Software Requirements Specification

for

Cuse Alumni Groves

Version 1

Prepared by Group 19

Syracuse University CSE687

April 6, 2024

Table of Contents

Name	Date	Reason For Changes	Version
Group 19	March 29 ,2024	Initial Revision	--
Group 19	April 6,2024	Updated Diagrams from VP,Added BDD	01

1. Introduction

1.1. Purpose

This Software Requirements Specification (SRS) aims to outline the software requirements for the Cuse Alumni Groves platform. The SRS serves as a guide for developers to implement the necessary functionality and for the testing team to create appropriate Verification and Validation (V&V) plans and procedures to demonstrate compliance with this specification.

1.2. Scope

This document specifies the requirements for the following capabilities:

1.User registration and authentication

2.Alumni-student networking features

3.Profile management and customization options

4.Feed page with updates, discussions, and job postings

5.Chat functionality (future scope)

1.3. Definitions

Acronyms and Definitions

SRS: Software Requirements Specification
V&V: Verification and Validation

1.4. References

IEEE Std 830-1998 - IEEE Recommended Practice for Software Requirements Specifications - Revision of IEEE Std 830-1993

1.5. Overview

This document adheres to the recommended format outlined in IEEE Std 830-1998 IEEE Recommended Practice for Software Specifications. Section 3 follows the specific template A.5 for organizing information by feature.

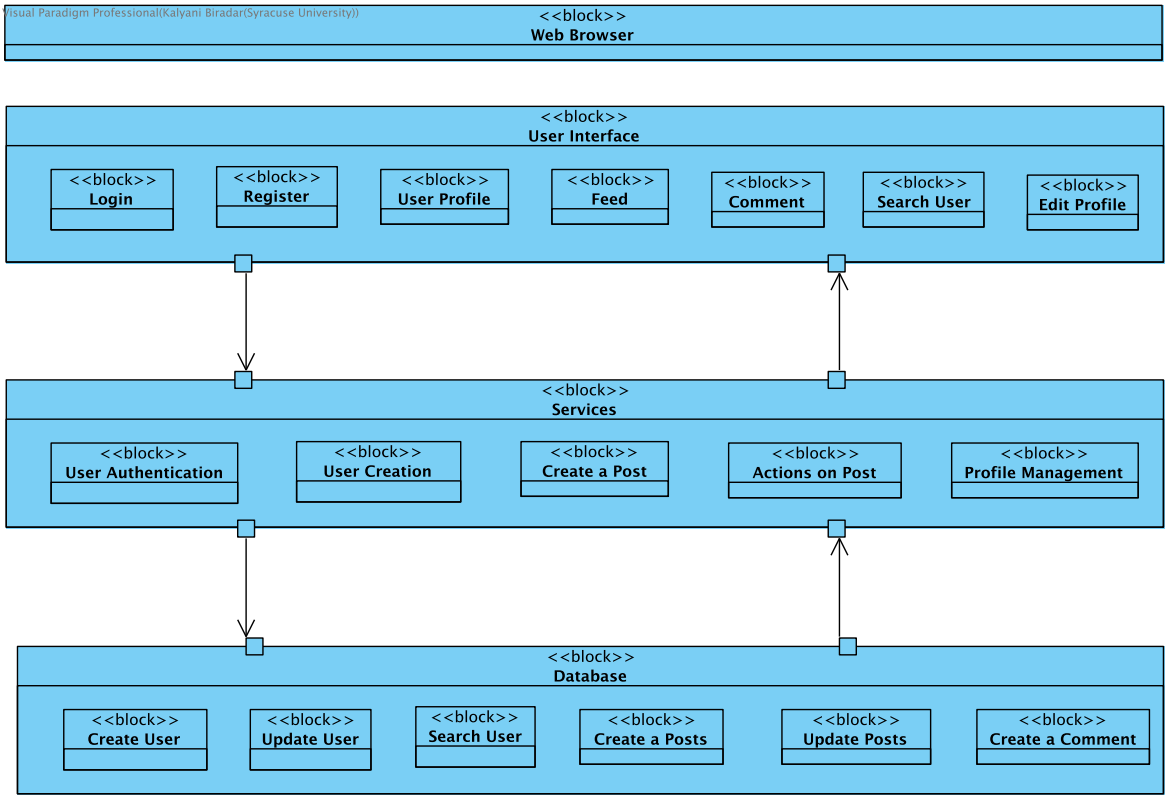
2. Overall Description

2.1. Product Perspective

The Cuse Alumni Groves platform is designed to facilitate communication and collaboration within the Syracuse University community. It offers features for both alumni and current students to connect, share insights, and explore opportunities. The platform can be accessed via web browsers or mobile applications, providing a seamless experience across devices. Figure 1 System Block Diagram illustrates the platform's overview, utilizing a Unified Modeling Language (UML) Block Definition Diagram (BDD).

This platform operates as a standalone system but can be integrated with existing university systems for enhanced functionality and data sharing. It serves as a centralized hub for Syracuse University members to engage, network, and support each other in their academic and professional endeavor

2.1.1. Block Definition Diagram



2.1.1.1. Web Browser

Users can browse to Cuse Alumni Groves web, news, events, and other relevant information, fostering seamless engagement with the alumni community and enhancing user experience.

2.1.1.2. User Interface

The User Interface (UI) encompasses the visual and interactive elements through which users interact with the application. It provides intuitive navigation, access to features such as profiles, events, and news. The UI design aims to enhance user experience, making it easy for alumni to connect, explore content, and stay informed about campus activities and updates.

2.1.1.3. Login

UI to Log into web with a user email and passoword

2.1.1.4. Register

UI to sign up new user

2.1.1.5. Search User

UI to search the user by name or email

2.1.1.6. User Profile

UI to display user profile details

2.1.1.7. Feed

UI screen to show latest feed posted by the community

2.1.1.8. Comment

UI Screen to comment on posts

2.1.1.9. Edit Profile

UI feature to edit the user deatils

2.1.1.10. Services

Essential services such as secure user authentication,account creation, and posting capabilities, enabling alumni to connect, share updates, and engage with their community.

2.1.1.11. User Authentication

User Authentication while login validating the entered details and details in backend

2.1.1.12. Create a Posts

Insert post created by user into database

2.1.1.13. Update Posts

Update the posts with actions : like,comment etc into database

2.1.1.14. Profile Management
User Profile management like viewing,editing and searching from database

2.1.1.15. Update User
Updating existing user into database

2.1.1.16. Database
Efficiently handles database interactions for updating user profiles, creating posts, creating comments and many more

