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1 Background

1.1 Product Overview

This website is a social movie review website with personalized recommendation and sharing, mainly targeting young people who have a stronger need to discover movies and share their opinions. The site provides a wealth of information on current and upcoming movies, and based on this, personalized recommendations and community features are introduced to meet users' interests and social needs.

1.2 Existing system analysis

We analysed the strengths, weaknesses, opportunities, and threats of the products by taking Rotten Tomatoes and IMDb, which are currently well-known international movie search sites, as the target. The purpose is to clarify the strengths, weaknesses and core competencies of the existing websites. Thus, we can maximize the advantages and develop reasonable strategies to differentiate and compete to win the market. As shown in the figure 1.

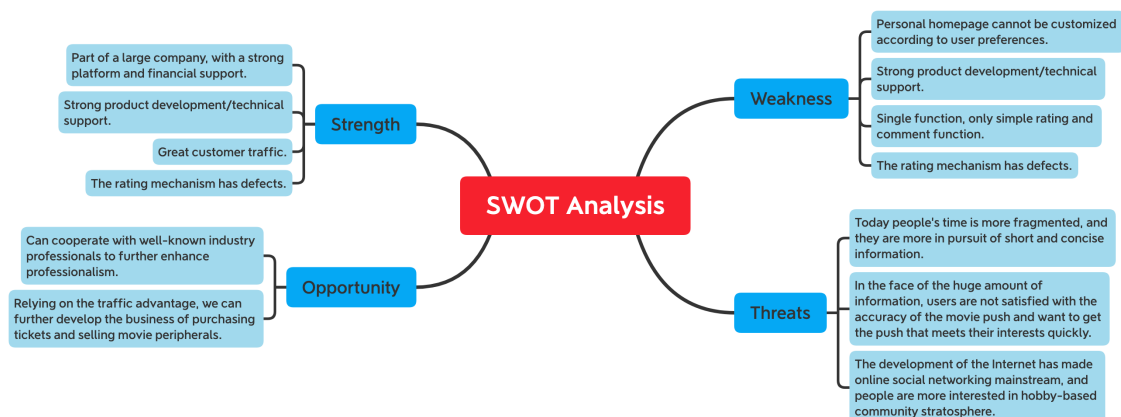


Figure 1 SWOT Analysis

Rotten Tomatoes[1] differs from most review sites in that it uses a binary rating system. The staff collects reviews of a film from various critics and determines whether the entire review is positive or negative, then counts positive reviews as "fresh" and bad reviews as "rotten," and finally totals The ratio of likes and dislikes is calculated. The scoring group is strictly limited to professional critics certified by the website, so the number of movie reviews is small, and the reviews are more elite and professional, sometimes not directly reflecting the majority of people's preferences. Moreover, the rating mechanism is more general, which does not reflect the critics' more nuanced views of the film and reduces the objectivity of the website.

IMDb[2] adopts a 10-point rule, and the general public can score freely, with the same voting rights as professional critics, without any focus, which can better represent the views of film

fans. The diversity and personalization of movie reviews also brings certain negative effects, when the movie is well viewed, the rating is relatively high, while some excellent movies with good plot, art and creativity are easily underestimated. The site is mainly for English-speaking users in Europe and the United States, and the number of non-English movie ratings is too small.

Below are some screenshots of the two compared websites. After analyst, we know that existing movie systems have many classic features like authority, search, movie details, recommend and so on.

