Project: Business Analysis and Modeling for an eBike Rental Startup

Instructions: Use this template to draft the deliverable of the project. You may modify the template to include more information.

Step 1: Identifying stakeholders for requirement gathering

Stakeholder	Example	Interest
Customers	Enthusiasts	Affordable rentals, user-friendly booking system, good customer service, and bike availability.
Business Owners	Founders of Mobi-e-rides	Profitability, market share, customer satisfaction, and brand reputation.
Employees	Maintenance, Rental Agents	Efficient operational processes, clear communication, and adequate training for handling bikes and customer interactions.
Local Government	Municipalities regulating transportation	Compliance with regulations, safety standards, and contributions to local sustainability efforts.
Investors	Individuals or firms funding Mobi-e-rides	Return on investment, growth potential, and efficient use of resources.

Step 2: Drafting interview questions for gathering requirements

Questions for customers (Enthusiasts and tourists)	Business owners (Founders of E Mobi-e-rides)	Employees (Rental agents and maintenance staff
What features would you find most useful in an eBike rental service?	What are your primary goals for launching the eBike rental service?	What tools or processes do you currently use to manage rentals and maintenance?
How do you typically book rentals, and what improvements would you suggest?	What challenges do you anticipate when entering the eBike rental market?	How do you believe the rental process could be improved from your perspective?

Step 3: Employing techniques for requirements prioritization

Must have	Should have	Could have	Won't have
User-friendly booking system	Mobile app for rentals	Customer loyalty program	GPS tracking for individual bikes at launch
Payment processing functionality		Integration with local tourist attractions	
Bike availability tracking			

Step 4: Traceability tools for requirements

Requirement ID	Description	Stakeholder	Status	Comments
R1	User-friendly booking system	Customers	In Progress	Initial design phase
R2	Payment processing functionality	Business Owners	Not Started	Researching payment options
R3	Mobile app for rentals	Customers	Not Started	Awaiting customer feedback

Step 5: Facilitating workshops

Agenda

1.Introduction

- Purpose of the workshop
- Overview of stakeholder interests

2. Requirements Discussion

- Review prioritized requirements
- Gather feedback from stakeholders

3. Validation of Requirements

- Confirm understanding and agreement on requirements
- Identify any additional needs

4. Next Steps

- Outline follow-up actions
- Schedule future meetings

Notes

- Stakeholders expressed strong interest in a user-friendly booking system.
- Concerns raised about payment security and integration with existing systems.
- Suggestions for additional features like customer feedback options.

Step 6: Observation techniques

Example solution: Not applicable

You can consider analyzing existing rental services (if you have access to them) to understand their processes.

Step 7: Designing surveys

Question 1
How often do you rent bikes?
a) Daily
b) Weekly
c) Monthly
d) Rarely

Question 2
What features are most important to you in an eBike rental service? (Select all that apply)
a) Easy booking
b) Payment options
c) Customer support
d) Bike maintenance

Question 3
What is your preferred method of booking?
a) Website
b) Mobile app
c) In-person

Question 4
How likely are you to recommend our service to others? (Rate 1-5)
Question 5
What improvements would you like to see in our service?

Step 8: Prototyping [Optional]

