

CS335 Software Engineering & Software Process Project Report

Composed by
Adam Richard O'Connor

Edited by
David Ifeanyichukwu Nwafor
Levi Kagimbi Ngugi

Contents

1 Introduction	
1.1 Preface	3
1.2 Contributors	3
2 User Stories	
2.1 Overview	3
2.2 List of User Stories	4
3 UML Diagrams	
3.1 Overview	5
3.2 List of Use Case Diagrams	5
3.3 List of Sequence Diagrams	6-8
3.4 Class diagram	9
3.5 Architectural diagram	9
4 User Interface	
4.1 Overview	10
4.2 List of User Interface Mockups	10-12
5 System Tests	
5.1 Overview	12
5.2 List of System tests	12-14

Part 1

Introduction

1.1 Preface:

Our project is centred around the theme of social activities. We decided to develop a software system that revolves around a community centre, the services they provide and detailed information about those services.

1.2 Contributors:

Below is a list of our projects participants and how each one of us contributed:

Adam Richard O'Connor:

Project brainstorming.
Composition of project report.
Composition of user stories and UML diagrams.
Composition of project slides.
Revision of user interfaces.
Revision of system tests.

David Ifeanyichukwu Nwafor:

Project brainstorming.
Composition of user interfaces through use of Wireframes.
Composition of system tests.
Revision of user stories and UML diagrams.

Levi Kagimbi Ngugi

Project brainstorming.
Revision of user stories and UML diagrams.
Composition of user interfaces through use of Wireframes.
Revision of system tests.

Part 2

User Stories

2.1 Overview

This section will cover ten user stories. These scenarios are a description of how a system may be used for a particular task and help give us a real-life example of how the system can be used.

2.2 List of User Stories

- (i) Dylan is a college student who has recently taken up an interest in becoming active. However he has a limited knowledge of sports in general. He would like to find a website that provides access to a wide variety of sports clubs so that he can read more about them.
- (ii) John is an aspiring soccer player, however he has no friends or family who share his interest in the sport. He wants to be able to interact with others who share his passion, preferably via creating an online account and joining a local swimming club.
- (iii) Jess likes to go for long runs. She has grown bored of running the same routes day after day. She would like to read about new and interesting routes in her region via an online discussion board.
- (iv) Paula is a fitness coach. She leads a very active lifestyle, however she feels as though she sometimes lacks motivation. She would like to find a website that helps her organise her time so that she can join a club and bring some routine to her life.
- (v) Ivor is an old man who has recently become very concerned about his health. He wishes to take up a local sport that is not too strenuous, like yoga or hiking. He would like to use a website that allows him to explore his options in this regard.
- (vi) Leo is a professional soccer player who would like to get more people involved in the sport. He wishes to find a place online to volunteer and help his community discover more about soccer.
- (vii) Sarah is an aspiring athlete. She has a handful of friends that share her interest and who attend the local community centre. She wishes to view the member list of the community centre's athletic club and find out which of her friends attend.
- (viii) William is a middle-aged man who recently decided to become more active. He wants to join a gym, but has limited knowledge of the equipment and their associated exercises. He would like to access a variety of gym plans and workouts online.
- (ix) Fred enjoys playing basketball, but does not have access to any good-quality courts to play in. He wants to find a way to easily contact his local community centre so that he can gain access to its basketball court.
- (x) Victor is a businessman who sells high-quality sports equipment for a living. He wishes to find a local sports club so that he can sell his products online and increase his profits and exposure.

Part 3

UML Diagrams

3.1 Overview

This section will cover all four diagrams, including Use Case, Sequence, Class and Architectural diagrams. These diagrams are useful to us as they allow us to visualise, contextualise and document the system as a whole.