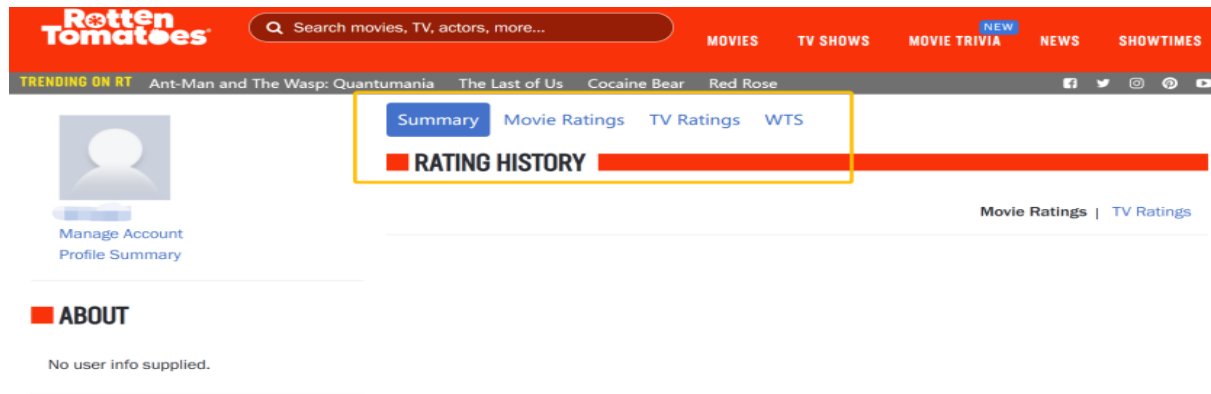


Figure 2 Rotten Tomatoes' personal page



Figure 3 IMDB's personal page

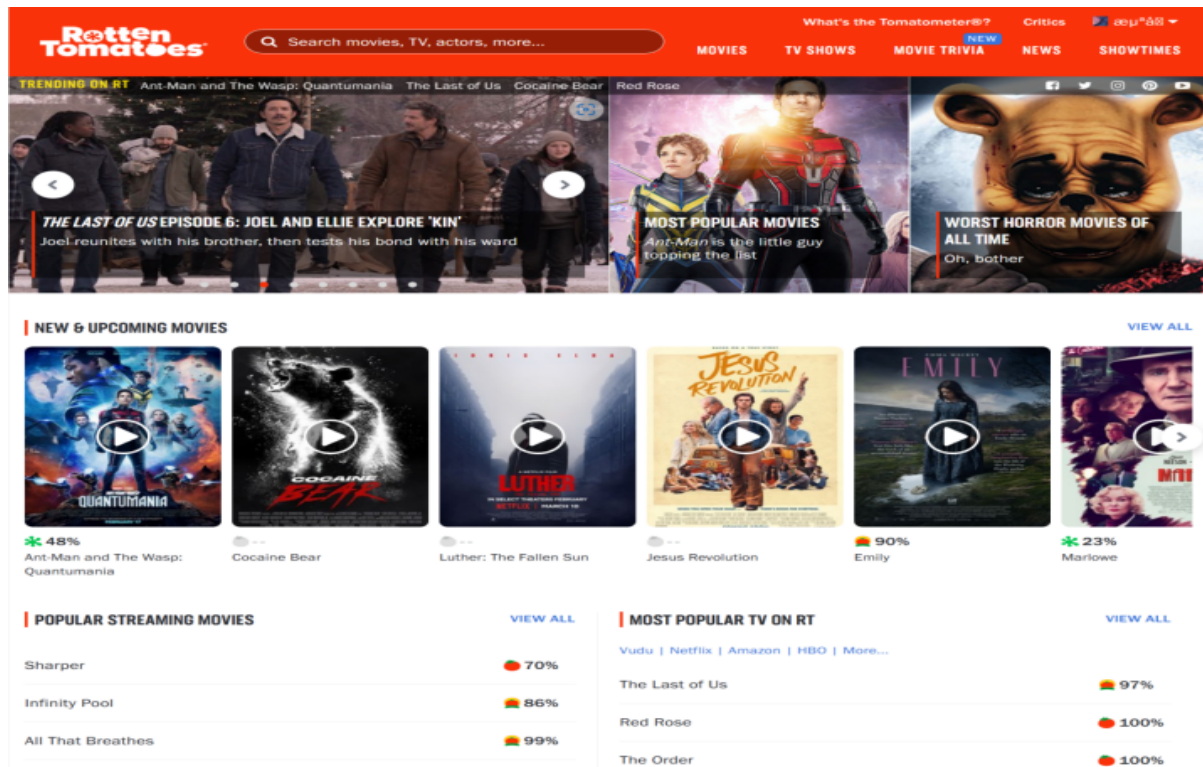


Figure 4 Rotten Tomatoes' recommend page

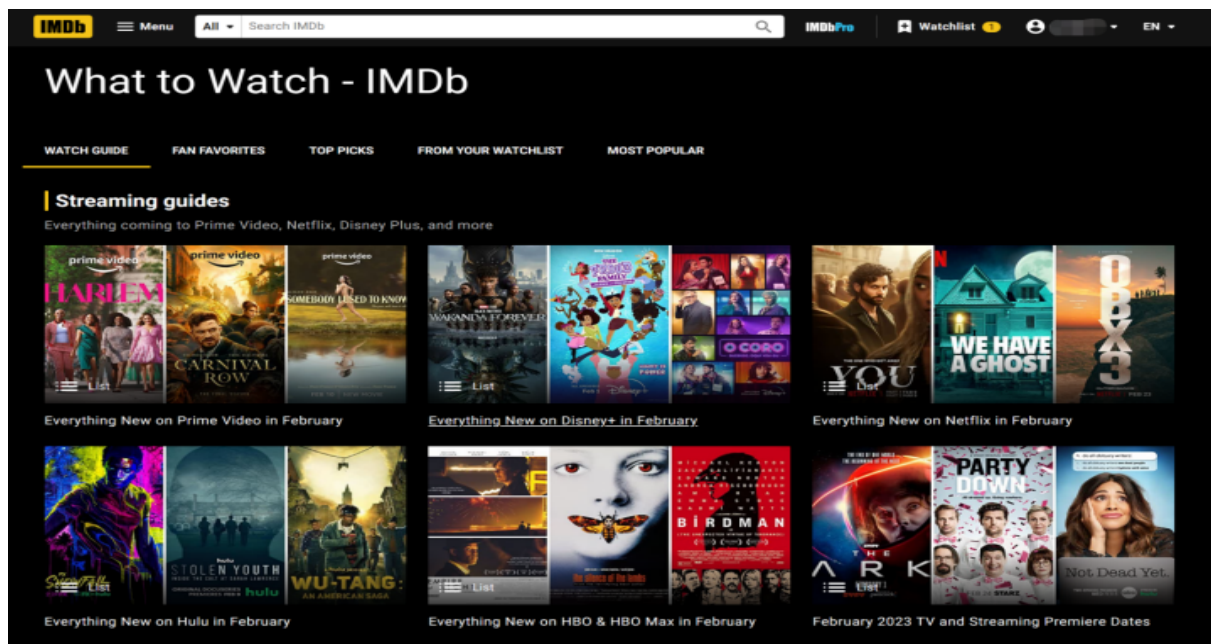


Figure 5 IMDB's recommend page

CRITIC REVIEWS FOR *ANT-MAN AND THE WASP: QUANTUMANIA*

All Critics (319) | Top Critics (66) | Fresh (152) | Rotten (167)



A superhero epic of gargantuan proportions that overwhelms and overstimulates, but still manages to deliver some human emotions despite the CGI circus.

February 20, 2023 | Rating: 3/5 | [Full Review...](#)



Wenlei Ma
News.com.au
★ TOP CRITIC



The overall narrative is pedestrian but offers enough flashes, bangs, and general weirdness for those who prefer to sit back and absorb such things.

February 20, 2023 | Rating: 2.5/4 | [Full Review...](#)



James Berardinelli
ReelViews
★ TOP CRITIC



"Quantumania" has greater stakes and a grander canvas than the more lighthearted previous chapters of the Ant-Man saga, and the film mostly negotiates the tricky tonal shift -- even if the results are more predictable than spectacular.

February 20, 2023 | [Full Review...](#)



Tim Grierson
Screen International
★ TOP CRITIC



The film's main asset is Jonathan Majors as Kang the Conqueror: his performance, with its velvet-soft line deliveries and unfathomable, boundless rage, is the magnetic core of this incoherent effects-dump of a movie.

February 19, 2023 | Rating: 2/5 | [Full Review...](#)



Wendy Ide
Observer (UK)
★ TOP CRITIC



And yet, there it was, that thought, overarching and overwhelming: "I didn't feel a thing."

February 18, 2023 | Rating: 0/5 | [Full Review...](#)



Matthew Lickona
San Diego Reader
★ TOP CRITIC



Ant-Man's return is notable for the villain and not a lot more, meaning this sequel shrinks into the back of the memory rather quickly, disappearing into the multiversal content void almost as if it never existed in the first place.

