Software Requirement Analysis Document

Submitted by:

Diponker Roy(28)
Abdullah Ashik(32)

Submitted to:

Dr. Saifuddin Md. Tareeq
Mr. Md. Redwan Ahmed Rizvee

1. Introduction

1.1 Purpose of the system

The purpose of your educational website could be to provide accessible and engaging learning resources for a specific subject or range of subjects. This could include offering informative articles, video tutorials, and other multimedia content to help learners grasp concepts effectively. The aim is to facilitate learning, promote understanding, and empower individuals to acquire new knowledge and skills in an engaging and user-friendly online environment.

1.2 Scope of the system

Content Creation and Management: Developing high-quality educational materials such as articles, videos to your target audience.

User Management: Providing user registration, login, and profile management functionalities.
Learning Management System (LMS) Features: Offering features like course enrollment.
Interactive Learning Tools: Integrating interactive elements such as forums, chatbots.
Accessibility and Compatibility: Ensuring the website is accessible to users of all abilities and compatible across different devices and browsers to reach a wider audience.
Community Building: Fostering a supportive online learning community through features like discussion forums, peer-to-peer collaboration, and mentorship programs.
Monetization Options: Exploring revenue streams such as subscription models, premium content, advertising, or partnerships with educational institutions or businesses.
Scalability and Maintenance: Designing the system architecture to accommodate future growth in content, users, and features while ensuring regular updates and maintenance to keep the website running smoothly.

1.3 Objective and success criteria of the project

Objectives:

1. Deliver engaging educational content.
2. Foster user interaction and engagement.
3. Provide structured learning management.
4. Ensure accessibility and usability.
5. Build a supportive online learning community.
6. Explore sustainable monetization strategies.

Success criteria:

1. Improved completion rates for courses.
2. Positive user feedback and satisfaction.
3. Compliance with accessibility standards.
4. High User Engagement
5. Effective revenue generation.
6. High-quality educational content.

1.4 Definitions and Acronyms and abbreviations

1. User Engagement: Level of user interaction and participation.
2. Learning Management System (LMS): Software for organizing and tracking learning activities.
3. Accessibility: Ensuring equal access to content for all users.
4. **Monetization:** Generating revenue from website activities.
5. **Educational Website:** Online platform providing learning resources and tools.
6. **Community Building:** Fostering connections and collaboration among users.

1.6 Overview

Objective: Develop a user-friendly and engaging educational website to facilitate learning across various subjects.

Scope: The project involves creating a comprehensive online platform offering educational resources, interactive tools, and community features. It aims to provide accessible learning opportunities for users of all levels.

Key Features:

Content Creation and Management: Curate and manage high-quality educational content, including articles, videos and interactive exercises.

User Management: Implement user registration, login, and profile management functionalities to personalize learning experiences.
Learning Management System (LMS): Offer course enrollment to facilitate structured learning paths.
Interactive Learning Tools: Integrate forums, chatbots, virtual labs, and simulations to enhance user engagement and comprehension.
Accessibility and Compatibility: Ensure the website is accessible across different devices and complies with accessibility standards.
Community Building: Foster a supportive online learning community through discussion forums, peer collaboration, and mentorship programs.
Monetization Options: Explore revenue streams such as subscriptions, premium content, and partnerships to sustain the website.
Analytics and Reporting: Implement tools to gather data on user behavior, engagement metrics, and content performance for continuous improvement.

2. Overall description

2.1 Product perspective

The educational website being developed is a new, self-contained product designed to provide a comprehensive online learning platform. It is not part of an existing product family nor does it replace any specific existing systems.

However, it may integrate with other systems or components in the larger educational ecosystem, such as:

1.**Learning Management Systems (LMS):** The website may integrate with existing LMS platforms to import course materials, synchronize user data, or provide additional learning resources.
2.**Content Management Systems (CMS):** Integration with CMS platforms can streamline content creation, management, and publishing processes.
3.**Authentication Systems:** The website may interface with external authentication systems (e.g., OAuth, LDAP) for user authentication and authorization.
4.**Payment Gateways:** Integration with payment gateways enables monetization features such as subscription payments or course purchases.