3.2 List of Use Case Diagrams

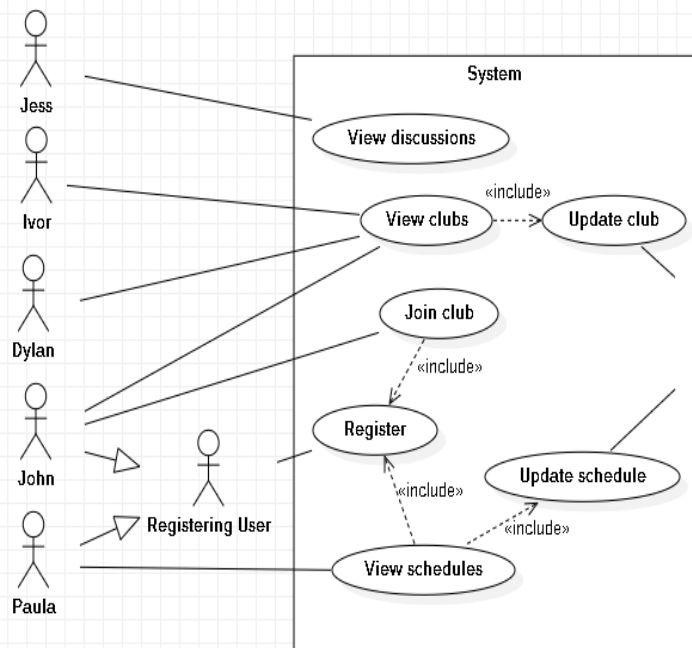


Figure 3.1: Use case diagram for user stories 1 through 5

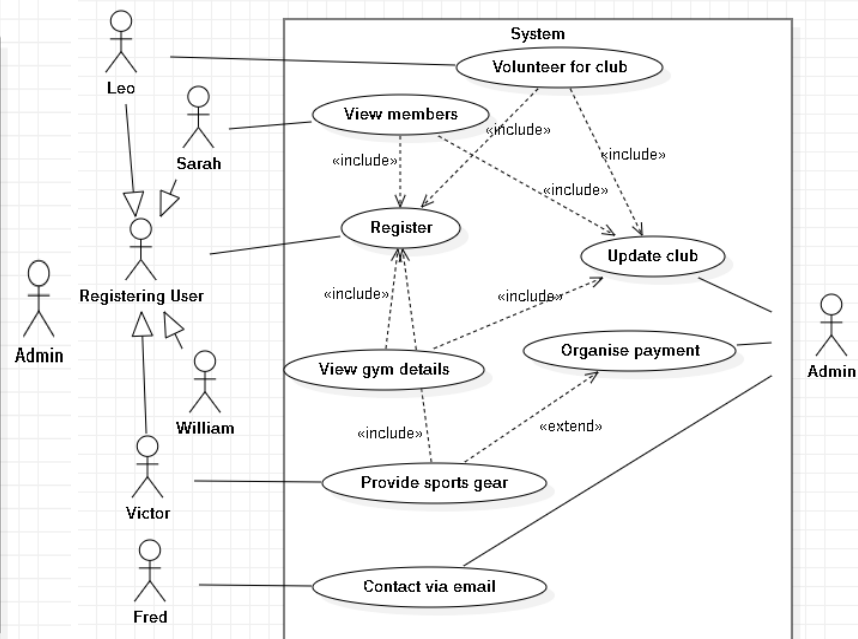


Figure 3.2: Use case diagram for user stories 6 through 10

3.3 List of Sequence Diagrams

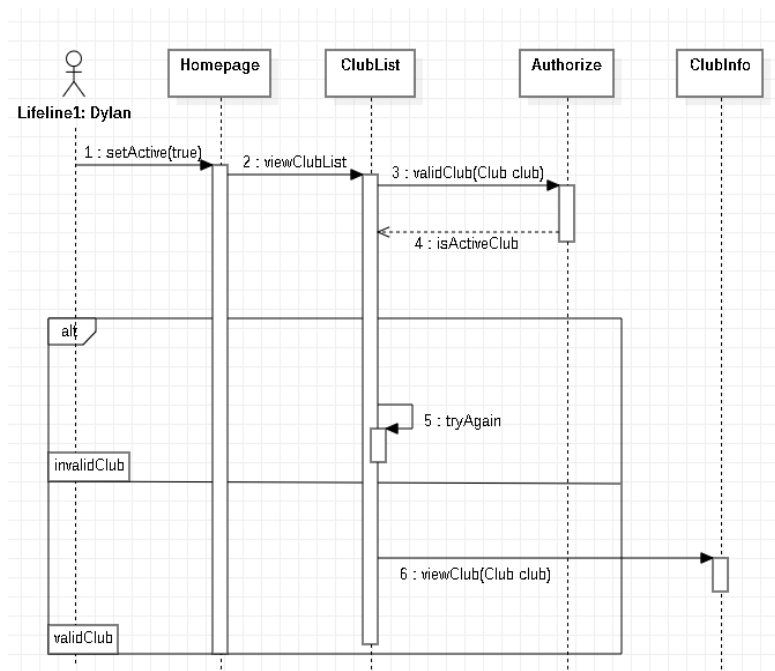


