# Software Requirements Specification (SRS)

## HelpLagbe - Professional Service Platform

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# 1. Introduction

### 1.1 Purpose

This document specifies the software requirements for HelpLagbe, a comprehensive service platform that connects customers with verified technicians across Bangladesh. The platform facilitates booking, management, and payment for various home and office maintenance services including appliance repair, electrical work, plumbing, AC services, and general maintenance.

### 1.2 Document Conventions

- **Functional Requirements:** Prefixed with FR-
- **Non-Functional Requirements:** Prefixed with NFR-
- **User Stories:** Written in format "As a [user type], I want [functionality] so that [benefit]"
- **Priority Levels:** High, Medium, Low
- **Technical Terms:** Defined in Appendix A

### 1.3 Intended Audience and Reading Suggestions

This document is intended for:

- **Developers:** Complete requirements for implementation
- **Testers:** Test cases and validation criteria
- **Project Managers:** Scope, timeline, and resource planning
- **Stakeholders:** Business requirements and feature overview
- **UI/UX Designers:** Interface and user experience requirements

### 1.4 Project Scope

HelpLagbe is a comprehensive service marketplace platform that:

- Connects customers with verified technicians

- Supports multiple service categories (electrical, plumbing, appliances, etc.)
- Provides real-time booking and tracking
- Implements secure payment processing
- Offers bilingual support (English and Bengali)
- Ensures quality through ratings and reviews
- Operates across all major cities in Bangladesh

## 1.5 References

- W3C Web Accessibility Guidelines (WCAG 2.1)
- PCI DSS Standards for Payment Processing
- ISO 27001 Information Security Standards
- Bangladesh Digital Commerce Guidelines
- Mobile Application Security Standards

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# 2. Overall Description

## 2.1 Product Perspective

HelpLagbe is a standalone web-based platform with the following components:

- **Customer Web Portal:** Primary interface for service booking
- **Technician Mobile App:** For service providers (future scope)
- **Admin Dashboard:** Management and monitoring interface
- **Payment Gateway Integration:** Secure payment processing
- **SMS/Notification Service:** Real-time communication
- **Database System:** User and transaction data storage

## 2.2 Product Features

**Core Features:**

1. **Service Booking System**

   - Browse and select services
   - Real-time technician matching
   - Instant booking confirmation
   - Service tracking
2. **User Management**

   - Customer registration and profiles
   - Technician verification and onboarding

- Admin user management

3. **Payment Processing**

- Multiple payment methods (cash, mobile banking, cards)
- Secure transaction handling
- Invoice generation

4. **Quality Assurance**

- Technician rating and review system
- Service guarantee implementation
- Complaint management

5. **Communication System**

- Real-time chat functionality
- SMS notifications
- Email communications

## 2.3 User Classes and Characteristics

**Primary Users:**

1. **Customers**

- Age: 18-65 years
- Tech Literacy: Basic to intermediate
- Primary Goal: Quick, reliable service booking
- Languages: Bengali, English

2. **Technicians**

- Age: 20-50 years
- Tech Literacy: Basic to intermediate
- Primary Goal: Receive service requests and manage work
- Languages: Primarily Bengali

3. **Administrators**

- Role: System management and oversight
- Tech Literacy: Advanced
- Primary Goal: Platform monitoring and user support

## 2.4 Operating Environment

**Client-Side:**

- **Web Browsers:** Chrome 90+, Firefox 88+, Safari 14+, Edge 90+
- **Mobile Browsers:** iOS Safari, Android Chrome

- **Screen Resolutions:** 320px to 2560px wide
- **Internet Connection:** Minimum 2G, optimized for 3G/4G

**Server-Side:**

- **Web Server:** Apache
- **Application Server:** Python
- **Database:** MySQL
- **Operating System:** Windows 10
- **Cloud Platform:**Cloud

## 2.5 Design and Implementation Constraints

- **Regulatory:** Comply with Bangladesh Digital Commerce regulations
- **Performance:** Page load times under 3 seconds
- **Security:** PCI DSS compliance for payment processing
- **Accessibility:** WCAG 2.1 AA compliance
- **Languages:** Bilingual support (English/Bengali)
- **Browser Support:** Last 3 versions of major browsers
- **Mobile Responsiveness:** All features accessible on mobile devices

## 2.6 User Documentation

1. **User Guide:** Step-by-step booking process
2. **FAQ Section:** Common questions and troubleshooting
3. **Video Tutorials:** Service booking walkthrough
4. **Terms of Service:** Legal and usage guidelines
5. **Privacy Policy:** Data handling and protection
6. **Technician Handbook:** Guidelines for service providers

## 2.7 Assumptions and Dependencies

**Assumptions:**

- Users have basic internet connectivity
- Mobile phone access for SMS verification
- Email access for account management
- Basic digital literacy

