

COMP3900 22T2 Proposal

F16A Group 2 - Impregnable

Movie Monster



Name	zID	Role	UNSW Email
Damon (Shengyue Guan)	z5285984	Scrum Master	z5285984@ad.unsw.edu.au
Tam (Khiet Tam Nguyen)	z5313514	Frontend Developer	z5313514@ad.unsw.edu.au
Owen (Xunbo Su)	z5285996	Frontend Developer	z5285996@ad.unsw.edu.au
Joyce (Zhaoyan Liu)	z5271698	Backend Developer	z5271698@ad.unsw.edu.au
Matt (Feng Ji)	z5290365	Backend Developer	z5290365@ad.unsw.edu.au

Submission Date:
Sunday 19.06.22

Table of Contents

1. Background	2
1.1. Problem Overview	2
1.2. Existing Systems	3
1.2.1. Letterboxd	3
1.2.2. Rotten Tomatoes	4
1.2.3. IMDb	4
1.2.4. Metacritic	5
2 User Stories and Sprints	7
2.1. Jira Screenshots	7
2.1.1. Priorities Key	7
2.1.2. Sprint 1 Stories	7
2.1.3. Remaining Backlog	7
2.2. Objectives	8
2.3. User Stories	8
2.4. Novel Features	13
2.5. Sprints	14
2.5.1. Start and End Dates	14
2.5.2. Sprint 1 Scope	14
3. Interface and Flow Diagrams	15
3.1. Login and sign-up page	15
3.2. Home page	15
3.3. Movie browse and search page	15
3.4. User search page	15
3.6. User page	16
3.7. Movie page	16
4. System Architecture	26
4.1. Presentation Layer	26
4.2. Business Layer	27
4.3. Data Layer	27
5. References	28

1. Background

1.1. Problem Overview

Movies are an important source of leisure and entertainment in our daily lives. When we want to find a movie to watch, it is a trivial task to look online through various websites for reviews and recommendations. Movie finders often pick movies based on various factors such as the genre, cast, director, average ratings or simply recommendations from a system or a friend.

Most recommendation systems provide a personalised experience by using historical data about the user, such as previous viewing history, rating history or the watched history. This allows them to provide the user with recommendations for films that more closely align with their interests. However, these systems are often inadequate in many aspects. This includes intrusive advertisements, unreliable ratings, insecure user accounts, poor search results and so on. Our aim is to create a movie finder system that addresses these needs and allows the user to browse and find movies with security, convenience and comfort.

Another major focus of our project is on building a better movie community. Unlike other movie finder systems, where users are only able to leave reviews on movies, we aim to add features that would better engage our users in contributing and thus benefiting from the collective work of everyone involved. The two key features that we will introduce are blogs and quizzes.

With blogging, users will be able to do much more than simply share their thoughts about a single movie. For example, they could create a top 10 movie list, draw attention to other interesting facts about the movie such as where it was filmed, or just compare and contrast the creative choices between a movie adaptation and its original novel. The possibilities are endless.

For quizzes, our aim is for users to better appreciate or discover interesting facts about their favourite movies by walking through a short questionnaire. The quiz feature can be used in many ways, such as challenging the user's knowledge of something they've just watched, helping them learn about how the movie came to be, or just a collection of trivia questions for laughs and giggles with their friends and families.

With a high focus on differentiating our system from existing ones, we found the alliteration **Movie Monster** fitting to use as our title as it is not only catchy but also implies that our project will devour all competitors that stand in our way.

1.2. Existing Systems

Our analysis focused on 4 popular movie finder systems: Letterboxd, Rotten Tomatoes, IMDB and Metacritic. Each system has its own unique functionalities and drawbacks.

1.2.1. Letterboxd

Letterboxd (Letterboxd, 2011) is an online social networking service created in 2011. It was launched as a social application focused on sharing opinions about movies. Users can use it as a diary to

- Record their thoughts about movies
- Keep track of the movies they have seen in the past
- Write and read reviews
- Make lists of films to showcase their favourite films

Drawbacks:

- Too many intrusive advertisements, which affects the user experience.

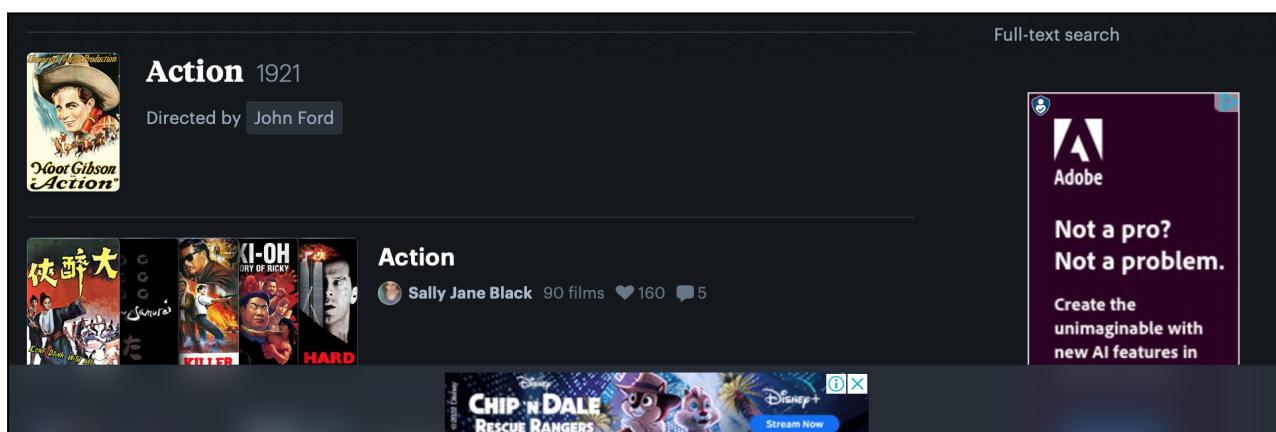


Figure 1.2.1.1: Letterboxd browsing screen

- Movie descriptions are not searchable. For example, the movie *A Quiet Place*, cannot be found by searching text from the description, such as “hunt by sound”.

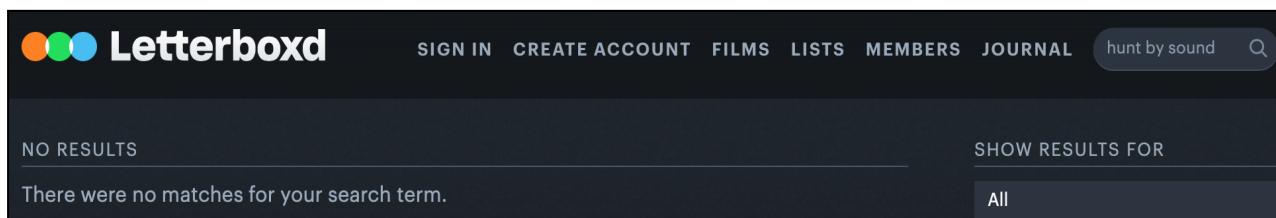


Figure 1.2.1.2: Letterboxd search results from A Quiet Place's description

1.2.2. Rotten Tomatoes

Rotten Tomatoes rates films based on the reviews of all the site's accredited critics and decide whether the review is good (fresh tomatoes) or bad (rotten tomatoes), using aggregate performance data to determine whether the review is positive ("fresh") or negative ("rotten"). The website tracks the content of all reviews and the percentage of positive comments. If more than 60% of the reviews are positive, the work will be considered "fresh". Conversely, if a movie has less than 60% positive reviews, it will be marked as "rotten". And Rotten Tomatoes now also has a certified "fresh" label, where a film needs at least 75% fresh to be certified fresh.

Drawbacks:

- The biggest problem with rotten tomatoes is that they break down complex opinions into yes or no scores. It gives a critic who thinks the film is good but has some defects (for example, 59% rating) the same rating as the critic who thinks the film is horrible (0%)



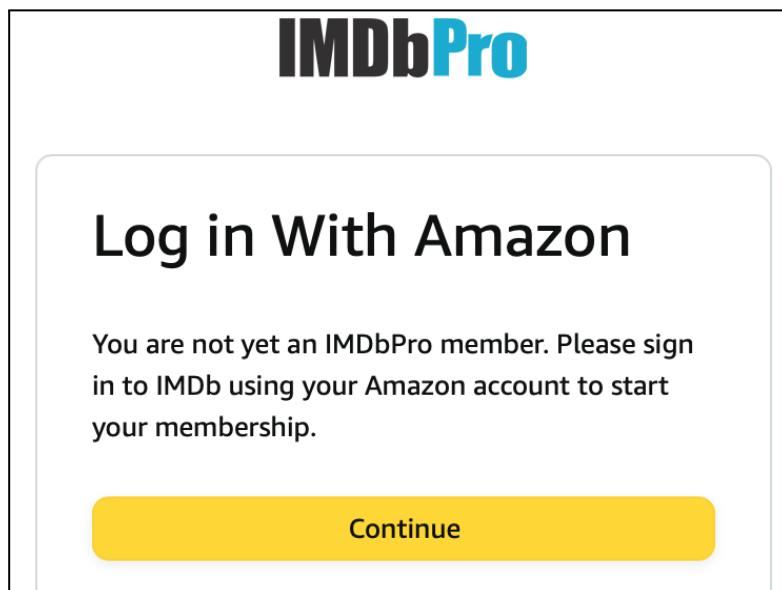
Figure 1.2.2.1: Rotten Tomatoes rating page.

1.2.3. IMDb

IMDb (1993) is an authoritative American film website and, in addition to its exhaustive information, a special feature is the scores given to films on it. These scores are based on a complex set of rules that allow not only professional staff to rate the film, but also ordinary fans to rate the film, and when the number of votes is high, the film's score can be a more objective reflection of the film's quality.

Drawbacks:

- To access some content, such as the ranking of popular movies compared to others currently in cinemas, you will need to subscribe to IMDb Pro. This subscription costs approximately \$16 per month (Miller, 2022)



This screenshot came from the website IMDb (1993).