2.1.1.17. Search User
Search user in existing records in database

2.1.1.18. Create a Comment
Insert a comment created by user into database

2.1.1.19. Create User
Inserting a new user into database

2.1.1.20. Actions on Post
Actions on post are like, comment and share and update it to database

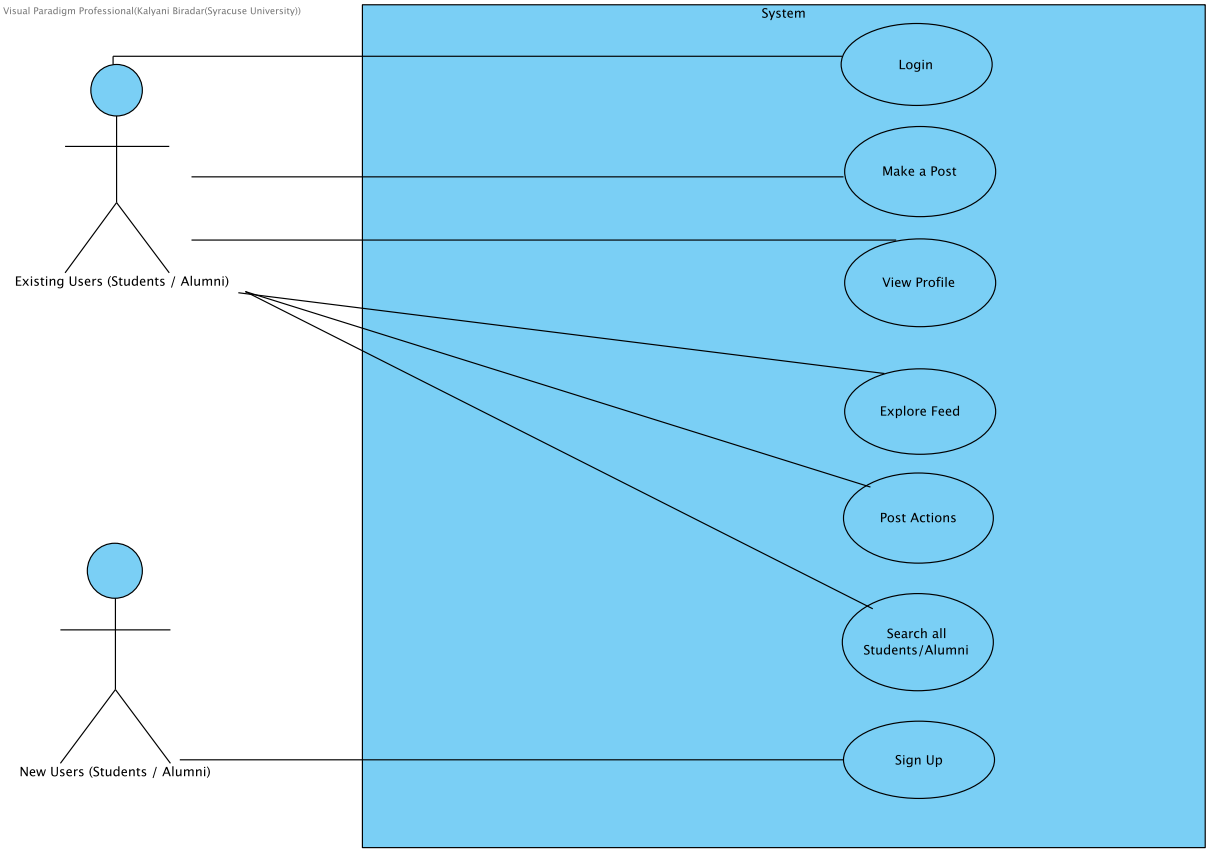
2.1.1.21. Create a Post
Create a post by user and passing on the details to database for insertion of records

2.1.1.22. User Creation
User Account creation while sign up,sending the user entered details to database

2.2. Product Functions

The following use case diagram illustrates the users of the Cuse Alumni Groves platform and how they are expected to interact with the system.

2.2.1. Cuse Alumni Groves Use Case Diagram



2.2.1.1. Existing Users (Students / Alumni)

ID: AC01

This actor represents registered users like current students or alumni. They access system features such as browsing, updating personal info, and accessing resources.

2.2.1.2. New Users (Students / Alumni)

ID: AC03

This actor represents new users : students or alumni, who are not yet registered or affiliated with the system.

2.2.1.3. Explore Feed

ID: UC03

Upon accessing the feed, the system displays a curated selection of content, such as posts, articles, or updates posted by the community.

2.2.1.3.1. Primary Actors

Existing Users (Students / Alumni)

2.2.1.3.2. Details

Level	N/A
Complexity	High
Use Case Status	N/A
Implementation Status	N/A
Preconditions	User needs to Login in , user must be connected to the internet.
Post-conditions	System should efficiently manages memory and data load to prevent lag or crashes, especially when loading media-rich content. Feed must maintain consistency in presentation across different devices , ensuring a seamless user experience whether on mobile or desktop platforms.
Author	N/A
Assumptions	N/A

2.2.1.3.3. Scenarios

Scenario

1. User needs to login.
2. Once logged in, the system retrieves the latest feed data, which may include posts, images, and updates from other stu dents or alumni.
3. As new content is posted by other users, the feed is dynamically updated to show the most recent content without the need for a manual refresh.

2.2.1.3.4. Requirements

Data Storage and Retrival

ID: UC03.REQ002

Efficient memory management/ prevention of lag. Data to be stored in suitable format in the database so that easy to retrieve specifically for images

Load the feed to display posts

ID: UC03.REQ001

The system retrieves posts and related content from the database or external sources to populate the feed.

ViewPort Display

ID: UC03.REQ003

The feed page should be visible clearly and responsive for all screen sizes.

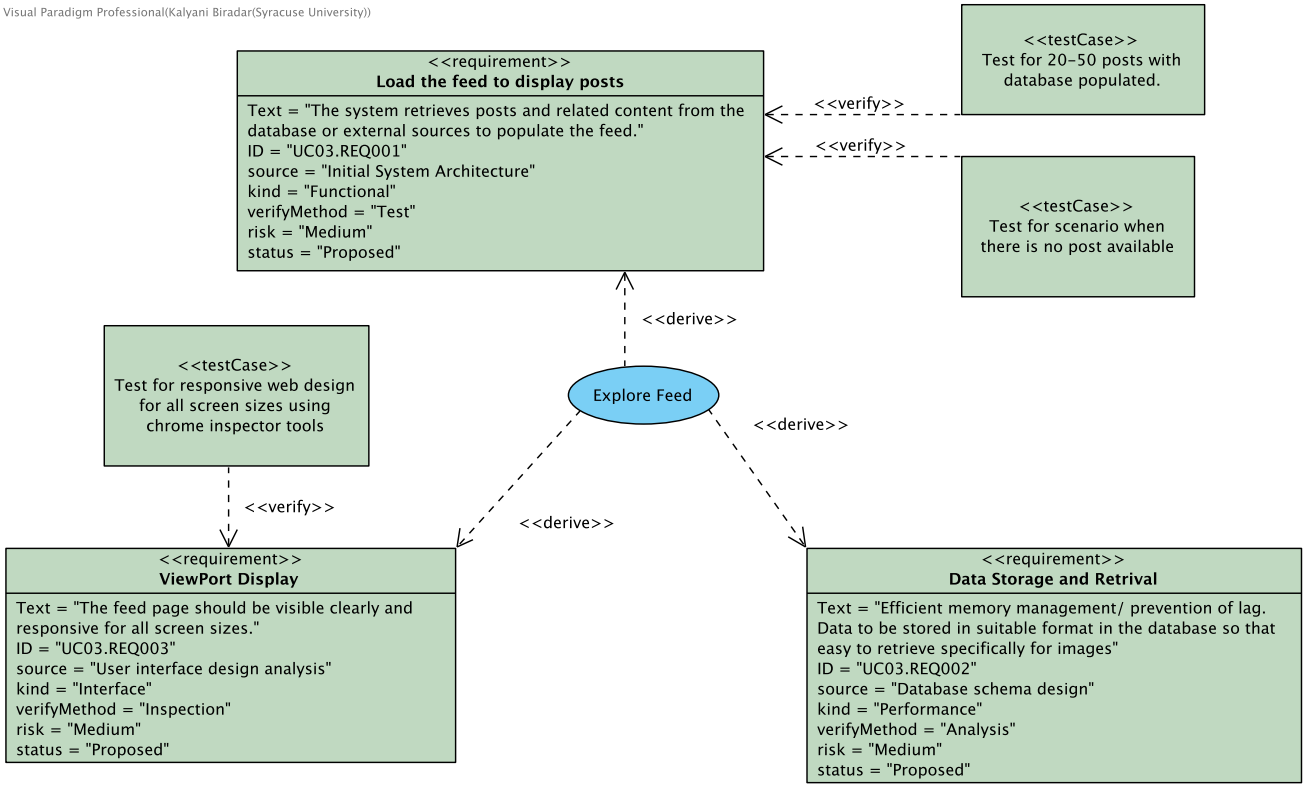
2.2.1.3.5. Relationships

Relationship	From	To
«d» unnamed	Explore Feed	Load the feed to display posts
«d» unnamed	Explore Feed	ViewPort Display
«d» unnamed	Explore Feed	Data Storage and Retrival

