Project Report:

Group #38

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Appendix

Abstract

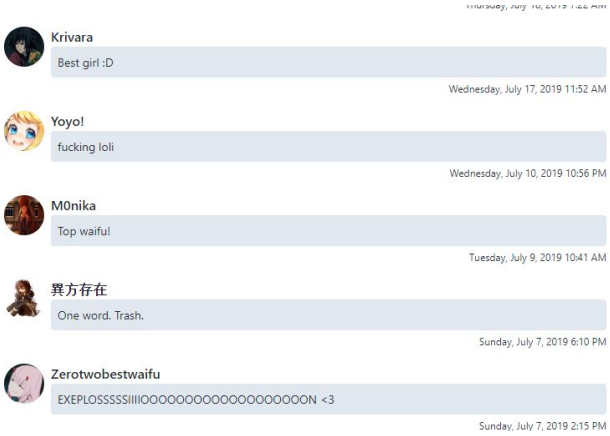
Our project is a web application that allows users to rate their favorite fictional characters. This concept was inspired by RateMyProfessors.com and database websites like MyAnimeList.net or AnimeCharacterDatabase.com. Although there exists an uncountable number of fictional characters, a select few are always ranked highly across many of these websites without any informative content as to what makes them more popular. Our goal for this project is to create a system that helps users understand why certain characters are favored over others. Using rating concepts similar to RateMyProfessor.com, we are able to generate a rating score for fictional characters determined by a small questionnaire followed by a text section for comments or elaboration.

Introduction

The admiration of animated fictional characters is an ongoing trend that has long existed throughout the evolution of technology. This admiration has grown significantly in recent decades and many people now choose refer to these characters as “Waifus.” Every source of fictional media will have some collection of characters. Given the number of animated series, manga or comics, and even games that have been released, the number of characters, or “waifus” that exist has become uncountable.

Problem Definition

Considering the exponentially increasing number of characters that have been released over the decades, we expect to find a diverse selection of characters admired by most people. However, after researching several sources such as MyAnimeList.net or mywaifulist.moe, we find that a select few characters are significantly more popular to the public than others. To the right is an example of comments listed on mywaifulist.moe for the character Megumin from the anime Konosuba. We find that the comments section on these sites for each character is often completely cluttered with catch-phrases or comments that lack informative content. These comments fail to help us understand why characters such as Megumin stand out more than others.



Our Solution

To understand why certain characters are more admired than others, we explored several rating sites. We found that RateMyProfessor.com had an excellent system for rating professors, and we decided to implement a similar approach towards waifus. When rating a professor, you are prompted with a small questionnaire to determine a score followed by a comment section to support the rating. By implementing a system like RateMyProf, we can generate a rating score determined by some questionnaire in addition to user comments to better understand why some characters are more popular than others.

Project Design

There are three types of users for our system; admins, registered users, and guests. A guest user is anyone who has not created an account for website. Anyone is able to browse and search anime and characters, filter anime and characters by some category tag, and view details about anime, characters and the ratings posted by registered users. Accessing other features such as uploading anime or characters or rating a character is restricted to registered users and admins only. Guests who try to access these features will be redirected to the Login page.

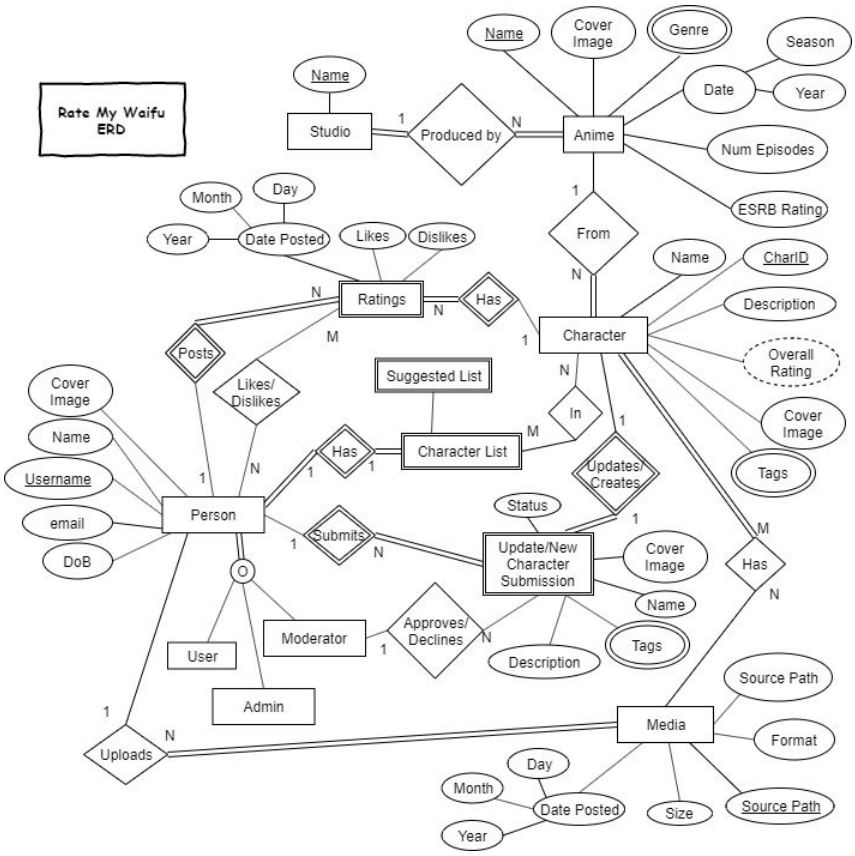
We have prefilled a database of characters and anime for illustrative purposes, and any new entries can be uploaded by registered users. To ensure accurate information, these uploads will not be added to the public database until they have been reviewed and approved by an admin. Registered users are able to rate characters, where they will be prompted to fill out a small questionnaire and provide comments or reasoning for the rating. The questionnaire will determine scores for attributes such as the character's appearance or personality. Once posted, the overall average of each attribute is calculated from all the ratings. Character pages contain all the ratings for that character. User pages contain all of the ratings created by that user. The home page shows a list of the most recent ratings.

Any pending uploads can be viewed on an admin page by accessing "localhost:5000/admin". If the user is not an admin, he will be redirected to the home page if he tries to access this page. Admins can see all the uploads submitted and can approve or decline the submission. If approved, the submission will be added to the database. The submission is cleared from the list of pending uploads once the admin approves or declines the submission.