February 18, 2023 | Rating: 2.5/4 | [Full Review...](#)



Sara Michelle Feters
MovieFreak.com
★ TOP CRITIC

Figure 6 Rotten Tomatoes' review score page

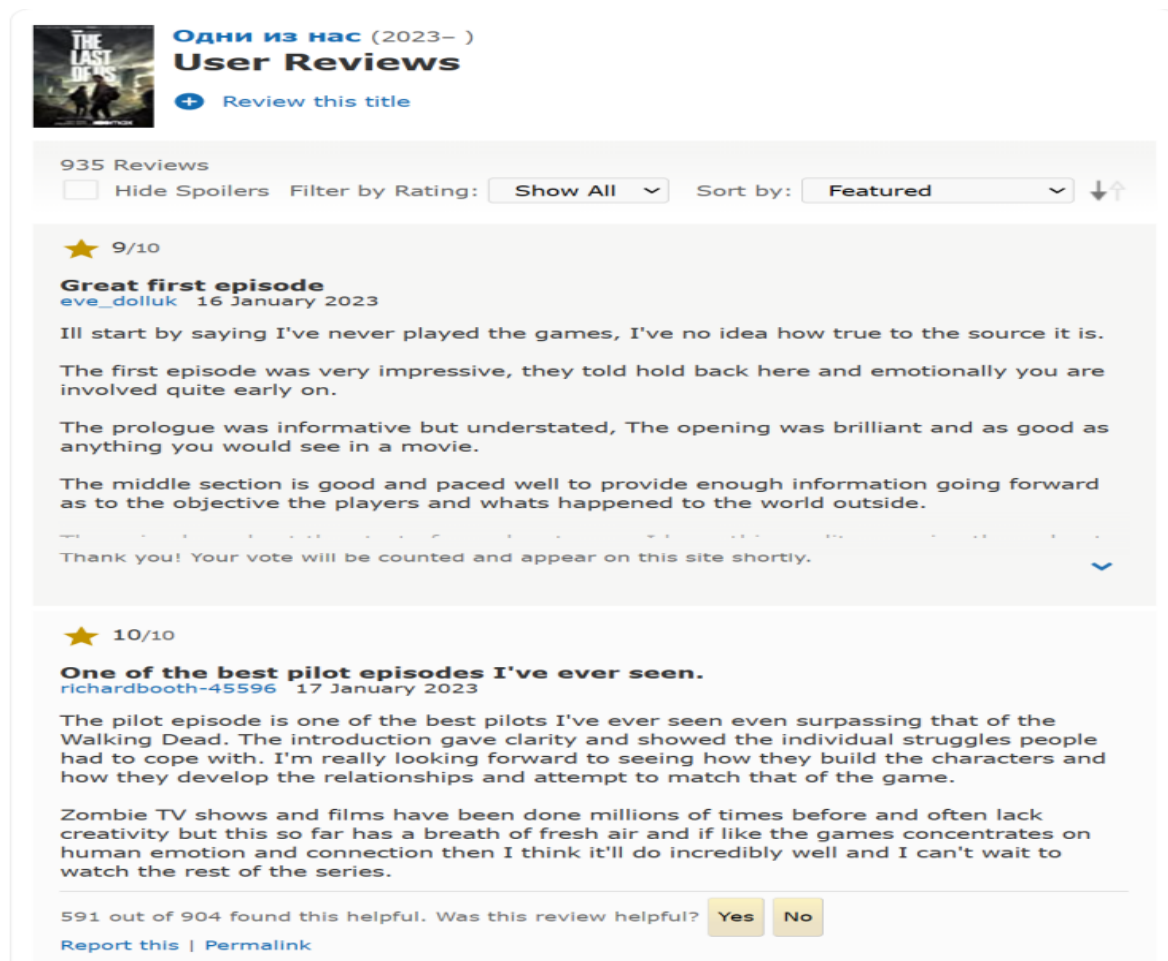


Figure 7 IMDB's review score page

1.3 Motivation

With the continuous improvement of consumption level and the process of building film and television culture, the film industry is in a booming stage of development. The scale of the movie-going population is expanding, and more and more people are choosing to relax by watching movies. Movies are a very public-oriented art, but there are good and bad movie quality, and for viewers with limited money and time, how to judge the quality of a movie largely depends on the evaluation of popular movie review websites. The current international mainstream websites lack innovation and are only limited to the aggregation of movie information and cannot make recommendations based on users' preferences. The scene is abstract and single, lacking content that can generate topics, and users' perception of each other is weak, consuming users' imagination and not giving expected interactive feedback.

Our team plans to develop a movie review site for users who have a stronger need to discover movies and share them. Users can recommend personalized quality content through self-selected tags, set up a personal centre for users to manage their favourite movies, and add a forum function to build a social circle among users to find people with similar movie-watching interests to watch movies and communicate together to increase user stickiness.

2 User stories and Project objectives

To design and provide movie lovers with a user-friendly platform, we must first think about user stories. With user stories, we can identify this system's specific requirements and project objectives. Based on the user stories and project objectives, we conclude 9 functionalities of this system (including 2 novelties).

2.1 Search

User stories:

- As a movie lover, I want to search for a movie by typing a few words of its name so that I can search for the movie without knowing or typing its full name.
- As a movie lover, I want to search for a movie by typing a few words of its description so that I can search for the movie without knowing or typing its name.
- As a movie lover, I want to search for some movies by typing or selecting a genre so that I can search for those related movies.

Based on the above user stories, we know that movie lovers only want to search movies by keywords, not by the full name of the movie.

Project objective 1 can be concluded below:

Movie finders must have a user-friendly interface that allows users to search for movies based on keywords, that match the movie name, description, or genre, with listed results showing matching movie names, and their latest average rating.

Based on the user stories and the project objective, we can conclude the 1st functionality: Search.

2.2 Movie details

User stories:

- As a movie lover, I want to see movie details so that I can know what the movie is about and whether I am interested in it.

Based on the above user stories, we know that movie lovers want to view movie details which can help them decide whether to watch the movie.

Project objective 2 can be concluded below:

Movie finders must provide users with detailed information about each movie, including the movie name, description, genre, cast, director, latest average rating, and all associated reviews.

Based on the user stories and the project objective, we can conclude the 2nd functionality: Movie details.

2.3 Recommendation

User stories:

- As a movie lover, I want to find some movies that are similar to a movie I searched for so that I can watch them or add them to my wish list.

Based on the above user stories, we know that movie lovers want to be recommended some movies based on their data in the system.

Project objective 3 can be concluded below:

Movie finders must have a recommendation system that suggests movies similar to those the user like.

Based on the user stories and the project objective, we can conclude the 3rd functionality: Recommendation.

2.4 Wish list

User stories:

- As a movie lover, I want to add a movie to my wish list so that I can watch them later.
- As a movie lover, I would like to remove a movie from my wish because I change my mind.
- As a movie lover, I want to see other people's wish lists so that I can see what they are interested in.

Based on the above user stories, we know that movie lovers want to manage their wish list.

Project objective 4 can be concluded below:

Movie finders must be able to allow users to create and manage their wish lists, including adding or removing movies.

Based on the user stories and the project objective, we can conclude the 4th functionality: Wish list.

2.5 Review and rating

User stories:

- As a movie lover, I would like to leave reviews for movies I watched.
- As a movie lover, I would like to rate a movie I watched.

Based on the above user stories, we know that movie lovers want to comment on movies they watched and rate them.

Project objective 5 can be concluded below:

Movie finders must provide a review and rating system that allows users to rate and leave reviews for movies they have watched.

Based on the user stories and the project objective, we can conclude the 5th functionality: Review and rating.

