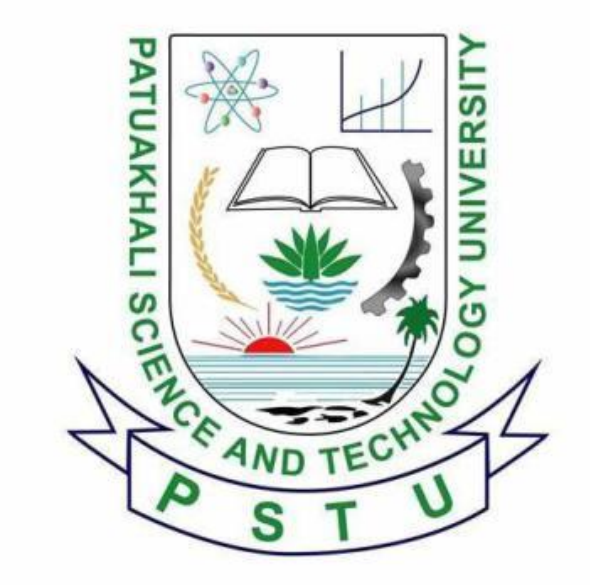

Patuakhali Science and Technology University

Faculty of Computer Science and Engineering
CIT 222 - Information System Analysis and Design
Sessional Project Report

Project Title: Online Rental Management System (ORMS)

Submission Date: 28 June 2025

Submitted To:

Md. Atikur Rahman
Professor,
Department of Computer Science and Information Technology,
Patuakhali Science and Technology University.

Submitted By:

1. Md. Abul Basar
ID: 2102036
Reg: 10163

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1. Introduction

The **Online Rental Management System (ORMS)** is a web-based platform that connects **buyers**, **sellers**, and an **admin** to manage short-term and long-term rentals for items such as cars, real estate, farmland, fashion wear, and other rentable goods. The system offers secure transactions, product listing, booking management, and an admin dashboard with analytics.

2. Objective

- Simplify rental operations via a centralized online platform.
- Allow verified sellers to list rentable items with price/day, images, and availability.
- Enable buyers to search, filter, and book items with an integrated payment method.
- Admin controls the entire ecosystem, ensuring data integrity and security.

3. Industry Visit

3.1. Locations Visited:

- **Summit Power Plant** – Learned about industrial equipment rental and logistics systems.
- **StarTech Bangladesh (Showroom)** – Observed how e-commerce systems and inventory work in practice.

3.2. Interviewing

Interviews with sellers, showroom managers, and rental business owners revealed:

- A lack of centralized rental platforms.
- Difficulty in inventory availability and booking transparency.
- No user-friendly dashboards for sellers or buyers.

4. Scope

The system supports:

- Rental listings for various items (car, house, dress, farmland, etc.).
- Real-time availability and secure booking.
- Admin moderation and analytics.
- Scalable architecture for future item categories.

5. Problem Statement

Most rental businesses in Bangladesh operate offline or through fragmented platforms. There's no unified system where individuals can both **list** and **book** rentable goods seamlessly and securely.

5.1. Target Audience

- General users
- Small/medium rental businesses
- Farmers renting equipment or land
- Individuals renting clothing or property for short events

6. Requirements

6.1. Functional Requirements

- Buyer/Seller/Admin login
- Seller adds rental listings with price & image
- Buyer browses, books, and pays
- Admin dashboard to control listings & users
- Booking calendar and invoice system

6.2. Non-Functional Requirements

- Mobile responsiveness
- Secure authentication & payment
- Real-time availability updates
- Multi-role access control

7. Technology

7.1. Admin Panel

Layer	Technology
Frontend	Razor Pages, HTML5, Bootstrap
Backend	ASP.NET Core MVC (.NET 8)
Database	Microsoft SQL Server
ORM	Entity Framework Core
Auth	ASP.NET Identity / JWT
Hosting	Local IIS / Azure / MonsterASP.net

7.2. Seller & Buyer Portal

Layer	Technology
Frontend	Bootstrap, JavaScript, jQuery
Backend	ASP.NET Core MVC
APIs	RESTful API for internal logic
Payment	Dummy Gateway / Stripe (sandbox)

8. Architecture

8.1. Overview

The system follows an MVC architecture integrated with microservices for user management, booking, and notifications.