Diagram:

A simple diagram illustrating the product perspective could include:

- The educational website as the central component.
- Arrows indicating interfaces with external systems such as LMS, CMS, authentication systems, and payment gateways.
- Subsystem interconnections representing data flow and interactions between various components.

2.2 Product functions

User Management:

- User registration, login, and profile management.
- Customization of learning experiences based on user preferences and progress.

Teacher Management:

- Teacher registration , login , and profile management.
- Can add classes for the general users.

Founder Management:

- Founders registration , login and profile creation
- Can add new courses for the general users

Accessibility:

- Ensure accessibility for users of all abilities, complying with WCAG standards.
- Compatibility across various devices and browsers.

Community Building:

- Foster a supportive online learning community through discussion forums, groups, and social features.

Monetization:

- Implementation of revenue generation strategies such as subscriptions, premium content, and advertising.

2.3 User Profiles

Students:

- **Characteristics:** Varied educational levels, ranging from K-12 to higher education.

- **Usage Frequency:** Regular usage for accessing course materials, completing assignments, and interacting with peers.
- **Privileges:** Access to learning materials, progress tracking, and participation in interactive activities.

Instructors/Teachers:

- **Characteristics:** Educators or subject matter experts.
- **Usage Frequency:** Regular usage for creating and managing courses, providing guidance, and assessing student progress.
- **Technical Expertise:** Moderate to high technical proficiency.
- **Privileges:** Content creation, course management, assessment tools access.

Founders:

- **Characteristics:** System administrators or site managers.
- **Usage Frequency:** Occasional usage for system maintenance, user management, and content moderation.
- **Technical Expertise:** High technical proficiency.
- **Privileges:** User management, system configuration, content moderation.

Guest Users:

- **Characteristics:** Individuals exploring the platform without registering.
- **Usage Frequency:** Infrequent usage for browsing content or previewing courses.
- **Technical Expertise:** Basic computer literacy.
- **Privileges:** Limited access to certain features or content.

2.4 Constraints

Regulatory Compliance: Adherence to privacy regulations (e.g., GDPR, COPPA) regarding the collection and handling of user data.

1. **Hardware Limitations:** Compatibility with a range of devices and browsers to ensure accessibility for users.
2. **Interface Compatibility:** Integration with existing systems such as Learning Management Systems (LMS) or Content Management Systems (CMS).
3. **Technology Stack:** Utilization of specific technologies, tools, and databases as per organizational standards or infrastructure limitations.
4. **Security Considerations:** Implementation of robust security measures to protect user data and prevent unauthorized access or breaches.
5. **Programming Standards:** Adherence to programming standards and design conventions for consistency and maintainability.

6. Scalability: Designing the system to handle potential growth in user base and content volume.
7. Communication Protocols: Compliance with communication protocols for seamless interaction with external systems or APIs.
8. Maintenance Responsibility: Clarification on whether the founders organization will be responsible for maintaining the software after delivery.

2.4 Assumptions and dependencies

Assumptions:

1. Availability of Third-Party Components: Assumption that third-party tools, libraries, or services required for certain functionalities (e.g., payment gateways, LMS integrations) will be available and compatible with the project requirements.
2. Technical Expertise of Development Team: Assumption that the development team possesses the necessary skills and expertise to implement the required features and functionalities effectively.
3. User Accessibility: Assumption that users will have access to stable internet connections and compatible devices to interact with the educational website.
4. Regulatory Compliance: Assumption that regulatory compliance requirements regarding data privacy and accessibility standards will not significantly change during the project timeline.

Dependencies:

1. External APIs and Integrations: Dependency on external APIs for functionalities such as payment processing, content management, and authentication.
2. Third-Party Services: Dependency on third-party services for hosting, data storage, and analytics.
3. Content Creation: Dependency on content creators or educators for generating high-quality educational materials.
4. Stakeholder Availability: Dependency on stakeholders for providing feedback, clarifications, and approvals throughout the project lifecycle.
5.Infrastructure: Dependency on the availability and stability of infrastructure components such as servers, databases, and networking resources.