- Users cannot directly search descriptions or genres to find movies.
- It does not allow movie searchers to add review authors they hate to their 'banned' list.

1.2.4. Metacritic

Metacritic (1999) is a website that aggregates reviews of films, TV shows, music albums, video games and formerly, books. For each product, the scores from each review are averaged (a weighted average). The site provides an excerpt from each review and hyperlinks to its source. The colours green, yellow or red summarizes the critics' recommendations. It is regarded as the foremost online review aggregation site for the video game industry.

Drawbacks:

- Too many advertisements, which affects the user experience.

Harry Potter: Hogwarts Mystery

What's this?

Summary: YOU have been chosen to attend Hogwarts School of Witchcraft and Wizardry! Embark on your own adventure in this all new RPG set in the wizarding world, years before Harry Potter received his Hogwarts letter. Explore never-before-seen rooms of Hogwarts Castle and investigate ancient... [Expand ▾](#)

Buy Now

Stream On **Get it on iTunes**

Developer: Jam City, Inc.
Genre(s): Simulation, Virtual, Virtual Life
of players: No Online Multiplayer
Cheats: On GameFAQs
[More Details and Credits »](#)

TRAILER

Play Sound

R18+ RESTRICTED

00:01/00:15

Stranger Things Quiz - Who R U

Which Stranger Things character best matches your personality?

START WITH \$50

Get the App

eToro Service ARSN 637 489 466 promoted by eToro AUS Capital Limited ACN 612 791 803 AFSL 491139. Capital at risk. Other fees apply. See PDS and TMD

This screenshot came from the website (Metacritic, 1999)

- The page utilization is too low, when the window is maximized, only about 1/3 of the page has content
- Users cannot add movies to a watched list or wish list.

2 User Stories and Sprints

2.1. Jira Screenshots

2.1.1. Priorities Key

Name	Description	Icon	Color	Order	Actions
Highest	This is a core functionality and could potentially halt progress	⬆️	Red	↓	Edit Delete Default
High	This is an important functionality that may affect other features	⬆️	Orange	↑ ↓	Edit Delete Default
Medium (Default)	This is a moderately important functionality, although it will affect other functionalities	=	Yellow	↑ ↓	Edit Delete
Low	These are non-core functionalities and have little impacts on the core features	⬇️	Grey	↑	Edit Delete Default

2.1.2. Sprint 1 Stories

Sprint 1 18 Jun – 1 Jul (10 issues)		0 0 0 Start sprint	...
DR3900-40 UR1 - As a user, I want to remain logged in so that I don't have to enter my credentials each time on the same device.	0 = IN PROGRESS		
DR3900-34 UR2 - As a user, I want to access my accounts from multiple devices so that I can always sync my personal information.	0 = IN PROGRESS		
DR3900-33 UR3 - As a user, I want to sign out of my accounts when I am done so that no one can read, modify or steal my data.	0 = IN PROGRESS		
DR3900-41 UR5 - As a user, I want to remain logged in when using the same device so that I don't have to enter my credentials every time.	0 = IN PROGRESS		
DR3900-36 AD2 - As an admin, I want to add new movies to our database so that regular users can have access to up-to-date movie content.	0 ~ TO DO		
DR3900-44 AD3 - As an admin, I want to update movies in our database so that any mistakes pointed out by regular users can be corrected.	0 ~ TO DO		
DR3900-39 MF2 - As a movie finder, I want to know all relevant details about a movie so that I can decide whether it is worth watching.	0 ~ TO DO		
DR3900-46 MF3 - As a movie finder, I want to filter movies based on different criteria so that I can more quickly find movies that match my interest.	0 ~ TO DO		
DR3900-48 MF5 - As a movie finder, I want to find a movie without signing up so that I can quickly and conveniently discover something to watch.	0 ~ TO DO		
DR3900-22 CP1 - As a cinephilia, I want to save movies to a list so that I can watch, track and review them at a later date.	0 ~ TO DO		

2.1.3. Remaining Backlog

Backlog (23 issues)		0 0 0 Create sprint	...
DR3900-35 UR4 - As a user, I want the ability to reset my password so that I won't be locked out of my account if I forget my credentials.	0 = TO DO		
DR3900-37 AD1 - As an admin, I want to regulate movie reviews so that users are not negatively affected by inappropriate comments.	0 ~ TO DO		
DR3900-28 MF1 - As a movie finder, I want the ability to search for movies that match certain keywords so that I can quickly find movies about particular topics.	0 ~ TO DO		
DR3900-47 MF4 - As a movie finder, I want to filter out the movies I've marked so that I don't see the same movies again.	0 = TO DO		
DR3900-23 MF6 - As a movie finder, I want the ability to instantly view a random movie so that I can discover something new and expand my repertoire.	0 ~ TO DO		
DR3900-21 MF7 - As a movie finder, I want to receive immediate search predictions when looking for a particular movie so that I can quickly locate the movie I had in mind.	0 = TO DO		
DR3900-25 CP2 - As a cinephilia, I want to upload an avatar so that my friends and subscribers can quickly identify me when using the application.	0 ~ TO DO		
DR3900-26 CR3 - As a cinephilia, I want control over who can view my profile so that I can protect my privacy whilst still sharing my movie interest with my targetted audience.	0 = TO DO		
DR3900-27 CP4 - As a cinephilia, I want to update my profile so that it reflects my most recent personal information.	0 ~ TO DO		
DR3900-32 RE1 - As a movie watcher, I want to be shown similar movies when viewing a movie's page so that I can select another movie that matches my interest.	0 ~ TO DO		
DR3900-20 RE2 - As a movie watcher, I want to receive recommendations based on movies I've watched so that I can find movies that are similar to my interest.	0 ~ TO DO		
DR3900-18 CO1 - As a movie critic, I want to share my thoughts and experience on a movie I've seen so that I can help other users decide if a movie is worth watching.	0 ~ TO DO		
DR3900-38 CO2 - As a movie follower, I want to see other people's movie interests so that I can also watch those movies.	0 ~ TO DO		
DR3900-42 CO3 - As a movie follower, I want to block users that I dislike so that I don't have to see their activities.	0 ~ TO DO		
DR3900-43 CO4 - As a movie enthusiast, I want to share and receive movies with my friends so that we can discuss and watch the latest movies together.	0 ~ TO DO		
DR3900-19 CO5 - As a movie critic, I want to be updated on what other critics think about my reviews so that I can validate or rethink what I have written.	0 ~ TO DO		
DR3900-17 BL1 - As a blogger, I want to blog about all kinds of movie-related topics so that I can attract a wider audience and recommend the movies I like.	0 ~ TO DO		
DR3900-53 BL2 - As a blogger, I want to display all of my blogs in one place so that my followers and I can easily manage and track them.	0 ~ TO DO		
DR3900-54 BL3 - As a blogger, I want to transparently edit my blogs so that I can fix mistakes without looking deceptive to the public.	0 ~ TO DO		
DR3900-55 BL4 - As a blogger, I want to know how popular I currently am so that I can feel proud about my eventual rise to fame	0 ~ TO DO		
DR3900-56 QZ1 - As an admin, I want to create quizzes about movies so that users can be engaged and stay longer on the website.	0 ~ TO DO		
DR3900-57 QZ2 - As an admin, I want to modify movie quizzes so that I can make corrections or add new questions when more interesting facts and information are discovered.	0 ~ TO DO		
DR3900-58 QZ3 - As a user, I want to be informed of my performance in a movie quiz so that I can determine how well I know my favourite movies.	0 ~ TO DO		

2.2. Objectives

Code	Description
UR	Registered users can be authenticated and have persistent data
AD	Admin users can have elevated privileges and can modify the database
MF	Movie finders can efficiently and conveniently browse or search for movies
CP	Cinephile can customise their profiles and categorise movies as they wish
RE	Users can receive different forms of recommendations from the system
CO	Users can interact with other users in the movie community in multiple forms
BL (novel)	Users can blog their thoughts about various topics and follow other bloggers
QZ (novel)	Admins can create quizzes about movies for users to participate in

2.3. User Stories

The table below displays the user stories proposed for the project. The code of each user story is prefixed by the predominant objective that they aim to satisfy.

Some user story codes are bolded to indicate that they were constructed from core functionalities that were proposed in the original Movie Finder System project description.

Code	User Story	Acceptance Criteria
UR1	As a user, I want to have a customised account so that I can store and share information about my movie interests.	<ul style="list-style-type: none"> • Users can create an account by entering a valid <ul style="list-style-type: none"> ◦ email ◦ password • Users will be prompted to retry if the <ul style="list-style-type: none"> ◦ email is invalid ◦ email is already taken ◦ password is less than 6 characters • Once the account is created, the user should be automatically logged in.
UR2	As a user, I want to access my accounts from multiple devices so that I can always sync my personal information.	<ul style="list-style-type: none"> • Users can log in using a username/registered email and the corresponding password. • Users can log in on multiple devices/sessions simultaneously. • If a user fails to enter valid credentials after three attempts, they will be prompted to reset their password.
UR3	As a user, I want to sign out of my accounts when I am done so that	<ul style="list-style-type: none"> • Users can log out from the current session. • Choosing to log out from a single session does not affect other sessions

	no one can read, modify or steal my data.	<ul style="list-style-type: none"> Users should have the option to log out of all sessions.
UR4	As a user, I want the ability to reset my password so that I won't be locked out of my account if I forget my credentials.	<ul style="list-style-type: none"> Users can reset their password by entering an email address If the email address is valid, the system should send an email to the given address with a reset code. Once the password has been reset, all active sessions should be made inactive (logged out). For security reasons, the user should not know whether the email address they entered is valid.
UR5	As a user, I want to remain logged in when using the same device so that I don't have to enter my credentials every time.	<ul style="list-style-type: none"> Once a user is logged in, they should remain so unless another trigger (e.g. sign out or password-reset) occurs.
AD1	As an admin, I want to regulate movie reviews so that users are not negatively affected by inappropriate comments.	<ul style="list-style-type: none"> Admin users can edit user reviews Admin users can remove user reviews
AD2	As an admin, I want to add new movies to our database so that regular users can have access to up-to-date movie content.	<ul style="list-style-type: none"> Admin movies can add new movies to the database by providing an IMDb url.
AD3	As an admin, I want to update movies in our database so that any mistakes pointed out by regular users can be corrected.	<ul style="list-style-type: none"> Admin movies can edit all details about a movie that will be displayed on the movie page. The website should display when the movie was last edited.
MF1 (novel)	As a movie finder, I want the ability to search for movies that match certain keywords so that I can quickly find movies about particular topics.	<ul style="list-style-type: none"> Users can search movies by typing keywords into a search bar. Keywords can match a movie's <ul style="list-style-type: none"> name description genre
MF2	As a movie finder, I want to know all relevant details about a movie so that I can decide whether it is worth watching.	<ul style="list-style-type: none"> Users can view a movie's <ul style="list-style-type: none"> movie id full title image release date rating IMDB rating description, director list