Entity Relation Diagram

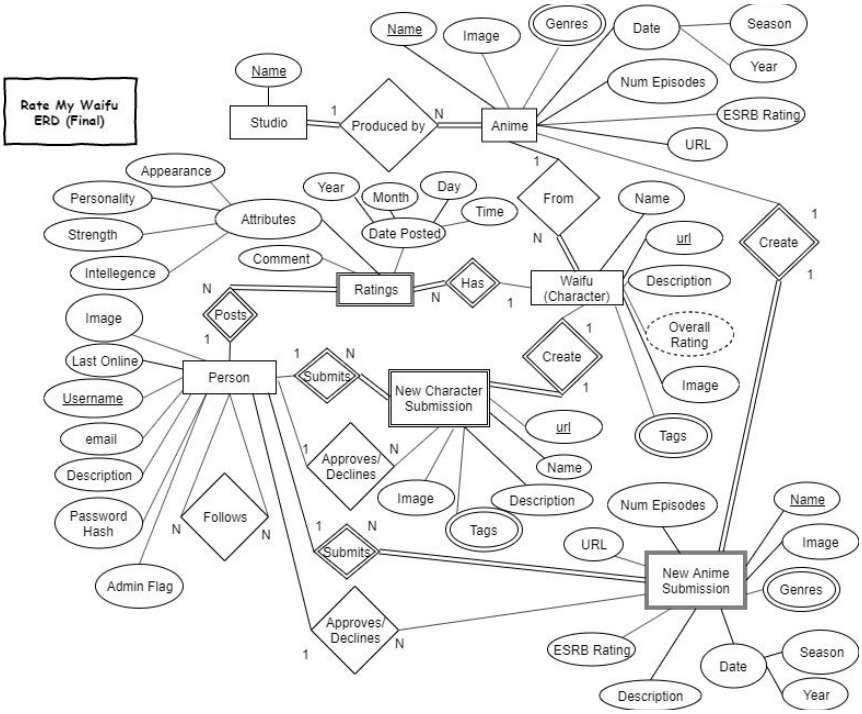
Things that were removed from the ERD:

- Gallery of uploaded media for characters
- liking/disliking user's ratings
- List of user favorite characters and a suggested list of characters
- Removed moderator, using Admin instead



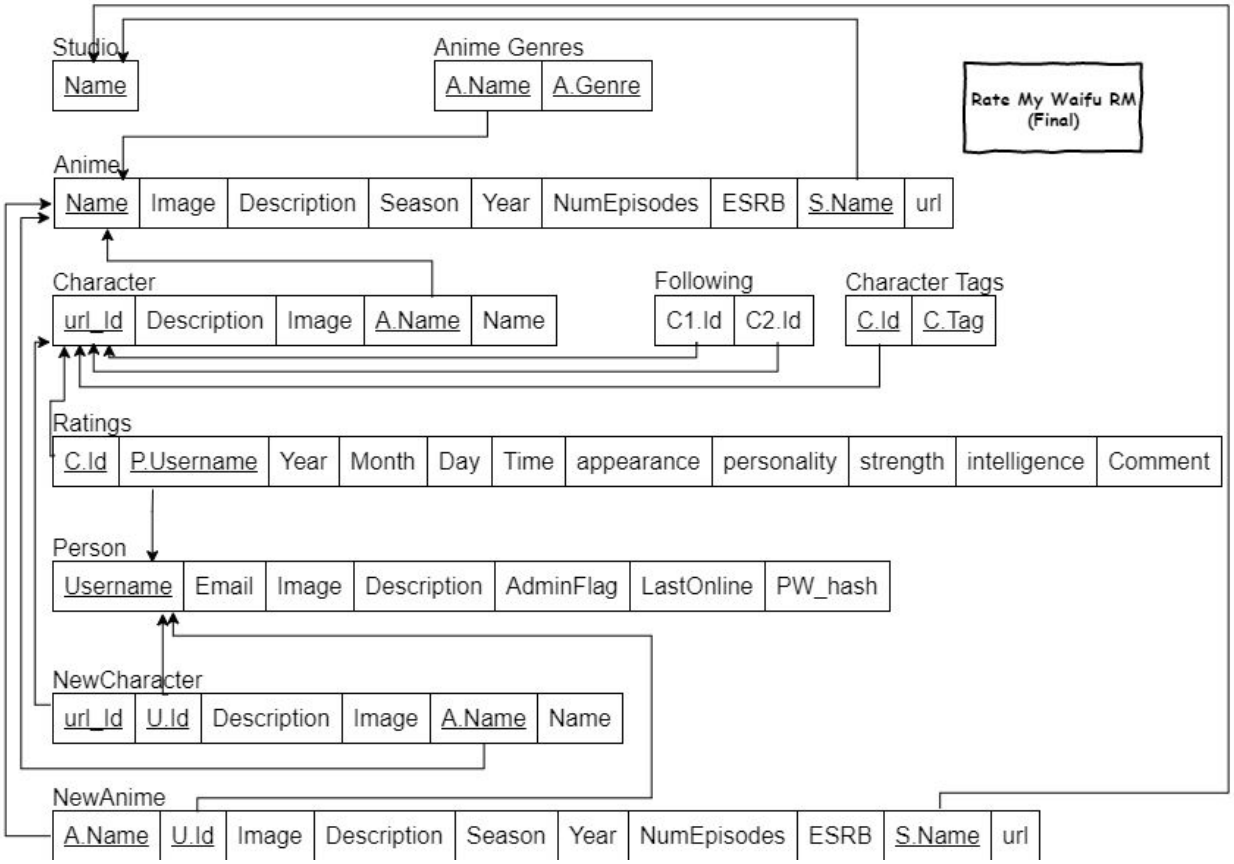
Things that were added to the ERD:

- Numeric Attributes were added to Ratings
- Description of anime
- Password hash and admin flag for users
- Urls for anime and characters
- New anime submission
- Users can follow other users



Implementation

Relational Model



We used the Flask micro web framework to create the website application. We used Bootstrap for the front-end of the website.

Database Management System (DBMS)

We used SQLite as our relational database management system and SQLAlchemy to perform our queries. SQLAlchemy queries translate into equivalent raw SQLite queries but prevent SQL injection attacks when reading data from text fields such as our search bar or when displaying a list of filtered results when the user clicks a link on a page like one of the genres of an anime.

