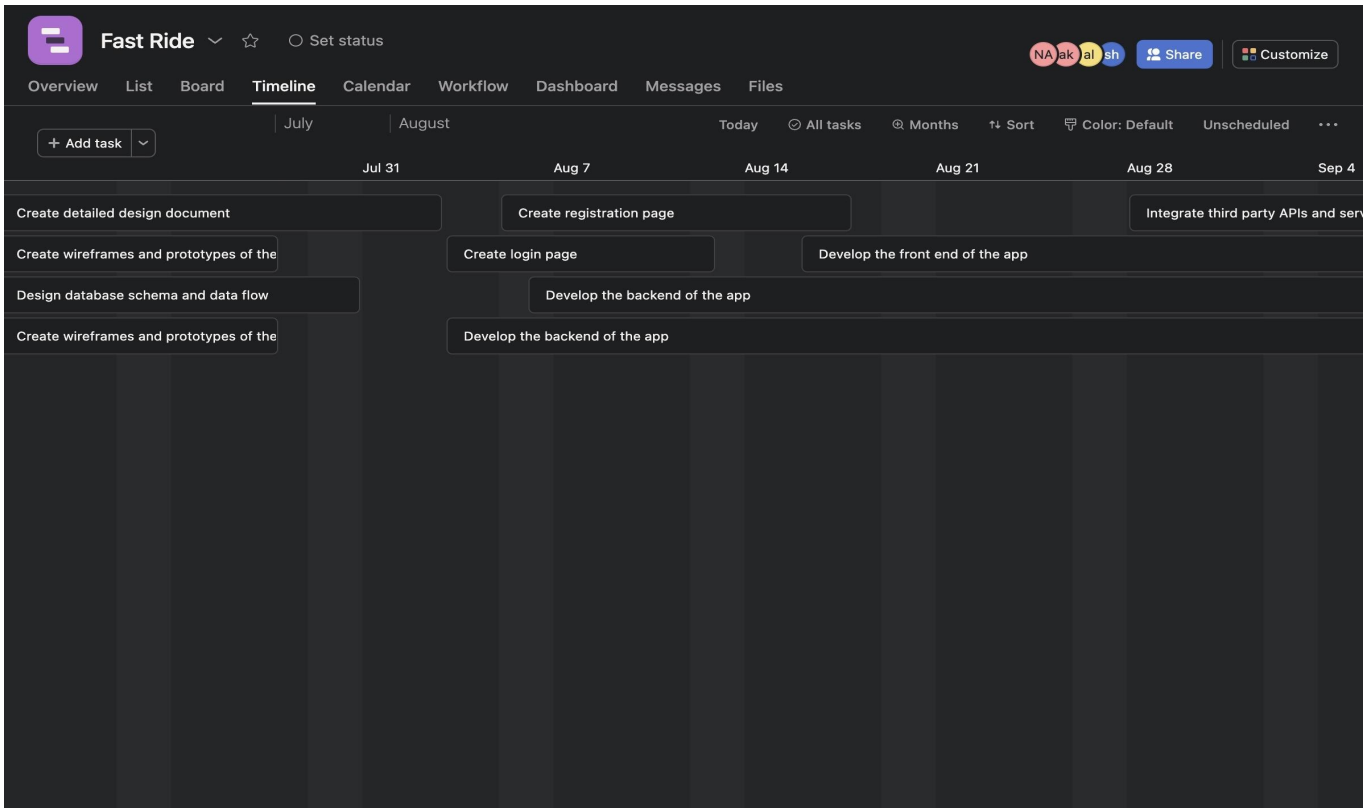
7. Maintenance Phase:

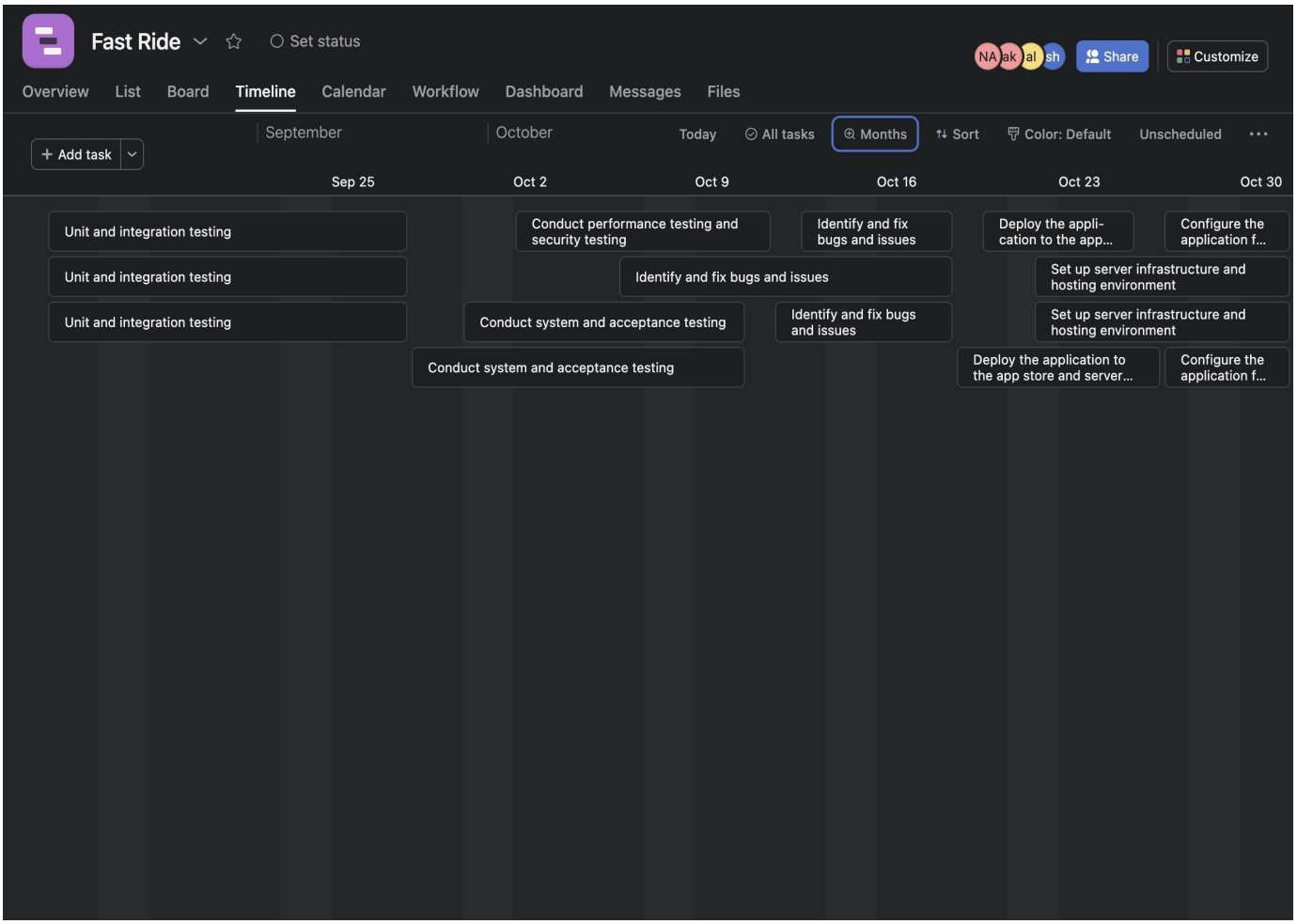
- We will provide ongoing technical support and maintenance.
- We will continuously improve the application based on user feedback.
- We will update the application with new features and functionality.

Project Schedule: Ongoing

6.2 Project Schedule







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