Figure 3.3: Sequence diagram for Dylan

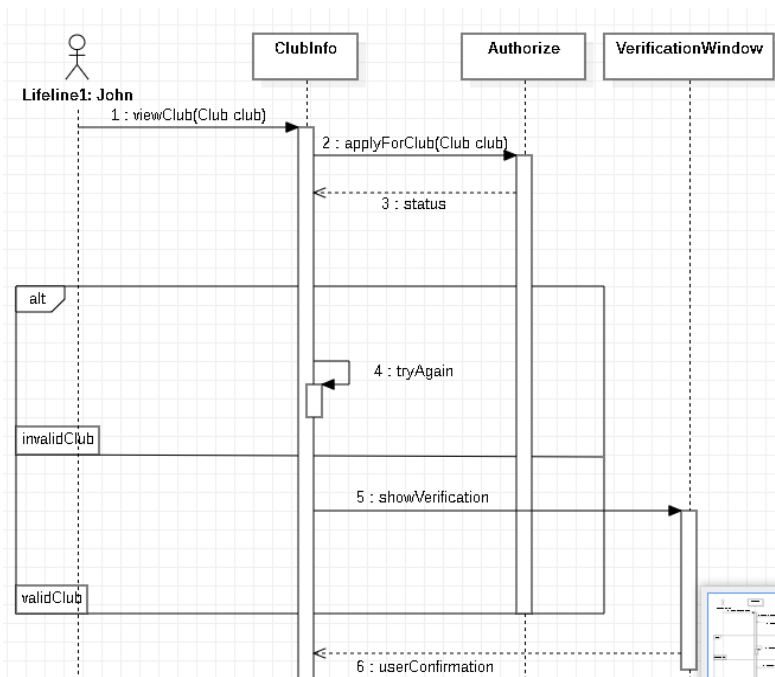


Figure 3.4: Sequence diagram for John

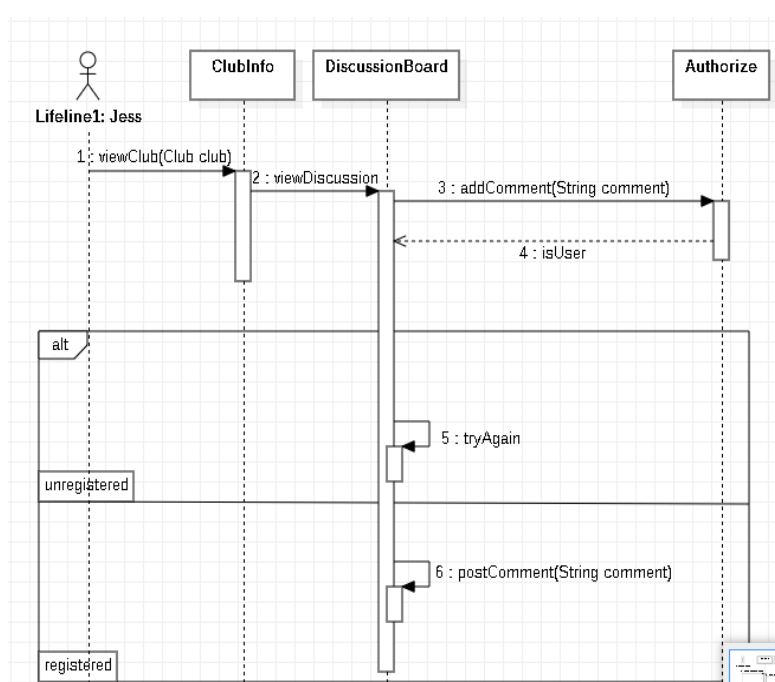


Figure 3.5: Sequence diagram for Jess

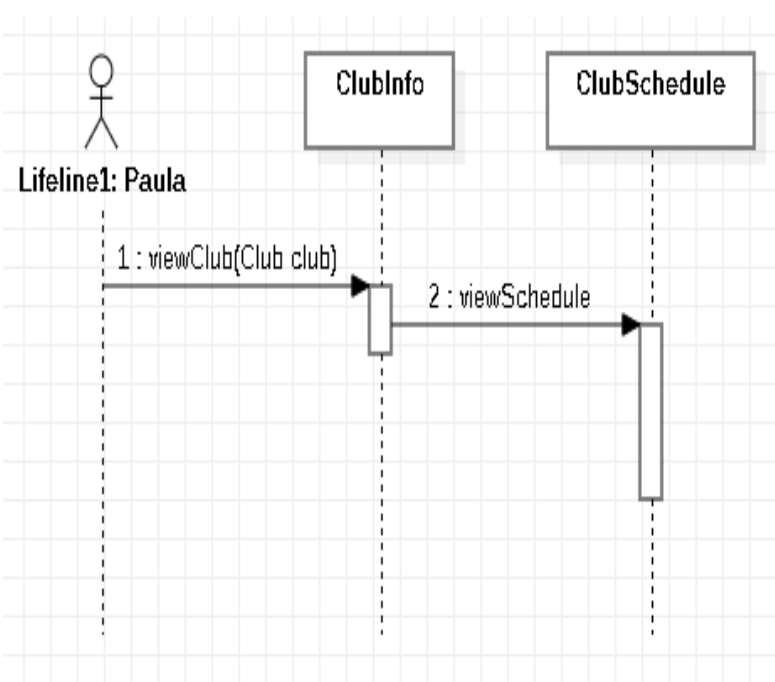


Figure 3.6: Sequence diagram for Paula

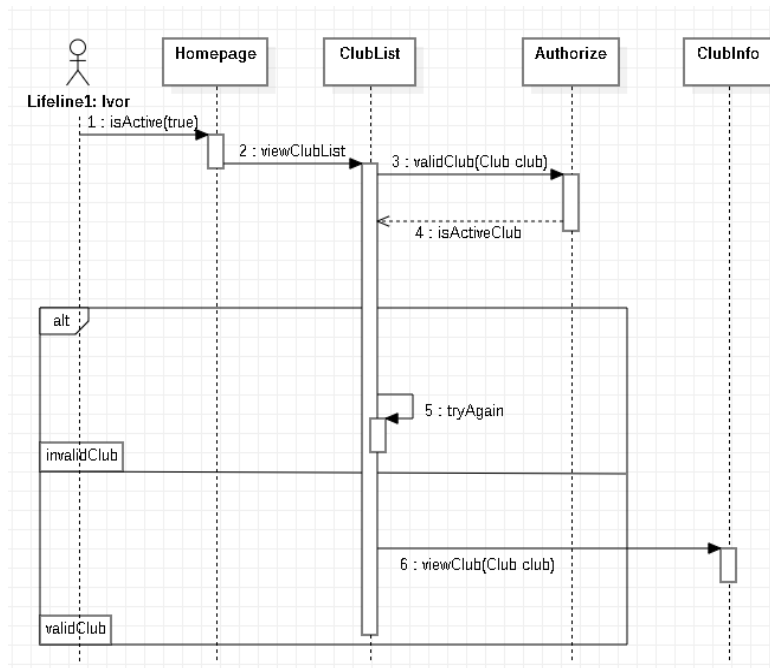