3. Proposed System

3.1 Overview

The project involves developing an educational website to provide a user-friendly platform for accessing educational resources and tools. It aims to facilitate learning across various subjects and levels by offering features such as content management, user authentication, course management, interactive learning tools, and community building. The project assumes the availability of third-party components and the technical expertise of the development team. Dependencies include external APIs, third-party services, content creators, stakeholder availability, and infrastructure stability.

3.2 Functional Requirement

User Authentication:

- **FR1:** Users can register for a new account by providing necessary information including username, email, and password.
- **FR2:** Registered users can log in using their credentials.
- **FR3:** Passwords must be securely stored and encrypted.
- **FR4:** Users can reset their passwords in case they forget them.

Founders Information:

- **FR5:** We registered the founders in database from previous.they won't be able to register but can login
- **FR6:** Registered founders can log in using their credentials.
- **FR7:** Passwords must be securely stored and encrypted.

Teachers information:

- **FR8:** Integration of discussion forums where users can engage in discussions related to course topics.

Others:

- **FR9:** Integration of discussion forums where users can engage in discussions related to course topics.
- **FR10:** Error handling: Notify users if any accessibility features are unavailable or inaccessible.

3.3 Non Functional Requirement

1.**Usability:** The website interface must be intuitive and easy to navigate, catering to users of varying technical abilities.

2. **Reliability:** The system should be highly available and resilient, minimizing downtime and ensuring consistent performance.
3. **Performance:** The website must be responsive, with fast loading times for content and interactive features.
4. **Supportability:** Adequate documentation and user support resources should be provided to assist users in troubleshooting issues.
5. **Implementation:** The development process must follow industry best practices and coding standards to ensure maintainability and extensibility.
6. **Scalability:** The system architecture should be designed to handle increased user traffic and content volume as the platform grows.
7. **Security:** Robust security measures must be implemented to protect user data, prevent unauthorized access, and mitigate potential threats.
8. **Maintainability:** The codebase should be well-structured and modular, facilitating ease of maintenance, updates, and future enhancements.

3.4 Systems Model

3.4.1 Scenarios

1.User , Teachers can register with a new account in the website
2. User , Teachers can login with that
3. User can buy course
4. Founders can add course
5. Teachers can add something new if he want
6. Users can pay amount

3.4.2 Use cases

User Registration:

- **Name:** Registering for a new account.
- **Actors:** Student, Instructor.
- **Flow of Events:**

    User accesses the registration page.
    User provides required information (username, email, password).

System validates the information and creates a new account.
User receives a confirmation email.
Users can now log in with the newly created account.

Teacher Registration:

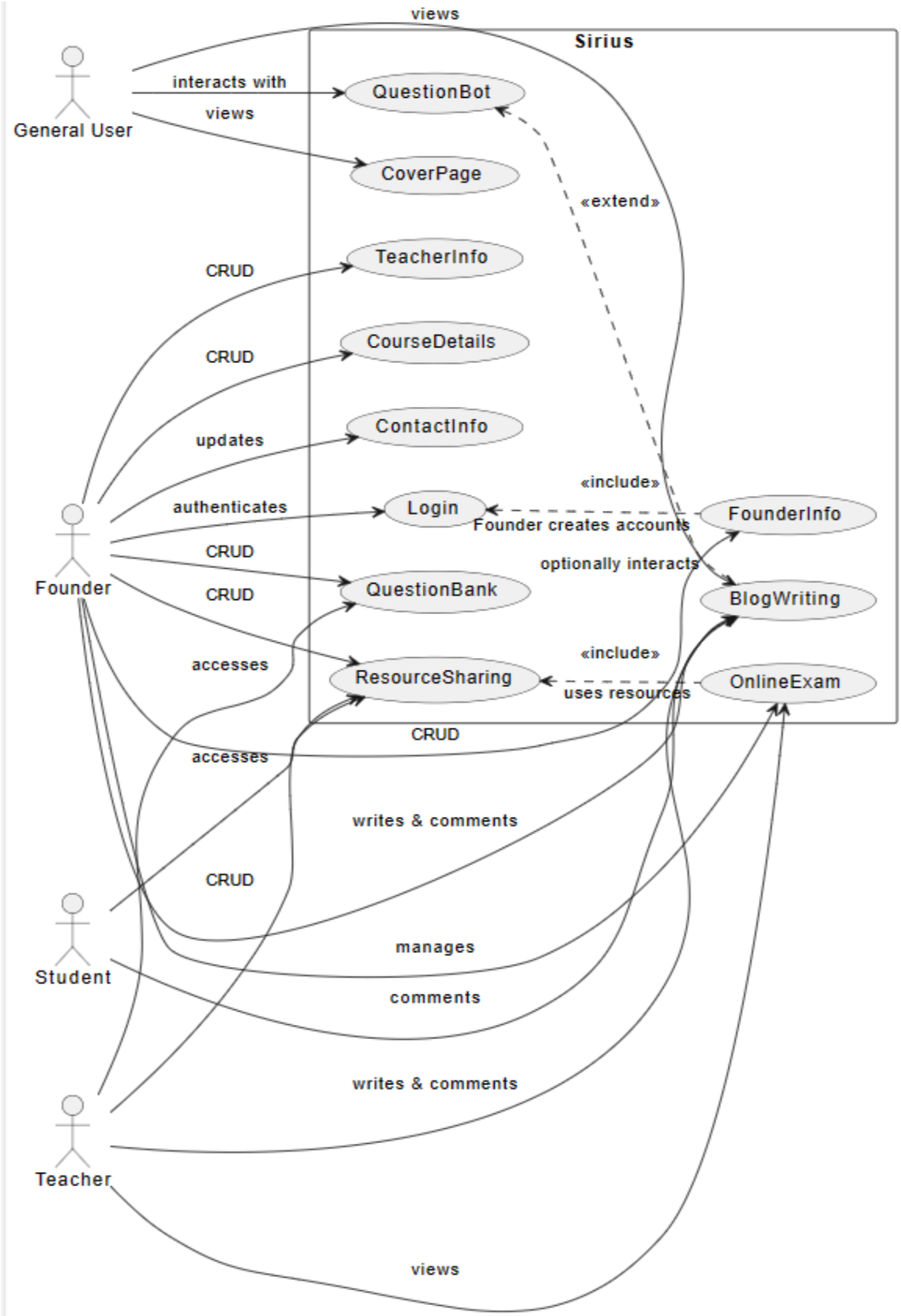
Name: Registering for a new account.

Actors: Student, Instructor.

Flow of Events:

- User accesses the registration page.
- User provides required information (username, email, password).
- System validates the information and creates a new account.
- User receives a confirmation email.
- Users can now log in with the newly created account.