**Dependencies:**

- Third-party payment gateway availability
- SMS service provider reliability
- Internet infrastructure in Bangladesh
- Government regulations compliance

- Technician network availability

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# 3. System Features

## 3.1 User Registration and Authentication

**Description and Priority:** High Priority - Essential for platform security and user management

**Stimulus/Response Sequences:**

1. User accesses registration page
2. System displays registration form
3. User provides required information
4. System validates and creates account
5. User receives confirmation

**Functional Requirements:**

- **FR-001:** System shall allow customer registration with email/phone
- **FR-002:** System shall verify phone numbers via SMS OTP
- **FR-003:** System shall implement secure password requirements
- **FR-004:** System shall provide social media login options
- **FR-005:** System shall support password reset functionality

## 3.2 Service Discovery and Booking

**Description and Priority:** High Priority - Core business functionality

**Stimulus/Response Sequences:**

1. Customer selects service category
2. System displays available services and technicians
3. Customer reviews options and selects preferred technician
4. System processes booking request
5. Customer receives booking confirmation

**Functional Requirements:**

- **FR-006:** System shall display service categories with descriptions
- **FR-007:** System shall match customers with available technicians
- **FR-008:** System shall show technician profiles with ratings
- **FR-009:** System shall process instant booking confirmations
- **FR-010:** System shall send booking notifications to technicians

## 3.3 Real-Time Tracking and Updates

**Description and Priority:** Medium Priority - Enhanced user experience

**Functional Requirements:**

- **FR-011:** System shall provide real-time technician location tracking
- **FR-012:** System shall send status updates via SMS and email
- **FR-013:** System shall allow customers to communicate with technicians
- **FR-014:** System shall provide estimated arrival times

## 3.4 Payment Processing

**Description and Priority:** High Priority - Essential for business operations

**Functional Requirements:**

- **FR-015:** System shall support multiple payment methods
- **FR-016:** System shall process secure online payments
- **FR-017:** System shall generate digital invoices
- **FR-018:** System shall handle payment disputes
- **FR-019:** System shall support cash payments with confirmation

## 3.5 Rating and Review System

**Description and Priority:** Medium Priority - Quality assurance

**Functional Requirements:**

- **FR-020:** System shall allow customers to rate services (1-5 stars)
- **FR-021:** System shall enable detailed review submissions
- **FR-022:** System shall display aggregate ratings for technicians
- **FR-023:** System shall moderate review content
- **FR-024:** System shall respond to customer complaints

## 3.6 Admin Management System

**Description and Priority:** High Priority - Platform governance

**Functional Requirements:**

- **FR-025:** System shall provide comprehensive admin dashboard
- **FR-026:** System shall support technician verification workflows
- **FR-027:** System shall generate business analytics reports
- **FR-028:** System shall manage customer support tickets
- **FR-029:** System shall monitor platform performance metrics

### 3.7 Multilingual Support

**Description and Priority:** Medium Priority - Market accessibility

**Functional Requirements:**

- **FR-030:** System shall support English and Bengali languages
- **FR-031:** System shall allow dynamic language switching
- **FR-032:** System shall store language preferences
- **FR-033:** System shall display all content in selected language

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# 4. External Interface Requirements

## 4.1 User Interfaces

**Web Interface Requirements:**

- **Responsive Design:** Adaptive layout for desktop, tablet, and mobile
- **Modern UI/UX:** Clean, intuitive interface following material design principles
- **Accessibility:** WCAG 2.1 AA compliance with screen reader support
- **Browser Compatibility:** Cross-browser support for major browsers
- **Loading Performance:** Fast page loads with progressive enhancement

**Key Interface Components:**

1. **Homepage:** Service overview, search functionality, trust indicators
2. **Service Listing:** Category-based service display with filtering
3. **Booking Form:** Step-by-step service booking process
4. **User Dashboard:** Account management and service history
5. **Payment Interface:** Secure payment processing forms

## 4.2 Hardware Interfaces

- **Mobile Devices:** iOS and Android smartphone compatibility
- **Desktop/Laptop:** Standard PC and Mac system support
- **Tablet Devices:** iPad and Android tablet optimization
- **Smart TV:** Basic web browsing compatibility (future scope)

## 4.3 Software Interfaces

**Third-Party Integrations:**

1. **Payment Gateways:**

   ○ bKash API for mobile payments
   ○ Nagad API for digital transactions
   ○ SSL Commerz for local card processing
2. **Communication Services:**

   ○ SMS Gateway
   ○ Email Service
   ○ Push Notification Service
3. **Location Services:**

   ○ Google Maps API for location tracking
   ○ Geocoding services for address validation
4. **Authentication Services:**