		<ul style="list-style-type: none"> ○ actor list ○ genre list ○ reviews
MF3	As a movie finder, I want to filter movies based on different criteria so that I can more quickly find movies that match my interest.	<p>On the browsing page:</p> <ul style="list-style-type: none"> ● users should be able to filter movies based on: <ul style="list-style-type: none"> ○ director ○ genre ● users should be able to sort movies by <ul style="list-style-type: none"> ○ popularity (average rating) <ul style="list-style-type: none"> ■ movies with no rating will default to a value of 0. ○ names (lexicographically) <ul style="list-style-type: none"> ■ by default, only sort by name if the movies have equal popularity.
MF4 (novel)	As a movie finder, I want to filter out the movies I've marked so that I don't see the same movies again.	<p>On the browsing page:</p> <ul style="list-style-type: none"> ● Users can select any combination of their wish list, watched list and favourite list to omit from the display.
MF5	As a movie finder, I want to find a movie without signing up so that I can quickly and conveniently discover something to watch.	<p>Without creating an account, anonymous users</p> <ul style="list-style-type: none"> ● can search for movies ● can view a movie's details ● cannot add reviews or rate movies
MF6	As a movie finder, I want the ability to instantly view a random movie so that I can discover something new and expand my repertoire.	<ul style="list-style-type: none"> ● Users can instantly view a random movie from the website. ● When a user chooses to reroll a random movie before refreshing the page, previous movies should not reappear.
MF7	As a movie finder, I want to receive immediate search predictions when looking for a particular movie so that I can quickly locate the movie I had in mind.	<ul style="list-style-type: none"> ● When searching for keywords, relevant movie titles should be displayed and updated below the search bar after each change to the search string.
CP1	As a cinephilia, I want to save movies to a list so that I can watch, track and review them at a later date.	<ul style="list-style-type: none"> ● Users can add movies to their wishlist, watched list and favourite list. ● Users can remove movies from their wishlist, watched list and favourite list.
CP2	As a cinephilia, I want to upload an avatar so that my friends and	<ul style="list-style-type: none"> ● Users should be able to upload a profile picture to their account. ● The image should be in JPG or PNG

	subscribers can quickly identify me when using the application.	<p>format.</p> <ul style="list-style-type: none"> The size of the image cannot exceed 2 MB.
CP3	As a cinephilia, I want control over who can view my profile so that I can protect my privacy whilst still sharing my movie interest with my targetted audience.	<ul style="list-style-type: none"> Users can select whether their profile should be visible to the: <ul style="list-style-type: none"> public friends private (just themselves) Users can search for a list of other users Users can view other user's profiles
CP4	As a cinephilia, I want to update my profile so that it reflects my most recent personal information.	<ul style="list-style-type: none"> Users should be able to edit their <ul style="list-style-type: none"> username email password profile picture Users must enter the current password if they wish to change their password.
RE1	As a movie watcher, I want to be shown similar movies when viewing a movie's page so that I can select another movie that matches my interest.	<ul style="list-style-type: none"> When viewing a movie page, users will receive recommendations on similar movies based on a selection from the movie's <ul style="list-style-type: none"> review history genre director cast(s)
RE2	As a movie watcher, I want to receive recommendations based on movies I've watched so that I can find movies that are similar to my interest.	<ul style="list-style-type: none"> When a user views their profile page, they should receive recommendations of similar movies based on their "watched list"
CO1	As a movie critic, I want to share my thoughts and experience on a movie I've seen so that I can help other users decide if a movie is worth watching.	<ul style="list-style-type: none"> Users can leave a review on the movie page Reviews should include <ul style="list-style-type: none"> text rating (from 0 to 5) The review title cannot exceed 50 characters The review text cannot exceed 500 characters.
CO2	As a movie follower, I want to see other people's movie interests so that I can also watch those movies.	<ul style="list-style-type: none"> Users can view other users' wishlists, watched lists and favourite lists when visiting their profile page. Users can navigate a targetted user's profile page by clicking on their avatar, which is always displayed when the targetted user makes a comment on the movie page. Users cannot view a profile that is set to

		private, or “friends” if they are not a friend
CO3	As a movie follower, I want to block users that I dislike so that I don't have to see their activities.	<ul style="list-style-type: none"> Users can block other users by adding them to a “banned” list. Users can remove blocked users. When a user is blocked, their movie reviews will not be displayed to the current user. When a user is blocked, their rating of the movie will not influence the average rating displayed to the current user.
CO4 (novel)	As a movie enthusiast, I want to share and receive movies with my friends so that we can discuss and watch the latest movies together.	<ul style="list-style-type: none"> Users can add other users as friends Users can share a movie with their friends Users should not be able to share movies with other users who are not on their friend list.
CO5 (novel)	As a movie critic, I want to be updated on what other critics think about my reviews so that I can validate or rethink what I have written.	<ul style="list-style-type: none"> Users can receive notifications when: <ul style="list-style-type: none"> they receive a like on their review they receive a dislike on their review
BL1 (novel)	As a blogger, I want to blog about all kinds of movie-related topics so that I can attract a wider audience and recommend the movies I like.	<ul style="list-style-type: none"> Users can create blog posts by entering a title and a description. <ul style="list-style-type: none"> title must be at most 50 characters blog post must be at most 1000 characters Blog posts can link to multiple movies.
BL2 (novel)	As a blogger, I want to display all of my blogs in one place so that my followers and I can easily manage and track them.	<ul style="list-style-type: none"> Users can view their blogs in their profile Users can view other users' blogs if their profile is set to public or set to friends and they are a friend.
BL3 (novel)	As a blogger, I want to transparently edit my blogs so that I can fix mistakes without looking deceptive to the public.	<ul style="list-style-type: none"> Users can edit their blogs about movies Edited blogs will be timestamped at the time of edit (i.e. marked by “last edited at ...”).
BL4 (novel)	As a blogger, I want to know how popular I currently am so that I can feel proud about my eventual rise to fame	<ul style="list-style-type: none"> Users can follow other users (bloggers). Users can unfollow other bloggers Users can view their list of followers Users can view the list of bloggers they have followed
QZ1 (novel)	As an admin, I want to create quizzes about movies so that users can be engaged and stay longer on the website.	<ul style="list-style-type: none"> Admins can create quizzes on particular movies Users cannot create quizzes Users can play quizzes about particular movies

QZ2 (novel)	As an admin, I want to modify movie quizzes so that I can make corrections or add new questions when more interesting facts and information are discovered.	<ul style="list-style-type: none"> • Admins can edit movie quizzes • Admins can remove movie quizzes • Users cannot edit quizzes • Users cannot remove quizzes
QZ3 (novel)	As a user, I want to be informed of my performance in a movie quiz so that I can determine how well I know my favourite movies.	<ul style="list-style-type: none"> • Users receive a score after partaking in a movie quiz. • Users can compare their scores with other players through a ranking system.

2.4. Novel Features

As previously alluded to, one of the drawbacks in [Existing Systems](#) is the ability to search for movies based on fields other than the movie title. Achieving user story **MF1** will provide the capability for our system to handle searches for not only the title, but also the description and genre. It is also possible to extend this to other fields such as directors and casts. Moreover, we plan to extend the search and browse features such that users can select any combinations of their wish list, watched list and favourite list to omit from the browsing or search results (**MF4**).

Another set of novel features we will introduce is friends and notifications. While not a revolutionary idea, the sites we have researched either do not allow for users to maintain a friend list or support notifications, or both. With user story **CO4**, users will be able to add and share movies with their friends. This allows for movies to be conveniently searched and shared on the same platforms and the respective parties are notified accordingly. As such, users will be more inclined to remain on our website rather than seek an alternative platform for movie sharing or further discussions.

To cover the blogging aspect from our [Problems Overview](#), user stories **BL1** and **BL2** will allow our bloggers to write and manage their blog posts with ease while not being restricted to a review about a single movie. As for quizzes, user story **QZ1** will allow only admins to create quizzes about movies. This was a preemptive measure against potential trolls and inappropriate users attempting to harm the movie community. However, all users will be able to participate in these quizzes and test their knowledge about their favourite movies. The main reason for the introductions of these novelties is to encourage more participation from users and thus make our website more personal and inclusive than just your regular movie recommendation system.

2.5. Sprints

2.5.1. Start and End Dates

Sprint	Start Date	End Date
1	18/06/22	01/07/22
2	02/07/22	22/07/22

3	23/07/22	05/08/22
---	----------	----------

2.5.2. Sprint 1 Scope

From the [Jira Screenshots](#) section, the following user stories will be in the scope for the first sprint:

- UR1, UR2, UR3, UR5
- AD2, AD3
- MF2, MF3, MF5
- CP1

This sprint will focus on what we have determined to be the core functionalities in the UR, AD, MF and CP objectives that will produce a minimal viable product. For example, the ability to create an account (UR1), add new movies (AD2), view movie details (MF2), browse movies (MF3) and leave ratings and reviews (CP1).

