

Assignment 1

Course Title: Software Engineering

Course ID: CSE470

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Section:5

Group No: 11

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Functional Requirements (FRs):

FR-1: User Login & Registration

Requirement:

The system must allow parents and babysitters to securely register and log into the platform.

FR-2: Babysitter Profile & Verification

Requirement:

Babysitters must have verified and complete profiles before accepting bookings.

FR-3: Parent Profile & Verification

Requirement:

Parents must be verified before posting or booking babysitting services.

FR-4: Booking System (Scheduling & Management)

Requirement:

Parents must be able to book babysitters based on real-time availability.

FR-5: Location-Based Matching

Requirement:

Babysitters must be matched to parents based on distance and service radius.

FR-6: AI & Smart Assistance Module

Requirement:

The system must use AI to improve matching, safety, and scheduling.

Non-Functional Requirements (NFRs):

NFR1. Performance Requirements

- The system must handle **simultaneous logins** without noticeable delay.
- Booking search results must load within **3 seconds**.
- AI matching recommendations must generate within **5 seconds**.

NFR2. Security Requirements

- All passwords must be encrypted using **industry-standard hashing** (e.g., bcrypt).
- JWT authentication must be used for secure session management.
- Sensitive documents (NID, student ID) must be stored in encrypted form.
- Role-Based Access Control (RBAC) must restrict Parent/Sitter/Admin permissions.

NFR3. Reliability Requirements

- System uptime must be at least **99%**.
- Booking actions must be atomic — no double bookings should occur.
- Automatic error recovery in case of server failure.

NFR4. Usability Requirements

- The interface must be mobile-friendly and simple for non-technical users.
- A user should be able to complete registration within **5 minutes**.
- Consistent navigation for both Parent and Babysitter dashboards.

NFR5. Scalability Requirements

- System should support expansion to thousands of users without performance loss.
- Modules must allow future addition of payment gateways or emergency sitters.

NFR6. Maintainability Requirements

- Code should follow MVC architecture for easy updates.
- API documentation must be provided for AI and payment modules.

NFR7. Availability Requirements

- Cloud-hosted deployment with automatic failover.
- Daily backup of user data and booking logs.