***Home Services System***

**Functional Requirements**

1. **FR-001: User Authentication**
   * Users **must** register and log in to access the platform.
   * **Justification**: Ensures secure access and personalized experience for users.
2. **FR-002: Service Search**
   * Users **must** be able to browse and search for available services.
   * **Justification**: Core functionality to allow users to find the desired home services easily.
3. **FR-003: Service Booking**
   * The system **must** allow users to book a service provider.
   * **Justification**: Critical for enabling the primary purpose of the system: scheduling services.
4. **FR-004: Provider Availability Management**
   * Service providers **should** be able to update their availability.
   * **Justification**: Enhances the system's reliability by ensuring real-time data accuracy.
5. **FR-005: Booking Confirmation**
   * The system **must** send booking confirmations via email or SMS.
   * **Justification**: Keeps users informed and provides documentation of their booking.
6. **FR-006: Service Reviews**
   * Users **could** view reviews and ratings for service providers.
   * **Justification**: Encourages trust and better decision-making for users.
7. **FR-007: Multiple Payment Options**
   * The system **should** support multiple payment options (e.g., cards, wallets).
   * **Justification**: Makes the system more user-friendly and accessible to a larger audience.
8. **FR-008: Booking Management**
   * Users **could** reschedule or cancel bookings through the platform.
   * **Justification**: Adds flexibility and improves user satisfaction.
9. **FR-009: Admin Dashboard**
   * The system **must** maintain an admin dashboard for managing users, services, and providers.
   * **Justification**: Essential for operational control and oversight by administrators.

**Non-Functional Requirements**

1. **NFR-001: Performance Efficiency**
   * The platform **must** ensure an average page load time under 3 seconds.
   * **Justification**: Provides a responsive user experience, critical for user retention.
2. **NFR-002: Scalability**
   * The system **should** handle at least 10,000 concurrent users.
   * **Justification**: Ensures scalability to meet expected traffic growth.
3. **NFR-003: Data Security**
   * User data **must** be encrypted at rest and in transit.
   * **Justification**: Protects sensitive user information, aligning with data security standards (e.g., GDPR).
4. **NFR-004: Multilingual Support**
   * The system **could** provide support for multilingual interfaces.
   * **Justification**: Enhances accessibility and usability for a diverse audience.
5. **NFR-005: System Reliability**
   * The system **should** have 99.9% uptime availability.
   * **Justification**: Ensures reliability and builds trust among users.
6. **NFR-006: Cross-Platform Compatibility**
   * The platform **must** be compatible with desktop and mobile devices.
   * **Justification**: Provides seamless access across devices, catering to modern user behavior.
7. **NFR-007: Error Logging**
   * Error logs **must** be maintained and accessible for debugging purposes.
   * **Justification**: Facilitates quick issue resolution and system maintenance.
8. **NFR-008: Usability**
   * The system **should** be intuitive, with a task completion time of under 3 clicks for key actions.
   * **Justification**: Improves user satisfaction by prioritizing simplicity and usability.
9. **NFR-009: Data Backup and Recovery**
   * Backup systems **must** be in place to restore data within 4 hours of failure.
   * **Justification**: Ensures business continuity and minimal disruption in case of system issues.

**Use Case Scenarios for Functional Requirements**

**1. FR-001: User Authentication**

* **Title**: User Registration and Login
* **Actors**: New user, existing user, system
* **Precondition**: User has access to the platform via a browser or mobile app.
* **Main Flow**:
  1. New user accesses the platform.
  2. The user selects the “Sign Up” option and provides required details (e.g., name, email, password).
  3. The system validates and registers the user, sending a confirmation email.
  4. The user logs in using their credentials.
  5. The system verifies the credentials and redirects the user to the dashboard.
* **Alternative Flow**:
  1. **Forgot Password**: The user clicks "Forgot Password" and resets it via email.

**2. FR-002: Service Search**

* **Title**: Searching for Home Services
* **Actors**: Registered user, system
* **Precondition**: The user is logged into the platform.
* **Main Flow**:
  1. The user navigates to the search bar or service categories.
  2. The user enters keywords or filters (e.g., type of service, location, date).
  3. The system retrieves and displays matching services.
  4. The user selects a service for more details.
* **Alternative Flow**:
  1. If no results are found, the system suggests related services or prompts the user to refine their search.

**3. FR-003: Service Booking**

* **Title**: Booking a Service
* **Actors**: Registered user, service provider, system
* **Precondition**: The user has found a service via the platform.
* **Main Flow**:
  1. The user selects a service and views the provider’s availability.
  2. The user picks a date and time for the service.
  3. The system verifies availability and confirms the booking.
  4. The system sends a notification to the service provider and the user.

**4. FR-004: Provider Availability Management**

* **Title**: Updating Provider Availability
* **Actors**: Service provider, system
* **Precondition**: The service provider is logged into the platform.
* **Main Flow**:
  1. The provider navigates to their availability settings.
  2. The provider adds, edits, or removes time slots for their availability.
  3. The system updates the provider's calendar and makes it visible to users.
* **Alternative Flow**:
  1. If there’s a conflict with existing bookings, the system prompts the provider to resolve it before updating.

**5. FR-005: Booking Confirmation**

* **Title**: Confirming a Booking
* **Actors**: Registered user, system
* **Precondition**: A service booking has been made.
* **Main Flow**:
  1. After a booking is confirmed, the system sends a confirmation email or SMS to the user.
  2. The email contains the booking details, payment status, and contact information for the provider.
  3. The system logs the booking for future reference.

**6. FR-006: Service Reviews**

* **Title**: Viewing Service Reviews and Ratings
* **Actors**: Registered user, system
* **Precondition**: The user is browsing services.
* **Main Flow**:
  1. The user selects a service or provider.
  2. The system displays aggregated ratings and user reviews for the provider.
  3. The user reads reviews to assess the provider’s quality.

**7. FR-007: Multiple Payment Options**

* **Title**: Processing Payments
* **Actors**: Registered user, payment gateway, system
* **Precondition**: The user is booking a service.
* **Main Flow**:
  1. After selecting a service, the user proceeds to payment.
  2. The user chooses a payment option (e.g., credit card, digital wallet).
  3. The system redirects the user to a secure payment gateway.
  4. Payment is processed, and the system confirms the transaction.

**8. FR-008: Booking Management**

* **Title**: Rescheduling or Cancelling a Booking
* **Actors**: Registered user, system
* **Precondition**: A booking exists.
* **Main Flow**:
  1. The user navigates to their booking history.
  2. The user selects a booking and chooses to reschedule or cancel it.
  3. If rescheduling, the user selects a new date and time.
  4. The system updates the booking and sends notifications to the provider and user.
  5. If cancelling, the system confirms the action and processes a refund if applicable.

**9. FR-009: Admin Dashboard**

* **Title**: Managing Users, Services, and Providers
* **Actors**: Admin, system
* **Precondition**: The admin has access to the dashboard.
* **Main Flow**:
  1. The admin logs into the platform and accesses the dashboard.
  2. The admin views, adds, edits, or removes users, services, or providers.
  3. The system applies changes and logs them for audit purposes.