Software Requirements Specifications

For

SkillSync- A Job Marketplace Platform

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Contents

Software Requirements Specification (SRS)

1. Introduction

1.1 Purpose

The purpose of SkillSync is to create a web platform that connects students, beginners, and freelancers in Bangladesh with skill-based job opportunities. This platform aims to bridge the gap between local talent and employers while providing skill development resources. This document outlines the requirements and specifications for the development of the SkillSync web application.

1.2 Document Conventions

- Abbreviations:
    - SS: SkillSync
    - UI: User Interface
- Standards:
    - The document follows IEEE standards for SRS documentation.

1.3 Intended Audience and Reading Suggestions

The primary audience for this document includes developers, testers, project managers, and stakeholders. Developers and testers should focus on Sections 3 and 4 for detailed requirements, while managers can review Sections 1 and 2 for project scope and features.

1.4 Project Scope

SkillSync is a web application designed to connect job seekers (particularly students, beginners, and freelancers) with employers offering skill-based opportunities in Bangladesh. The platform includes job listings, hiring, and user management systems. Key goals include making employment possibilities easily accessible, enabling employers to select the best candidate for their position, and establishing a community that fosters professional development in the local setting.

1.5 References

- MERN stack documentation
- Local employment regulations in Bangladesh
- Digital security standards

2. Overall Description

2.1 Product Perspective

The platform is a comprehensive web application developed using the MERN stack (MongoDB, React, Node.js). It serves as an integrated hub for job seeking, hiring, and professional networking within Bangladesh.

2.2 Product Features

Here are the detailed product features for your SkillSync platform as you've described:

1. **Job Searching**

    Users can input their preferences to search for suitable jobs:

    a. **Filtering Options:**

        - Location-based filtering to find nearby opportunities

        - Job category selection for targeted search results

        - Salary range specification according to user expectations

        - Sorting capabilities (newest, most relevant, highest paid)

2. **Employee Profile**

    a. User details are maintained in a comprehensive list format

    b. One-click application process through "Apply" button

    c. Evaluation based on profile information and submitted CV

    d. Skills and experience showcase for better employer assessment

3. **Employers' Profile**

    a. Job posting functionality through a structured form

    b. Ability to view applicant profiles and their qualifications

    c. Access to browse profiles of active job seekers

    d. Manage and track posted job listings

4. **Registration**

    a. Easy registration process using email address and password

    b. User role selection (job seeker or employer) during signup

    c. Profile building capabilities after initial registration

      d.   Simple login using email/user ID and password

      e.   Password recovery and account management options

5. **Rating System**

      a.   Mutual rating capabilities between employees and employers

      b.   Performance evaluation metrics for transparent feedback

      c.   Rating history accessible on profiles

      d.   Trust-building mechanism for the platform community

6. **Additional Features**

      a.   **Contact Us:**

         ▪   Contact form for direct inquiries

         ▪   Email contact information

         ▪   Comprehensive FAQ section

         ▪   Social media platform links

      b.   **About Us:**

         ▪   Platform overview and mission statement

         ▪   Detailed explanation of application process

         ▪   Testimonials from employees and employers

         ▪   Team information and platform history

2.3 User Classes and Characteristics

- **Job Seekers**: Students, beginners, and freelancers looking for opportunities.

- **Employers**: Companies and individuals posting job opportunities.

- **Administrators**: Users managing the platform and ensuring quality.

2.4 Operating Environment

- **Frontend**: HTML, React, CSS

- **Backend**: Node.js

- **Database**: MongoDB

2.5 Design and Implementation Constraints

- Must efficiently handle numerous user profiles, job listings, and application data

- Requires optimized query performance for job search filtering

- Role-based access control for job seekers vs. employers

2.6 User Documentation

- Comprehensive user guides for all user types.

- FAQ section with common issues and solutions.

2.7 Assumptions and Dependencies

- Users have basic internet access.

- Compliance with local employment and data protection laws.

3. System Features

3.1 User Authentication System

Description and Priority: A secure system for user registration, login, and account management. This is a high priority feature as it's the gateway to all platform functionality and handles sensitive user data.

Stimulus/Response Sequences:

- User attempts to register → System validates inputs → Creates account → Sends confirmation

- User attempts to login → System authenticates credentials → Grants access to appropriate dashboard

- User requests password reset → System verifies identity → Sends reset instructions

Functional Requirements:

- Support registration via email with strong password requirements

- Enable role-based access control (job seeker/employer)

- Provide secure password recovery mechanism

- Maintain session management with appropriate timeouts

- Store encrypted user credentials

3.2 Job Matching Algorithm

Description and Priority: Core system that connects job seekers with relevant opportunities based on skills, experience, and preferences. High priority as it's the primary value proposition of the platform.