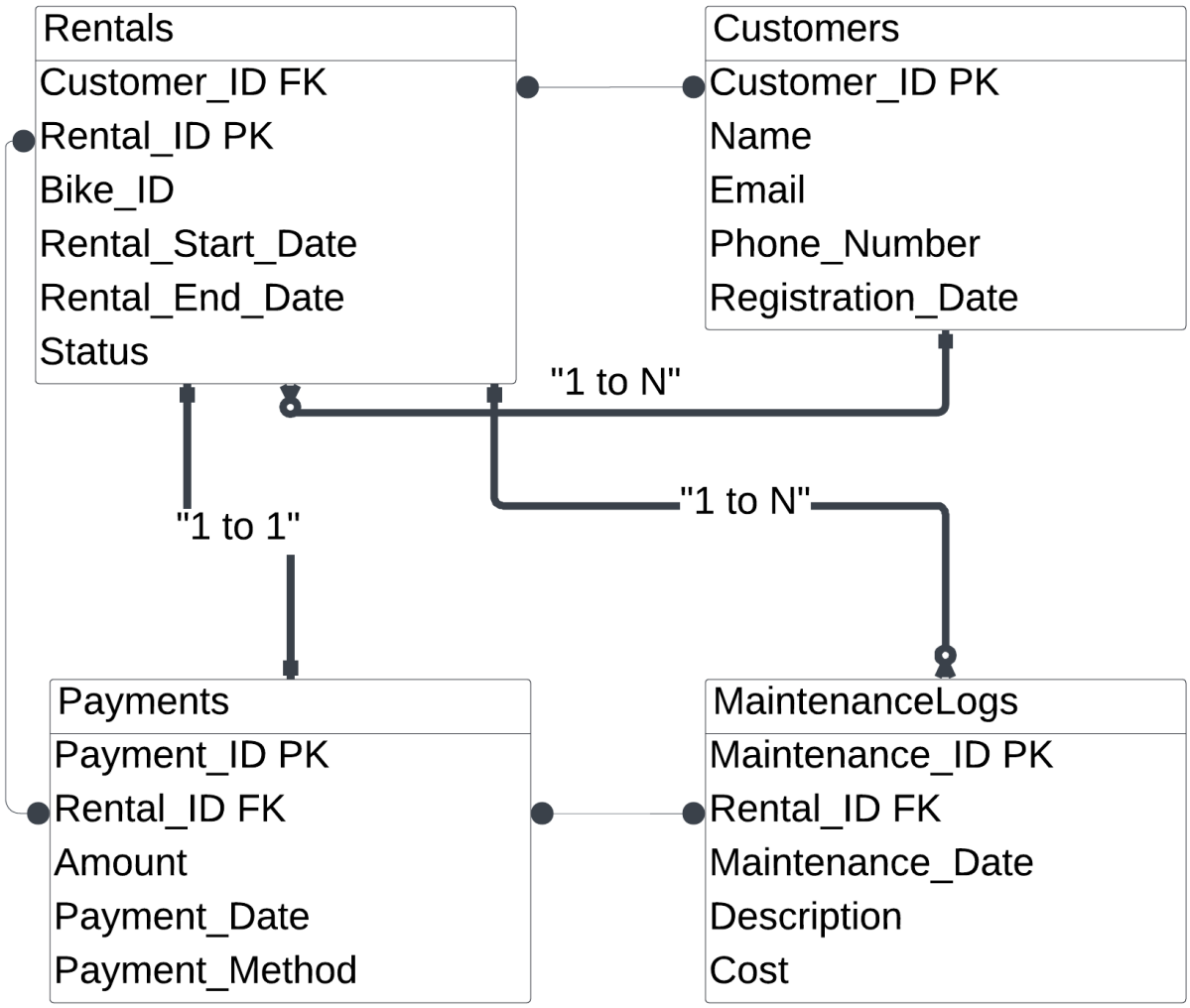
Key features
Develop low-fidelity prototypes using Figma for:

- User registration page
- Booking interface
- Payment processing screen
- Customer loyalty dashboard
- Feedback submission form

Step 9: Modeling business processes

Entity	Attributes
Customers, Rentals	Customers can have multiple Rentals.
Payments	Rentals are associated with Payments.
Maintenance Logs	Maintenance Logs are linked to Rentals.

