Weekly Report 1
CIS 453 M001
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Week 1
–Planning & Requirements Gathering

Project Overview & Scope

We are developing a Car Rental Service to allow customers to rent vehicles online. The system will serve as a practical case study for applying SDLC principles, with emphasis on process over product.

In-Scope (functional requirements):

- Customer registration and authentication
- Browsing cars by category (sedan, SUV, economy)
- Booking system with date selection
- Simulated payment process
- Admin dashboard for fleet and booking management
- Responsive web interface

Out-of-Scope (non-functional requirements):

- Real payment gateway integration
- GPS vehicle tracking
- Insurance processing
- Mobile app development
- Multilingual support

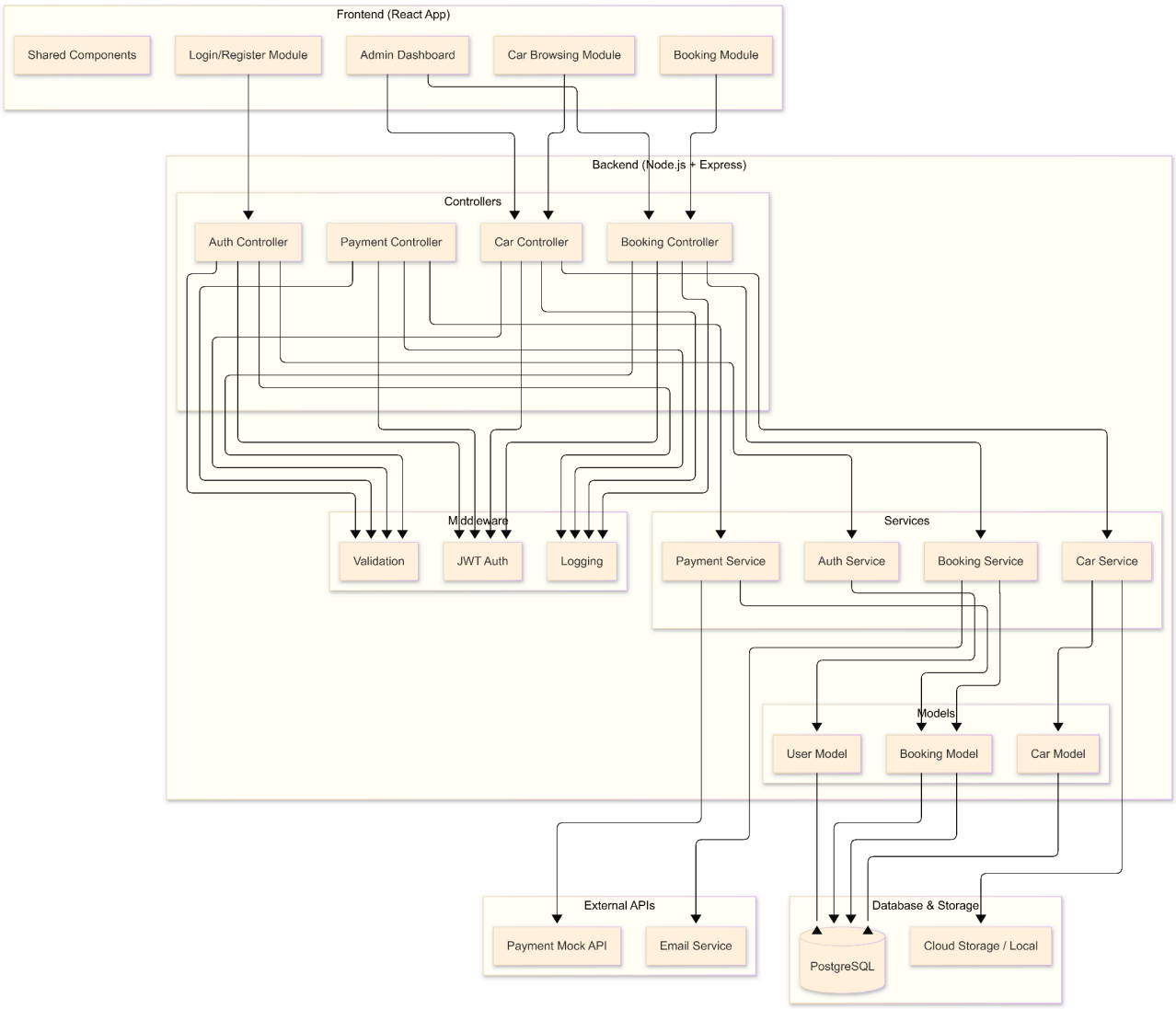
Functional Requirements (SRS)