Figure 3.7: Sequence diagram for Ivor

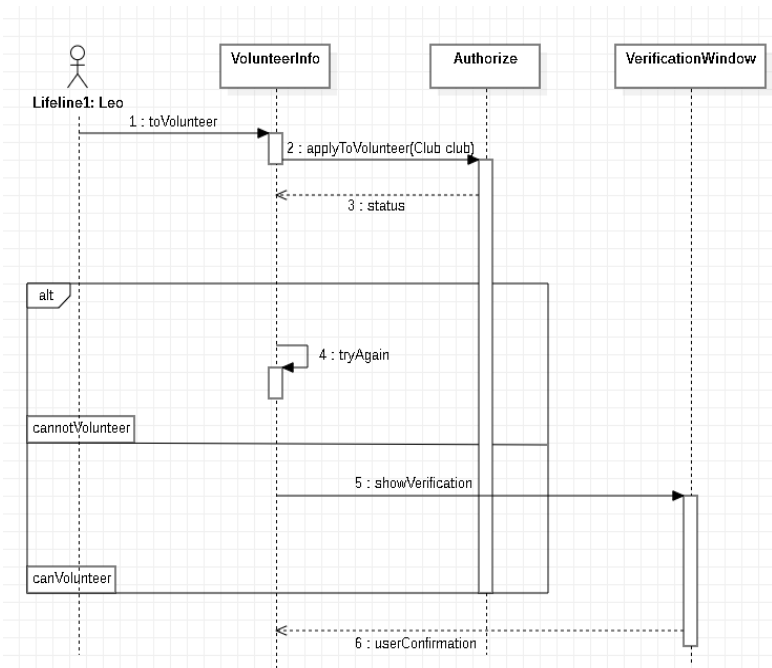


Figure 3.8: Sequence diagram for Leo

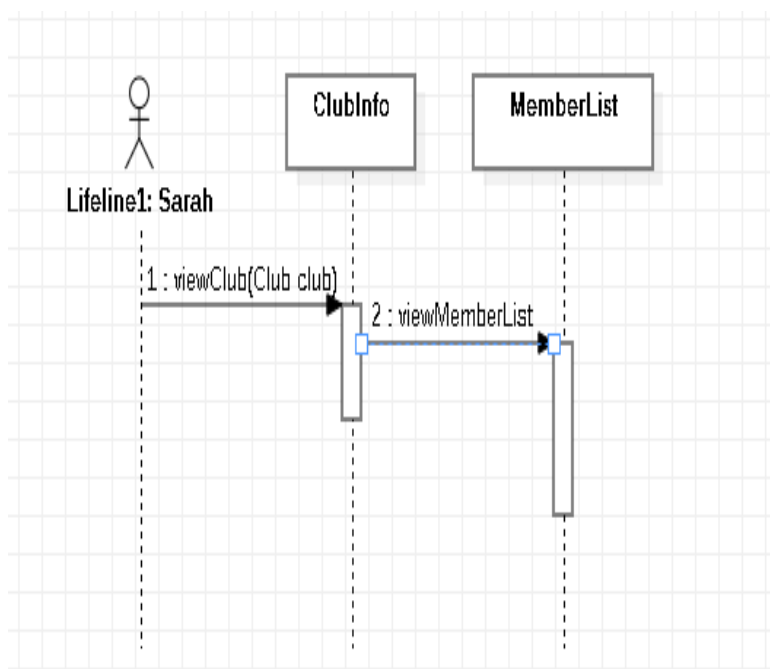


Figure 3.9: Sequence diagram for Sarah

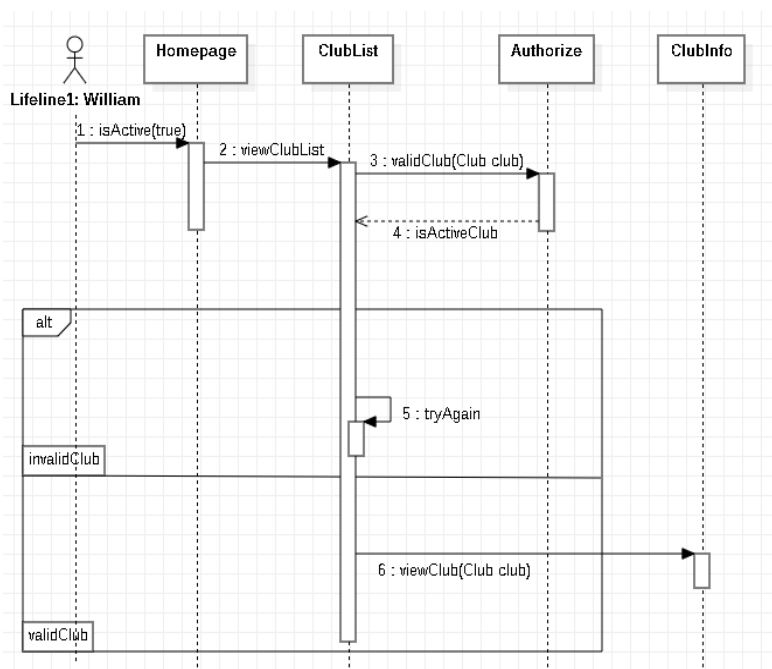


Figure 3.10: Sequence diagram for William

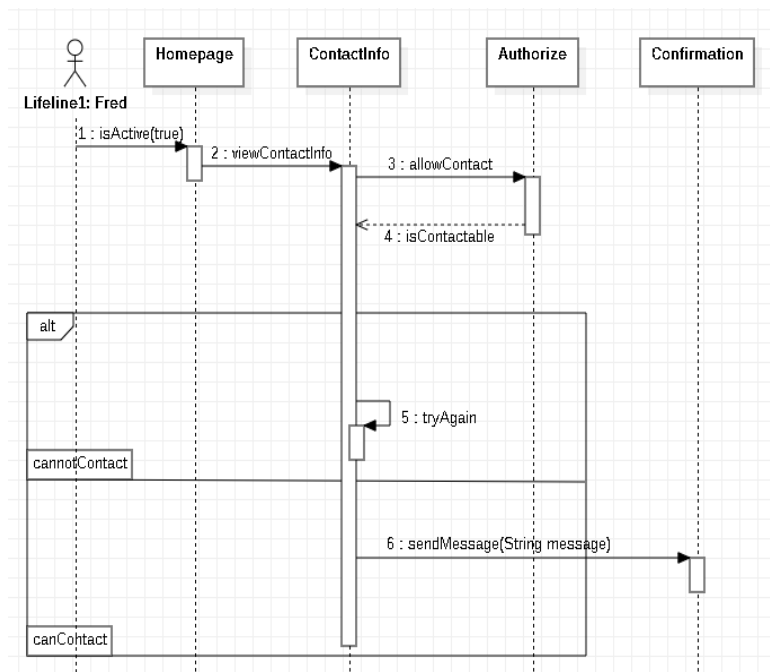