8.2. MACH Architecture

- **Microservices:** Modular rental, payment, and user systems
- **API-First:** Clean separation between frontend and backend
- **Cloud-native:** Deployable on any cloud (Azure preferred)
- **Headless UI:** Can be expanded into mobile apps later

8.3. MVC Integration

- **Model:** Data layer (users, listings, bookings)

- **View:** HTML + Razor
- **Controller:** Handles user actions, logic, API calls

9. Visualizations

9.1. E-R Diagram

Entities include:

- Users (Admin, Seller, Buyer)
- Products
- Bookings
- Payments

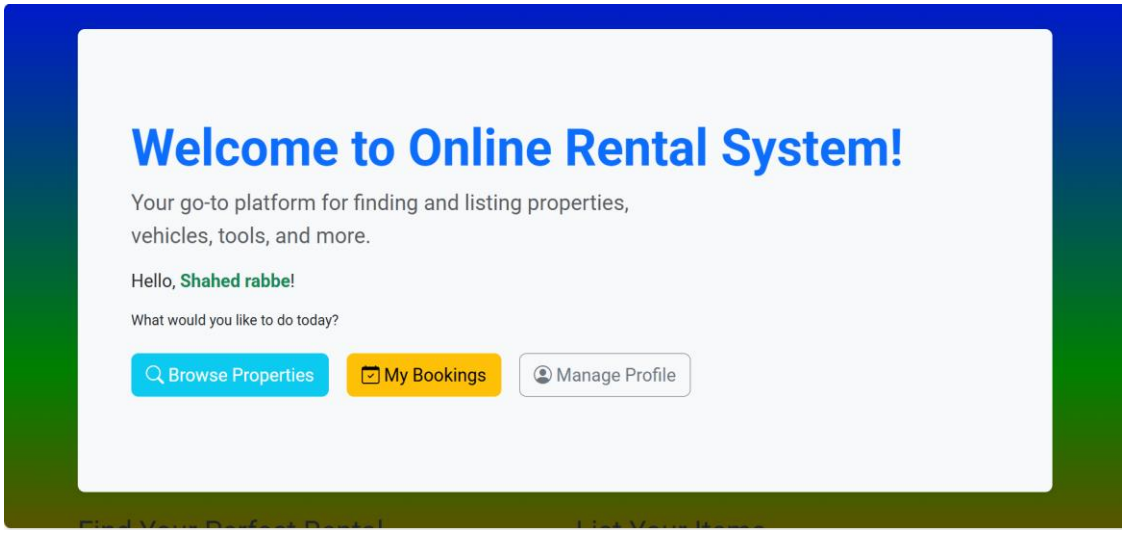
9.2. Gantt Chart

Task Timeline:

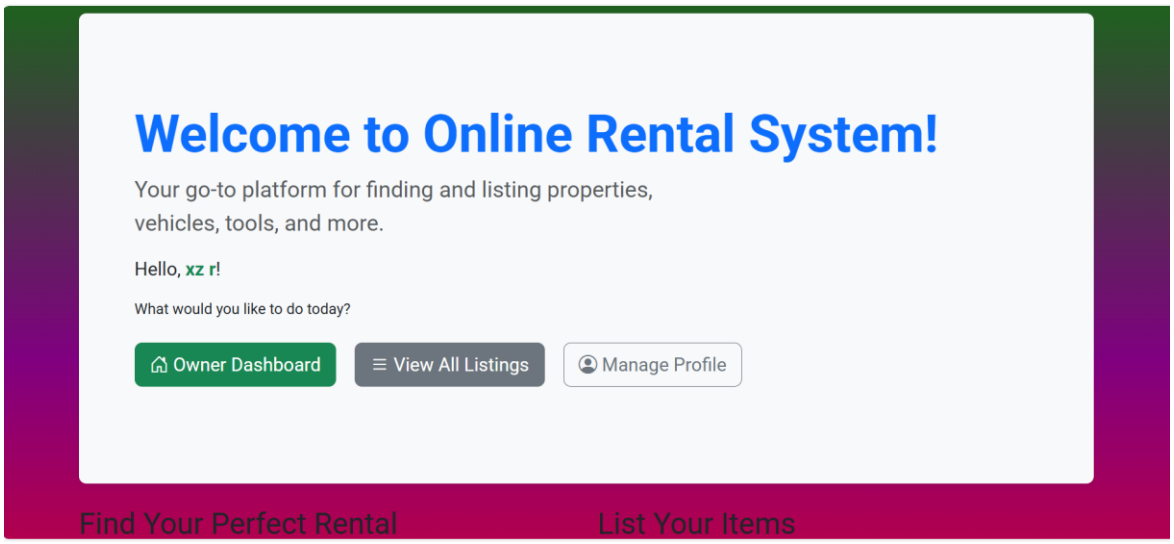
- Week 1–2: Planning & UI Design
- Week 3–4: Database & Backend Setup
- Week 5–6: Frontend Development
- Week 7: Testing & Fixes
- Week 8: Report & Final Deployment