2.6 Browse

User stories:

- As a movie lover, I want to browse movies by director so that I can know what movies the director has made.
- As a movie lover, I want to browse movies by genre so that I can know what movies are available under this genre.

Based on the above user stories, we know that movie lovers want to browse movies by some specific types or directors.

Project objective 6 can be concluded below:

Movie finders must enable users to browse movies by director and genre.

Based on the user stories and the project objective, we can conclude the 6th functionality: Browse.

2.7 Banned list

User stories:

- As a movie lover, I want to add some reviewers to my banned list because I do not like their review and their rate for movies.

Based on the above user stories, we know that movie lovers want to manage their banned list.

Project objective 7 can be concluded below:

Movie finders must be able to allow users to create and manage their banned lists, including adding or removing other users.

Based on the user stories and the project objective, we can conclude the 7th functionality: Banned list.

2.8 Novelty: News

User stories:

- As a movie lover, I want to view movie news so that I can know what is going on about movies.

Based on the above user stories, we know that movie lovers want to view some movie news.

Project objective 8 can be concluded below:

Movie finders must provide a news section for users to stay up to date on the latest movie-related news.

Based on the user stories and the project objective, we can conclude the 8th functionality: News. While some existing systems provide basic information about movies such as ratings, reviews, and release dates, they do not provide up-to-date news about the movie industry. Comparing to existing systems, this user story provides a novel functionality – News to provide movie news for movie lovers.

2.9 Novelty: Discussion

User stories:

- As a movie lover, I would like to post article of any movies without limited size.
- As a movie lover, I would like to discuss with people of movies, not only leave a review.

Based on the above user stories, we know that movie lovers want to discuss with other people about movies.

Project objective 9 can be concluded below:

Movie finders must provide a platform for users to share their thoughts and opinions.

Based on the user stories and the project objective, we can conclude the 9th functionality: Discussion. While some existing systems allow users to leave reviews, they do not offer a platform for users to engage in meaningful discussions about movies. The Discussion feature in the Movie Finder System enables users to post and read articles about movies without a size limit, as well as participate in discussions with other users. This feature sets the system apart from others that only allow users to leave short reviews, which may not provide enough detail for users to make informed decisions about which movies to watch.

3 Project management

Based on the user stories and project objectives, we conclude 9 functionalities the Movie Finder System must achieve. In project management, these 9 functions can be divided into 4 epics:

Epic 1 is “Movie”, including search, movie details, recommendation, wish list, review and rating, browse, banned list.

Epic 2 is “News”, including the news functionality.

Epic 3 is “Discussion”, including the discussion functionality.

Epic 4 is “Authority”. This epic does not include any functionalities that we consider above. But we need this authority to provide users with accounts to manage their data like the wish list and the banned list.

With the information, we can set up our backlog and sprints in Jira.

3.1 Backlog

Below is the screenshots of Backlog.



Figure 8 Backlog

3.2 Sprints

Sprint schedule:

Sprints	Date	Activities
Sprint1	Mar1 – Mar15	Epic1: Authority Epic2: Movie (only finish these functionalities: search, movie details, wish list, browse, banned list)

		Epic3: News
Sprint2	Mar16 – Apr5	Epic2: Movie (finish the rest functionalities of this epic: recommendation, review and rating)
Sprint3	Apr6 – Apr19	Epic4: Discussion

Below is the first sprint screenshots in Jira.

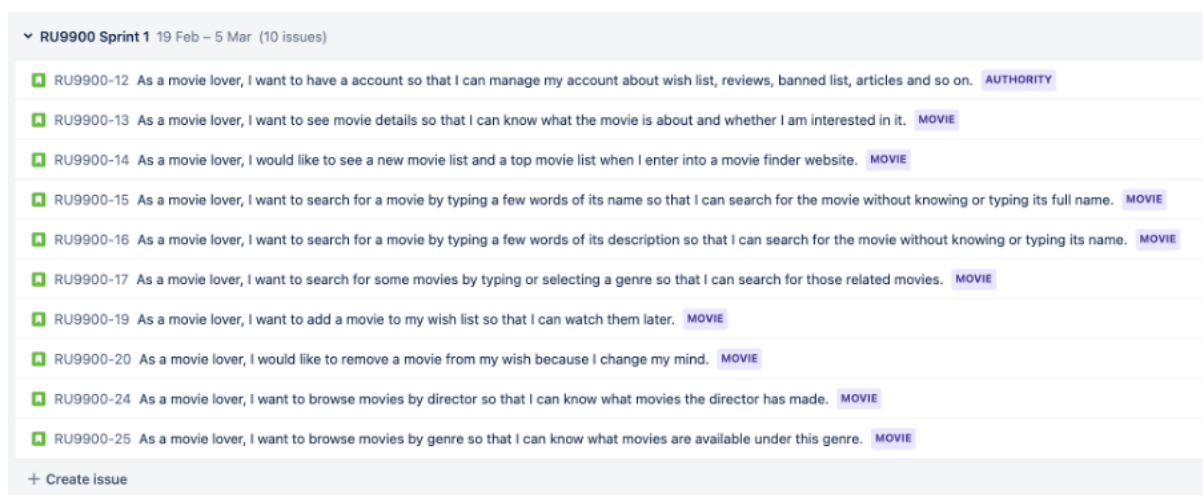


Figure 9 First sprint

3.3 Roadmap

Below is the screenshots of Roadmap.

