Delivery Project Plan

Project Name: *Rental & Services Management System*
Created/Updated: ***9/18/***
Project Lead: Bharath Veldi

1.0 Purpose of Project

The Rental & Services Management System project aims to ease the moving-in process for international students (and in-state students), inspired by the founder's personal experience. Focused on apartment rentals and associated services, the project addresses critical gaps in existing rental platforms. Specifically designed for students attending the Indiana University of Bloomington, the system offers detailed property listings with essential information like proximity to supermarkets and campus facilities. By centralizing this data, it streamlines the apartment search, eliminating the need for students to navigate multiple platforms. The project also empowers students with tools for informed decision-making, including map views, multimedia features, and user reviews. Additionally, it simplifies access to moving-in services such as transportation and utility setup. Through features like messaging and chat, the system fosters a sense of community, enhancing the overall experience for international students during their crucial transition period.

2.0 Objectives & Deliverables

Objectives To accomplish this goal, the following will be done:	**Deliverables** The following will be delivered as a result of accomplishing this objective. *Where possible, tie deliverables to objectives.*
Maintain a consistent public view for all users and visitor	❑ A user-friendly and informative public interface that displays available items for rent without requiring login.
Implement a Renter view	❑ Secure user registration and login ❑ Apartment listing feature ❑ Search and filter functionality ❑ Detailed apartment profiles ❑ Integration with google maps. ❑ Contact information of owners ❑ Feedback and review system ❑ Adding maintenance request ❑ Getting insurance info ❑ User profile management
Providing student utilities	❑ Information of bank opening ❑ Guide to obtaining free transportation services (buses, cycles, IU ride etc.) ❑ Information on grocery stores, IU stores, Crimson Cupboard etc.

Implement an Admin view	❑ Admin dashboard for approving items added for rent. ❑ Capability to accept and manage customer complaints, routing them to the appropriate renter. ❑ Ability to issue refunds to renters when necessary
Implement email notifications for payment updates.	❑ Automated email notifications to renters confirming successful payments. ❑ Automated email notifications to item owners when payments are made. ❑ Automated email notifications to item owners when their property is accepted by the admin.
Implement an Owner view	❑ Adding details about their properties to post them for leasing. ❑ Able to see complete list of properties added with which one are on lease and which one are not. ❑ Able to get maintenance requests. ❑ Able to remove their property.

2.5 Scope Control

Complete the following aspects of scope that further define this project.

In Scope	Out of Scope	Uncertain
All the functionalities mentioned in the objectives are in scope.	The development of physical hardware components, unless they are necessary for interfacing with the software (e.g., IoT devices for property monitoring).	Voice-activated search implementation complexity may vary.
Integration with OAuth providers (Google, Facebook).	Legal services or legal advice related to rental contracts, liability, or dispute resolution, unless it involves integrating a basic legal terms and conditions module.	Chatbot for administrators.
Maps and multimedia integration.	Complex artificial intelligence or machine learning features that are not essential to the core functionality, such as advanced predictive analytics or deep learning algorithms.	Dashboards for administrators and owners.
		Adding other rental items like bicycles, scooters, and skateboards.

3.0 Approach

❑ *Our project approach integrates the MERN stack and Agile methodology. We prioritize in-house development to maintain control over customization and scalability while closely aligning with the unique needs of off-campus students at IUB. Phased delivery ensures essential features are deployed early, and prototypes facilitate user feedback. We remain adaptable by evaluating emerging technologies and deciding on their integration based on alignment with project goals. This approach guarantees a responsive and tailored Rental & Services Management System for international*

students, enhancing their experience during property rentals and moving-in processes.

3.5 Time Line

Milestone / Deliverable	Completion Date
Project Kick-off	9/18
UI Design Consisting Home Component Login Component Signup Component USER's Property Listing Component Booking and Reservation Component Payments and Invoicing Component	10/2
User Authentication System	10/2
Form for Renters to add their information Search & Filtering System	10/16
Maps & Multimedia Integration	10/16
View Specific Functionalities	10/30
Messaging & Chat System	10/30
Additional Features Implementation	11/13
Testing & Quality Assurance	11/27

4.0 Stakeholder Roles & Responsibilities

Project Role	Who	Project Responsibilities	% Time
Sponsor		❑	
Project Manager	Mudit Devenkumar	❑ Manages the whole project with focus on individual task completion	
Project Team	Team 19	❑	
QA Engineer and Team Lead	Bharath Veldi	❑ Responsible for testing using test frameworks, test pyramid etc	20
Front-End Developer	Carter, Novak	❑ Responsible for UI development	20
Front-End	Nithin Shastry	❑ Responsible for UI development	20

Developer			
Back-End Developer	Ashutosh	❑ Responsible for integrating UI with backend services	20
Back-End Developer	Darrion	❑ Responsible for integrating UI with backend services	20

4.5 Communication Plan

How will key stakeholders be kept involved/informed about the project status?