1. FR1 – User Management:
    - Register with email, password, driver's license
    - Login/Logout functionality
    - Password reset option
2. FR2 – Vehicle Browsing:
    - View cars by category (sedan, SUV, economy)
    - Filter by price, availability, transmission type
    - View car details: image, specs, daily rate
3. FR3 – Booking System:
    - Select rental dates (from/to)
    - Real-time availability check

- Calculate total cost (days × daily rate + tax)
- Confirm booking

4. FR4 – Payment Simulation:
   - Enter mock payment details
   - Generate booking confirmation number
   - Send confirmation email (simulated)
5. FR5 – Admin Dashboard:
   - Add/edit/remove vehicles
   - View all bookings
   - Update car availability status

Develop high-level architecture diagram.



Car Rental Service — Gantt Chart (4 Weeks)

Task / Phase	Week 1	Week 2	Week 3	Week 4
Phase 1: Planning				
Phase 1: Requirements Gathering (SRS)				
Phase 2: System Design (UML + Architecture)				
Phase 4: Tech Stack Justification				
Phase 5: Implementation				
Phase 6: Final Report & Reflection				

Weekly Reporting Template

Rental10 Squad / Chang Chang, Hussein E. Otero, Ryan Cupplo, Zichen Shen.

Week Number: 1

1. Objectives for this Week

Based on the assignment schedule, our objectives for Week 1 were:

- Define project scope and initial plan
- Identify functional requirements (mandatory) and non-functional requirements (optional but encouraged)
- Draft Software Requirements Specification (SRS)
- Develop high-level architecture diagram

2. Work Completed

- Project Scope Definition: Created clear boundaries for the Car Rental Service (inclusions: customer registration, car browsing, booking system, payment simulation, admin dashboard; exclusions: real payment gateway, GPS tracking, insurance processing)
- Requirements Document (SRS Draft):
    - Identified 5 functional requirements (User Management, Vehicle Browsing, Booking System, Payment Simulation, Admin Dashboard)

    - Outlined 3 optional non-functional requirements (Usability, Performance, Security)
- High-Level Architecture Diagram: Developed a three-tier architecture diagram showing Client Layer (React Frontend), Server Layer (Node.js API), and Data Layer (PostgreSQL)
- Initial Project Plan: Outlined 4-week timeline following the assignment phases

3. Challenges Encountered

- Scope Definition: Determining what features were essential for the MVP versus nice-to-have enhancements
- Requirement Specificity: Balancing detailed requirements with the practical constraints of a 4-week project
- Team Coordination: Aligning on meeting schedules and communication methods as a new team
- Architecture Decisions: Choosing between different architectural approaches suitable for a car rental system

4. Next Steps

For Week 2 (System Architecture & Design), we plan to:

- Map requirements to design decisions
- Create UML-based design diagrams (Use Case, Class, Sequence diagrams)
- Select and justify technology stack (programming language, framework, database, tools)
- Begin initial repository setup and environment configuration

5. Team Contribution

[Ryan]:

- Helped facilitate team contract discussion
- Discussed functional requirements with the group
- Discussed overall project requirements, goals and timeline with the group.

[Hussein]:

- Drafted the SRS document and functional requirements for Week 1
- Documented user stories and use cases
- Organized requirement categorization and prioritization

[Chang]:

- Developed the high-level architecture diagram and initial technical approach for Week 1
- Researched technology options and architectural patterns
- Set up the initial documentation repository structure

[Zichen]:

- Reviewed and validated all Week 1 requirements for completeness
- Developed quality assurance checklist for deliverables
- Documented assumptions, constraints, and risk considerations

All members: Participated in Week 1 requirements brainstorming and scope validation sessions, provided feedback on all deliverables, and contributed to finalizing Phase 1 documentation.