Relationship	From	To
unnamed	Existing Users (Students / Alumni	Explore Feed)

2.2.1.3.6. Sub Diagrams

Explore Feed Requirement Diagram



2.2.1.3.7. Reference Diagrams

Explore Feed Requirements Spec

Explore Feed Requirements Spec

2.2.1.4. Login

ID: UC01

Login action will be placed at login page. Used as the entry point to the system for users who have already created an account.

2.2.1.4.1. Primary Actors

Existing Users (Students / Alumni)

2.2.1.4.2. Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	User needs to be signed up / account created already using the Sign Up

Post-conditions	After the login is successful, the user will be landed or redirected to the explore page as stated on Explore Feed use case
Author	N/A
Assumptions	N/A

2.2.1.4.3. Scenarios

Scenario

1. User who have already created an account land on the login page.
2. User enters USER ID (same as email address) and password
3. USER ID is validated in the database. If user exists the password is matched for correctness.
4. If details are correct, the user will land on the feed page
5. Else user is alerted to with appropriate message
    - 5.1. User ID doesn't exist in database
    - 5.2. Password is incorrect.

2.2.1.4.4. Requirements

Fields Verification

ID: UC01.REQ001

The system verifies the user's credentials (username/email and password) against the stored data in the system's database.

Password Encryption

ID: UC01.REQ002

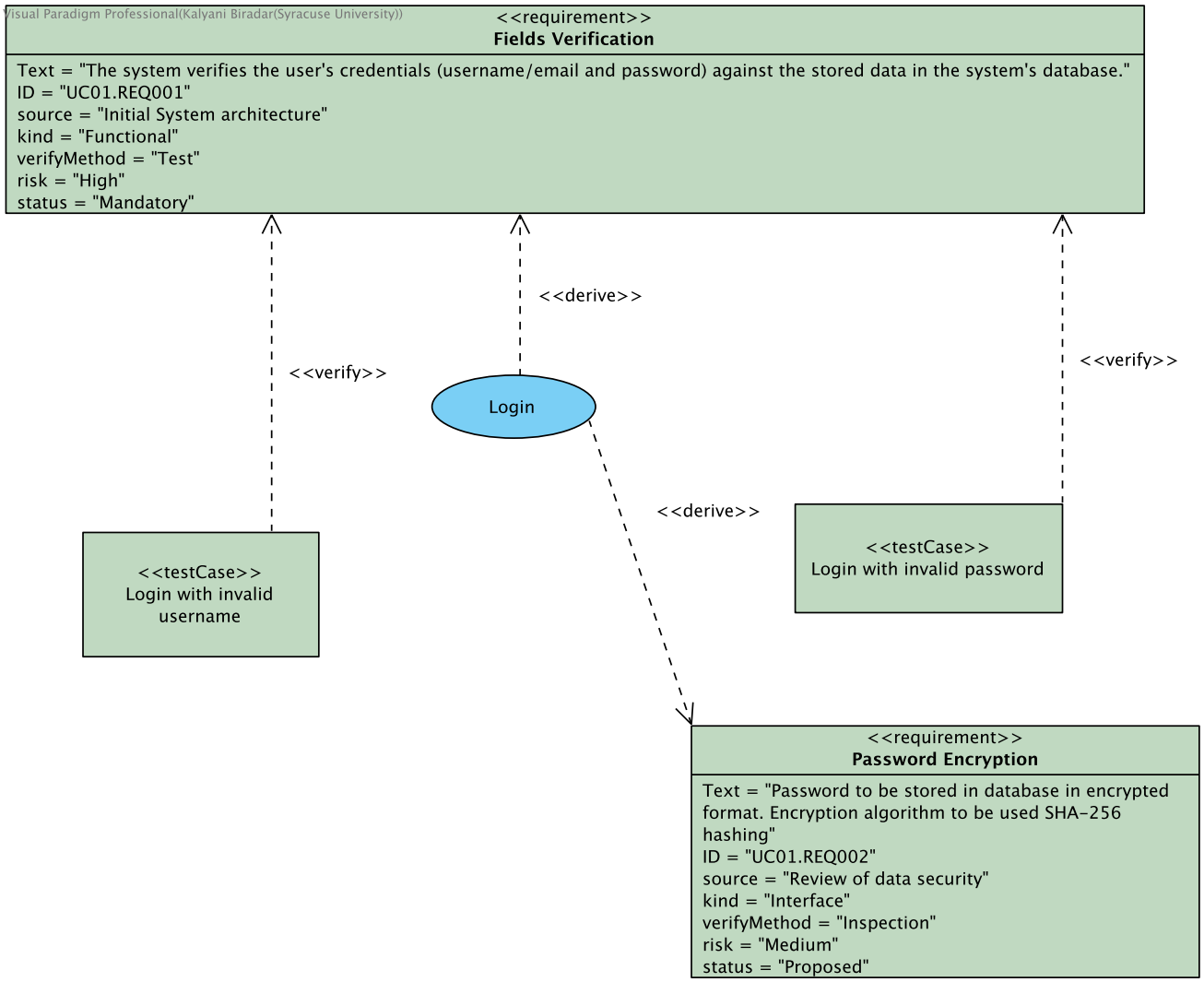
Password to be stored in database in encrypted format. Encryption algorithm to be used SHA-256 hashing

2.2.1.4.5. Relationships

Relationship	From	To
unnamed	Login	Fields Verification
unnamed	Login	Password Encryption
unnamed	Existing Users (Students / Alumni)	Login

2.2.1.4.6. Sub Diagrams

Login



2.2.1.4.7. Reference Diagrams

Login Requirements Spec

Login Requirements Spec

2.2.1.5. Make a Post

ID: UC02

Form or section to add a post into the system for other users to see.

2.2.1.5.1. Primary Actors

Existing Users (Students / Alumni)

2.2.1.5.2. Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	User needs to be logged in using Login

Post-conditions	On success the post will appear in feed section as described in Explore Feed use case
Author	N/A
Assumptions	N/A

2.2.1.5.3. Scenarios

Scenario

1. User who is logged into the system will be able to make post.
2. The post is text based with option to add POST TITLE and CONTENT
3. Once data is added, it is send to back-end to save in database.
4. If save is successful, the post will appear on feed page and other users will be able to see it.
5. Else, appropriate error message is displayed incase of save to database is unsuccessful.