Roadmap

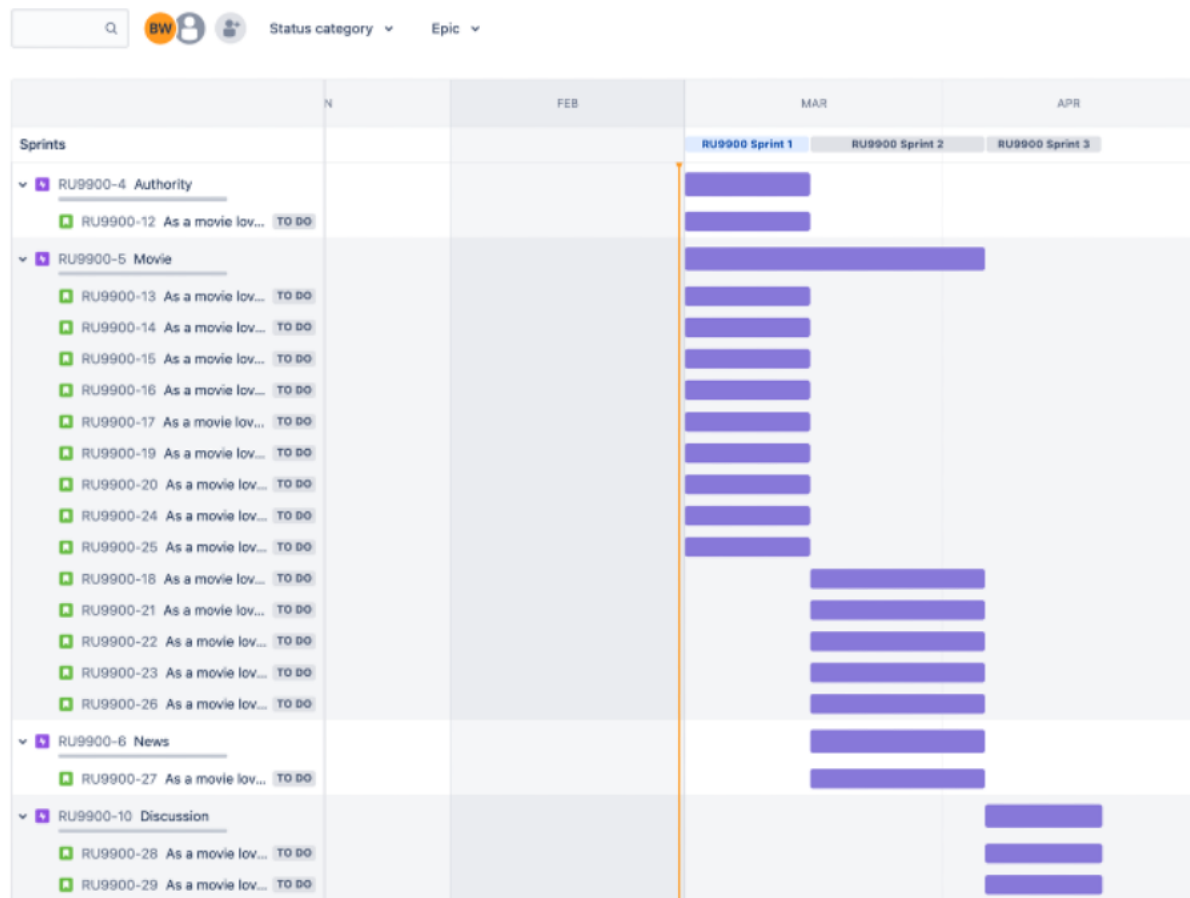


Figure 10 Roadmap

4 Interface and flow diagram

4.1 Interface

4.1.1 Home Page

Home page contains three main parts: Header, body, and footer and this construction will be used in most of the page in this system. The header is a navigation bar and it contains Home button, Browse button, Wish list button, News button, Discussion button, Search bar and sign in/up button. The body in this page contains the movies that are popular and upcoming. And in the right-top of this page, when user login by clicking the sing in or sign up button, the page will show an avatar which will route to the user's profile.

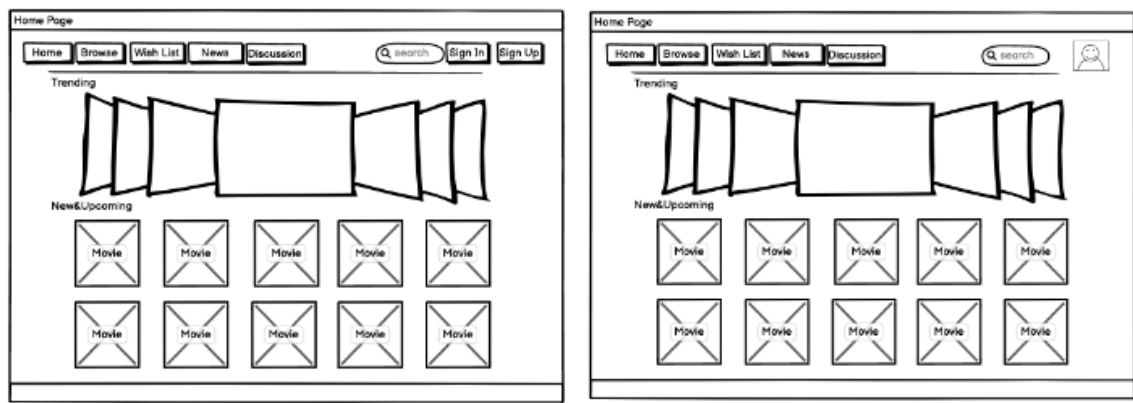


Figure 11 Home page

4.1.2 User profile

User profile is not a page, but when user login and click the avatar, four buttons for profile, wish list, banned list, and logout functionalities will be shown in the form of slide.

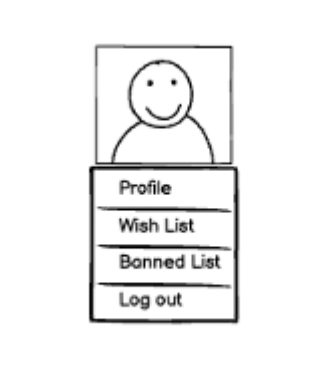


Figure 12 User profile

4.1.3 Browse page

When user use the searching bar by typing some key words, the system will call the searching function and the browse page is shown and the body of this page are the results of searching movies, and the results are based on the words typed and the searching algorithm. And there are four filter that the user could choose to use based on their preference.

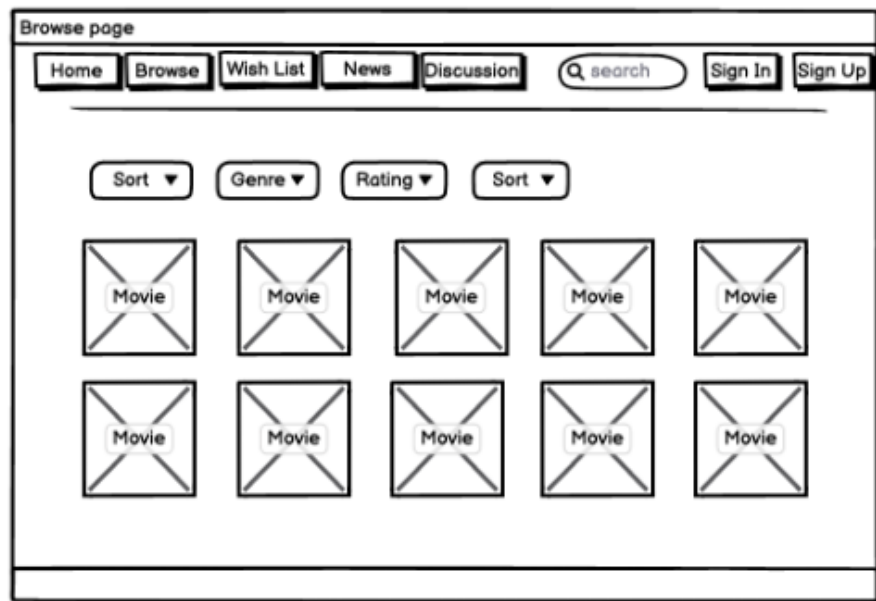


Figure 13 Browse page

4.1.4 Movie details page

When the user clicks the picture of the movie shown in the home page, it will be routed to the movie details page, and the body of this page is the detailed information of the movie, and some similar movies recommended for the user. Also, the reviews leaved by the user are also shown on the bottom of this page. And same as before, the user profile avatar will be shown if the user log in.