3. Interface and Flow Diagrams

The storyboard figures corresponding to the descriptions below are on subsequent pages and labelled with the numbered section as the prefix.

For example, **Figure 3.1.1** will correspond with **Section 3.1**. This was done to reduce blank pages due to large images in landscape mode.

3.1. Login and sign-up page

Users can sign up and log in by email. If a user forgets their password, they can request a reset code that will be sent to their email to reset their password.

3.2. Home page

For registered users, there are three different lists of movies. The first includes new movies, which will be the same for every user. Next is the recommendation list, which will be based on the movies the user has watched and liked. Finally, there is a list of recently reviewed movies.

In addition to these lists, an icon at the top right corner is also available for users to instantly view a random movie.

For anonymous or guest users, the recommendation and recently reviewed lists will not be available.

3.3. Movie browse and search page

The results can be filtered by directors and genres and will be sorted by average rating and name. Each movie will have a movie name, rating and image.

3.4. User search page

Users can search for other users. Every relative result will contain the user ID, profile photo and some details.

3.5. Profile page

The profile page for users includes four sub-pages: "My Profile", "My List", "My Friends" and "Blog". Admins will also have an "Admin" page.

On the "My profile" page, users can modify their personal information and users change the status of their profile.

On the "My list" page, users can view their wish list, watched list and favourite list. Users can remove movies from the list.

On the "My friends" page, users will be able to view their list of friends and also remove friends. They will also be able to see any pending friend requests and accept or decline them.

On the “Blog” page, users can see, create and delete blogs.

On the “Admin” page, admins can see all users and movies. Admins can remove users. Admin can add, modify, and remove movies.

3.6. User page

The user page contains viewable details about (other) users, a button for adding friends and a button for blocking. It also contains the favourite list, wish list and blogs of that user.

The user page can be set to private, friends or public. For example, if it is private, other users will not see any details and only can add and block.

3.7. Movie page

The movie page contains information such as rating, genre, cast, director and description. Similar movies will also appear as recommendations. The recommendation is based on a chosen combination of review history, genres and directors.

Users can add the movie to the wish list by clicking the “Wish to watch” icon or marking the movie with the “watched” status.

There is a quiz link below that contains questions about the movie, which only admins can create or modify.

User reviews are at the bottom. Users can add, edit and delete reviews. Admins can delete any reviews. Users can thumb up or down a review to express their attitude towards the comment. Users can also like or dislike a review.

In the upper right corner of the comments section, users can share movies with their friends. When users click on the "Share" icon, a list of friends will pop up and users can choose which friends they want to share with. There is also a “like” icon, if the user clicks it, the movie will be added to the favourite list.

Users can share movies on the blog page.

Figure 3.1.1: Register and Login (UR1, UR2, UR3, UR4)

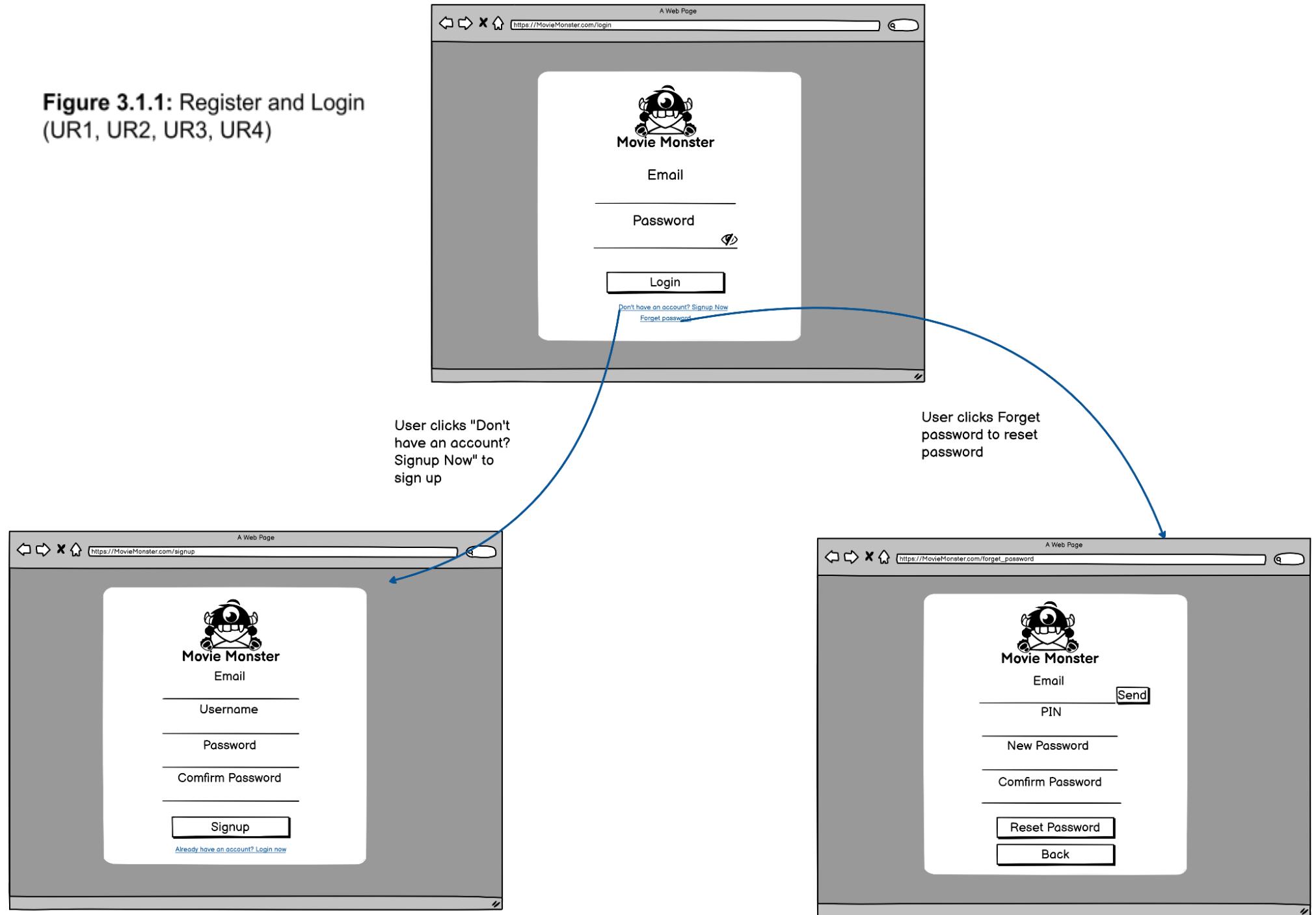


Figure 3.2.1: Home page registered users (MF6, RE1)

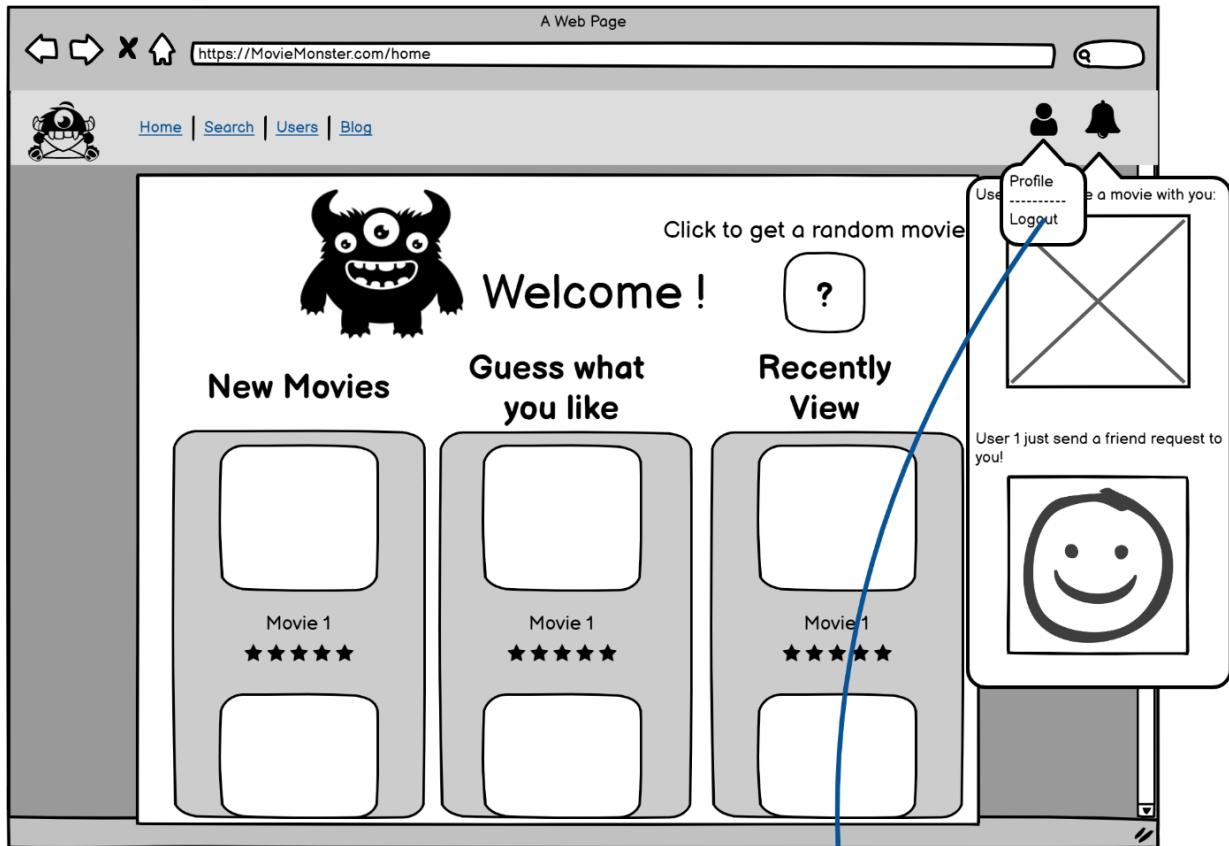


Figure 3.2.2: Home Page for Anonymous/Guest users (MF6)