2.2.1.5.4. Requirements

Add post content

ID: UC02.REQ001

User should be able to enter TITLE and CONTENT : Both text based

Image size validation

ID: UC02.REQ004

Having too large images can cause database usage to spike also load time while displaying can increase. Thus, the size of the image should be checked before accepting. max 20 MB

Image Uploading

ID: UC02.REQ003

The make a post form should accept images. with maximum of 2 images. This would have to make the post interactive

Validation on CONTENT text length

ID: UC02.REQ002

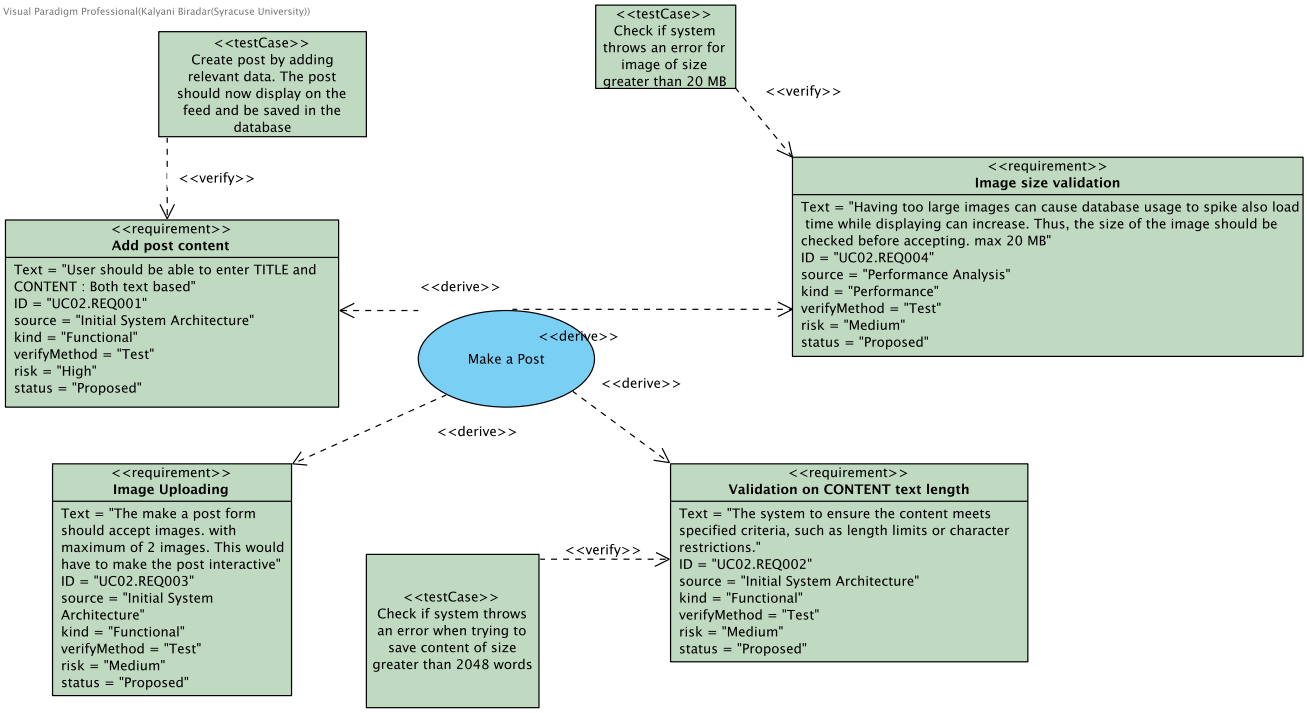
The system to ensure the content meets specified criteria, such as length limits or character restrictions.

2.2.1.5.5. Relationships

Relationship	From	To
unnamed	Make a Post	Add post content
unnamed	Make a Post	Image size validation
unnamed	Make a Post	Image Uploading
unnamed	Make a Post	Validation on CONTENT text length
unnamed	Existing Users (Students / Alumni)	Make a Post

2.2.1.5.6. Sub Diagrams

Make a Post Requirement Diagram



2.2.1.5.7. Reference Diagrams

Make a Post Requirements Spec

Make a Post Requirements Spec

2.2.1.6. Post Actions

ID: UC09

Post actions include like,share,comment
Displaying posts and providing options for users to like, share, and comment on posts. These options can be represented as buttons or icons associated with each post.

2.2.1.6.1. Primary Actors

Existing Users (Students / Alumni)

2.2.1.6.2. Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	User must logged in. Login The features for liking, commenting, and sharing must be operational and available to the user at the time of interaction.
Post-conditions	The user's interaction (like, comment, share) is recorded in the database and reflected in the UI. The post's metrics (like count, comment count, share count) are updated to reflect the new interaction.
Author	N/A
Assumptions	N/A

2.2.1.6.3. Scenarios

Scenario

1. User needs to be authenticated.
2. If the user wants to like a specific post,user clicks on the like button associated with a specific post.
3. If the user wants to comment on a specific post,user types their comment in the comment input field associated with that post.
4. If the user wants to share a specific post,the user clicks on the share button or link on a post.
5. The likes,comments are updated to the database.

2.2.1.6.4. Requirements

Like/Comment Support

ID: UC09.REQ005

The two actions available are adding like and comments. This functionality should be available seamlessly to the user on each post that is displayed on the feed

User Authenication

ID: UC09.REQ001

The user should be logged in the system before being able to make any actions on the posts

Word count limit on comment

ID: UC09.REQ006

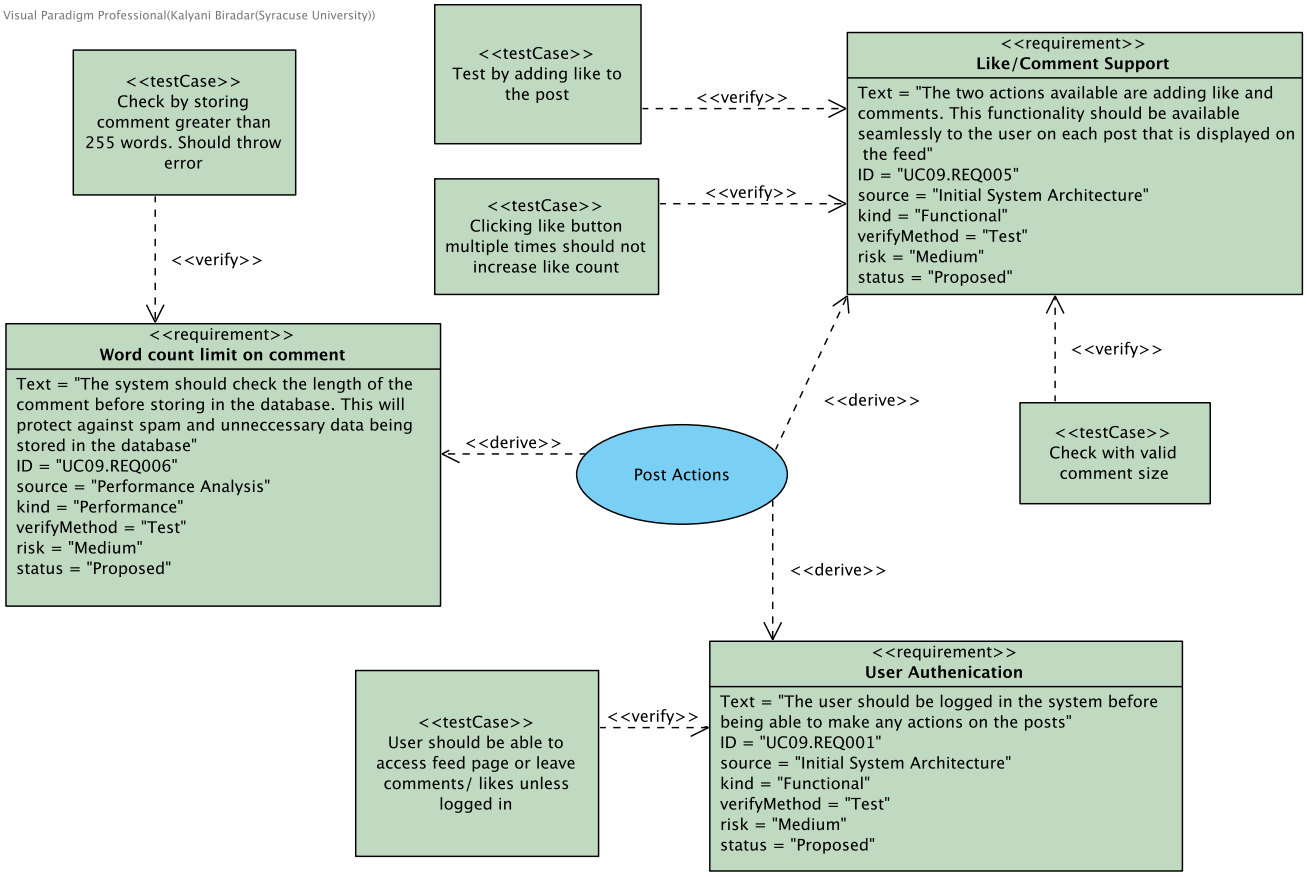
The system should check the length of the comment before storing in the database. This will protect against spam and unneccessary data being stored in the database