Some SQL Queries

```
@app.route('/anime/<url>')
def anime(url):
    anime = Anime.query.filter_by(url=url).first_or_404()
    waifus = db.engine.execute("Select * from waifu where
anime_name=(select name from anime as a where a.url=:mv)", {'mv':url})
    genres = db.engine.execute("Select * from anime_genres where
anime_name=(select name from anime as a where a.url=:mv)", {'mv':url})
    return render_template('anime.html', waifus=waifus, anime=anime,
genres=genres)
```

- On any anime page:
    - ‘anime’ contains a single row from anime along with all its attributes.
    - ‘waifus’ contains a list of characters that are from the anime
    - ‘genres’ contains all the genres the anime fall in. genres are stored in a separate table because it is a multivariable attribute of anime

---

```
@app.route('/animeRelease/<data>')
def browse_anime_by_release(data):
    animes = db.engine.execute("Select * from anime where (season=:gv or
year=:gv or studio=:gv)", {'gv':data})
    return render_template('browse_anime_by_release.html', animes=animes,
data=data)
```

- Whenever a season, year or studio is clicked:
    - ‘anime’ contains a list of anime from the season, year or studio it was released where season={Winter,Spring,Summer,Fall},1990<=year<=2019 and studio=/*some string*/,

---

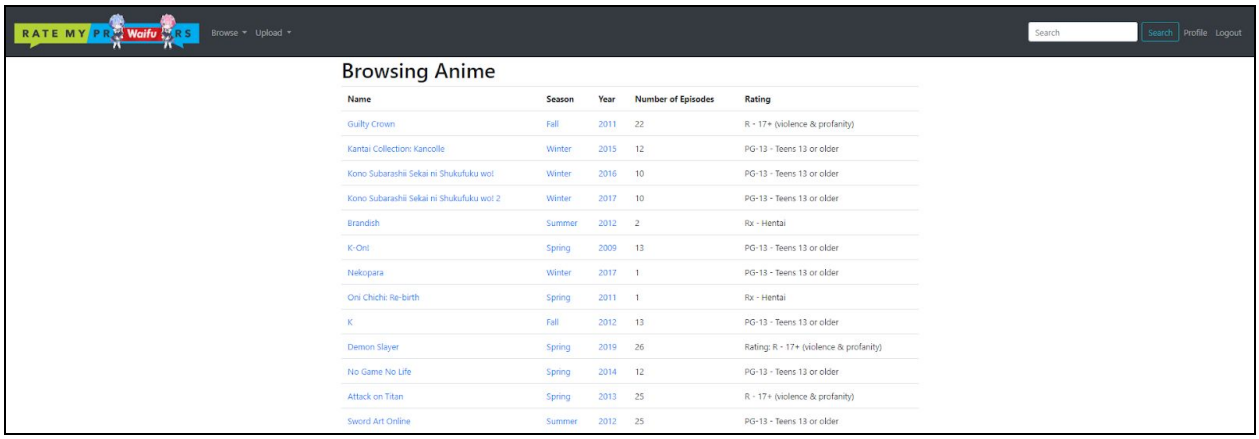
```
@app.route('/waifuTags/<tag>')
def browse_waifu_by_tag(tag):
    waifus = db.engine.execute("Select * from waifu join waifu_tags on
name=waifu_name where tag=:gv", {'gv':tag})
    return render_template('browse_waifus_by_tag.html', waifus=waifus,
Anime=Anime, tag=tag)
```

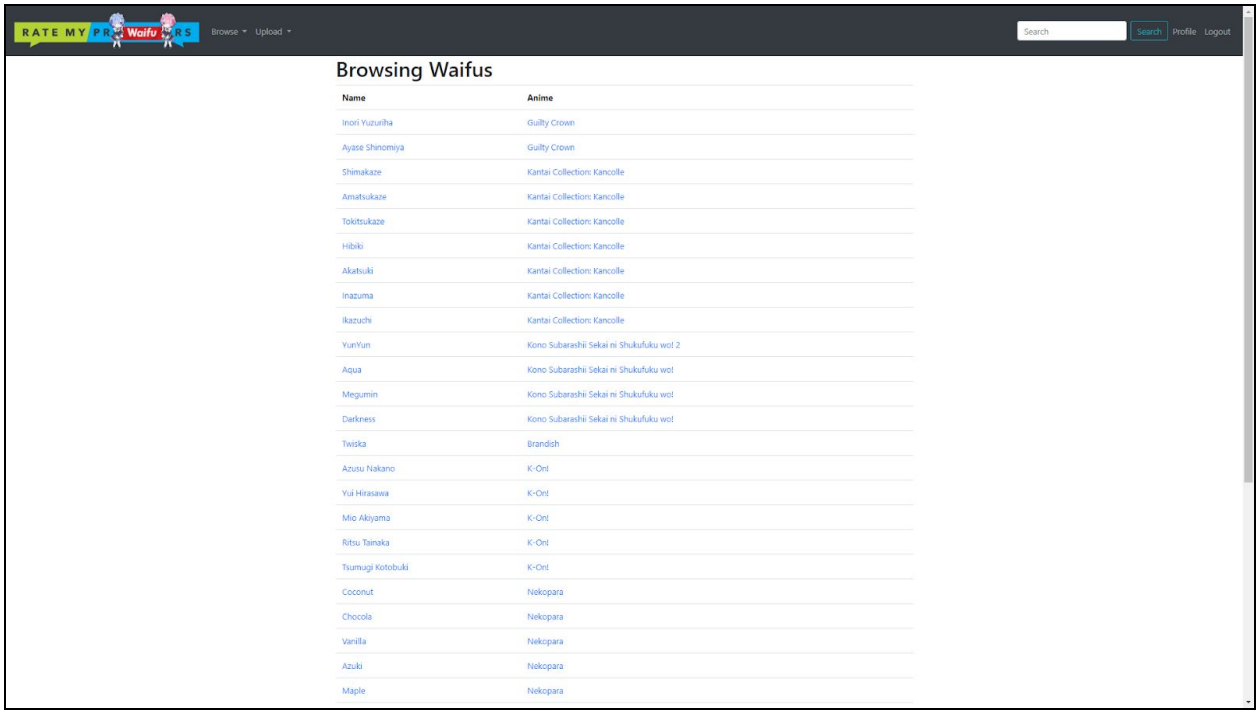
- Whenever a character tag is clicked:
    - ‘waifus’ contains a list of characters that contain the tag that was clicked. Waifu_tags is a multivariable attribute and is stored on a separate table.