What	Who (is involved/receives)	Frequency
Team Meetings	All the team members	At least thrice a week.
Meetings with Sponsor	All the team members and Mudit	Once per week
Written Status Reports	All the team members and Mudit	Once per week
Other Forms of Communication	All the team members	As needed

5.0 Project Budget

	Initial Cost	Recurring Cost
People *estimate on story points in a sprint may change		
▪ Staffing	8	YES
▪ Consultants	5	YES
▪ Training/Documentation	3	YES
System		
▪ Hardware	3	YES
▪ Software	3	YES

6.0 Risk Plan

Define key risks such as assumptions, dependencies, and constraints and a planned response for each.

Risk Factor	Impact On	Risk*	Risk Plan or	Person	In Place

	Project	Rating	Mitigation Strategy	Responsible	By
Scope Creep	Delays code, potential deviation from core plan	HxH	❑ Regularly review scope changes with stakeholders ❑ Clearly define project scope	Ashutosh	
Chat mechanism Challenges	Ineffective functionality or user confusion	HxM	❑ Rigorous testing of chat capabilities	Bharath	
3*rd* Party Dependencies	Integration issues, disruptions from third party malfunctions	HxM	❑ Establish contingency plans ❑ Identify critical dependencies early	Nithin	
Inaccurate Project Estimating	Delays, potential rework, missing features	HxM	❑ Stay up to date with changes and consistently check JIRA for timeline	Carter	
Privacy and Permissions	Unauthorized access to group chats or privacy breaches	HxH	❑ Implement control mechanisms	Darrion	

Rating = Probability that the risk will happen (H,M,L) x the Severity of the Impact if it does (H,M,L).

HxH = H **HxM = H** **HxL = M** **MxL = M**

7.0 Assumptions

This plan is based on the following assumptions (about resources, policies, schedules, technologies, etc.):

When we're planning to create a rental management service, there are certain things we need to assume about various aspects of the project. These assumptions help us make a plan that makes sense. Here are some important assumptions to consider:

1. Market Research: Make assumptions regarding the IUB community's need for rental management services. Think of things like the pool of possible academic and student users, their particular requirements, and their desire to use the service.

2. Technology Stack: Make assumptions about the technological stack you'll use for development, making sure it's compatible with current infrastructure and processes.

3. Budget: Assume a budget for creation, promotion, and continuing maintenance, accounting for our financial capabilities as well as any future university financing sources.

4. Regulatory Compliance: Make assumptions on the IUB-specific legal and regulatory requirements for running a rental management business. This might entail adhering to university norms, data protection laws, and local housing laws.

5. Competitive Landscape: Develop assumptions about the existing competition within the IUB community, considering any similar services or initiatives on campus.

6. Resource Availability: Speculate on the availability of developers and designers, among other qualified experts, inside our team.

7. User Behavior: Consider how IUB community, staff, and students will interact with your platform.

8. Scalability: Make assumptions about the scalability requirements of your platform, considering potential growth in the IUB user base over time.

9. Monetization Strategy: assumptions on the sources of income you want to use, such as subscription fees, transaction fees, or advertising. This includes presumptions on pricing schemes and adoption rates for new users.

10. Marketing and User Acquisition: Assumptions about the marketing channels you'll use to

acquire users, the cost of customer acquisition, and the expected conversion rates.

11. Customer Support: Assume that IUB customers will need a certain degree of customer service, along with the resources and anticipated response times to handle their questions and problems.

12. Partnerships: assumptions on prospective collaborations with mortgage agents, real estate management firms, or other enterprises in the renting sector.

13. Development Timeline: Assume the introduction of your rental management solution for the IUB community will occur after the different stages of design, development, testing, and launch.

14. User Feedback: Consider the value of getting feedback from IUB students, professors, and staff, as well as how it will be gathered and put to use to enhance the service within the context of the institution.

15. Maintenance and Updates: Assume that continual servicing and modifications are necessary to maintain the service competitive and in line with the changing demands of the IUB community.

8.0 Success Criteria

How we know we are successful. How to measure success:

- **Website traffic**: Keep track of how many people are accessing your public interface.
- **Bounce rate**: Measure the percentage of visitors who leave a website without taking any action.
- **API Success Rates**: Measure how well the APIs are performing.
- **User Involvement**: Track the frequency with which users provide ratings, reviews, access their rental history, and utilize the complaint and refund system.
- **User Contentment**: Gather user feedback regarding their satisfaction with these improved features.
- **Admin Task Performance**: Assess the speed at which administrator's complete tasks, including item approvals and complaint handling.
- **Error Tracking**: Keep a record of any errors or difficulties experienced by administrators during their tasks.
- **Payment Success Percentage**: Keep an eye on the ratio of successful payments to the total payment attempts.
- **Transaction Activity**: Record both the quantity and total value of payment transactions processed.
- **Email Sent rates**: Measure how many users open and read payment-related email notifications.
- **Effect on Coupon code Income**: Evaluate whether the use of coupon codes results in higher transaction rates or improved user retention.
- **Resolution Time for Tickets**: Calculate the duration it takes to address user complaints and process refund requests.
- **User satisfaction with chat feature**: Collect user feedback on the chat functionality
- **Number of group chat participants**: Monitor the number of participants in group chats

References

List documents where more detailed information about this project can be found.