2.2.1.6.5. Relationships

Relationship	From	To
unnamed	Post Actions	Like/Comment Support
unnamed	Post Actions	User Authenication
unnamed	Post Actions	Word count limit on comment
unnamed	Post Actions	Existing Users (Students / Alumni)

2.2.1.6.6. Sub Diagrams

Post Actions Requirement Diagram



2.2.1.6.7. Reference Diagrams

Post Actions Requirements Spec

Post Actions Requirements Spec

2.2.1.7. Search all Students/Alumni

ID: UC04

The system provides a search functionality that allows users to search for students and alumni based on criteria such as name, graduation year, course, or other relevant attributes.

2.2.1.7.1. Primary Actors

Existing Users (Students / Alumni)

2.2.1.7.2. Details

Level	N/A
Complexity	N/A
Use Case Status	N/A
Implementation Status	N/A
Preconditions	user must been logged in Login
Post-conditions	Users should be able to access the profiles of other students/alumni from the search results to view detailed information about them View Profile
Author	N/A

Assumptions	N/A

2.2.1.7.3. Scenarios

Scenario

1. User needs to be authenticated.
2. Users can access the search feature within the platform, typically represented by a magnifying glass icon or a search bar.
3. The user can input a search term, which could be a name, an academic major, a graduation year, or any relevant keyword associated with the students/alumni they wish to find.
4. The user can browse through the search results and select a profile to view more detailed information.

2.2.1.7.4. Requirements

Search algorithm

ID: UC04.REQ002

Implement a search algorithm for searching student and alumni profiles,users can search for profiles. This may include fields such as name, graduation year, course, current employment status, etc.

Up to Date Search

ID: UC04.REQ001

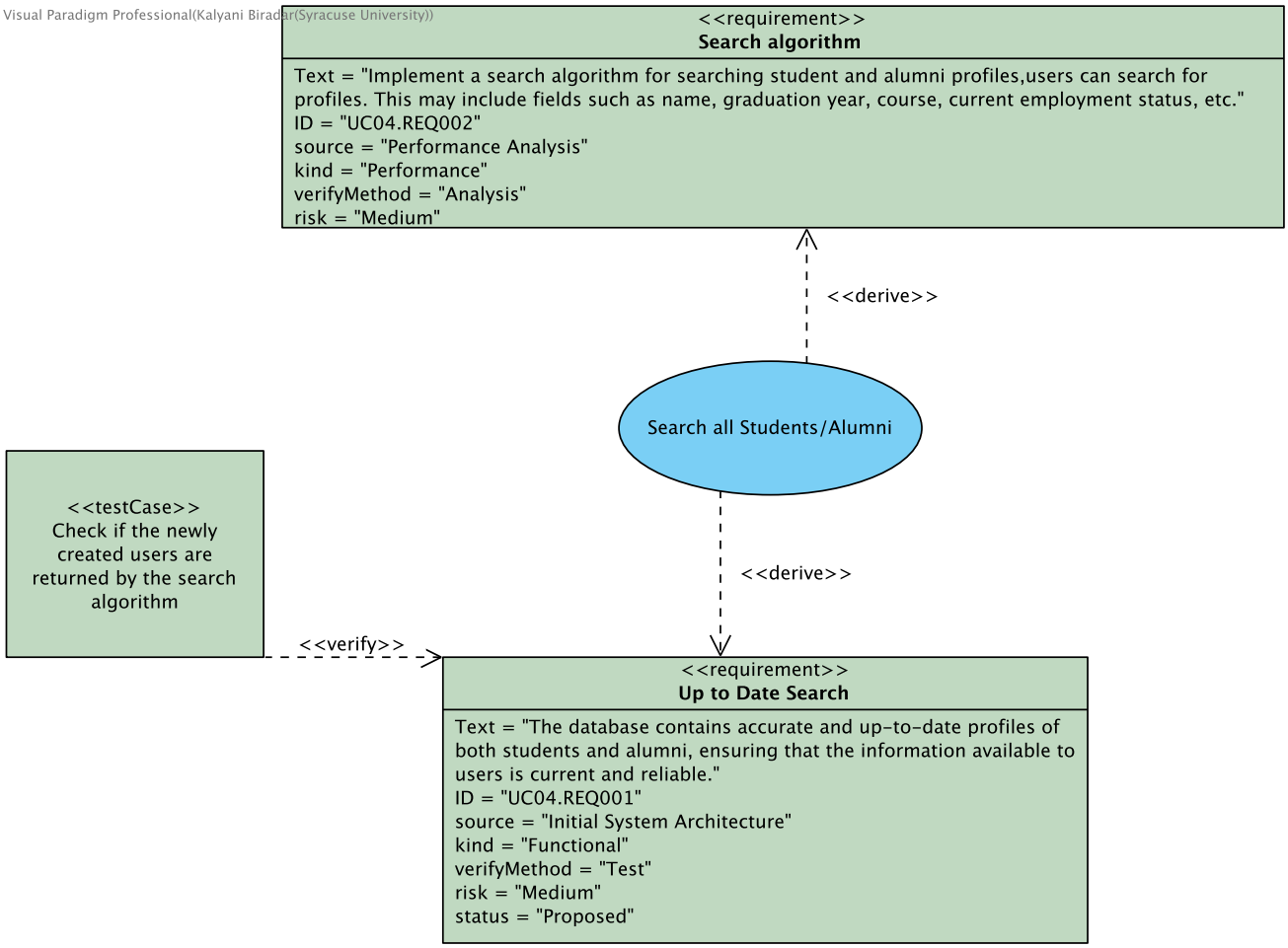
The database contains accurate and up-to-date profiles of both students and alumni, ensuring that the information available to users is current and reliable.

2.2.1.7.5. Relationships

Relationship	From	To
unnamed	Search all Students/Alumni	Search algorithm
unnamed	Search all Students/Alumni	Up to Date Search
unnamed	Existing Users (Students / Alumni)	Search all Students/Alumni

2.2.1.7.6. Sub Diagrams

Search all Students/Alumni Requirement Diagram



2.2.1.7.7. Reference Diagrams

Search all Students/Alumni Requirements Spec

Search all Students/Alumni Requirements Spec

2.2.1.8. Sign Up

ID: UC07

The Sign Up page allows new users to create an account and join the system.