   ○ Google OAuth 2.0
   ○ Facebook Login API
   ○ JWT token management

## 4.4 Communications Interfaces

**Network Protocols:**

- **HTTPS:** Secure data transmission (TLS 1.3)
- **WebSocket:** Real-time communication
- **REST API:** Mobile app integration
- **Email SMTP:** Automated email notifications
- **SMS Gateway:** Text message delivery

**Data Formats:**

- **JSON:** API data exchange
- **XML:** Legacy system integration
- **CSV:** Data export functionality
- **PDF:** Invoice and report generation

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# 5. Other Nonfunctional Requirements

## 5.1 Performance Requirements

- **NFR-001:** Page load time shall not exceed 3 seconds on 3G connection

- **NFR-002:** System shall support 1000 concurrent users
- **NFR-003:** Database queries shall complete within 200ms
- **NFR-004:** API response time shall not exceed 500ms
- **NFR-005:** System uptime shall be minimum 99.5%

## 5.2 Safety Requirements

- **NFR-006:** System shall implement automatic data backup every 24 hours
- **NFR-007:** System shall provide disaster recovery within 4 hours
- **NFR-008:** System shall validate all user inputs to prevent injection attacks
- **NFR-009:** System shall log all critical operations for audit trails
- **NFR-010:** System shall implement graceful error handling

## 5.3 Security Requirements

- **NFR-011:** System shall encrypt all sensitive data using AES-256
- **NFR-012:** System shall implement rate limiting to prevent abuse
- **NFR-013:** System shall require strong password policies
- **NFR-014:** System shall implement two-factor authentication for admin users
- **NFR-015:** System shall comply with GDPR data protection requirements

## 5.4 Software Quality Attributes

**Reliability:**

- **NFR-016:** System shall have 99.5% availability during business hours
- **NFR-017:** System shall handle failures gracefully with user notifications

**Scalability:**

- **NFR-018:** System shall scale horizontally to handle increased load
- **NFR-019:** Database shall support sharding for data distribution

**Maintainability:**

- **NFR-020:** Code shall follow established coding standards
- **NFR-021:** System shall support automated testing with 80% coverage

**Usability:**

- **NFR-022:** New users shall complete registration within 5 minutes
- **NFR-023:** Service booking process shall complete in maximum 3 steps

**Portability:**

- **NFR-024:** System shall run on multiple cloud platforms

- **NFR-025:** System shall support containerization (Docker)

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# 6. Other Requirements

## 6.1 Legal and Compliance Requirements

- **Business License:** Valid trade license in Bangladesh
- **Data Protection:** Compliance with national data protection laws
- **Consumer Rights:** Adherence to consumer protection regulations
- **Tax Compliance:** Proper VAT and tax handling
- **Labor Laws:** Compliance with technician employment regulations

## 6.2 Business Rules

- **Service Guarantee:** 30-day warranty on all completed services
- **Cancellation Policy:** Free cancellation up to 2 hours before service
- **Payment Terms:** Payment due upon service completion
- **Quality Standards:** Minimum 4.0-star average rating for active technicians
- **Geographic Coverage:** Services available in 64 districts of Bangladesh

## 6.3 Future Enhancements

- **Mobile Applications:** Native iOS and Android apps
- **IoT Integration:** Smart home device connectivity
- **AI Chatbot:** Automated customer support
- **Subscription Services:** Monthly maintenance packages
- **Corporate Accounts:** B2B service management

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# Appendices

## A. Glossary

| Term | Definition |
|------|------------|
| API | Application Programming Interface |
| OTP | One-Time Password |
| SLA | Service Level Agreement |

| **JWT** | JSON Web Token |
|---|---|
| **CRUD** | Create, Read, Update, Delete |
| **UI/UX** | User Interface/User Experience |
| **MVP** | Minimum Viable Product |
| **KPI** | Key Performance Indicator |

## B. Analysis Models

**Use Case Diagram**
Customer → Register/Login
Customer → Book Service
Customer → Make Payment
Customer → Rate Service
Technician → Receive Bookings
Technician → Update Status
Admin → Manage Users
Admin → Generate Reports

**Entity Relationship Model**
Users (customers, technicians, admins)
Services (categories, descriptions, pricing)
Bookings (service requests, status, scheduling)
Payments (transactions, methods, receipts)
Reviews (ratings, comments, responses)

## C. Issues List

| Issue ID | Description | Priority | Status |
|---|---|---|---|
| ISS-001 | Define exact technician verification process | High | Open |
| ISS-002 | Clarify payment processing for cash transactions | Medium | Open |
| ISS-003 | Determine data retention policies | Medium | Open |
| ISS-004 | Define emergency service procedures | Low | Open |

ISS-005    Establish customer support response times          Medium    Open