Snapshots

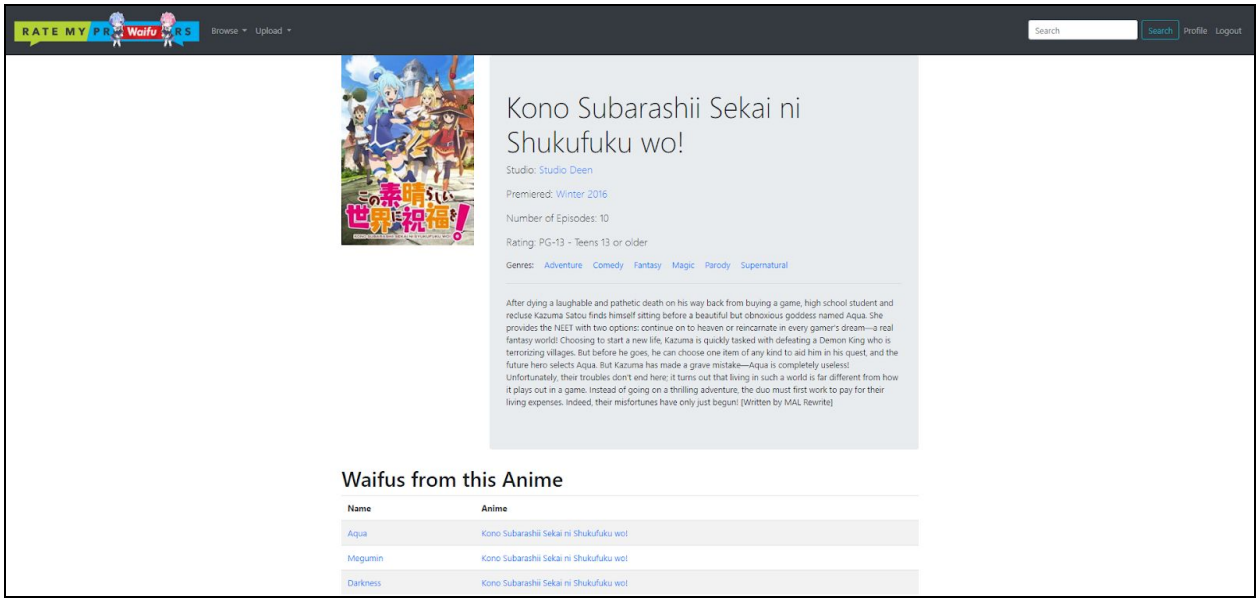
Features where user sign-in is NOT required

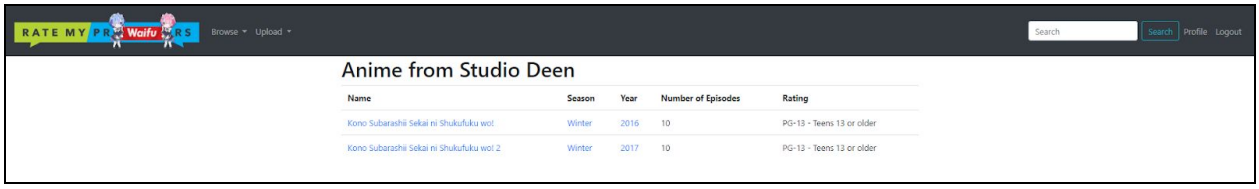
Browsing Anime and Waifus



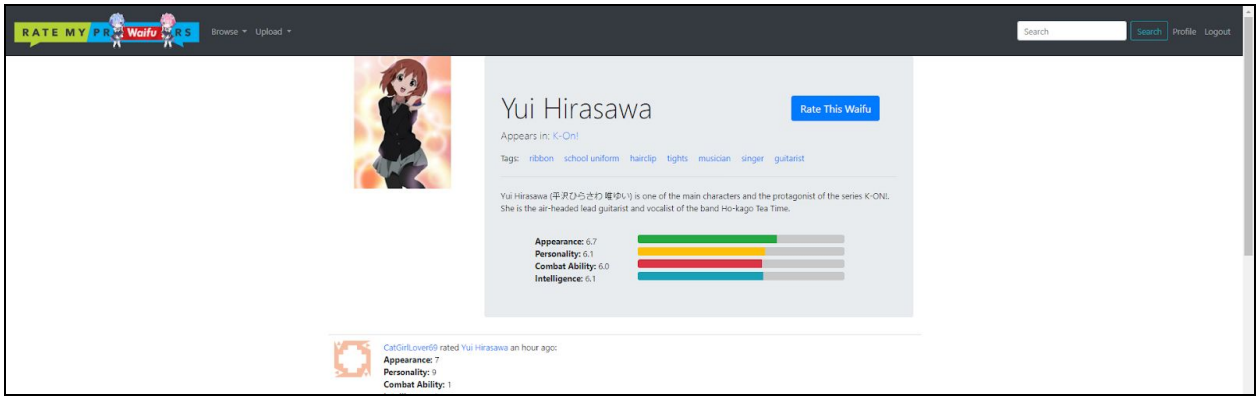


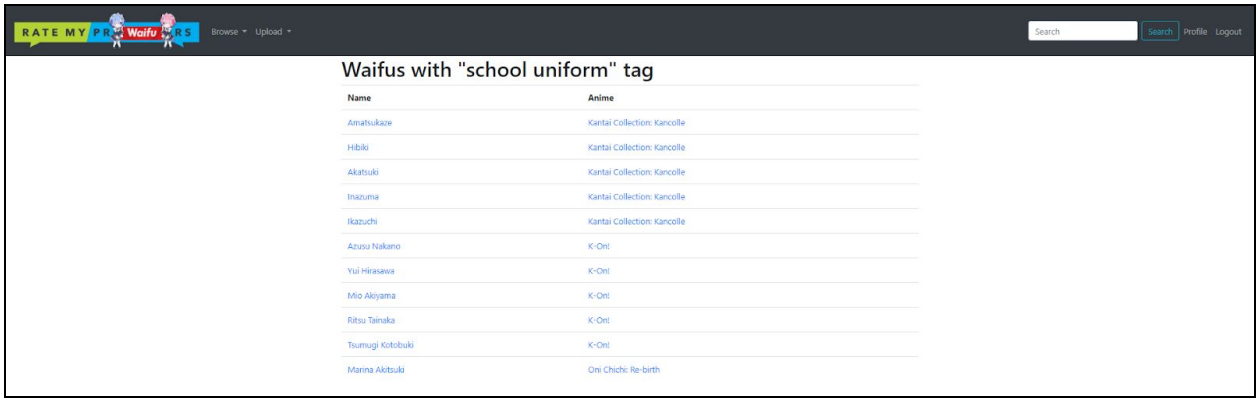
Browsing Anime by Season, Year, Studio or Genre