Stimulus/Response Sequences:

- Job seeker searches with parameters → System queries database → Returns relevant matches

- Employer posts job → System indexes requirements → Makes job discoverable to matching candidates

- User logs in → System automatically shows personalized job recommendations

Functional Requirements:

- Implement relevancy scoring based on multiple factors (skills match, location, salary)

- Support complex filtering based on user-defined criteria

- Provide real-time search results

- Enable keyword-based searching with synonym recognition

- Maintain search history for improved recommendations

3.3 Profile Management System

Description and Priority: Comprehensive system for creating and managing user profiles with different interfaces for job seekers and employers. Medium-high priority as it's essential for effective matching.

Stimulus/Response Sequences:

- User edits profile → System validates and stores changes → Updates visibility settings

- Employer views candidate → System displays relevant information → Tracks interaction

- User uploads documents → System processes and attaches to profile → Confirms completion

Functional Requirements:

- Support multimedia content upload (profile pictures, documents)

- Implement profile completeness indicators

- Provide template-based profile creation

3.4 Application Processing System

Description and Priority: System to manage the end-to-end application workflow from submission to hiring decision. High priority as it's a core transaction of the platform.

Stimulus/Response Sequences:

- Job seeker submits application → System delivers to employer → Confirms submission

- Employer reviews application → System records status change → Notifies applicant

- Employer makes decision → System processes result → Updates application status

Functional Requirements:

- Support one-click application submission

- Enable application tracking for both parties

- Implement status change notifications

- Provide application management dashboard for employers

3.5 Rating and Feedback System

Description and Priority: System for collecting and displaying ratings and reviews between employers and job seekers. Medium priority as it builds platform trust but isn't critical for core functionality.

Stimulus/Response Sequences:

- User completes job/hiring → System prompts for rating → Processes and displays feedback

- User views profile → System aggregates and displays rating metrics → User makes informed decision

- User reports inappropriate feedback → System flags for review → Takes appropriate action

Functional Requirements:

- Implement rating aggregation algorithms

- Support text reviews with moderation capabilities

- Provide rating analytics for users

3.6 Administrative Management System

Description and Priority: Back-end system for platform administrators to manage users, content, and system health. Medium-high priority for platform integrity and support functions.

Stimulus/Response Sequences:

- Admin reviews reported content → Makes decision → System enforces action

- System detects unusual activity → Alerts administrators → Provides investigation tools

Functional Requirements:

- Implement role-based admin access controls

- Provide content moderation tools

- Support user management functions (suspend, restore, edit)

- Enable health monitoring and reporting system

4. External Interface Requirements

4.1 User Interfaces

- Responsive design optimized for various devices.

- Intuitive navigation with minimal learning curve.

4.2 Hardware Interfaces

- Compatible with standard web browsers on desktops, laptops, and mobile devices.

- Optimized for low-end Android devices common in Bangladesh.

4.3 Software Interfaces

- Integration with payment gateways for premium features.

- Social media APIs for sharing and login functionality.

4.4 Communications Interfaces

- HTTPS for secure data transmission.

- Email and SMS gateways for alerts and verification.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

- Page load times under 3 seconds on standard connections.

- Responsive UI on 3G connections.

- Job search results delivered within 2 seconds.

5.2 Safety Requirements

- Data backup systems with regular scheduling.

- User data protection compliant with local regulations.

- Content moderation for job listings and user communications.

5.3 Security Requirements

- End-to-end encryption for user communications.

- Multi-factor authentication options.

- Regular security audits and penetration testing.

- Protection against common web vulnerabilities.

5.4 Software Quality Attributes

- Scalable architecture to accommodate user growth.

- Maintainable codebase with comprehensive documentation.

- Extensible design for future feature additions.

5.5 Localization Requirements

- Region-specific job categories and skill taxonomies.

- Culturally appropriate UI elements and terminology.

6. Other Requirements

6.1 Data Analytics and Reporting

- User behavior analytics for platform improvement.

- Market trend analysis for job sectors and skills.

- Customizable reports for employers and administrators.

6.2 Legal and Compliance

- Compliance with Bangladesh's labor laws.

- Privacy policy and terms of service aligned with local regulations.

- Transparent data usage and storage policies.

6.3 Future Enhancements

- Mobile application development.

- AI-powered career path suggestions.

- Virtual interview platform integration.

- Expanded regional support for neighboring countries.

Appendices

A. Glossary

- **Skill Taxonomy**: Categorization system for abilities and competencies.

- **Job Matching Algorithm**: AI system that connects users to relevant opportunities.

B. Analysis Models

- Use case diagrams for primary user interactions.

- Data flow diagrams for the job matching process.

- Entity-relationship diagrams for the database structure.

C. Issues List

- Pending: Integration with national ID verification system.

- Pending: Optimal AI model selection for job matching.