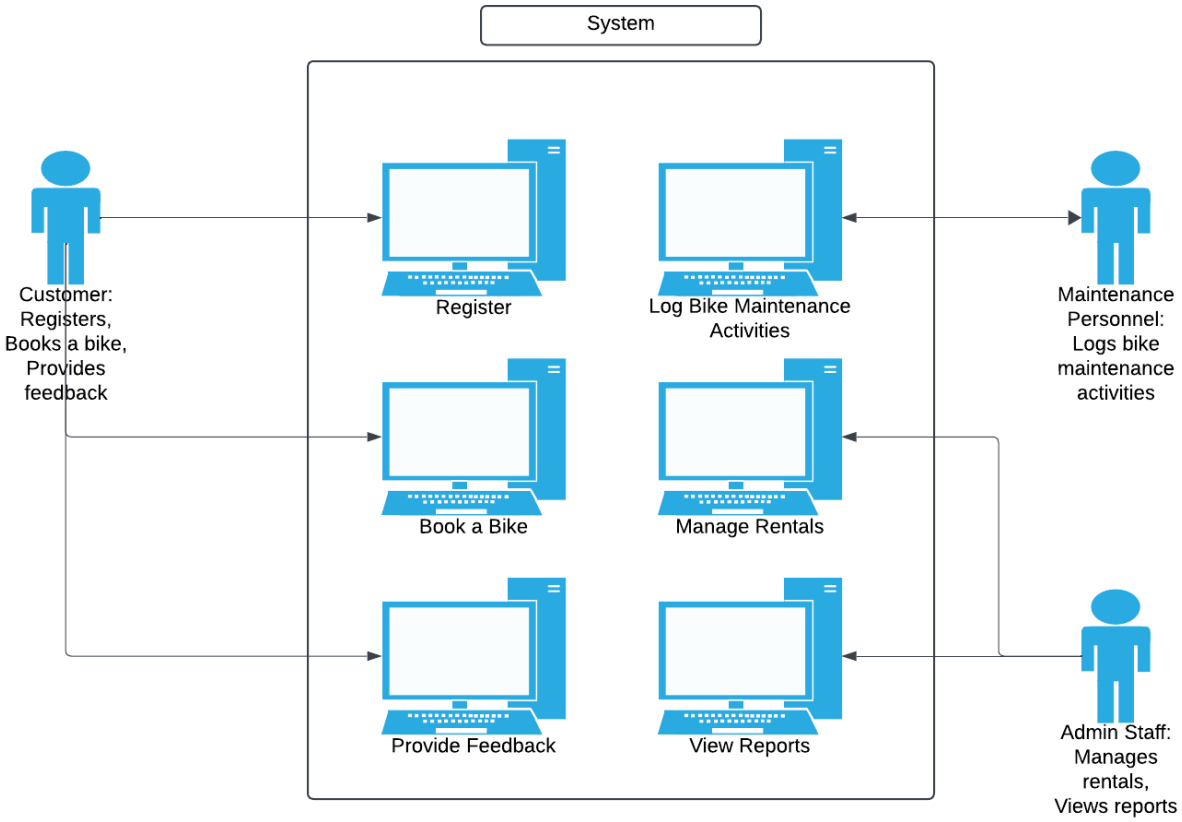
ERD diagram: To be created using a diagramming tool, such as Lucidchart.



Step 10: Use case diagram

Actors
• Customers • Admin Staff • Maintenance Personnel
Use cases
• Customers can register, book a bike, and provide feedback. • Admin staff can manage rentals and view reports. • Maintenance personnel can log bike maintenance activities.

Use case diagram: To be created using a diagramming tool, such as Lucidchart.