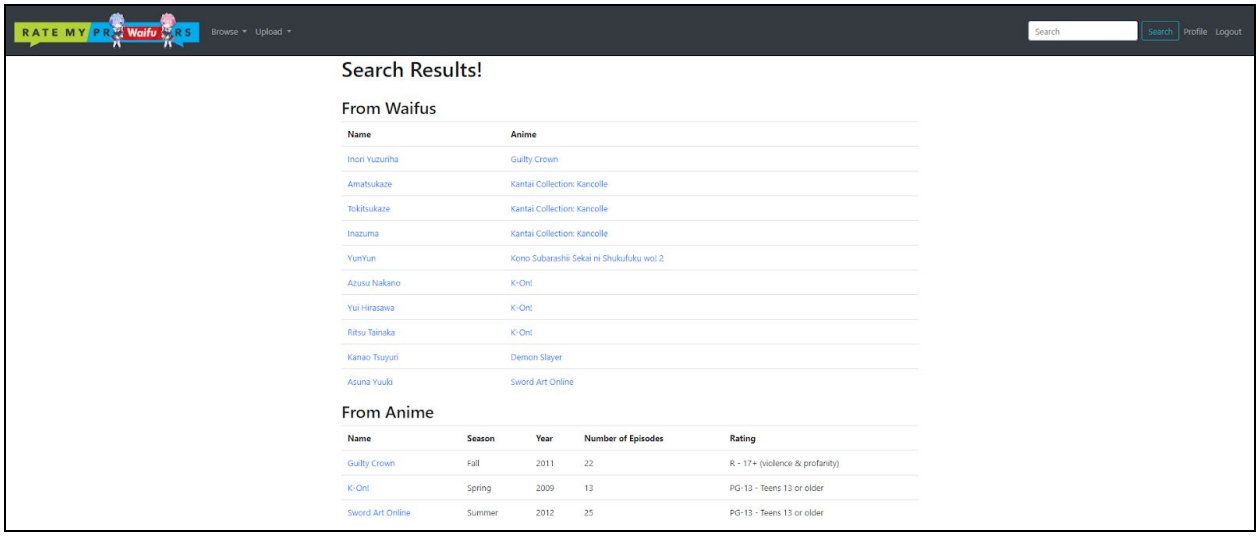
Browsing Waifus by Tags

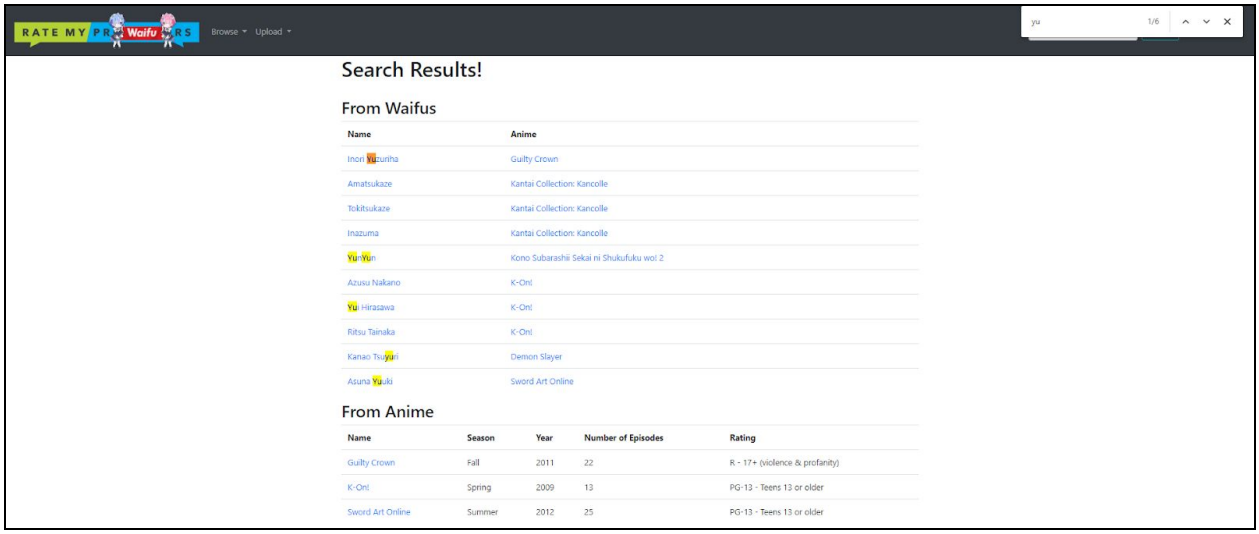


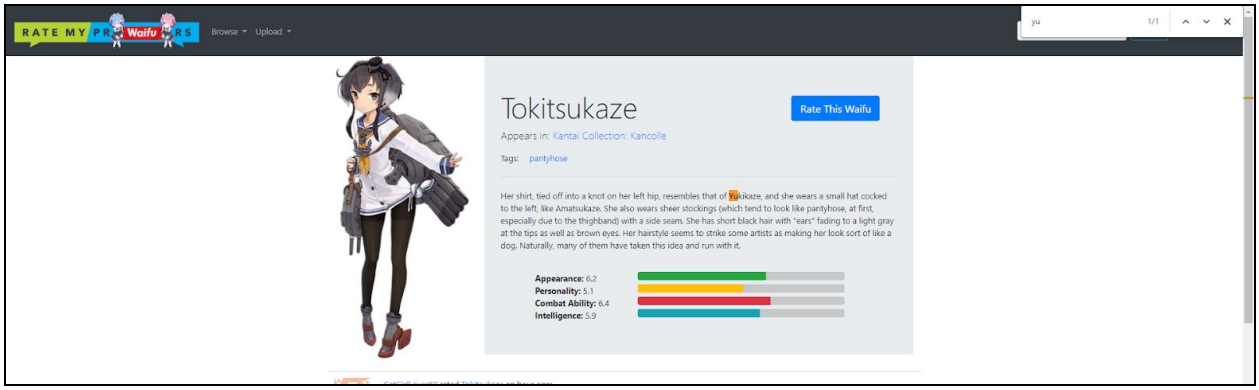


Searching

When a string is entered in the search bar, all anime and waifus that has the string as a substring in their name or description will be listed. For the following example, the string “yu” was entered in the search bar.