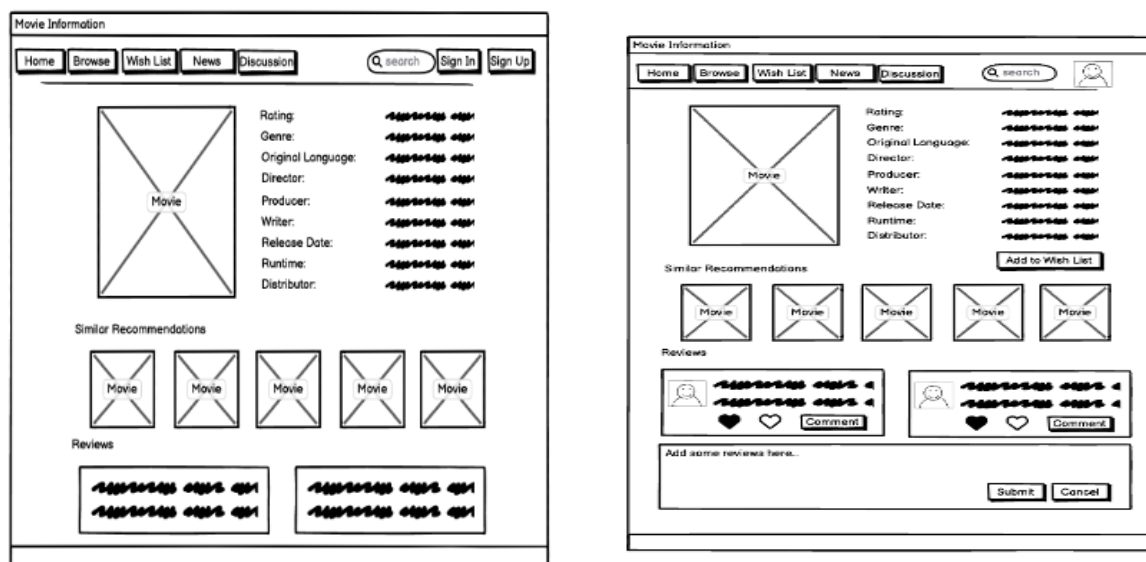


Figure 14 Movie details page

4.1.5 Sign up & Sign in & Reset password page

When the user clicks the sign up/sign in button on the home page, it will be routed to the following pages correspondingly. For the sign up page, a few details blanks are required for user to fill in to register. For the sign in page, the user must type in the username and the

password to sign in. And there are two more buttons in the sign in page for the user when they don't have an account yet or forgetting the password. When the user clicks the sign up button, it will be routed to the sign up page, and when the user click the forgot password button, it will be routed to reset password page. For the reset password page, the user must fill in the email of their account and the new password to change the password. When user login no matter by registering or signing in, it will be routed to the home page.

The figure shows three wireframe diagrams for user authentication pages:

- Sign Up page:** Contains input fields for Email, Password, Confirm Password, First name, and Last name. A "Sign Up" button is at the bottom.
- Sign In page:** Contains input fields for Username and Password. It has "Sign In" and "Sign Up" buttons, and a "Forgot password?" link at the bottom.
- Reset password page:** Contains input fields for Email, New Password, and Confirm Password. A "Submit" button is at the bottom.

Figure 15 Sign up & Sign in & Reset password page

4.1.6 News page

The system has an news page which is routed by clicking the news button in the home page and it shows the top headlines. Then when user clicks one of the news, the page will show the news.

The figure shows two wireframe diagrams for the News page:

- News page (Left):** Displays "Top Headlines" with a grid of news items, each represented by a circular icon and a text snippet.
- News page (Right):** Displays a detailed news article titled "The 5 best movies of 2023". It includes a list of movie titles, a "Featured on February" label, and a placeholder image for a featured movie.

Figure 16 News page

4.1.7 Banned list page

The system has a banned list page which is routed by clicking the button in the profile to show some users that are banned. And the user can not see the reviews of these accounts. And also in this page, there are unblocked buttons for the user to click to unblock some users.

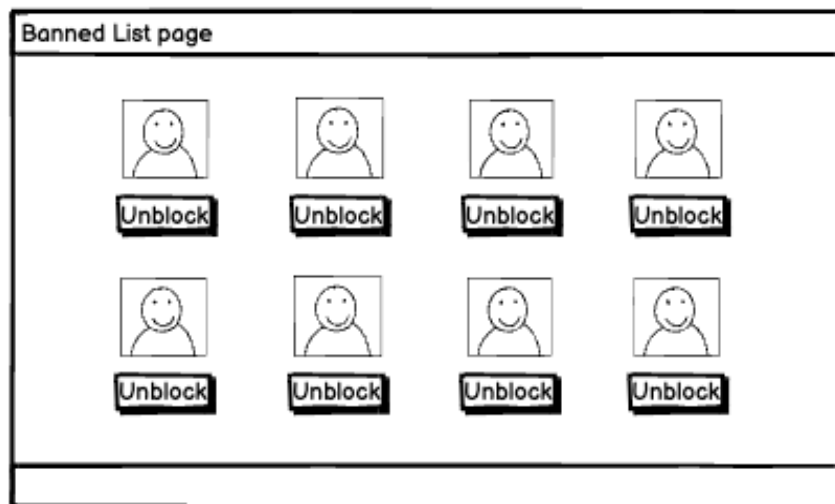


Figure 17 Banned list page

4.1.8 Wish list page

The system has a wish list page which is routed by clicking the button in the profile to show the wish list that listing some movies the user is interested in and want to watch. And also in this page, there are unlike buttons for the user to click to remove the movies that they may already watched or they don't want to watch anymore.

