Software Requirements Specification (SRS)

Ransem Foundation Youth Empowerment Management System

Document Version: 1.0

Date: May 26, 2025

Prepared for: Ransem Foundation

Prepared by: Development Team

Table of Contents

---

1. Introduction

1.1 Purpose

This Software Requirements Specification (SRS) defines the requirements for the Ransem Foundation Youth Empowerment Management System (RFYEMS). The system will support the foundation's mission to empower young people in Kenya through comprehensive support, education, and mentorship programs.

1.2 Document Conventions

- **High Priority Requirements:** Must be implemented in Phase 1
- **Medium Priority Requirements:** Should be implemented in Phase 2
- **Low Priority Requirements:** Could be implemented in future phases
- **FR:** Functional Requirement
- **NFR:** Non-Functional Requirement

1.3 Intended Audience and Reading Suggestions

This document is intended for:

- **Project Stakeholders:** Focus on sections 1, 2, and 3
- **Development Team:** Complete document with emphasis on sections 3, 4, and 5
- **System Administrators:** Focus on sections 4, 5, and 6
- **End Users:** Focus on sections 2 and 3

1.4 Project Scope

The RFYEMS will digitize and streamline the foundation's operations, including beneficiary management, program administration, mentorship coordination, financial tracking, and alumni engagement. The system aligns with Ransem Foundation's vision to empower young people in Kenya and supports their seven core program areas.

1.5 References

- IEEE Std 830-1998: IEEE Recommended Practice for Software Requirements Specifications
- Ransem Foundation Organizational Profile (2025)
- Kenya Data Protection Act (2019)

---

2. Overall Description

2.1 Product Perspective

The RFYEMS is a new, standalone web-based system that will serve as the central platform for managing all foundation activities. The system will integrate with external services for communication, payments, and reporting while maintaining data sovereignty within Kenya.

2.2 Product Functions

The system will provide the following major functions:

2.2.1 Beneficiary Management

- Registration and profile management for young people
- Academic progress tracking

- Skills assessment and development tracking
- Disability accommodation management

2.2.2 Program Administration

- Educational support management (scholarships, tutoring)
- Career development and guidance coordination
- Skills development program tracking
- Community engagement project management
- Spiritual nurture program administration

2.2.3 Mentorship Coordination

- Mentor-mentee matching system
- Mentorship session scheduling and tracking
- Progress monitoring and reporting

2.2.4 Financial Management

- Donation tracking and management
- Scholarship fund administration
- Program budget allocation and monitoring
- Financial reporting and transparency

2.2.5 Alumni Network Management

- Alumni registration and profile management
- Networking event coordination
- Alumni contribution tracking
- Alumni-current beneficiary mentorship programs

2.3 User Classes and Characteristics

2.3.1 Primary Users

Executive Director

- Technical Expertise: Moderate
- Usage Frequency: Daily
- Key Functions: Strategic oversight, reporting, resource allocation

Program Directors

- Technical Expertise: Moderate

- Usage Frequency: Daily

- Key Functions: Program management, beneficiary tracking, resource coordination

Administrative Staff

- Technical Expertise: Basic to Moderate

- Usage Frequency: Daily

- Key Functions: Data entry, communication, scheduling, basic reporting

2.3.2 Secondary Users

Board Members

- Technical Expertise: Basic

- Usage Frequency: Weekly/Monthly

- Key Functions: Strategic reporting, financial oversight

Mentors

- Technical Expertise: Basic to Moderate

- Usage Frequency: Weekly

- Key Functions: Session scheduling, progress reporting, communication

Beneficiaries (Young People)

- Technical Expertise: Basic to Moderate

- Usage Frequency: Weekly

- Key Functions: Profile management, resource access, communication

Alumni

- Technical Expertise: Basic to Moderate

- Usage Frequency: Monthly

- Key Functions: Network engagement, mentorship, contribution tracking

2.4 Operating Environment

- **Platform:** Web-based application accessible via modern browsers

- **Server Environment:** Cloud-based hosting (preferably with African data centers)