3.4.3 Use case model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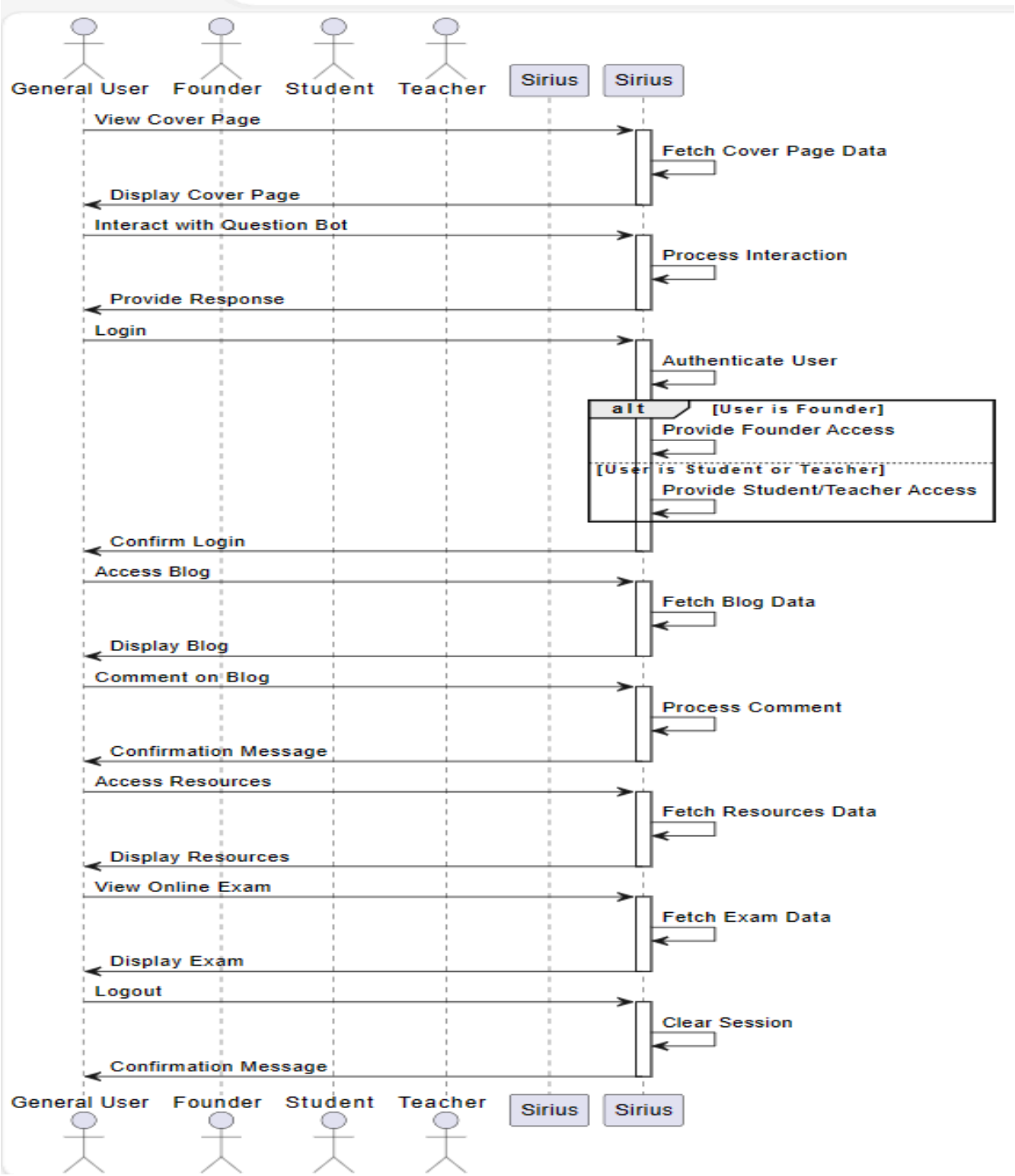
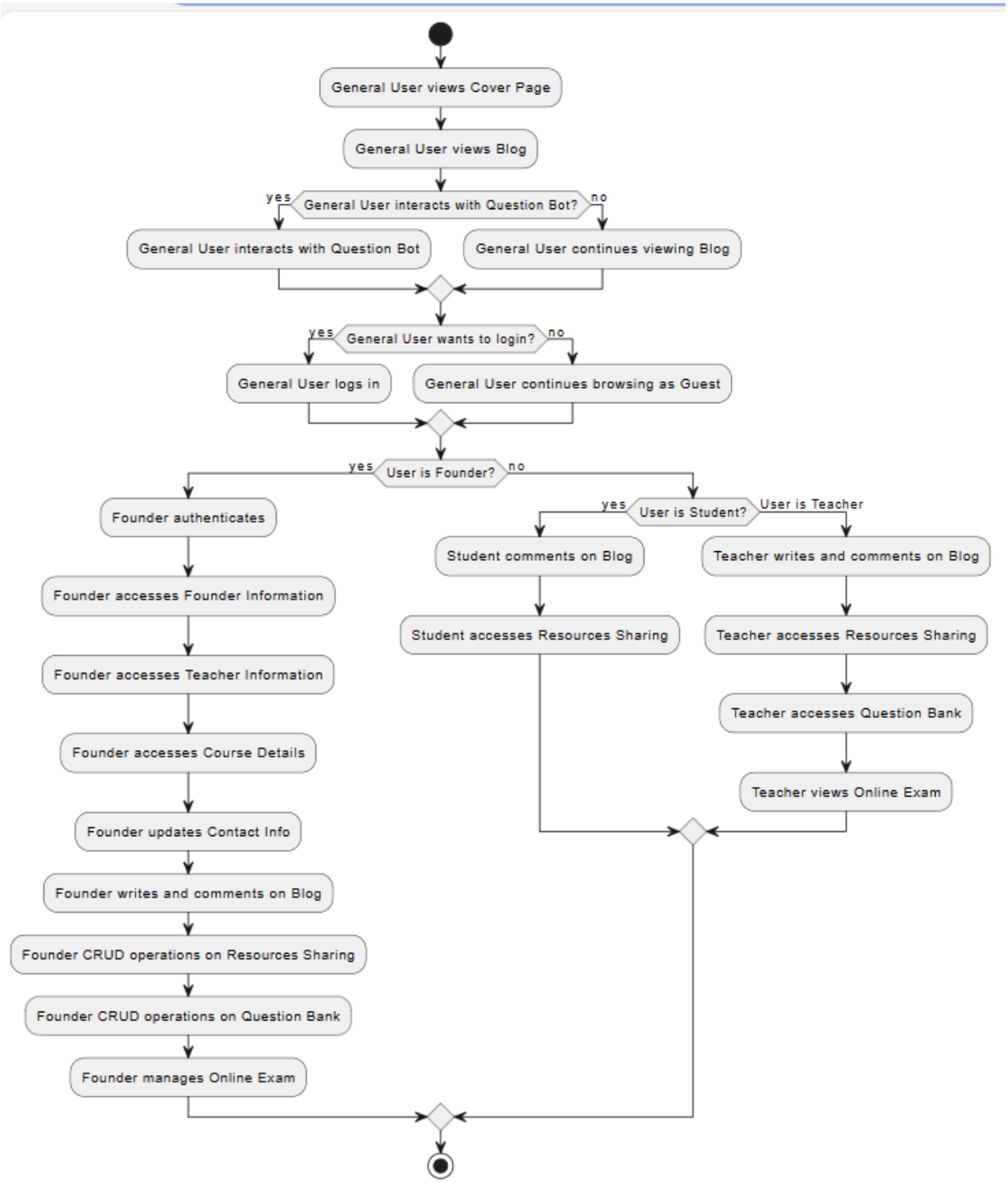
3.4.4 Dynamic Model