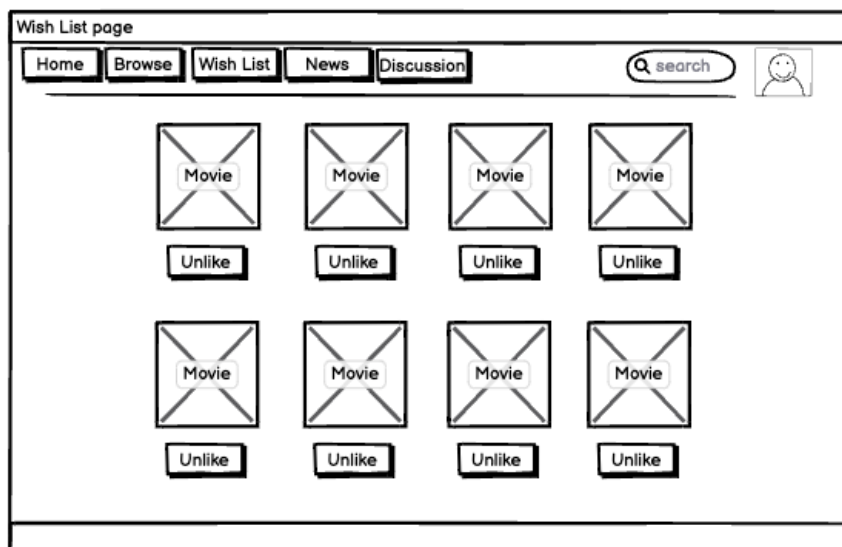


Figure 18 Wish list page

4.1.9 Discussion page

The system has a discussion page which is routed by clicking the button in the navigation bar to show some thoughts of the user for some specific movies. And it is like a forum allowing

users to share their thoughts for some specific movies. And there are two like/unlike options for user to click and there is a comment button for the user to leave their own thought for this comment to discuss.

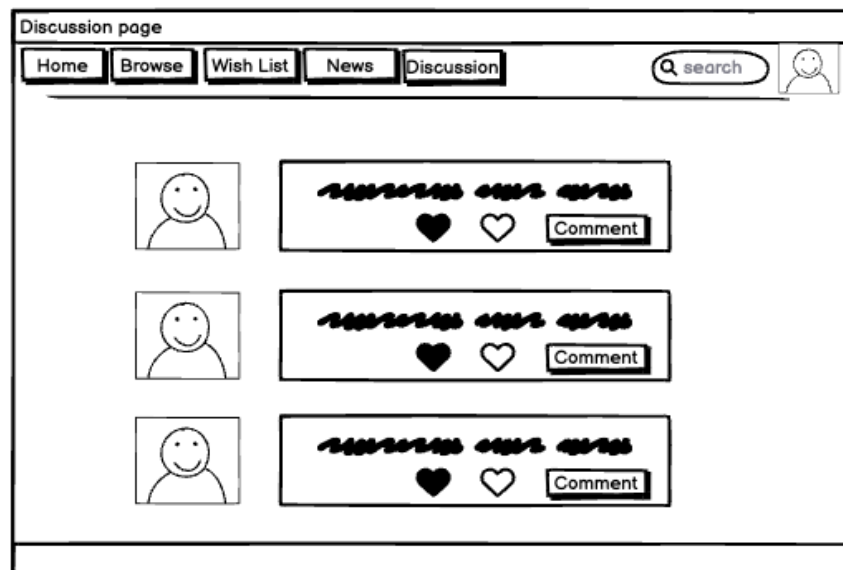


Figure 19 Discussion page

Below are the storyboards, which has the connection of all pages.

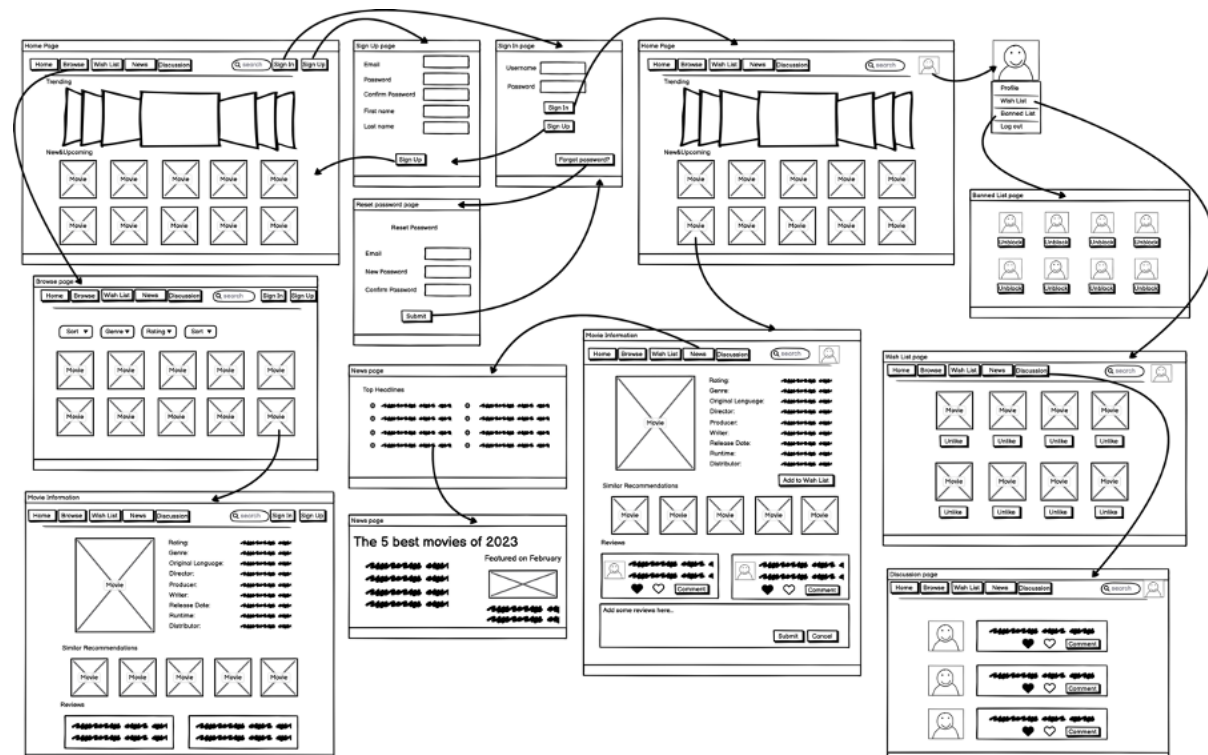


Figure 20 Storyboards

4.2 Flow diagram

The flow diagram is shown below.