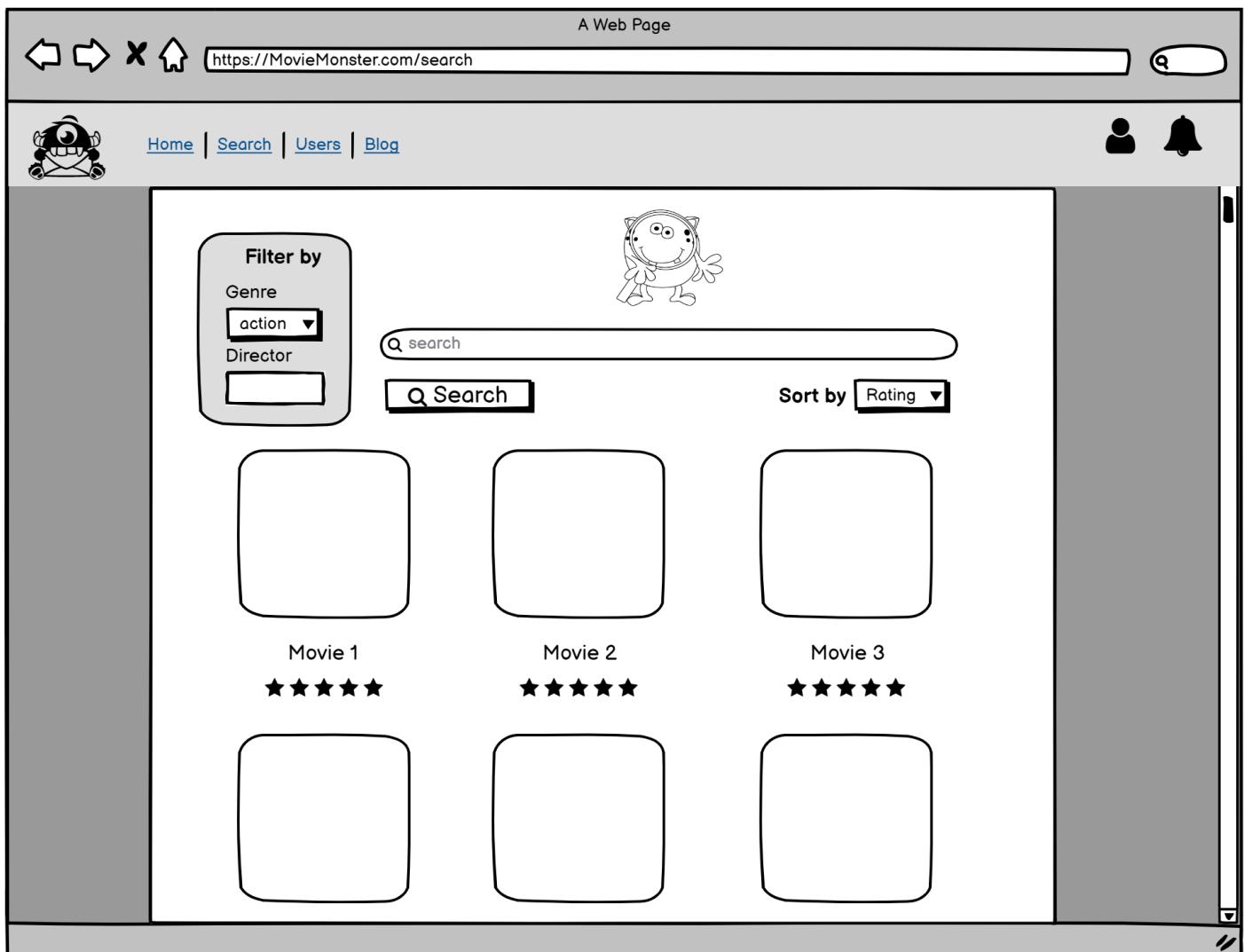


Figure 3.3.1: Movie Browse and Search page
(MF1, MF2, MF3, MF4, MF5, MF7)