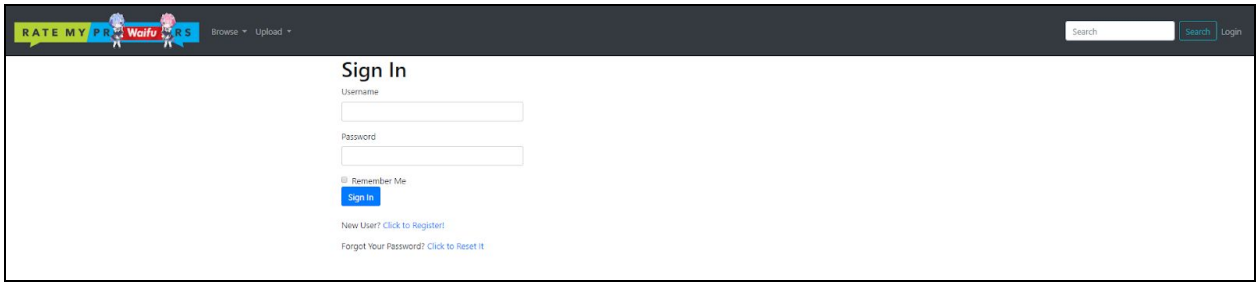


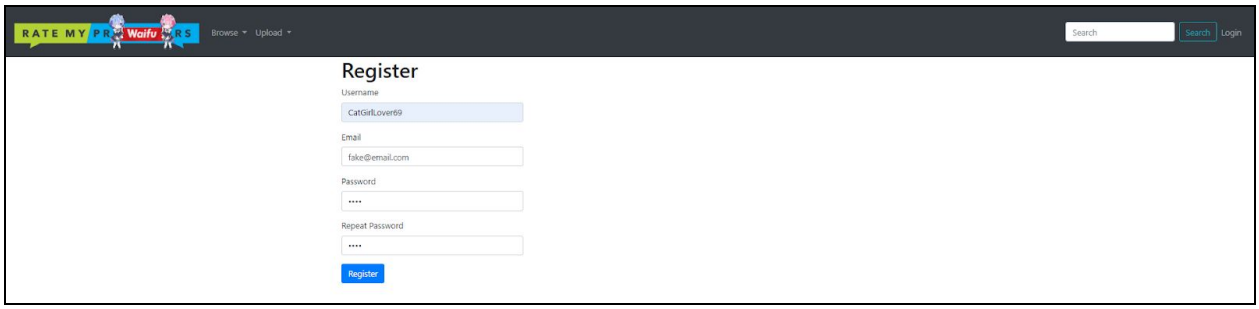


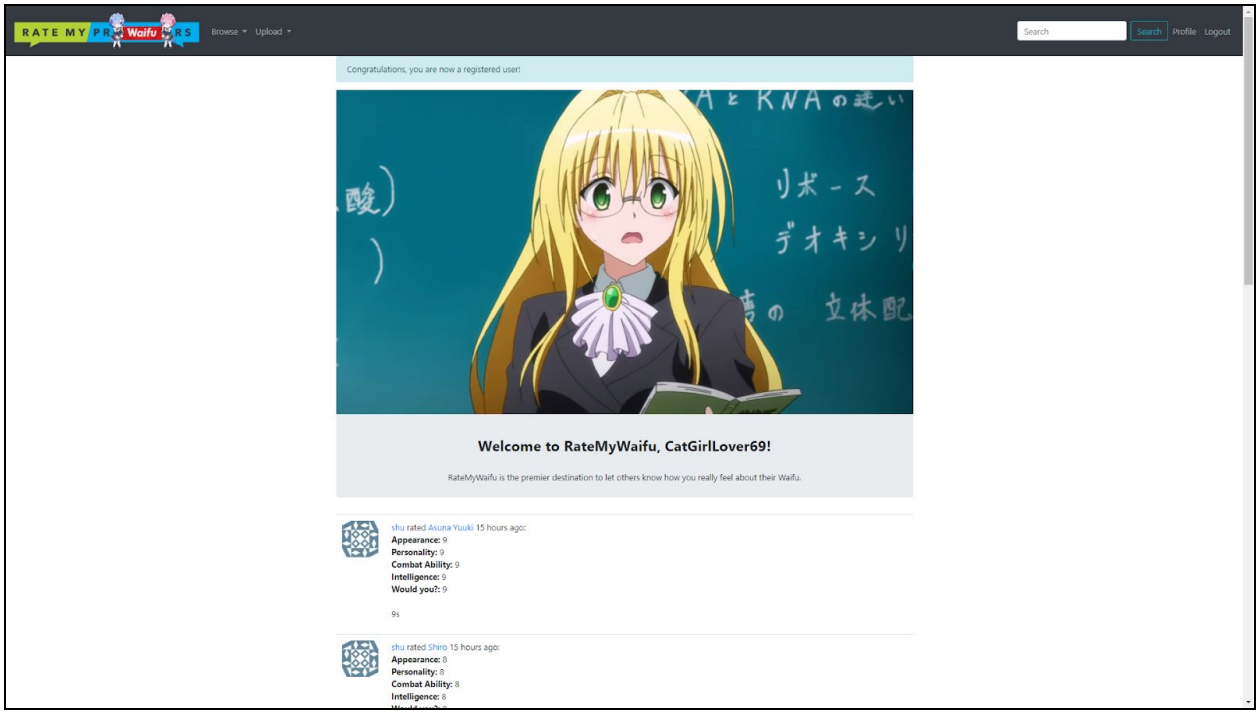
Features where user sign-in IS required

Registering and Logging in

The email field requires an entry in the form X@X.ca or X@X.com

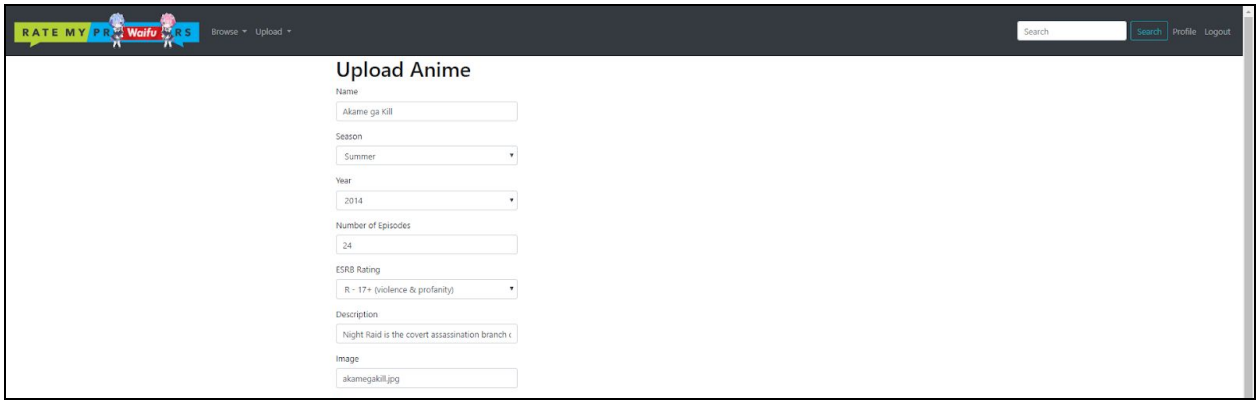


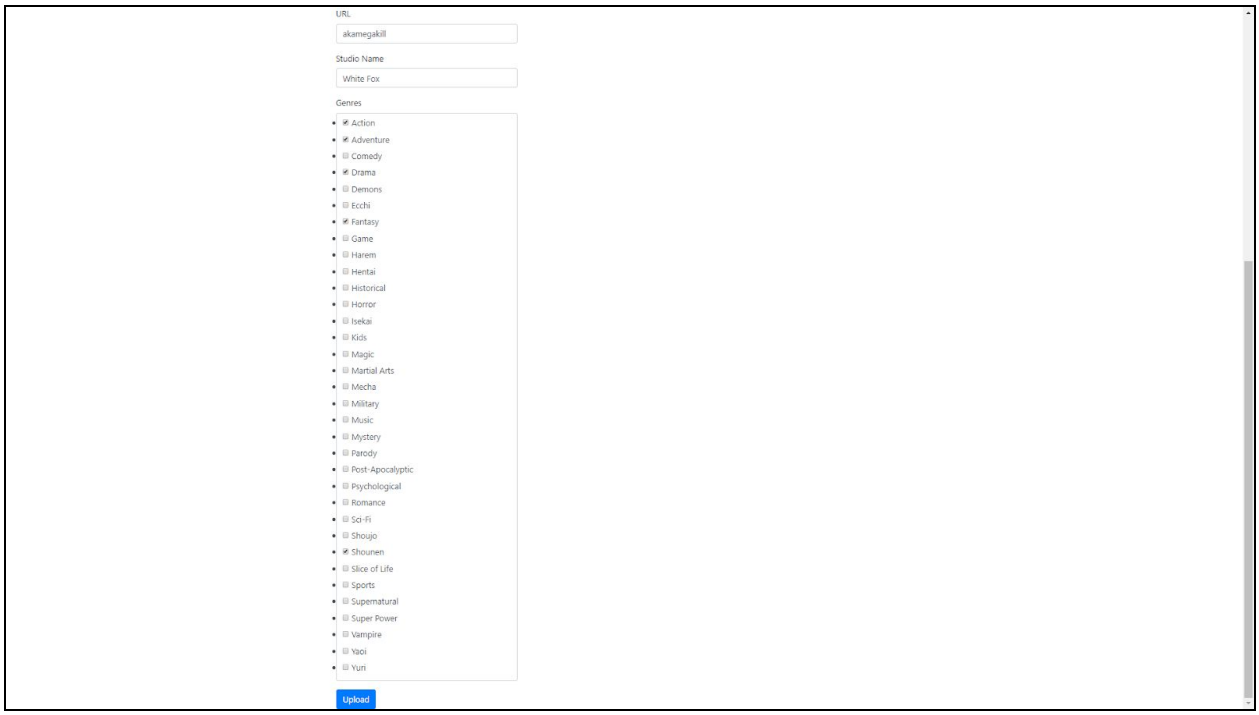


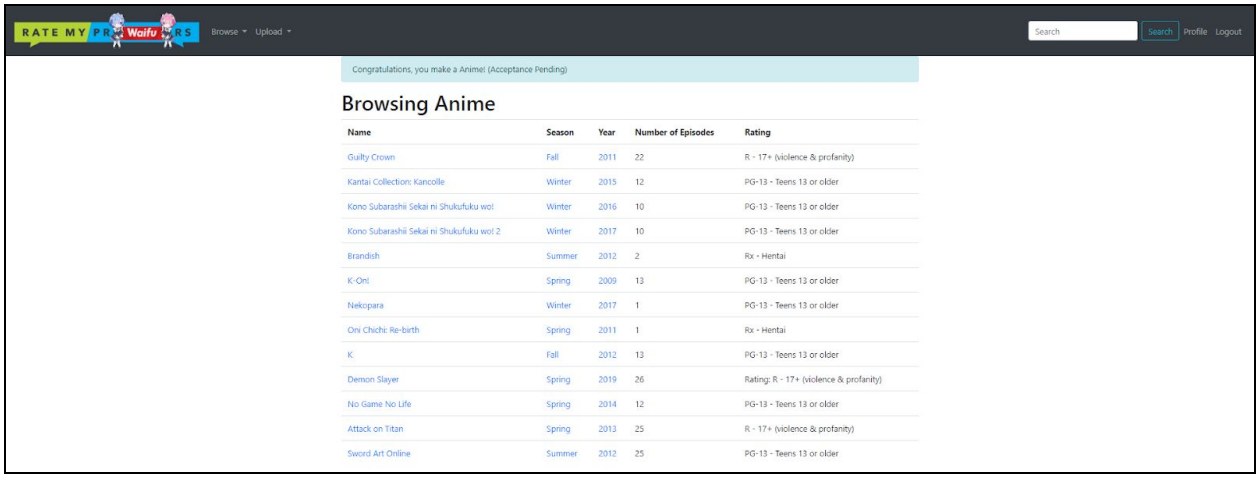


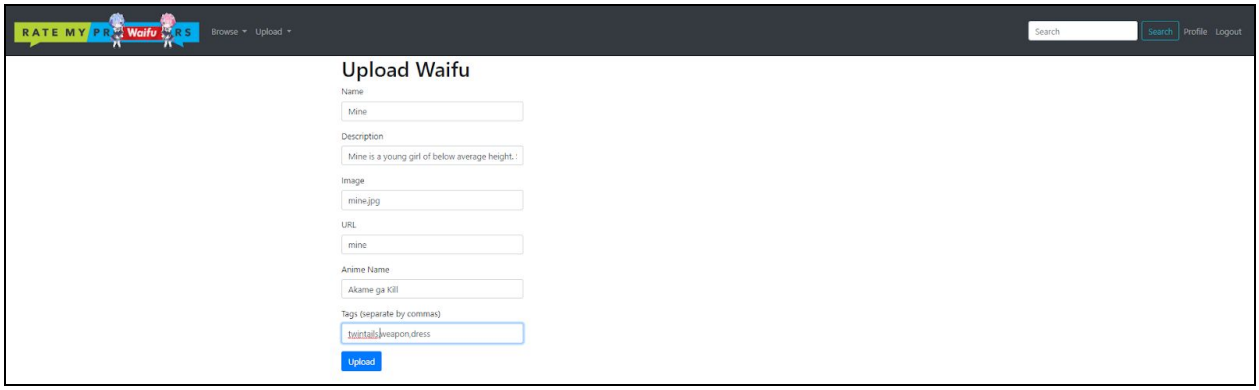
Uploading

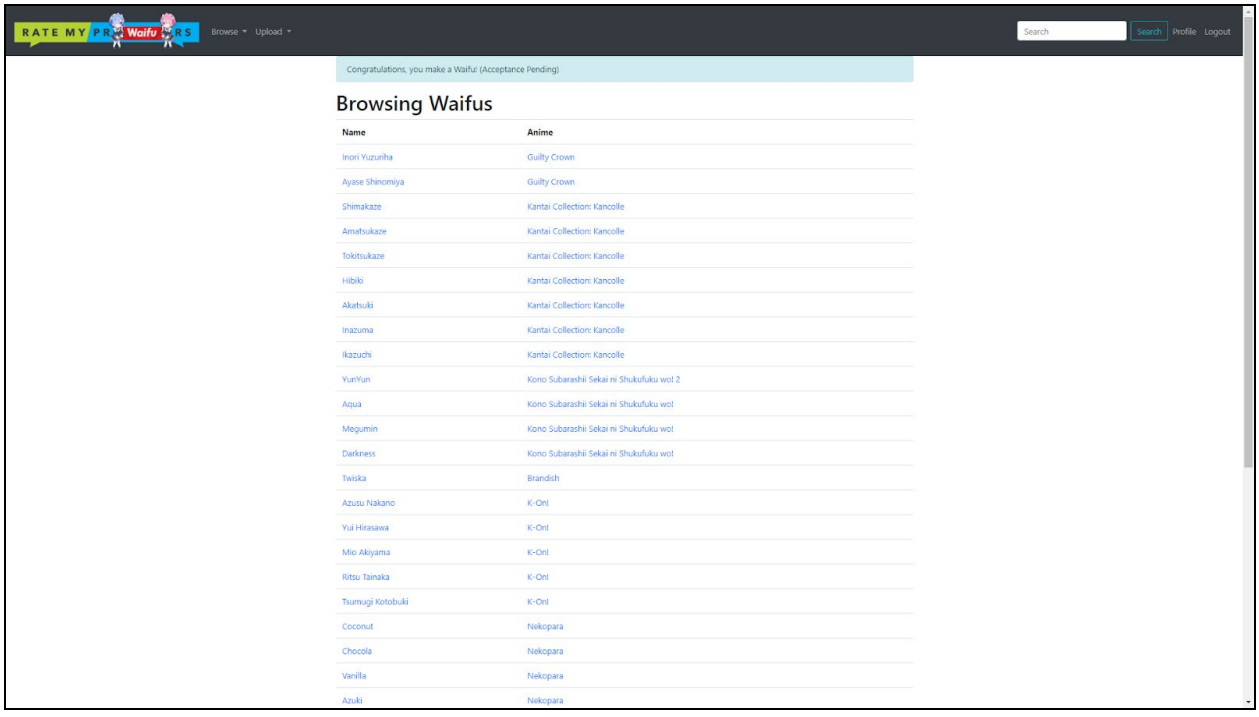