Figure 3.11: Sequence diagram for Fred

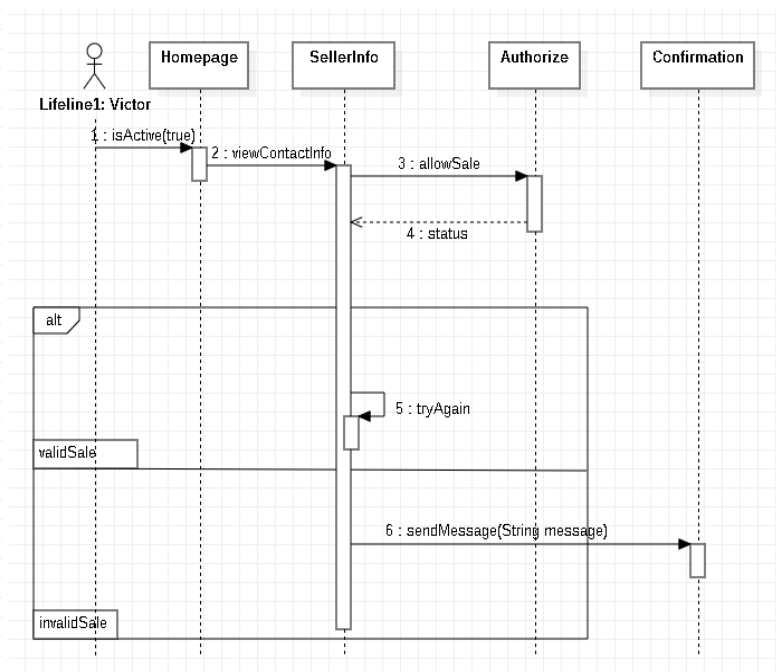


Figure 3.12: Sequence diagram for Victor

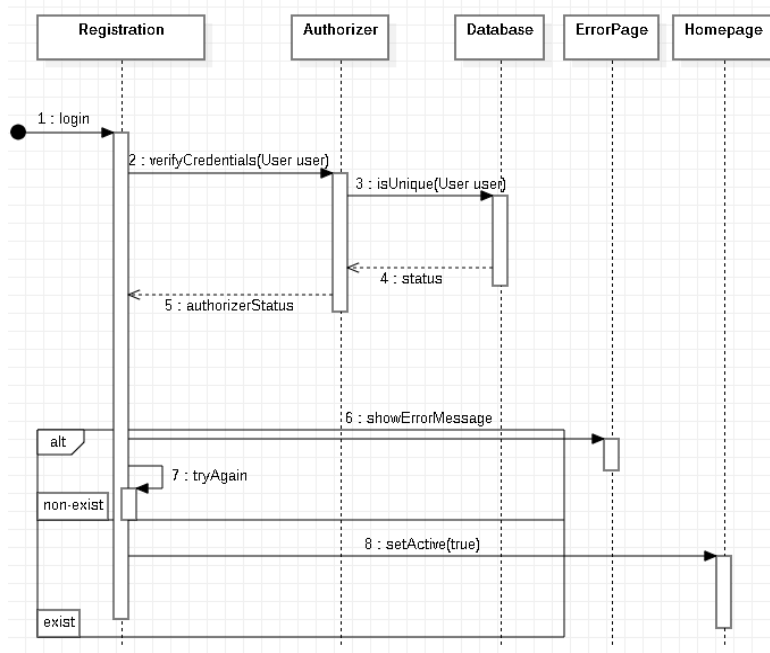


Figure 3.13: Sequence diagram for a registering user

3.4 Class Diagram

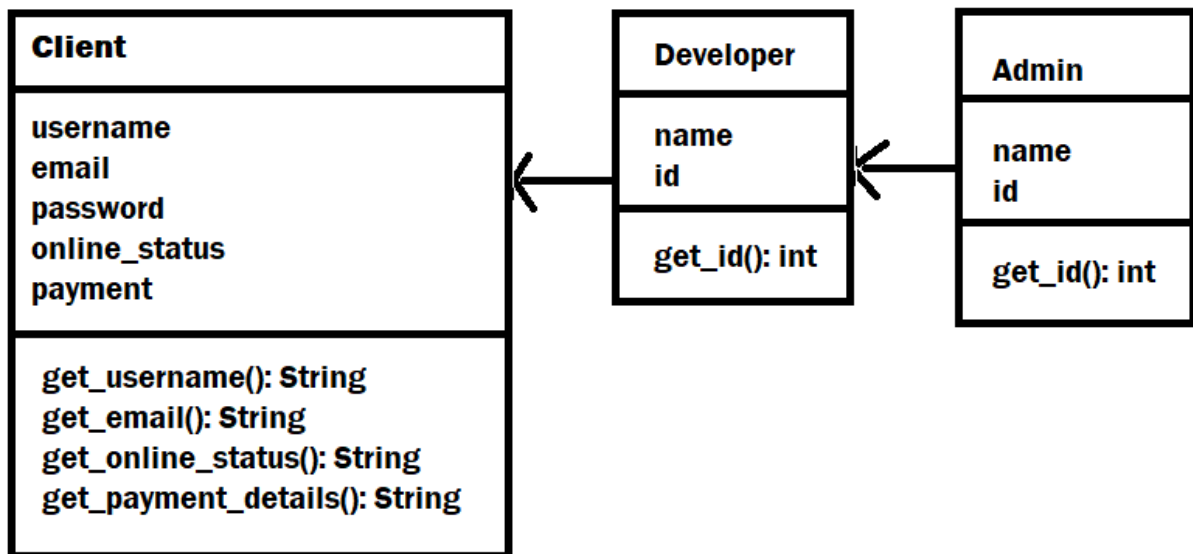


Figure 3.14: Class Diagram