- **Client Environment:** Desktop and mobile browsers
- **Database:** PostgreSQL or MySQL
- **Framework:** Modern web framework (React/Angular frontend, Node.js/Django backend)

2.5 Design and Implementation Constraints

- Must comply with Kenya Data Protection Act (2019)
- Multi-language support (English and Swahili minimum)
- Mobile-responsive design for accessibility in rural areas
- Offline capability for areas with limited internet connectivity
- Cost-effective hosting and maintenance for non-profit budget constraints

2.6 User Documentation

- Administrator user manual
- End-user guides for each user class
- Video tutorials for key functions
- Context-sensitive help system
- API documentation for future integrations

2.7 Assumptions and Dependencies

- Reliable internet connectivity at foundation headquarters
- Basic computer literacy among primary users
- Integration with M-Pesa or similar mobile payment systems
- Email and SMS gateway services availability
- Cloud hosting service availability in Kenya/East Africa

---

3. System Features

3.1 User Authentication and Authorization (High Priority)

3.1.1 Description

Secure login system with role-based access control ensuring appropriate access levels for different user types.

3.1.2 Functional Requirements

- **FR-3.1.1:** System shall provide secure user authentication using email/username and password
- **FR-3.1.2:** System shall implement role-based access control with predefined roles (Executive Director, Program Director, Admin Staff, Mentor, Beneficiary, Alumni, Board Member)
- **FR-3.1.3:** System shall support password reset functionality via email
- **FR-3.1.4:** System shall log all user authentication attempts
- **FR-3.1.5:** System shall automatically lock accounts after 5 failed login attempts

3.2 Beneficiary Management System (High Priority)

3.2.1 Description

Comprehensive system for managing young people enrolled in foundation programs, including their personal information, academic progress, and program participation.

3.2.2 Functional Requirements

- **FR-3.2.1:** System shall allow registration of new beneficiaries with complete profile information
- **FR-3.2.2:** System shall track academic progress including grades, certifications, and achievements
- **FR-3.2.3:** System shall manage scholarship applications and awards
- **FR-3.2.4:** System shall track program participation and completion rates
- **FR-3.2.5:** System shall support disability accommodation tracking and management
- **FR-3.2.6:** System shall generate individual beneficiary progress reports
- **FR-3.2.7:** System shall allow beneficiaries to update their own profiles (limited fields)

3.3 Program Management System (High Priority)

3.3.1 Description

Management of all seven program areas including educational support, career development, skills training, community engagement, mentorship, spiritual nurture, and disability support.

3.3.2 Functional Requirements

- **FR-3.3.1:** System shall manage educational support programs (scholarships, tutoring, STEM)
- **FR-3.3.2:** System shall coordinate career development activities (counseling, internships, entrepreneurship)
- **FR-3.3.3:** System shall track skills development programs and certifications
- **FR-3.3.4:** System shall manage community engagement projects and volunteer activities
- **FR-3.3.5:** System shall coordinate spiritual nurture programs and character development
- **FR-3.3.6:** System shall support disability-inclusive program management
- **FR-3.3.7:** System shall generate program-specific reports and analytics

3.4 Mentorship Coordination System (High Priority)

3.4.1 Description

Platform for matching mentors with mentees, scheduling sessions, and tracking mentorship progress.

3.4.2 Functional Requirements

- **FR-3.4.1:** System shall support mentor registration and profile management
- **FR-3.4.2:** System shall provide mentor-mentee matching based on interests, skills, and availability
- **FR-3.4.3:** System shall enable scheduling of mentorship sessions
- **FR-3.4.4:** System shall track mentorship session attendance and outcomes
- **FR-3.4.5:** System shall allow mentors to submit progress reports
- **FR-3.4.6:** System shall notify participants of upcoming sessions
- **FR-3.4.7:** System shall generate mentorship program effectiveness reports

3.5 Financial Management System (High Priority)

3.5.1 Description

Comprehensive financial tracking including donations, program expenses, scholarship distributions, and financial reporting.