2.2.1.8.1. Primary Actors

New Users (Students / Alumni)

2.2.1.8.2. Details

Level	User
Complexity	Medium
Use Case Status	Base
Implementation Status	Scheduled
Preconditions	Internet connection and link to the portal.
Post-conditions	The user may be redirected to a welcome page or their newly created account dashboard. View Profile. Has access to Login again

Author	N/A
Assumptions	N/A

2.2.1.8.3. Scenarios

Sign Up

1. In this Scenario user navigates to the Sign Up page by clicking on the "Sign Up" link or button on the system's homepage.
2. User fills out the registration form, providing required information such as name, email address, and password.
3. The system validates the user's input, checking for any errors or missing information.
4. If the provided information is valid, the system processes the registration and creates a new user account.

Sign Up Error

1. In this Scenario user navigates to the Sign Up page by clicking on the "Sign Up" link or button on the system's homepage.
2. User fills out the registration form, providing required information such as name, email address, and password.
3. The system validates the user's input, checking for any errors or missing information.
4. If there are errors, the system prompts the user to correct them before resubmitting.

2.2.1.8.4. Requirements

Field Validation

ID: UC07.REQ002

Upon registration, the system verifies that the provided email address belongs to the Syracuse University domain (e.g., @syr.edu).

User creation

ID: UC07.REQ001

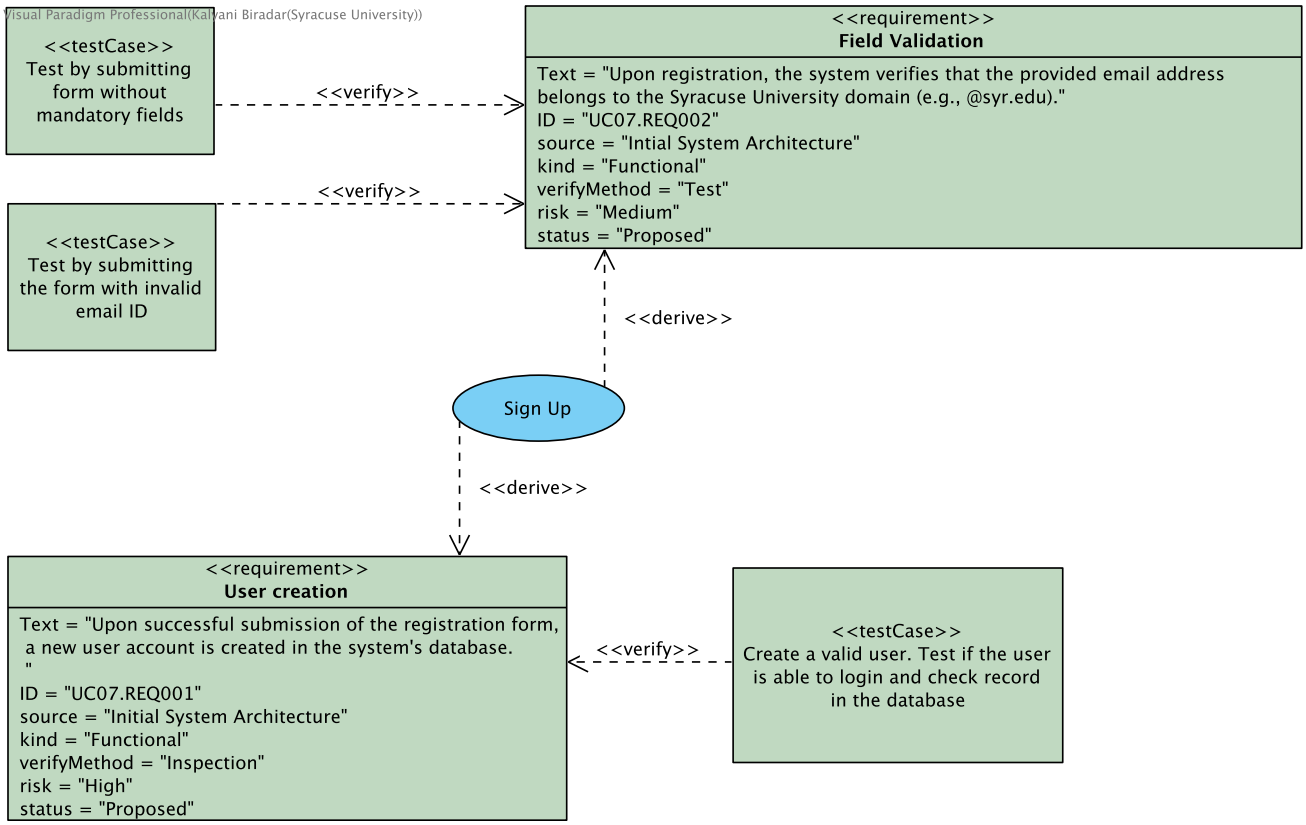
Upon successful submission of the registration form, a new user account is created in the system's database.

2.2.1.8.5. Relationships

Relationship	From	To
unnamed	Sign Up	Field Validation
unnamed	Sign Up	User creation
unnamed	New Users (Students / Alumni)	Sign Up

2.2.1.8.6. Sub Diagrams

Sign Up Requirement Diagram



2.2.1.8.7. Reference Diagrams

Sign Up Requirements Spec

Sign Up Requirements Spec

2.2.1.9. View Profile

ID: UC05

"View profile" allows existing users (students/alumni) to access and review their personal information and account details within the system for verification and updates.

2.2.1.9.1. Primary Actors

Existing Users (Students / Alumni)

2.2.1.9.2. Details

Level	User
Complexity	Medium
Use Case Status	Base
Implementation Status	Scheduled
Preconditions	The user must be able to successfully Login the system using their credentials. The system should provide a search functionality that allows users to find other users' profiles. Search all Students/Alumni
Post-conditions	If the user has permission to edit the profile, they can edit the displayed information. Edit the profile and Profile Information Display

Author	N/A
Assumptions	N/A

2.2.1.9.3. Scenarios

User accesses their own profile

1. In this scenario user logs into the system using their credentials.
2. They locate and select the "View Profile" option.
3. The system fetches and displays the user's profile information.
4. User checks the displayed information for accuracy.
5. They may choose to edit their profile or navigate to other features within the system.

User access someone else's profile

1. In this scenario, the user logs into the system using their credentials.
2. They search and select the profile of another user.
3. The system displays the profile information of the requested user.
4. The user may browse the displayed information but will not be able to edit it.

2.2.1.9.4. Requirements

Edit the profile

ID: UC05.REQ002

This feature enables users to edit their personal information, including name, email, and other relevant details, within the system.

Performance

ID: UC05.REQ004

Profile data should be fetched efficiently from the database will minimum latency

Post and Activity History

ID: UC05.REQ005

showing users their history will help to improve the overall user experience on the platform

Profile Information Display

ID: UC05.REQ001

This feature allows users to view their own profile information or the profile information of other users within the system, including their display name, course, graduation year, and email ,for alumni current workplace.