3.5 Architectural Diagram

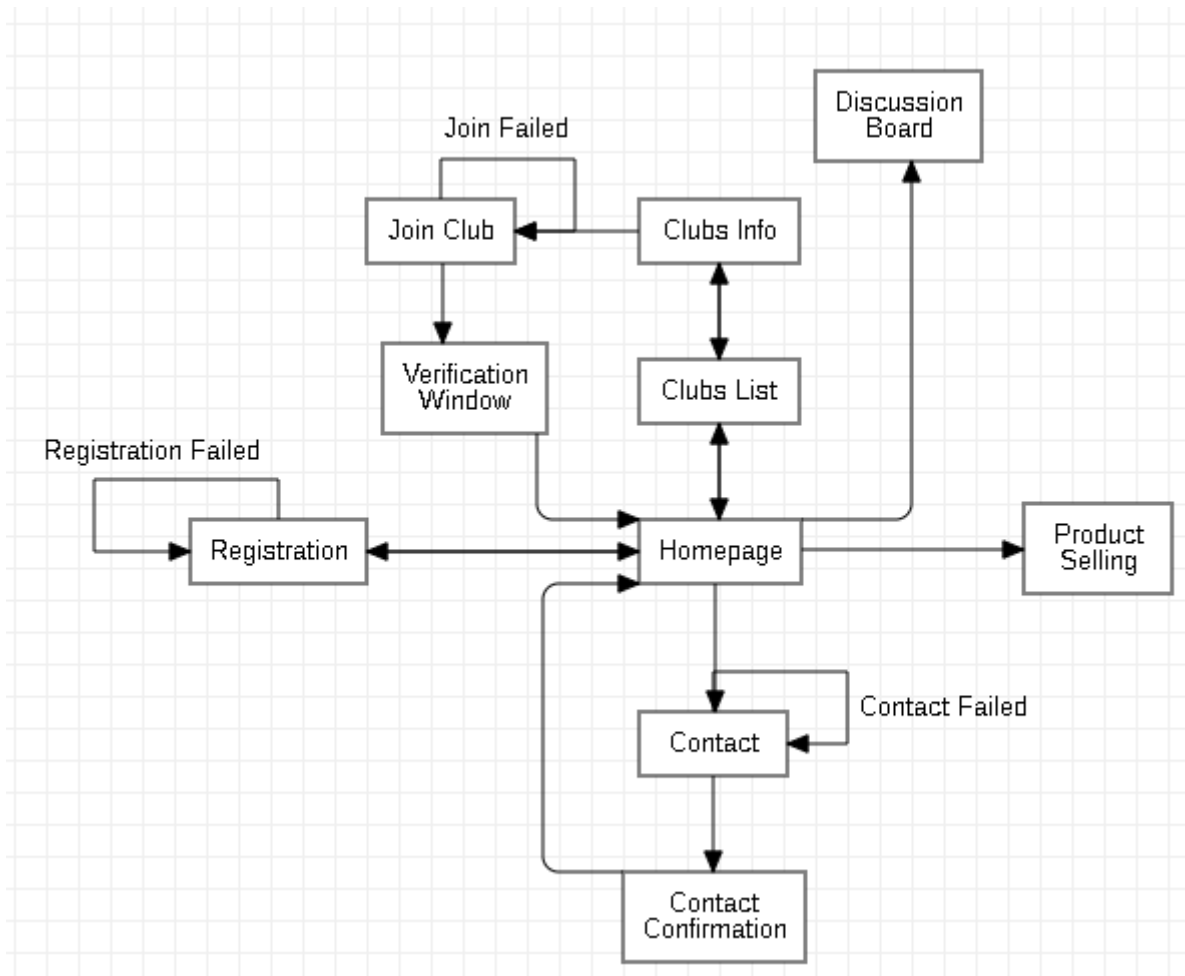


Figure 3.15: Sequence diagram for a registering user

Part 4

User Interface

4.1 Overview

This section showcases the user interfaces that were created using Wireframes. The UIs take the previous diagrams and user stories into account.