3.5.2 Functional Requirements

- **FR-3.5.1:** System shall track all incoming donations (one-time, recurring, program-specific)
- **FR-3.5.2:** System shall manage scholarship fund allocation and distribution
- **FR-3.5.3:** System shall track program expenses and budget utilization
- **FR-3.5.4:** System shall generate financial reports for transparency and compliance
- **FR-3.5.5:** System shall support donor acknowledgment and communication
- **FR-3.5.6:** System shall integrate with mobile payment systems (M-Pesa)
- **FR-3.5.7:** System shall maintain audit trails for all financial transactions

3.6 Communication and Notification System (Medium Priority)

3.6.1 Description

Integrated communication platform for stakeholder engagement including email, SMS, and in-system messaging.

3.6.2 Functional Requirements

- **FR-3.6.1:** System shall send automated email notifications for key events
- **FR-3.6.2:** System shall support SMS notifications for urgent communications
- **FR-3.6.3:** System shall provide internal messaging system between users
- **FR-3.6.4:** System shall support bulk communication for announcements
- **FR-3.6.5:** System shall maintain communication history and logs

3.7 Alumni Network Management (Medium Priority)

3.7.1 Description

Platform for managing alumni engagement, networking events, and alumni contributions to current programs.

3.7.2 Functional Requirements

- **FR-3.7.1:** System shall support alumni registration and profile management
- **FR-3.7.2:** System shall coordinate alumni networking events
- **FR-3.7.3:** System shall track alumni contributions (financial and volunteer)
- **FR-3.7.4:** System shall facilitate alumni-current beneficiary mentorship
- **FR-3.7.5:** System shall generate alumni engagement reports

3.8 Reporting and Analytics System (Medium Priority)

3.8.1 Description

Comprehensive reporting system providing insights into program effectiveness, beneficiary outcomes, and organizational impact.

3.8.2 Functional Requirements

- **FR-3.8.1:** System shall generate standard reports for all program areas
- **FR-3.8.2:** System shall provide customizable report generation
- **FR-3.8.3:** System shall create visual dashboards for key metrics
- **FR-3.8.4:** System shall support data export in multiple formats (PDF, Excel, CSV)
- **FR-3.8.5:** System shall provide real-time analytics on program performance

3.9 Document Management System (Low Priority)

3.9.1 Description

System for storing and managing documents related to beneficiaries, programs, and organizational operations.

3.9.2 Functional Requirements

- **FR-3.9.1:** System shall support document upload and storage
- **FR-3.9.2:** System shall provide document version control
- **FR-3.9.3:** System shall enable document sharing with appropriate access controls
- **FR-3.9.4:** System shall support document search and categorization

---

4. External Interface Requirements

4.1 User Interfaces

- **UI-4.1.1:** Web-based responsive interface compatible with desktop and mobile devices
- **UI-4.1.2:** Intuitive navigation suitable for users with basic computer literacy
- **UI-4.1.3:** Multi-language support (English and Swahili minimum)
- **UI-4.1.4:** Accessibility compliance (WCAG 2.1 AA standards)
- **UI-4.1.5:** Consistent branding with foundation's visual identity

4.2 Hardware Interfaces

- **HI-4.2.1:** Compatible with standard computer hardware (minimum 4GB RAM, modern processors)
- **HI-4.2.2:** Mobile device compatibility (Android and iOS)
- **HI-4.2.3:** Printer integration for report generation

4.3 Software Interfaces

- **SI-4.3.1:** Email service integration (SMTP/API)
- **SI-4.3.2:** SMS gateway integration for notifications
- **SI-4.3.3:** Payment gateway integration (M-Pesa, bank transfers)
- **SI-4.3.4:** Calendar system integration
- **SI-4.3.5:** Backup and cloud storage integration

