UE22CS341A: Software Engineering
Case Study

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Unit 1 Deliverable

Software Requirements Specification (SRS) for Career Connect

Abstract

Career Connect is a web-based platform designed to facilitate connections between students seeking internships and job placements and companies looking to recruit young talent. The system enables students to create profiles, view job postings, and apply for internships and job opportunities, while companies can post job openings, define eligibility criteria, and manage applications. The platform streamlines the recruitment process by providing easy access to opportunities for students and a talent pool for companies. Additionally, an administrative interface ensures the system's integrity and allows for moderation. Career Connect aims to enhance career opportunities for students while simplifying the hiring process for companies.

Introduction

In the evolving job market, students often find it challenging to access internships and job placements that match their skill sets, while companies struggle to find suitable candidates for open roles. Career Connect is developed to bridge this gap by offering a unified platform where students can explore job opportunities, apply for relevant positions, and track their application progress. Companies can post jobs with detailed eligibility criteria and manage the recruitment process efficiently through the platform. With administrative oversight, the platform ensures transparency, data security, and operational integrity. This document outlines the Software Requirements Specification (SRS) for Career Connect, detailing its functional and non-functional requirements, interfaces, and design constraints to guide its development and deployment.

1. Introduction

1.1 Purpose

This document specifies the requirements for the Career Connect application. The system allows students to create accounts, provide personal and academic details, and apply for internships and job opportunities posted by companies. Companies can create accounts to post job openings and internships, specifying eligibility criteria that will filter applications from qualified students.

1.2 Scope

The Career Connect application is designed to streamline the internship and job placement process for students and companies. It provides a secure, user-friendly platform where companies can post opportunities and students can apply, ensuring that only eligible candidates are considered.

1.3 Definitions, Acronyms, and Abbreviations

- **Career Connect**: The application designed to facilitate internships and job placements for students by connecting them with companies offering opportunities.
- **Profile**: The collection of information (personal, academic, and professional) that students create and manage in the Career Connect application.
- **Job Posting**: A listing created by companies on the Career Connect platform that describes available internship or job opportunities, including eligibility criteria.
- **Notification**: Alerts sent to users (students or companies) to inform them about important events, such as new job postings or application status updates.
- **Encryption**: The process of encoding data to prevent unauthorized access, ensuring that sensitive information is secure both at rest and in transit.
- **SRS**: Software Requirements Specification
- **UI**: User Interface
- **API**: Application Programming Interface
- **DBMS**: Database Management System

1.4 References

- IEEE Standard for Software Requirements Specifications

1.5 Overview

This document is structured into sections detailing the functional and non-functional requirements, system features, external interface requirements, and more.

2. Overall Description

2.1 Product Perspective

The Career Connect application is a standalone system but can integrate with educational institutions' existing databases to verify student credentials. It will also interact with company databases to retrieve and verify job posting data.

2.2 Product Functions

- **Student Account Management**: Allows students to create and manage their profiles.
- **Company Account Management**: Enables companies to create and manage job and internship postings.
- **Application Processing**: Facilitates the application process for students, including eligibility checks.
- **Notification System**: Notifies users of relevant updates, such as new job postings or application status changes.

2.3 User Classes and Characteristics

- **Students**: Individuals enrolled in educational institutions, seeking internships or job opportunities.
- **Company Representatives**: HR professionals or recruiters posting job opportunities.
- **Administrators**: Personnel responsible for system maintenance, user management, and content moderation.

2.4 Operating Environment

- **Software**: The application will run on web browsers.
- **Hardware**: Desktops, and laptops with internet access.
- **Backend**: Servers with DBMS and API integrations.

2.5 Design and Implementation Constraints

- Compliance with data protection regulations.
- Secure transmission of data between clients and servers.
- Usability across multiple devices and platforms.

2.6 Assumptions and Dependencies

- The application assumes the availability of stable internet connections for all users.
- Integration with third-party systems like educational databases will be available.

3. External Interface Requirements

3.1 User Interfaces

Student Portal: Web interface for students to manage profiles, search for jobs, and track applications.

Company Portal: Web interface for companies to post jobs, manage applications, and communicate with candidates.

Admin Dashboard: Web-based interface for administrators to manage users, job postings, and system settings.

3.2 Hardware Interfaces

Compatibility with standard input devices (keyboard, mouse).

3.3 Software Interfaces

- **APIs**: Integration with educational institutions' databases and company HR systems.
- **Database**: Secure DBMS for storing user data, job postings, and applications.

3.4 Communication Interfaces

- **Protocols**: HTTPS for secure data transmission.
- **Notifications**: Email and in-app notifications for user updates.