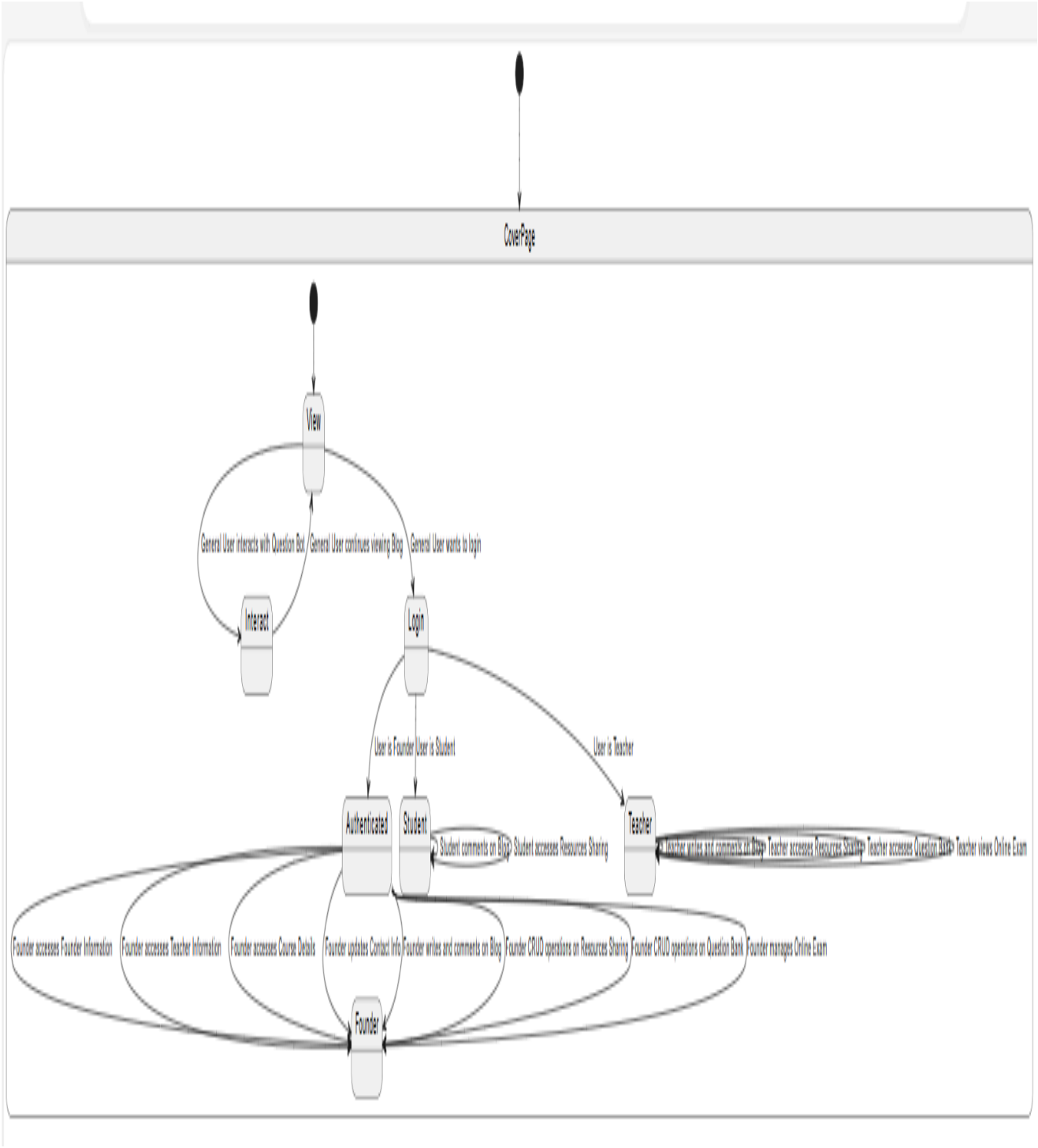
3.4.4.1 Sequence Diagram



3.4.4.2 Activity Diagram



3.4.4.3 State Diagram



3.4.5 User Interface

3.4.5.1 User Interface

Description: The graphical interface through which users interact with the educational website.

3.4.5.2 Software Interface

Description: Interfaces with other software components or systems that the educational website interacts with.

3.4.5.3 Hardware Interface

Description: Interfaces with hardware components or devices that the educational website interacts with, such as servers or user devices.

4. Supporting Information

Documentation: Comprehensive user guides, admin manuals, and developer documentation.

- **Training Materials:** Training videos, tutorials, and workshops for users, instructors, and administrators.
- **Feedback Mechanism:** Feedback forms, surveys, and user forums for gathering user input and suggestions.
- **System Logs:** Logging mechanisms to track system activities, errors, and performance metrics.
- **Version Control:** Version control system for managing code changes and releases.
- **Third-Party Integrations:** Documentation and agreements for integrating third-party services or APIs.
- **Testing Environment:** Separate testing environment for quality assurance and user acceptance testing.
- **Backup and Recovery Procedures:** Protocols for data backup, disaster recovery, and system restoration.
- **Regulatory Compliance Documentation**: Compliance documents for privacy regulations, accessibility standards, and security certifications.

- **Change Management Process:** Procedures for managing changes, updates, and enhancements to the system.