4.4 Communication Interfaces

- **CI-4.4.1:** HTTPS protocol for all communications
- **CI-4.4.2:** RESTful API for future integrations
- **CI-4.4.3:** WebSocket support for real-time notifications
- **CI-4.4.4:** File transfer protocols for document management

---

5. Non-Functional Requirements

5.1 Performance Requirements

- **NFR-5.1.1:** System shall respond to user requests within 3 seconds under normal load
- **NFR-5.1.2:** System shall support up to 100 concurrent users

- **NFR-5.1.3:** Database queries shall execute within 2 seconds for standard operations
- **NFR-5.1.4:** File uploads shall support files up to 10MB

5.2 Safety Requirements

- **NFR-5.2.1:** System shall maintain data integrity during unexpected shutdowns
- **NFR-5.2.2:** System shall provide data backup and recovery mechanisms
- **NFR-5.2.3:** System shall log all critical operations for audit purposes

5.3 Security Requirements

- **NFR-5.3.1:** System shall encrypt all sensitive data using AES-256 encryption
- **NFR-5.3.2:** System shall use HTTPS for all communications
- **NFR-5.3.3:** System shall implement SQL injection prevention measures
- **NFR-5.3.4:** System shall comply with Kenya Data Protection Act requirements
- **NFR-5.3.5:** System shall implement session timeout after 30 minutes of inactivity

5.4 Software Quality Attributes

5.4.1 Reliability

- **NFR-5.4.1:** System shall have 99.5% uptime availability
- **NFR-5.4.2:** System shall recover from failures within 15 minutes
- **NFR-5.4.3:** System shall provide automatic daily backups

5.4.2 Usability

- **NFR-5.4.4:** New users shall complete basic tasks within 30 minutes of training
- **NFR-5.4.5:** System shall provide context-sensitive help
- **NFR-5.4.6:** Error messages shall be clear and actionable

5.4.3 Scalability

- **NFR-5.4.7:** System shall accommodate 50% user growth without performance degradation

- **NFR-5.4.8:** System architecture shall support horizontal scaling

5.4.4 Maintainability

- **NFR-5.4.9:** System shall use modular architecture for easy updates
- **NFR-5.4.10:** System shall provide comprehensive logging for troubleshooting

---

6. Other Requirements

6.1 Legal Requirements

- **LR-6.1.1:** System shall comply with Kenya Data Protection Act (2019)
- **LR-6.1.2:** System shall maintain data residency within Kenya or approved jurisdictions
- **LR-6.1.3:** System shall provide data subject rights (access, rectification, erasure)

6.2 Cultural and Localization Requirements

- **CR-6.2.1:** System shall support Kenyan cultural context in user interface design
- **CR-6.2.2:** System shall accommodate local naming conventions
- **CR-6.2.3:** System shall support local date and currency formats

6.3 Environmental Requirements

- **ER-6.3.1:** System shall operate in environments with intermittent internet connectivity
- **ER-6.3.2:** System shall provide offline functionality for critical operations
- **ER-6.3.3:** System shall minimize bandwidth usage for mobile users

---

7. Appendices

7.1 Glossary

- **Beneficiary:** Young person enrolled in Ransem Foundation programs
- **Alumni:** Former beneficiaries who have completed foundation programs
- **Mentor:** Volunteer or professional providing guidance to beneficiaries

- **Program Director:** Staff member overseeing specific program areas

7.2 Analysis Models

- User role hierarchy diagram

- System context diagram

- Data flow diagrams

- Entity-relationship diagrams

7.3 Issues List

- Internet connectivity limitations in rural areas

- Multi-language content management complexity

- Integration with existing manual processes

- Training requirements for staff adoption

Document Approval

Role	Name	Signature Date
Executive Director	Rachael Wanjiru	
Board Chairperson	David Kituyi	
Technical Lead	[To be assigned]	

This document represents the complete Software Requirements Specification for the Ransem Foundation Youth Empowerment Management System. All requirements are subject to stakeholder review and approval before development begins.