4.2 List of User Interface Mockups



Figure 4.1 Splash Screen



Figure 4.2 Login



Figure 4.3 Registration

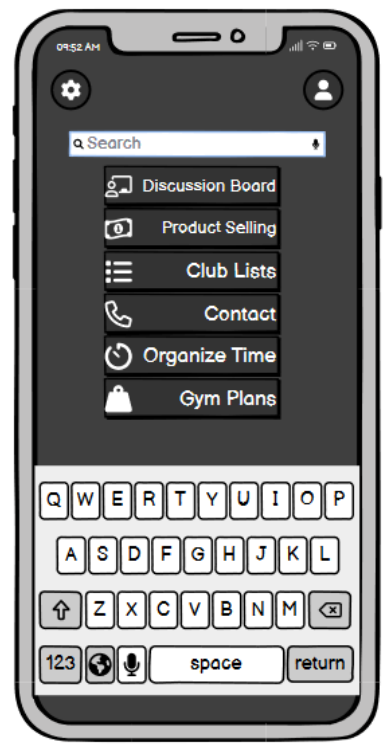


Figure 4.4 Homepage

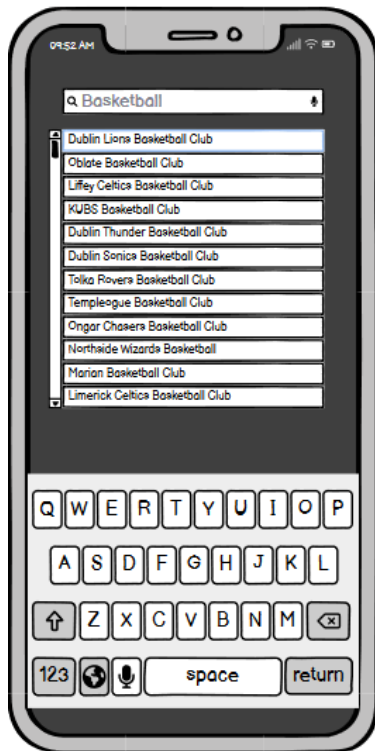


Figure 4.5 Clubs List

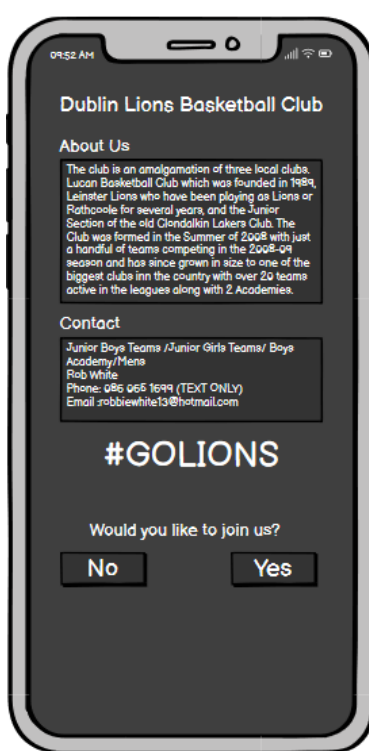


Figure 4.6 Club Info

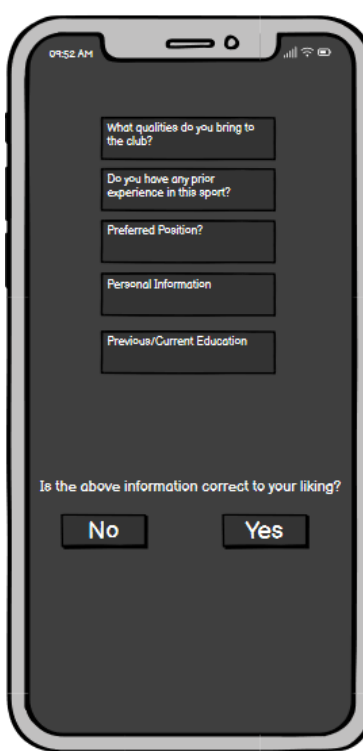


Figure 4.7 Club Join

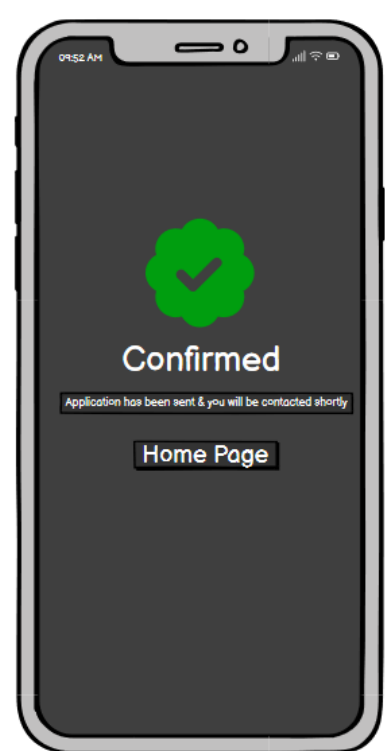


Figure 4.8 Verification

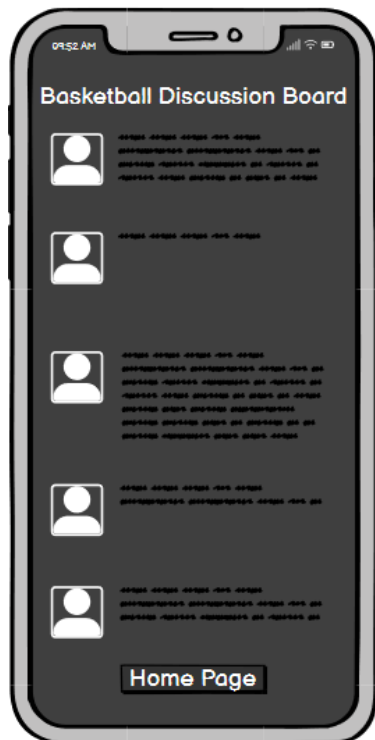


Figure 4.9 Discussion Board



Figure 4.10 Calendar

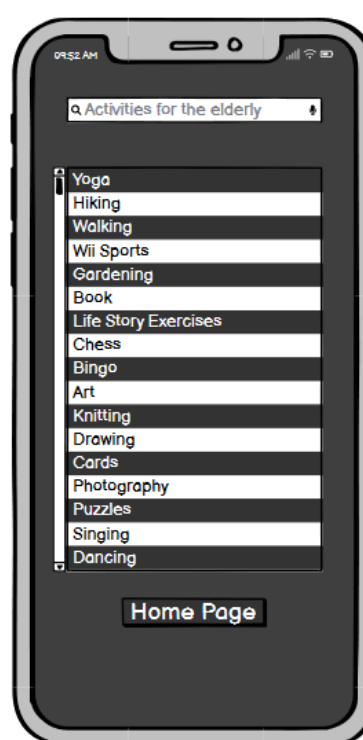


Figure 4.11 Search

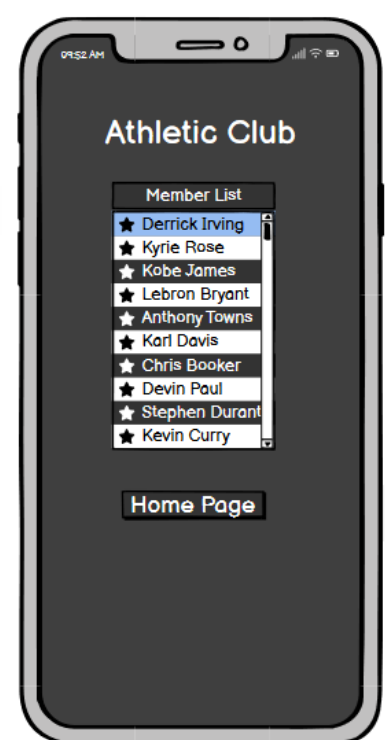


Figure 4.12 Members List

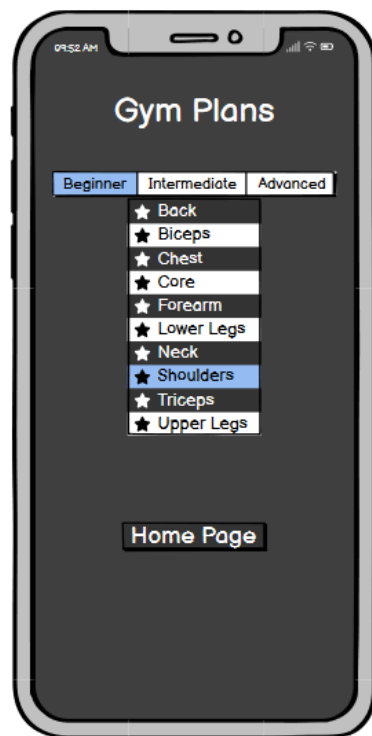


Figure 4.13 Gym Plans

Figure 4.14 Contact Us

Figure 4.15 Product Selling

Part 5 System Tests

5.1 Overview

This section shows us the list of system tests that can be carried out for each user requirement. System tests are vital and are used to catch and fix errors, improve software quality and compare expected results with actual results.