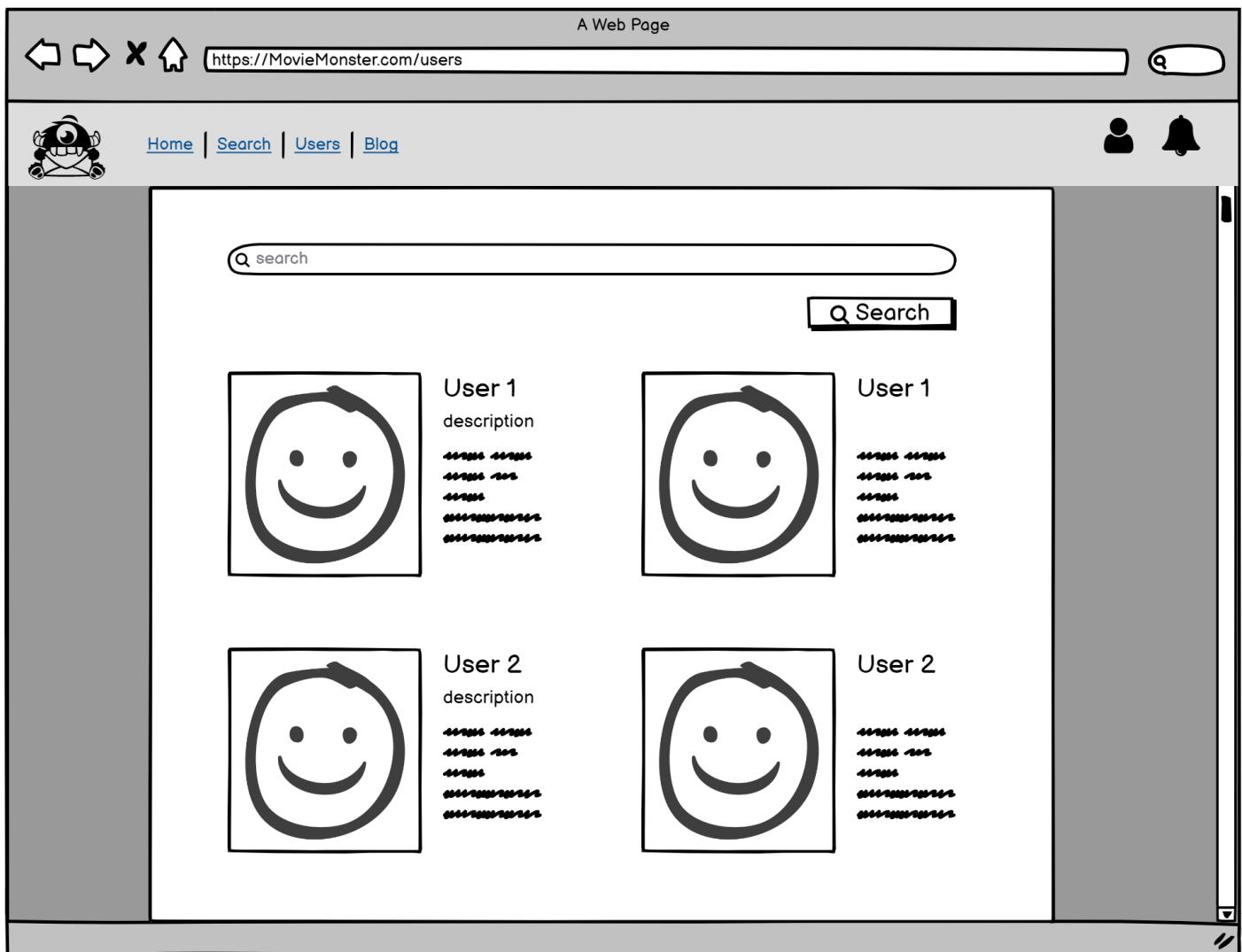
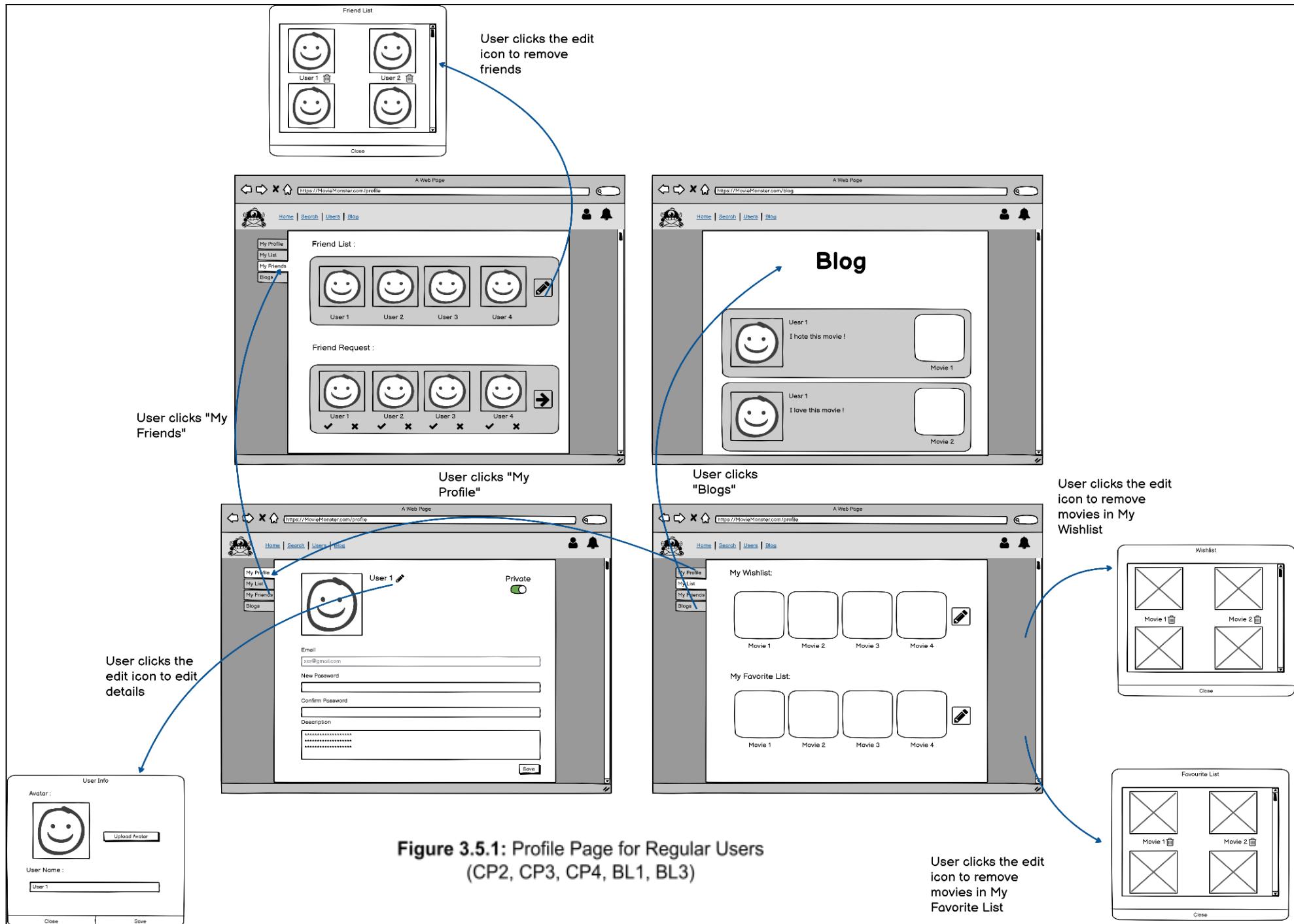
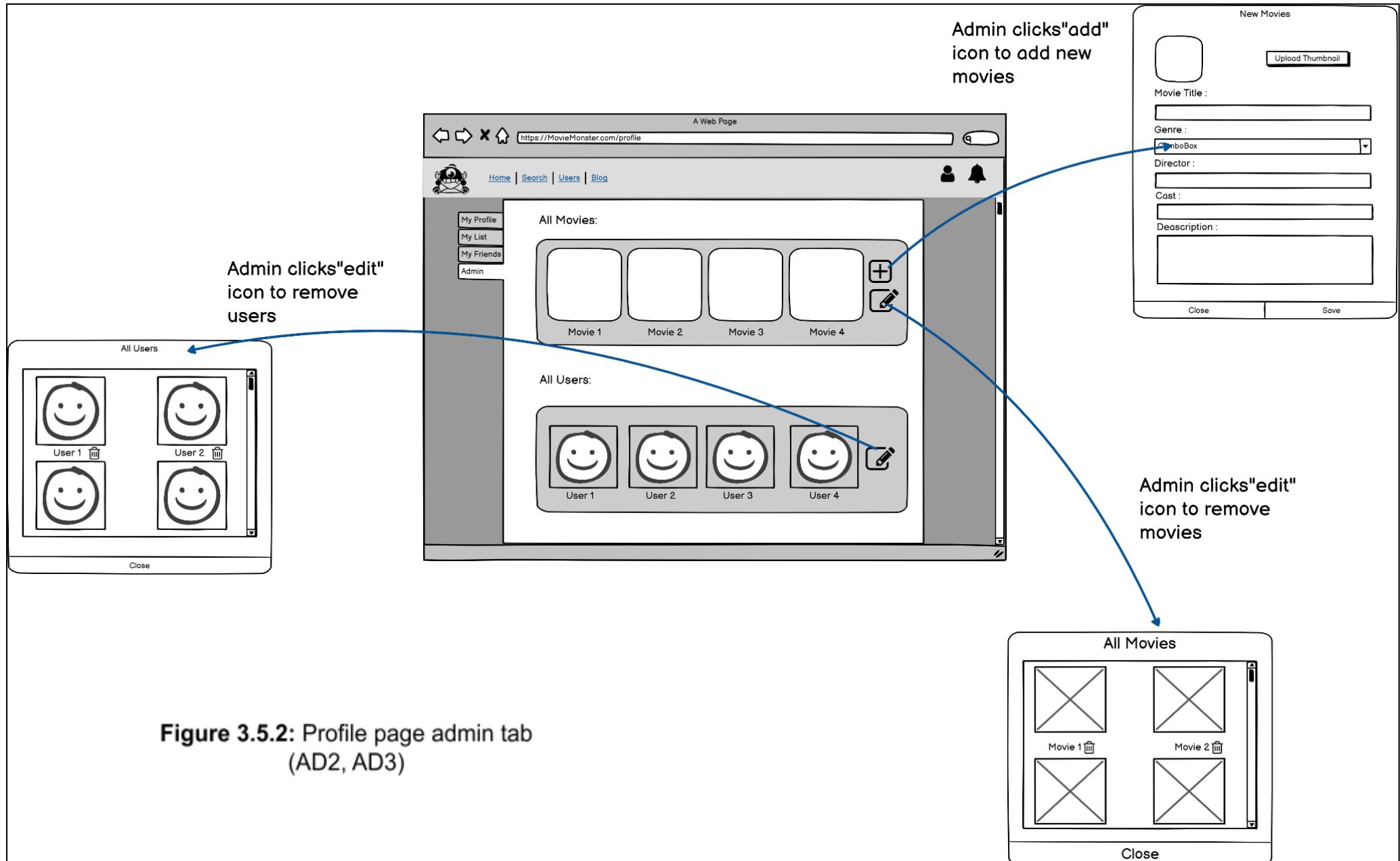
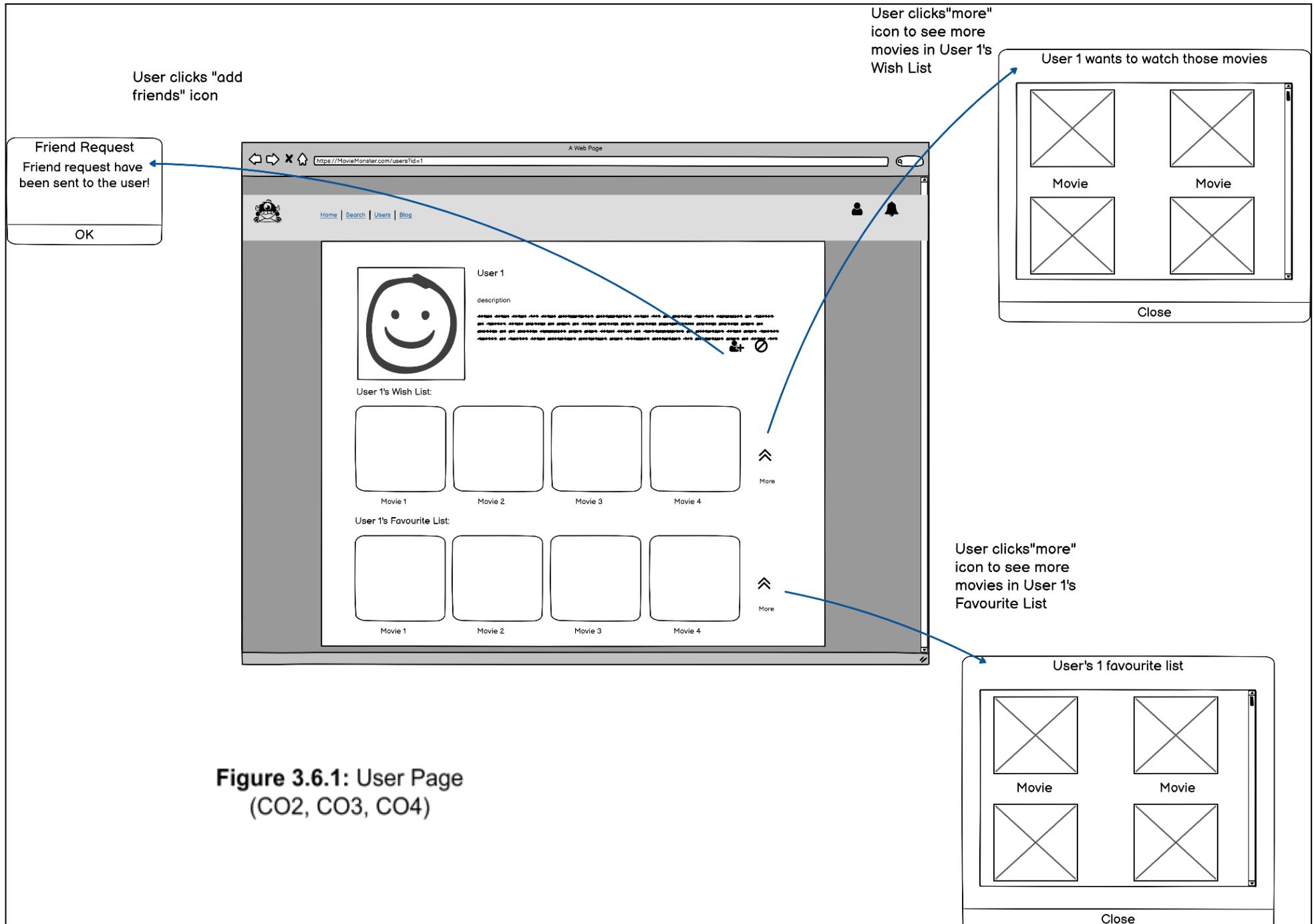


Figure 3.4.1: User search page (CP3)