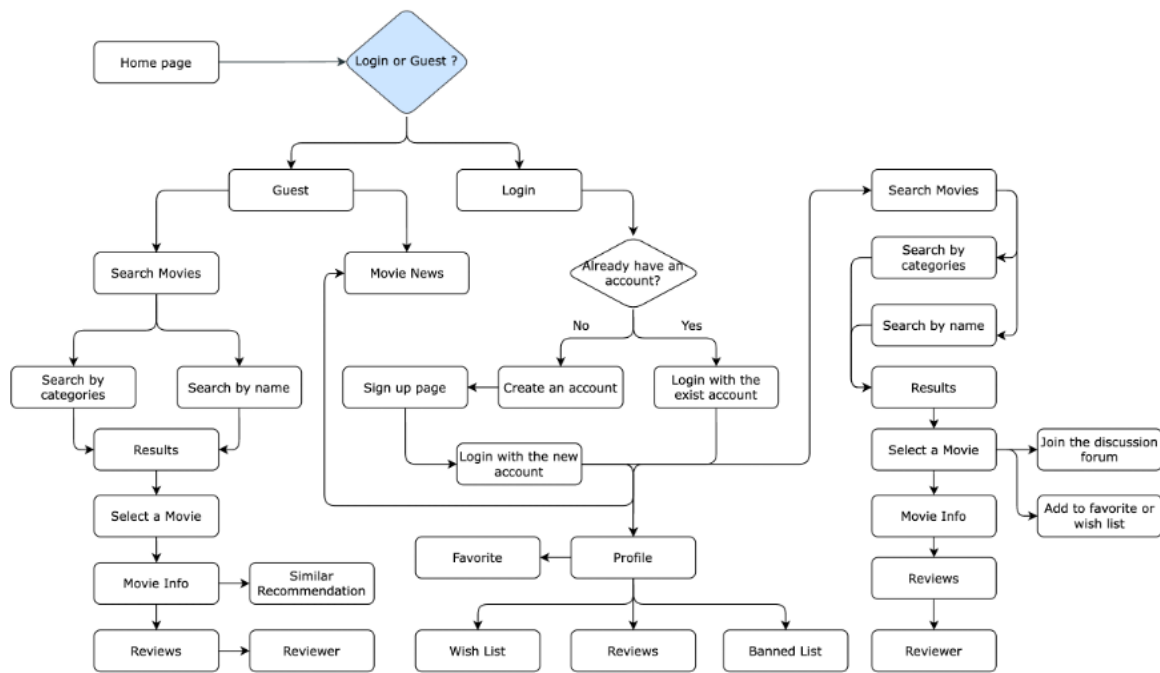


Figure 21 Flow diagram

5 System Architecture

5.1 Architecture breakdown

The architecture of the system can be generally divided into 3 layers: Presentation Layer, Business Layer, Data Layer which shows in the graph below.

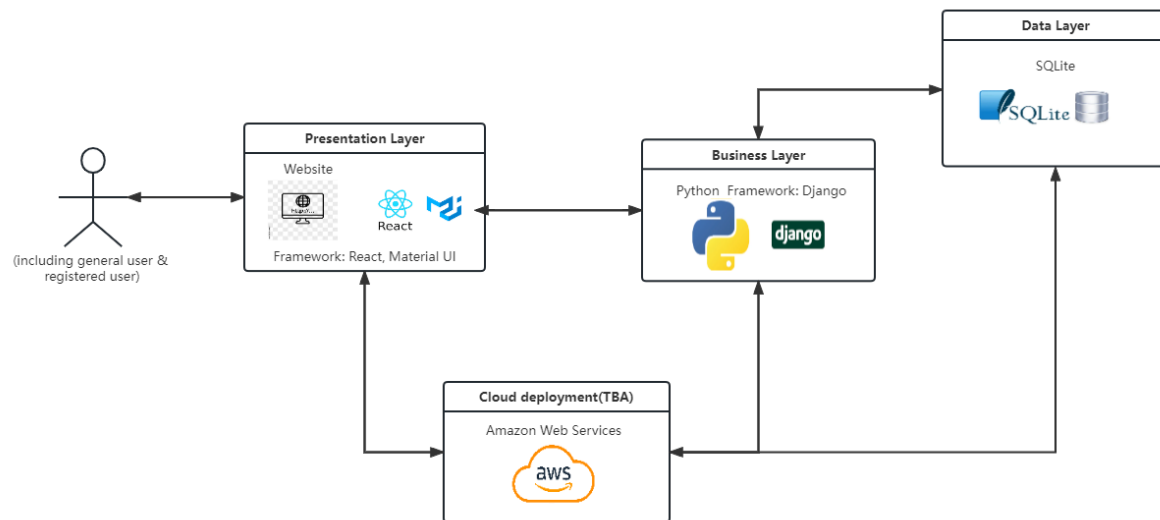


Figure 22 The architecture of the system

5.2 Technologies description

5.2.1 Presentation Layer:

React:

React has a larger community and a more mature ecosystem, offering a wider range of third-party libraries and tools. Its component-based architecture allows for more modular and reusable code, making it easier to maintain and scale large projects. At the same time, since COMP6080 teaches how to use react, some of us have experience in this course and are more familiar with react, so we tend to use react.

MUI:

MUI follows Google's Material Design guidelines to provide a consistent and familiar look across different platforms and devices.

It has a smaller bundle size and better performance, making it faster to load and more efficient to use. The same experience with COMP6080 makes us more inclined to choose it.

5.2.2 Business Layer

Python:

Python has a simpler and more expressive syntax, making it easier and faster to write code. Python is also the compiled language used by many courses at UNSW, so we are more familiar with Python, which will make our development more efficient. At the same time, Python has a lot of modules. It is not only easy to download, but also has many functions, which will make development easier.

Django:

Django is more stable and provides many modules out of the box (e.g. tools, patterns, features and functions). In terms of stability, Django has a longer, stricter release cycle. As a result, new Django releases have fewer shiny new features, but greater backwards compatibility. Therefore, when we continue to learn Django, the learning difficulty is lower than that of Flask. When Flask is updated, there will be many shocking new features, but this often requires learning costs. Django includes a simple and powerful ORM (object-relational mapping), which supports many ready-made relational databases-SQLite, PostgreSQL, MySQL and Oracle, which allows us to quickly develop a web project without implementing a database that is too complicated, and It is possible to use it built-in. at the same time,

Django comes with a functional admin backend, a web application that provides a user interface for managing data based on models. This is another highlight of Django, which also reduces the time and difficulty required for development. And Django's App looks more difficult than Flask's Blueprints, but Django makes these lazy, and it is very easy to use after installation. And Django supports async, which can improve the efficiency of the program. All in all, Flask will be smaller and more flexible, but the rich functions provided by Django can reduce the difficulty of development and improve development efficiency, so we choose to use Django instead of Flask.

5.2.3 Data Layer

SQLite:

It is an embedded database, just a file in .db format, no need to install, configure and start. SQLite attempts to provide local data storage for individual applications and devices. Therefore, it is very suitable for small and medium-sized websites, and it has good performance when the amount of data is within 100k. No additional configuration costs and environments are required, it performs well on small and medium-sized websites, and it is very lightweight, which is very suitable for our project.

Reference

- [1] Rotten Tomatoes. n.d. rottentomatoes. Available at: <https://www.rottentomatoes.com/> [Accessed 2 March 2023].
- [2] IMDb. n.d. IMDb. Available at: <https://www.imdb.com/> [Accessed 2 March 2023].