5.2 List of System Tests

User Requirement	Test
Dylan is a college student who wants to find a website that provides access to a wide variety of sports clubs.	<ul style="list-style-type: none"> • Verify that the website has a search function that allows Dylan to find sports clubs based on keywords or categories. • Verify that the website displays a list of sports clubs with their basic information, such as the name, location, contact details, and a short description. • Verify that the website allows Dylan to filter the search results based on his preferences, such as the location, sport type, level, age group, and schedule. • Verify that the website provides links to the websites or social media pages of the sports clubs for further information. • Verify that the website allows Dylan to save his favourite sports clubs or create a personalised list for future reference. • Verify that the website has a feedback or review system that allows Dylan to rate and comment on the sports clubs he has visited or joined.

<p>John wants to interact with others who share his passion for soccer via creating an online account and joining a local soccer club.</p>	<ul style="list-style-type: none"> • Verify that the website allows John to create an account and profile with his personal information, interests, and preferences. • Verify that the website has a search function that allows John to find local soccer clubs based on his location and preferences. • Verify that the website displays a list of soccer clubs with their basic information, such as the name, location, contact details, and a short description. • Verify that the website allows John to join a soccer club online or request to join one in person. • Verify that the website has a messaging or chat function that allows John to communicate with other members of the soccer club or similar interest groups. • Verify that the website has a calendar or schedule function that allows John to view the upcoming events, games, or practices of the soccer club.
<p>Jess wants to read about new and interesting running routes in her region via an online discussion board.</p>	<ul style="list-style-type: none"> • Verify that the website has an online discussion board or forum that allows Jess to post questions or comments about running routes. • Verify that the website has a search function that allows Jess to find previous posts or threads related to running routes. • Verify that the website allows Jess to filter the search results based on her preferences, such as the location, distance, terrain, and scenery. • Verify that the website has a map function that allows Jess to view the running routes or trails with their distance, elevation, and landmarks. • Verify that the website allows Jess to post her own running routes or share them with others. • Verify that the website has a rating or review system that allows Jess to rate and comment on the running routes she has tried.
<p>Paula wants to find a website that helps her organise her time and join a club.</p>	<ul style="list-style-type: none"> • Verify that the website has a calendar or planner function that allows Paula to schedule her activities, such as work, fitness, and leisure. • Verify that the website has a search function that allows Paula to find local clubs or events based on her preferences and availability. • Verify that the website displays a list of clubs or events with their basic information, such as the name, location, contact details, and a short description. • Verify that the website allows Paula to join a club or register for an event online or in person. • Verify that the website has a reminder or notification function that alerts Paula of upcoming events or deadlines. • Verify that the website has a feedback or rating system that allows Paula to rate and comment on the clubs or events she has attended.
<p>Ivor is looking for an online fitness programme that benefits the elderly.</p>	<ul style="list-style-type: none"> • Test the search functionality of the website to ensure that it can accurately filter sports activities based on Ivor's criteria (not too strenuous, local, etc.) • Test the website's content to ensure that it provides detailed information about each sport activity and its suitability for people of Ivor's age and fitness level • Test the website's accessibility and ease of use, especially for older users like Ivor who may not be as tech-savvy
<p>Leo wants to volunteer for a platform that engages others into sport.</p>	<ul style="list-style-type: none"> • Test the website's volunteer registration process to ensure that it is user-friendly and straightforward • Test the website's community outreach features, such as message boards and event calendars, to ensure that they are effective at promoting soccer and encouraging community involvement • Test the website's communication tools, such as email notifications and messaging systems, to ensure that volunteers can easily stay in touch with the organisation and each other

<p>Sarah wants to see which of her friends attend the local athletics clubs.</p>	<ul style="list-style-type: none"> • Test the website's member directory feature to ensure that it accurately lists all members of the athletic club and their contact information • Test the website's privacy settings to ensure that members have control over what information is displayed publicly • Test the website's search functionality to ensure that Sarah can easily find her friends and their membership status in the club
<p>William wants to have access to gym workouts and routines virtually.</p>	<ul style="list-style-type: none"> • Test the website's workout plan generator to ensure that it provides a variety of options based on William's fitness goals and limitations • Test the website's exercise video library to ensure that it has clear and detailed instructions on how to perform each exercise correctly • Test the website's user feedback and review system to ensure that William can get an idea of the effectiveness of each workout plan
<p>Fred would like a convenient way to find out when the basketball court is free to use</p>	<ul style="list-style-type: none"> • Test the website's facility search functionality to ensure that it can accurately filter community centres based on Fred's location and the availability of basketball courts • Test the website's contact information and communication channels to ensure that Fred can easily get in touch with the community centre and reserve court time • Test the website's user feedback and review system to ensure that Fred can get an idea of the quality of the basketball courts at the community centre
<p>Victor wants access to local sports clubs to sell his products to online</p>	<ul style="list-style-type: none"> • Test the website's search functionality to ensure that it can accurately filter local sports clubs based on the type of sport and location • Test the website's e-commerce platform to ensure that Victor can easily create a seller account and list his products for sale • Test the website's marketing and promotion tools to ensure that Victor's products are effectively advertised to the sports club's members and visitors