Step 11: Mapping out business processes

Process steps

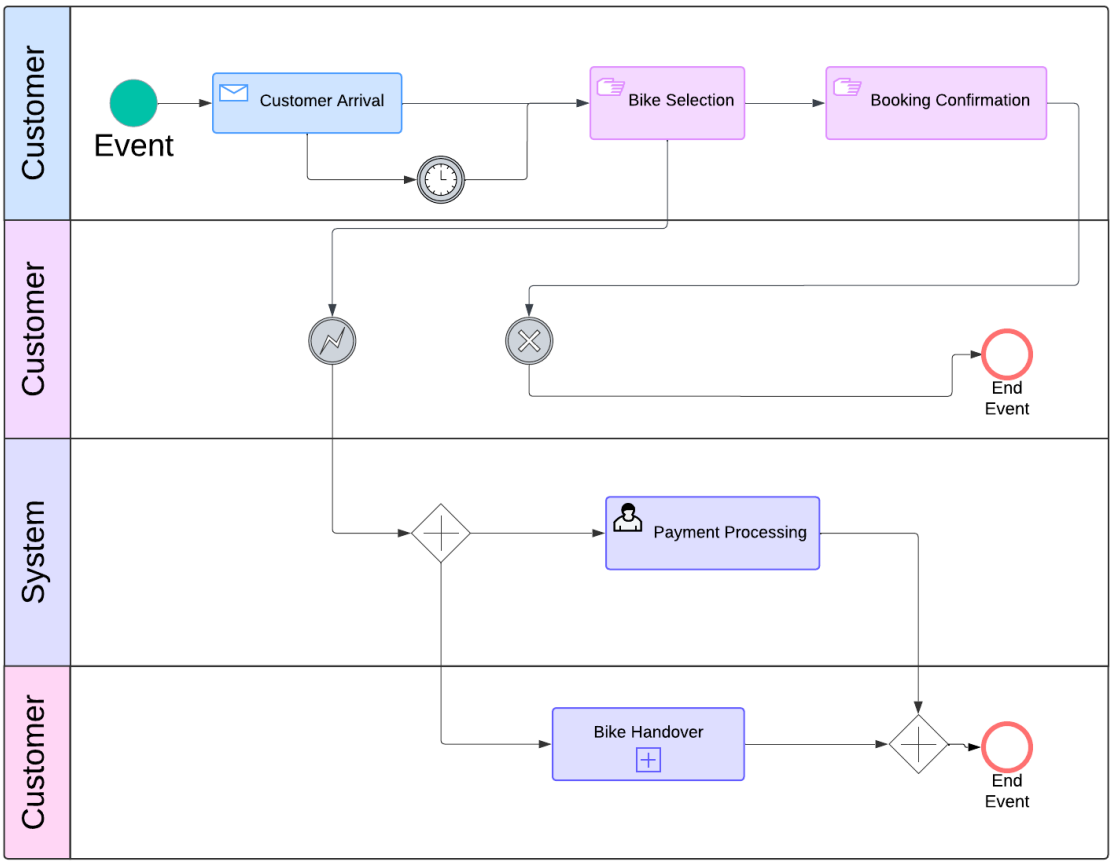
BPMN Flowchart for Rental Process

1. Customer Arrival
2. Bike Selection
3. Booking Confirmation
4. Payment Processing
5. Bike Handover
6. Return Process
7. Feedback Collection

Identified Bottlenecks

- Delays in payment processing can lead to customer frustration.
- Need for automation in booking and feedback collection.

Flowchart: To be created using a diagramming tool, such as Lucidchart.



Step 12: Systems analysis

1. **Requirements gathering**

Functional Requirements

- **User Registration**: Users should be able to register using email or social media accounts.
- **Profile Management**: The system must allow users to update their profiles, including personal information and payment methods.
- **Secure Login**: Users need to log in securely with password protection and two-factor authentication (2FA).

Nonfunctional Requirements

- **Speed**: The registration process should be completed within five minutes.
- **Scalability**: The system must support up to 10,000 simultaneous user registrations without performance degradation.

- **Reliability**: The system should maintain high availability, minimizing downtime.

2. Stakeholder analysis

- **Customers:** Expect a seamless registration experience that protects their privacy and data.
- **Admin Staff:** Need access to user data for management purposes while ensuring data security and compliance with regulations.
- **IT Staff:** Require a manageable and maintainable system that integrates smoothly with existing databases and technologies.

3. Current system evaluation

- **Existing Process:** If the current system relies on manual registration (e.g., paper forms), it is time-consuming and prone to errors. The new system should automate user registrations to improve efficiency and accuracy.
- **Challenges:** Manual processes increase the likelihood of data entry errors and slow down user onboarding.

4. Technology assessment

- **Identity Management:** Consider using a cloud-based identity management service (e.g., Auth0, Okta) to handle user registration and authentication securely.
- **Database Solutions:** Evaluate database options such as PostgreSQL or MongoDB for securely storing user credentials and profiles, ensuring compliance with data protection regulations.
- **Integration:** Assess the ease of integrating the new system with existing platforms (e.g., payment gateways, CRM systems).

5. Risk analysis

Potential Risks

- **Data Breaches**: Weak passwords or inadequate encryption methods may lead to data breaches, compromising user information.
- **User Experience**: Users may struggle with the new registration process, leading to abandoned accounts and reduced customer satisfaction.
- **Compliance Issues**: Failing to comply with regulations (e.g., GDPR) could result in legal repercussions.

Operational Risks

- Users encountering difficulties with the registration process may abandon the service, impacting customer acquisition.

6. Proposed solutions

- **Cloud-Based Authentication Service:** Implement a robust cloud-based authentication service that provides features like single sign-on (SSO) and 2FA to enhance security and user experience.
- **Encryption Practices:** Use strong encryption methods (e.g., bcrypt) for securely storing user passwords and ensuring data privacy.
- **User Documentation**: Create comprehensive user-friendly documentation and tutorials to guide customers through the registration and authentication process, addressing potential pain points.
- **Monitoring and Auditing:** Set up monitoring tools to track user registrations and access patterns, allowing for timely detection of unusual activities or potential security threats.

Step 13: Reflection and Validation

Reflective Essay

Through this project, I learned the importance of stakeholder engagement and the need for clear communication in requirements gathering. I faced challenges in prioritizing conflicting interests among stakeholders but found that using structured techniques like MoSCoW helped align expectations. In real-world scenarios, I would apply these skills to ensure comprehensive analysis and effective communication, ultimately leading to successful project outcomes.