**Figure 3.5.1: Profile Page for Regular Users
(CP2, CP3, CP4, BL1, BL3)**





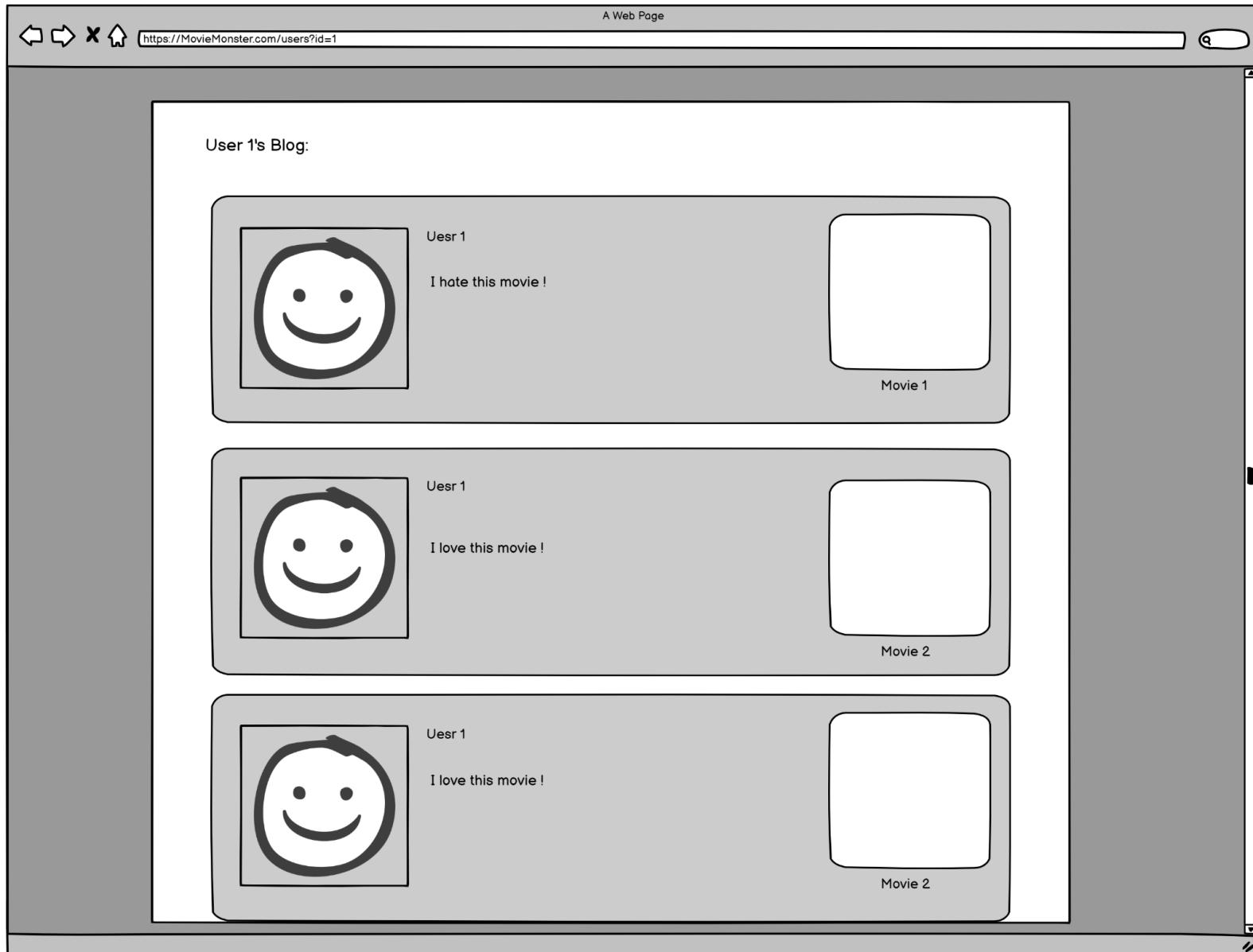
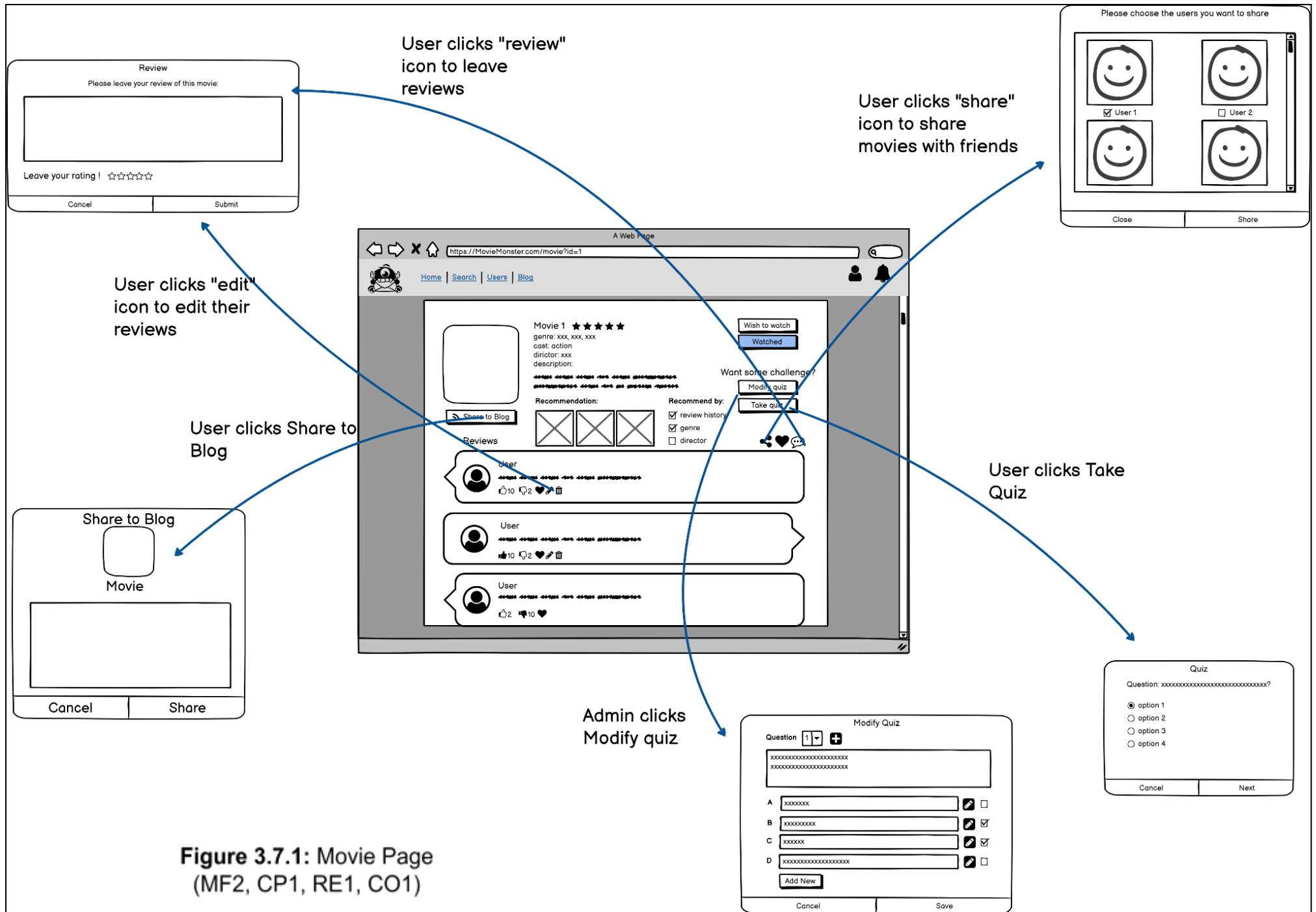
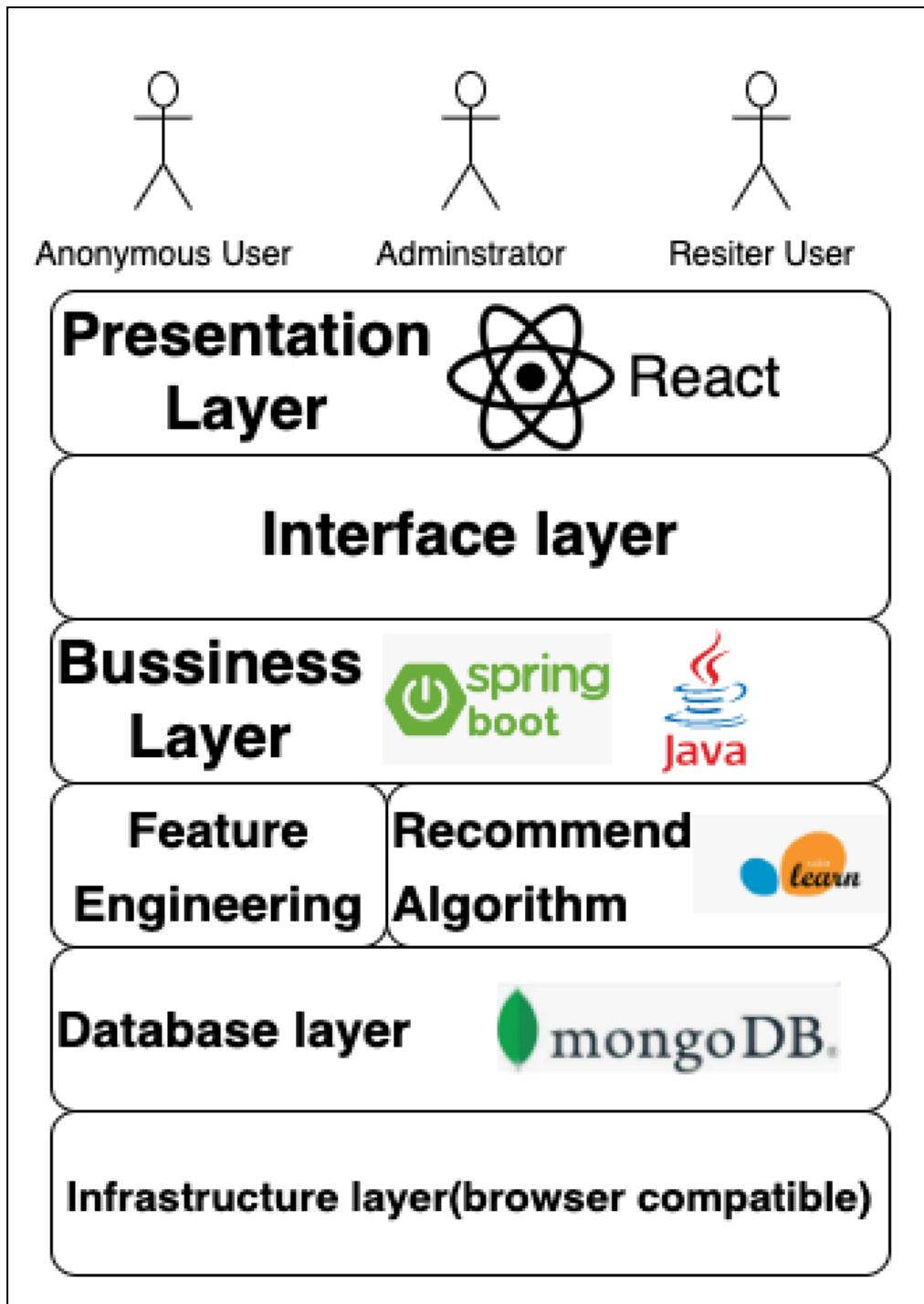