4. Analysis Models [UML model] :

5. System Features

5.1 System Feature 1: Student Account Management

Description: Students can create and manage their profiles, upload resumes, and view their application history.

Priority: High

Acceptance Criteria: The system shall allow students to register using their email or social media accounts and enable students to update their profiles and upload documents.

5.2 System Feature 2: Company Account Management

Description: Companies can create job and internship postings with specific eligibility criteria.

Priority: High

Acceptance Criteria: The system shall allow companies to create and manage job postings.

5.3 System Feature 3: Application Processing

Description: Students can apply for job opportunities that match their qualifications.

Priority: High

Acceptance Criteria: The system shall match student profiles with job postings based on eligibility.

5.4 System Feature 4: Notification System

Description: Users receive updates regarding their applications and new job postings.

Priority: Medium

Acceptance Criteria: The system shall send email and in-app notifications for relevant events.

6 Other Non-Functional Requirements

6.1 Performance Requirements

- The system shall respond to user inputs within 2 seconds.

The system shall handle up to 10,000 concurrent users without performance degradation.

6.2 Security Requirements

- The system shall encrypt all sensitive user data during transmission and storage.
- The system shall implement role-based access control for different user types.

6.3 Usability Requirements

- The system shall provide an intuitive user interface with consistent design across platforms.
- The system shall provide help documentation and customer support contact details.

6.4 Reliability Requirements

- The system shall have a minimum uptime of 99.9%.
- The system shall automatically back up data every 24 hours.

7. Other Requirements

7.1 Environmental Requirements

The system shall be operational in environments with internet connectivity.

7.2 Compliance Requirements

The system shall comply with relevant data protection laws, such as GDPR.

Appendices

Appendix A: Glossary

Student: A user enrolled in an educational institution, seeking internships or jobs.

Company Representative: A user who posts job opportunities on behalf of a company.

Administrator: A user responsible for managing the Career Connect platform.

Profile: A collection of personal, academic, and professional information created by students in the Career Connect system.

Job Posting: A listing created by companies for available internships or job opportunities, including eligibility criteria.

Eligibility Criteria: Requirements set by companies that students must meet to apply for a specific job or internship.

Encryption: The process of encoding data to prevent unauthorized access, ensuring data security.

Appendix B: Field Layouts

Database Tables:

Students Table: Fields include StudentID (Primary Key), Name, Email, Resume, Skills, etc.

Companies Table: Fields include CompanyID (Primary Key), Name, Industry, ContactInfo, etc.

JobPostings Table: Fields include JobID (Primary Key), CompanyID (Foreign Key), JobTitle, Description, EligibilityCriteria, etc.

Applications Table: Fields include ApplicationID (Primary Key), StudentID (Foreign Key), JobID (Foreign Key), Status, DateSubmitted, etc.

UI Forms:

Student Registration Form: Fields include Name, Email, Password, Academic Details, Skills, Resume Upload.

Job Posting Form: Fields include Job Title, Description, Eligibility Criteria, Application Deadline.

Application Form: Fields include Student ID (auto-filled), Job ID (auto-filled), Cover Letter Upload, Submit Button.

Appendix C: Requirement Traceability Matrix

Description: A matrix mapping each requirement to its corresponding design specification, implementation module, and test case, ensuring complete coverage and traceability throughout development.

Requirement ID	Requirement Description	Design Specification ID	Implementation Module/Code	Test Case ID	Verification Method	Comments

Requirement ID	Requirement Description	Design Specification ID	Implementation Module/Code	Test Case ID	Verification Method	Comments
FR-001	The system must enable students to create and manage profiles.	DS-001	IM-001 (ProfileManager.js)	TC-001	Functional Test	
FR-002	The system must allow companies to post and manage jobs.	DS-002	IM-002 (JobPosting.js)	TC-002	Functional Test	
FR-003	The system must process job applications based on eligibility.	DS-003	IM-003 (ApplicationProcessor.cs)	TC-003	Functional Test	
FR-004	The system must notify users of relevant updates.	DS-004	IM-004 (NotificationService.py)	TC-004	Functional Test	
FR-005	The system must allow administrators to manage users.	DS-005	IM-005 (AdminDashboard.js)	TC-005	Functional Test	
NFR-001	The system must support SSL/TLS encryption for data security.	DS-006	IM-06 (SecurityModule.java)	TC-006	Security Test	
NFR-002	The system should be scalable for high concurrent users.	DS-007	IM-07 (ScalabilityModule.java)	TC-007	Performance Test	
NRF-003	The system should provide an intuitive user interface.	DS-008	IM-008 (UIManager.html)	TC-008	Usability Test	

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- Section K