10. Screenshots

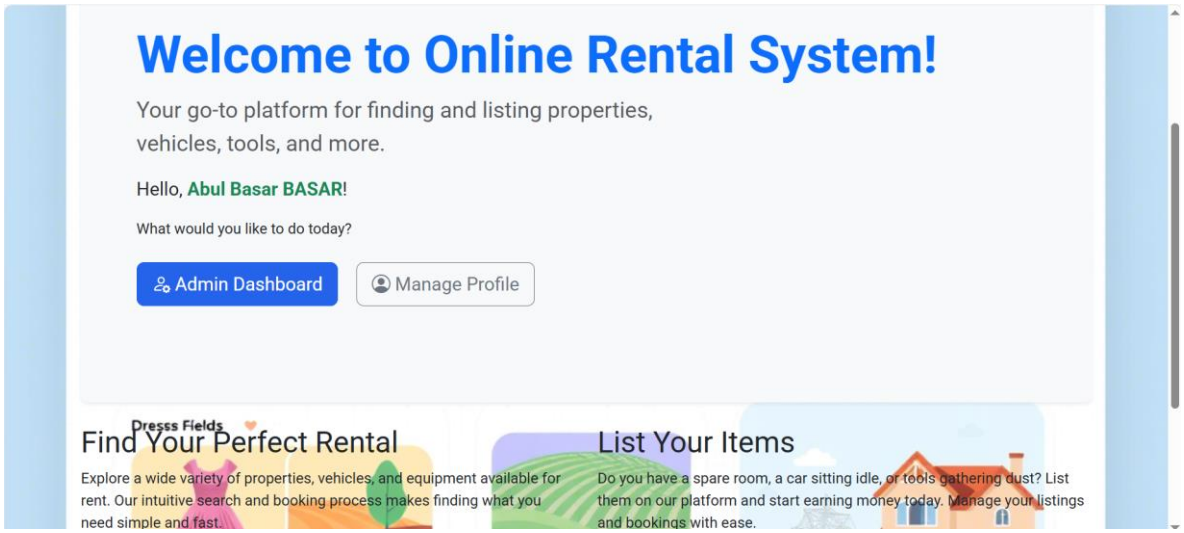
- **Buyer home page**



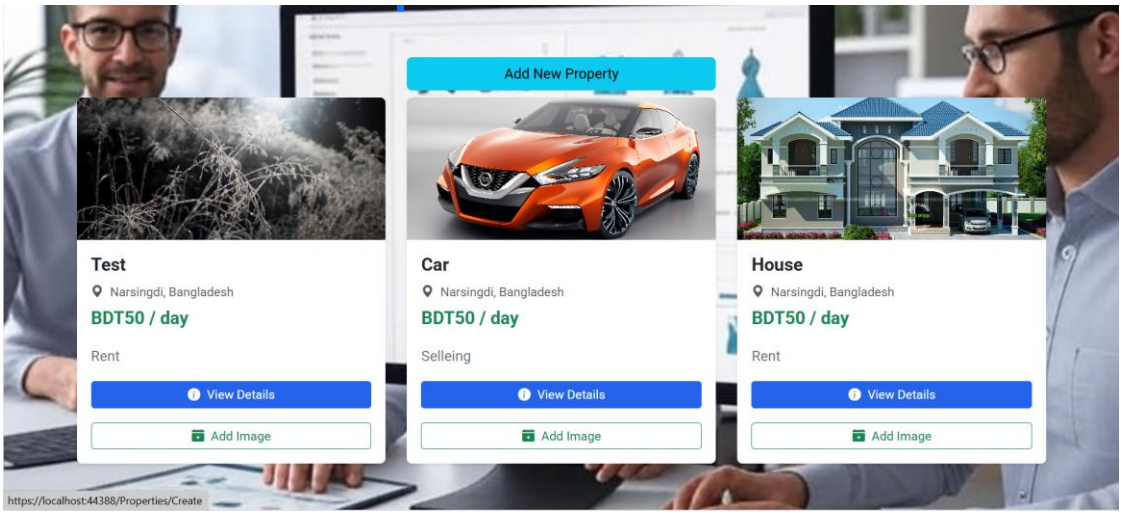
- **Seller dashboard**


Welcome to Online Rental System!
Your go-to platform for finding and listing properties, vehicles, tools, and more.
Hello, xz r!
What would you like to do today?
Owner Dashboard
View All Listings
Manage Profile
Find Your Perfect Rental
List Your Items

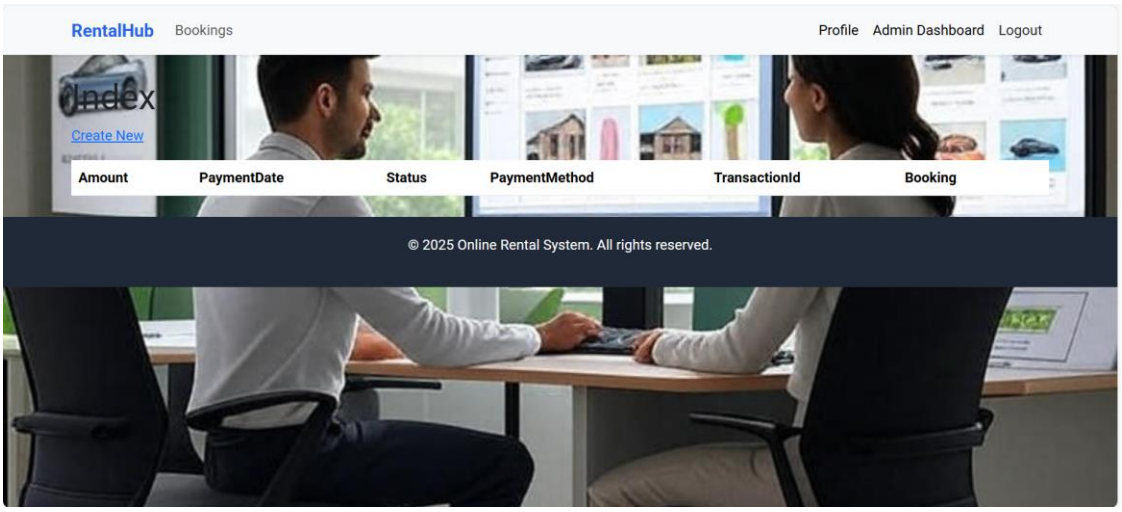
- **Admin panel**


Welcome to Online Rental System!
Your go-to platform for finding and listing properties, vehicles, tools, and more.
Hello, Abul Basar BASAR!
What would you like to do today?
Admin Dashboard
Manage Profile
Find Your Perfect Rental
Explore a wide variety of properties, vehicles, and equipment available for rent. Our intuitive search and booking process makes finding what you need simple and fast.
List Your Items
Do you have a spare room, a car sitting idle, or tools gathering dust? List them on our platform and start earning money today. Manage your listings and bookings with ease.

- **Product booking**



- **Payment gateway**



11. Business Model

11.1. Services

- Rent marketplace for various products
- Listing and booking support
- Review and rating system

11.2. Revenue Model

- Listing fees per product
- Transaction fee (commission)
- Subscription for sellers

11.3. Future Expansion

- Mobile app
- bKash/Nagad integration
- Live booking status notifications
- Business partnerships

11.4. Marketing Strategy

- Facebook and Google Ads
- Collaboration with local businesses
- Blog content and SEO optimization

12. Conclusion

The **Online Rental Management System (ORMS)** demonstrates how digital platforms can revolutionize item rental services. By combining a solid admin structure, intuitive seller interface, and easy buyer flow, this system sets the foundation for scalable digital transformation in the rental industry of Bangladesh.

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13.1. Industry Study

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