User Authentication

ID: UC05.REQ003

User should be logged into the system to be able to view and edit this page

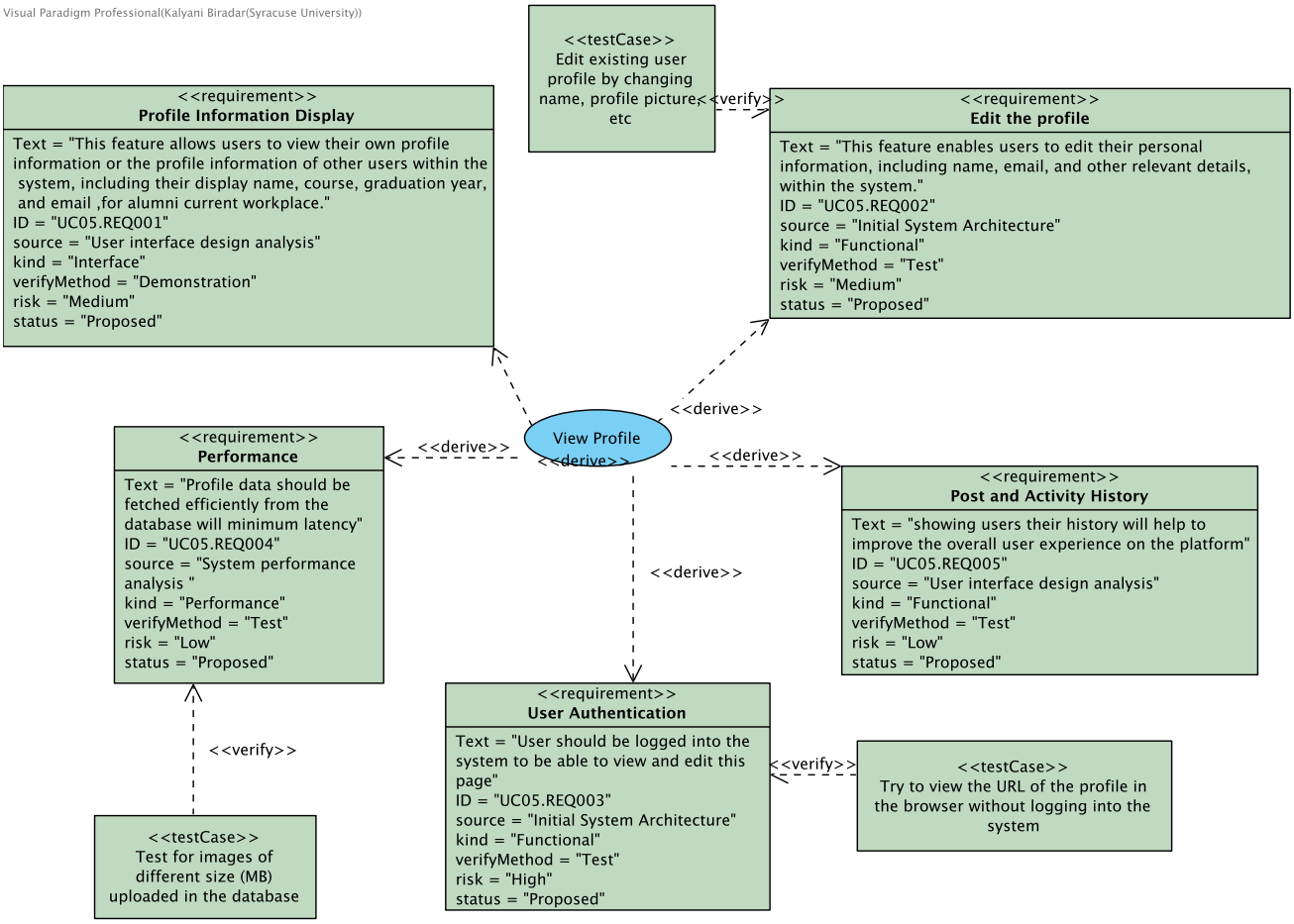
2.2.1.9.5. Relationships

Relationship	From	To
unnamed	View Profile	Profile Information Display
unnamed	View Profile	Edit the profile

Relationship	From	To
unnamed	View Profile	Performance
unnamed	View Profile	User Authentication
unnamed	View Profile	Post and Activity History
unnamed	Existing Users (Students / Alumni)	View Profile

2.2.1.9.6. Sub Diagrams

View Profile Requirement Diagram



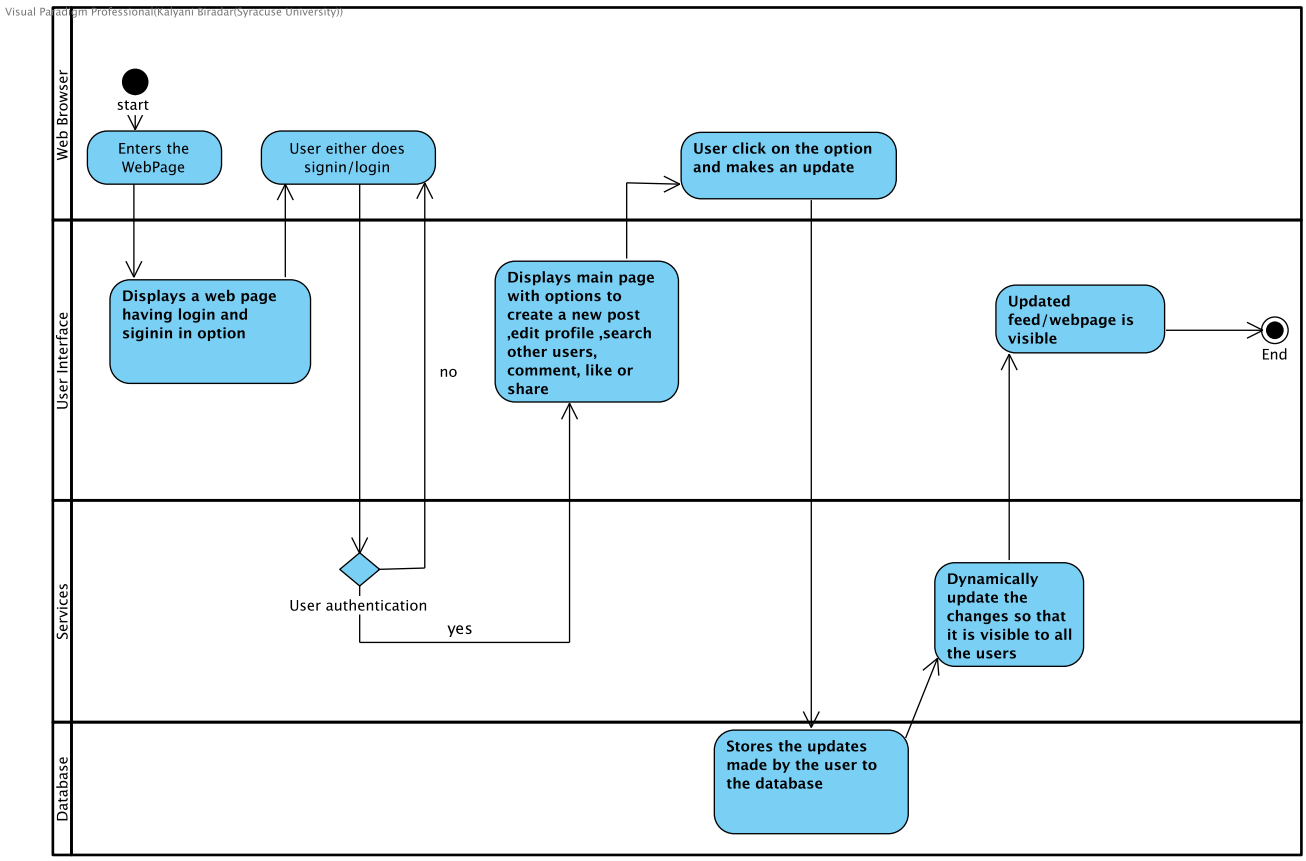
2.2.1.9.7. Reference Diagrams

View Profile Requirements Spec

View Profile Requirements Spec

2.3. Product Behaviors

2.3.1. Analysis Model Activity Diagram



This is the end or final stage of the activity diagram.