Figure 3.6.2: User Page Blogs (BL2)



**Figure 3.7.1: Movie Page
(MF2, CP1, RE1, CO1)**

4. System Architecture

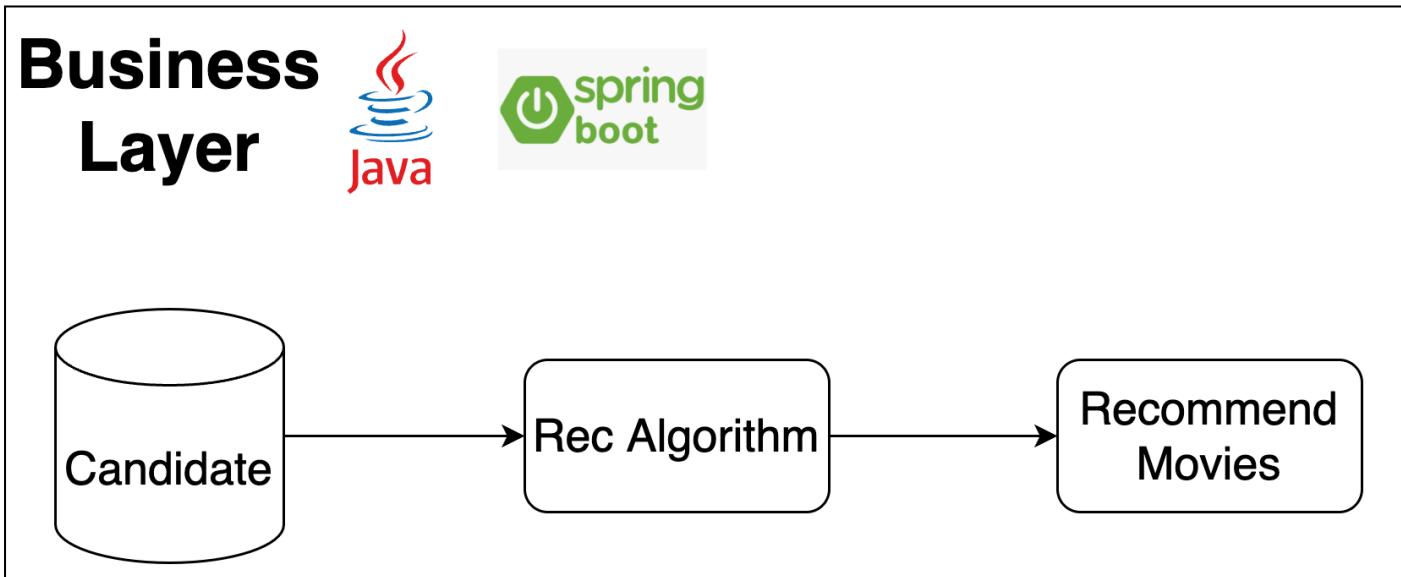


4.1. Presentation Layer

For our frontend, we have chosen the Reactjs Framework. This is because

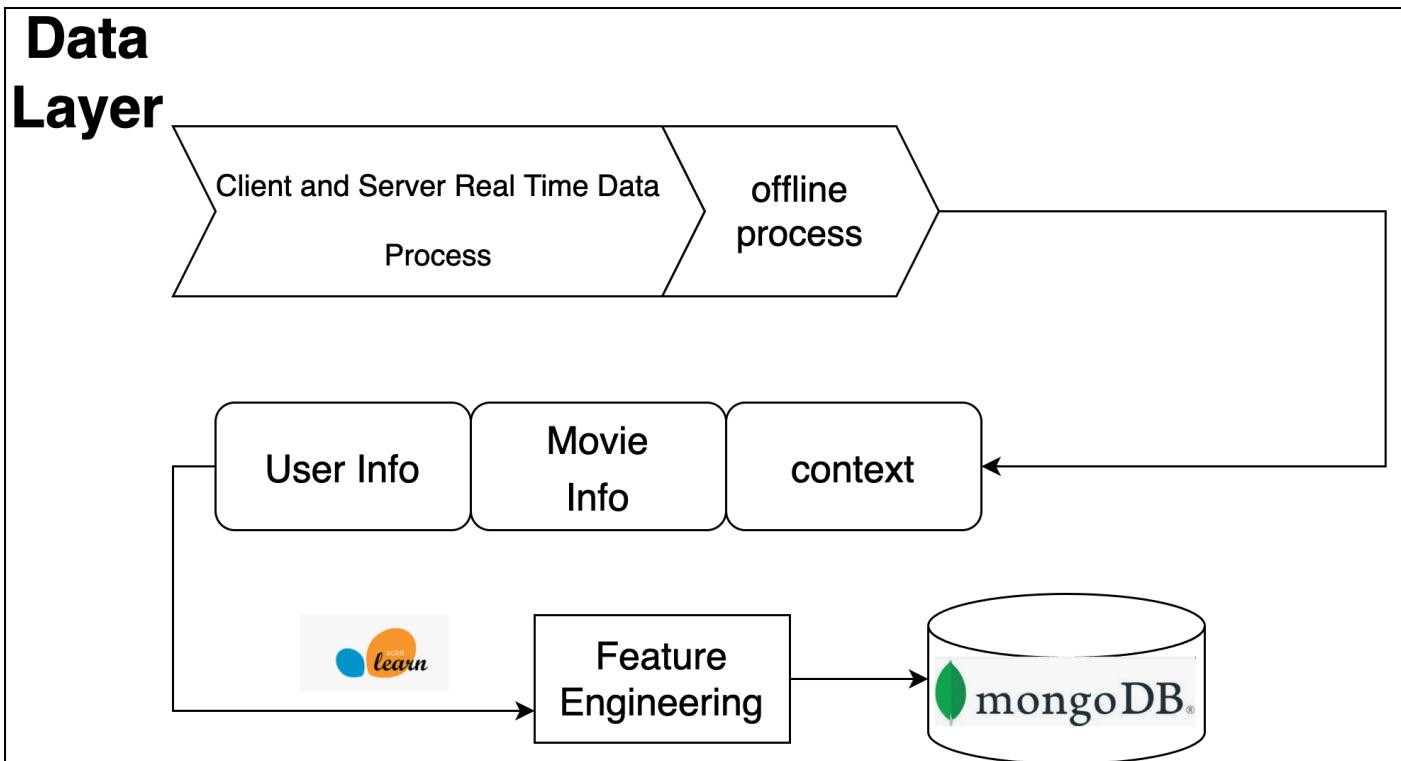
- React is fast and can build modular in a short time
- The components created by React are reuseable
- Users will have a better experience with Single Page applications as they do not need to wait for the pages to load after the initial visit.

4.2. Business Layer



In this layer, we will use Java and leverage the SpringBoost Framework. First, the system will get candidates from the database. After that, it will run algorithms to retrieve movies that the user may be interested in from the candidates and return them to the front end. The core part of this layer is the recommendation algorithm. Embedding (algorithm) and Spark (Engine) are famous in terms of recommendation, but the algorithm of our system is still to be announced.

4.3. Data Layer



For our database, we will be using MongoDB. The data layer will be responsible for controlling data flow. First is Real-Time Data Process - for example, some data in the front end needs processing in real-time, such as a profile page. Next is the “offline” process - the data received will be segmented into three different parts: user Information, movie information and context. After the data has been parsed, the refined data will be stored in our database.

5. References

- IMDb. (1993). IMDb: Ratings, Reviews, and Where to Watch the Best Movies & TV Shows.
Retrieved June 17, 2022, from <https://www.imdb.com>
- Letterboxd. (2011). Letterboxd • Social film discovery. Retrieved June 17, 2022, from
<https://letterboxd.com>
- Metacritic. (1999). Metacritic - Movie Reviews, TV Reviews, Game Reviews, and Music Reviews.
Retrieved June 17, 2022, from <https://www.metacritic.com>
- Miller, K. (2022). *Movie Review Sites* | LoveToKnow. Movies from LoveToKnow. Retrieved June
17, 2022, from https://movies.lovetoknow.com/wiki/Movie_Review_Sites
- Rotten Tomatoes. (1998, 8). Rotten Tomatoes: Movies | TV Shows | Movie Trailers | Reviews -
Rotten Tomatoes. Retrieved June 17, 2022, from <https://www.rottentomatoes.com>