2.3.1.1. Enters the WebPage

User can enter the web page using the web browser.

2.3.1.2. Displays a web page having login and siginin in option

The use Interface (UI) displays a dialog box having both login and siginin options.This step happens after user enters our webpage

2.3.1.3. User either does signin/login

After the dialog box is displayed , user can choose either, login in case of a new user or signin if he/she is an existing user to enter the website.

2.3.1.4. User authentication

User authentication step involves checking if the particular user is authorized to enter the website or not.This block has two outputs, if the user is not authorized then he/she is redirected to the login/signin page where they are asked to give correct details else they can go to next step.

2.3.1.5. Displays main page with options to create a new post ,edit profile ,search other users, comment, like or share

After the authentication of user ,user can access the main page of the website where he is provided with options to create new post ,edit profile ,search other users ,comment/like or share a post.

2.3.1.6. Dynamically update the changes so that it is visible to all the users

along with making the updates to the database the changes made by the user are dynamically updated so that they are visible to the other users of the website as well.

2.3.1.7. Updated feed/webpage is visible

The feed /webpage with all the changes made is now visible to the users.

2.3.1.8. User click on the option and makes an update

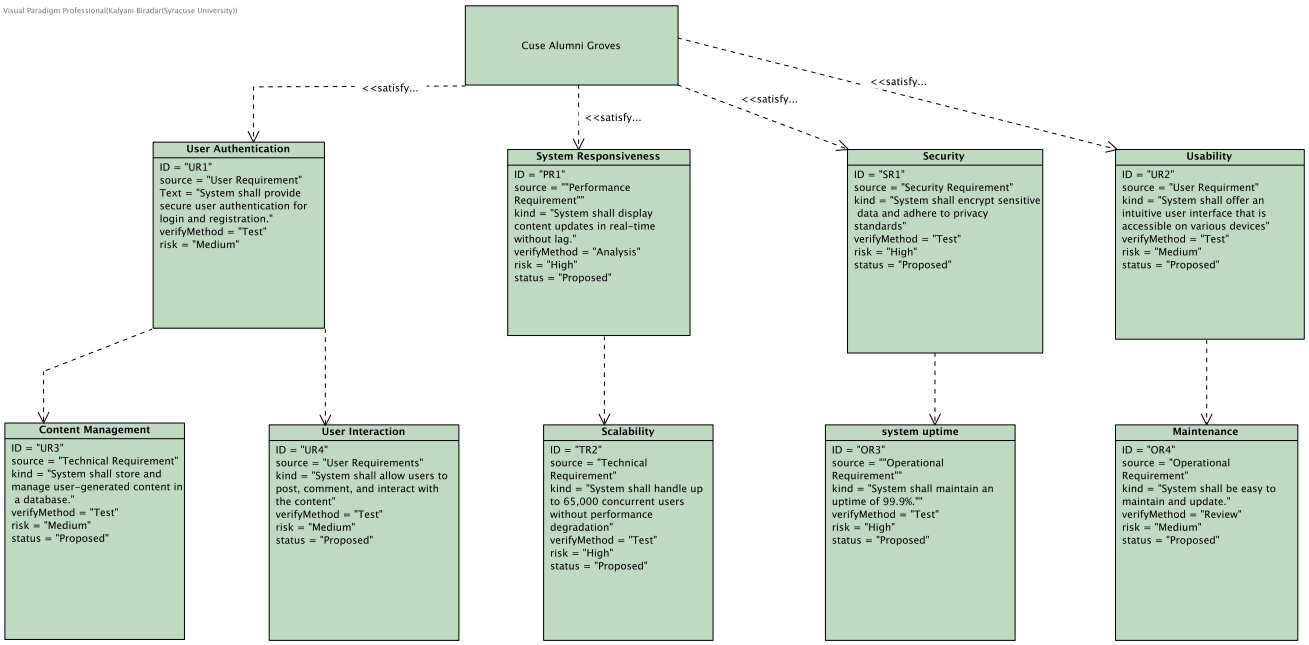
The user can click on any of the options provided like like,comment or share etc.

2.3.1.9. Stores the updates made by the user to the database

When the user makes the changes , those changes are saved to the database.

2.4. Product Requirements

2.4.1. System Requirement Diagram



2.4.1.1. Cuse Alumni Groves

Cuse Alumni Groves is a vibrant networking hub that connects students with alumni, promoting meaningful dialogue and stronger community ties.

2.4.1.2. User Interaction

ID: UR4

The 'User Interaction' requirement (ID: UR4) specifies that the Cuse platform must support dynamic and engaging communication among users, enabling features such as messaging, commenting, and sharing. This requirement, currently in the proposed stage, is vital for fostering a vibrant community atmosphere and is tagged with a medium risk level. Its effectiveness will be assessed through user feedback and interaction metrics.

2.4.1.3. Content Management

ID: UR3

The 'Content Management' functional requirement (ID: UR3) details that the Cuse system must efficiently store and manage user-generated content within a database. It is pivotal for content accessibility and integrity, classified with a medium risk, and is currently in the proposed phase, with testing planned for its verification.

2.4.1.4. User Authentication

ID: UR1

The 'User Authentication' functional requirement (ID: UR1) for the Cuse platform specifies that the system must provide a secure method for user login and registration. This requirement is crucial for maintaining user trust and safeguarding personal data. It is currently proposed, carries a medium risk, and is set to be verified through testing.

2.4.1.5. Usability

ID: UR2

The 'Usability' requirement (ID: UR2) emphasizes that the Cuse platform should provide an intuitive and accessible user interface across various devices. It's essential for ensuring that all users, regardless of technical proficiency, can navigate and utilize the platform with ease. This requirement is currently proposed, carries a medium risk level, and is slated for validation through usability testing.

2.4.1.6. Maintenance

ID: OR4

The 'Maintenance' requirement (ID: OR4) stipulates that the Cuse platform must be designed for ease of updates and repairs, ensuring minimal downtime and sustained performance. Classified as a medium risk, this proposed requirement is essential for the platform's longevity and efficiency. It will be evaluated through the system's adaptability to changes and the speed of issue resolution.

2.4.1.7. Security

ID: SR1

The 'Security' requirement (ID: SR1) for Cuse Alumni Groves is a critical functional mandate that requires the system to encrypt sensitive user data and conform to established privacy standards. Its implementation is pivotal for the platform's credibility and user trust, carrying a high-risk designation due to the potential consequences of security breaches. This proposed requirement will be validated through targeted testing procedures.

2.4.1.8. Scalability

ID: TR2

The 'Scalability' requirement (ID: TR2) mandates that the Cuse platform must be capable of handling an increasing number of users and data without compromising performance. This high-priority requirement, still in the proposal stage, is crucial for the platform's long-term growth and sustainability. It carries a high risk and will be evaluated through load testing to ensure the system's ability to scale effectively.

2.4.1.9. System Responsiveness

ID: PR1

The 'System Responsiveness' performance requirement (ID: PR1) for Cuse Alumni Groves dictates that the system must display content updates in real-time, without lag. This high-priority requirement is key to ensuring a seamless and engaging user experience. Its proposed status indicates planning is underway, and it will be verified through analytical methods, reflecting its high-risk classification due to its impact on user satisfaction.

2.4.1.10. system uptime

ID: OR3

The 'System Uptime' requirement (ID: OR3) demands that the Cuse platform maintains a consistent and reliable operational status, targeting a high availability rate. This performance requirement, currently proposed, is critical to ensure user satisfaction and trust in the platform's reliability. It is classified as high risk and will be measured through continuous monitoring of the system's operational performance.