Any upload submissions will be redirected to the browse page with a notification at the top of the list saying the submission is now pending and will not be added to the database until approved by an admin.





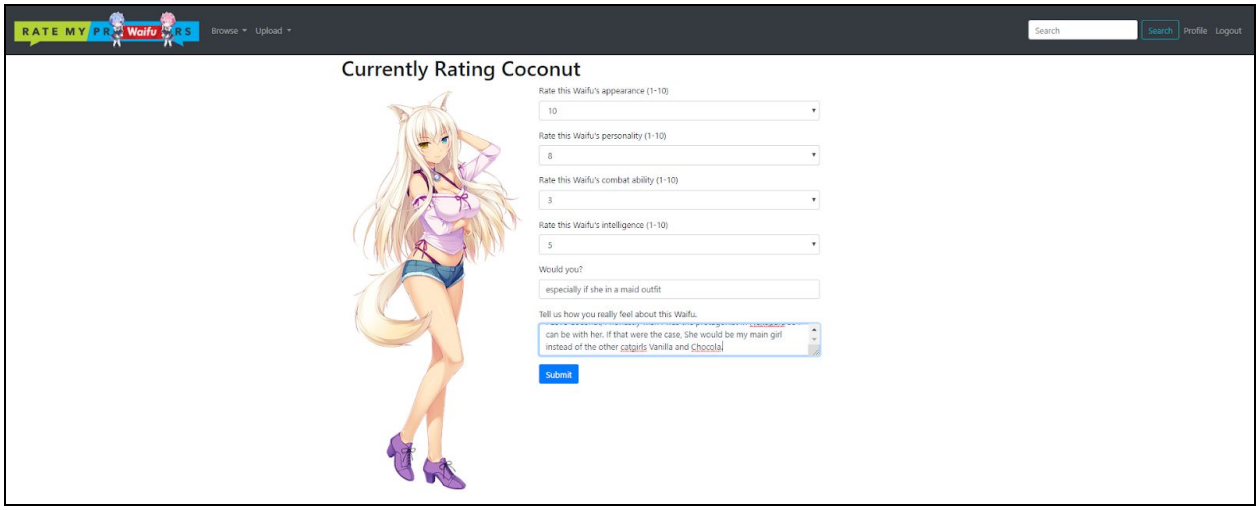

RATE MY Waifu RS
Browse
Upload
Search
Search
Profile
Logout
Congratulations, you make a Anime! (Acceptance Pending)
Browsing Anime
Name
Season
Year
Number of Episodes
Rating
Guilty Crown
Fall
2011
22
R - 17+ (violence & profanity)
Kantai Collection: Kancolle
Winter
2015
12
PG-13 - Teens 13 or older
Kono Subarashii Sekai ni Shukufuku wo!
Winter
2016
10
PG-13 - Teens 13 or older
Kono Subarashii Sekai ni Shukufuku wo! 2
Winter
2017
10
PG-13 - Teens 13 or older
Brandish
Summer
2012
2
Rx - Hentai
K-On!
Spring
2009
13
PG-13 - Teens 13 or older
Nekopara
Winter
2017
1
PG-13 - Teens 13 or older
Oni Chichi: Re-birth
Spring
2011
1
Rx - Hentai
K
Fall
2012
13
PG-13 - Teens 13 or older
Demon Slayer
Spring
2019
26
Rating: R - 17+ (violence & profanity)
No Game No Life
Spring
2014
12
PG-13 - Teens 13 or older
Attack on Titan
Spring
2013
25
R - 17+ (violence & profanity)
Sword Art Online
Summer
2012
25
PG-13 - Teens 13 or older

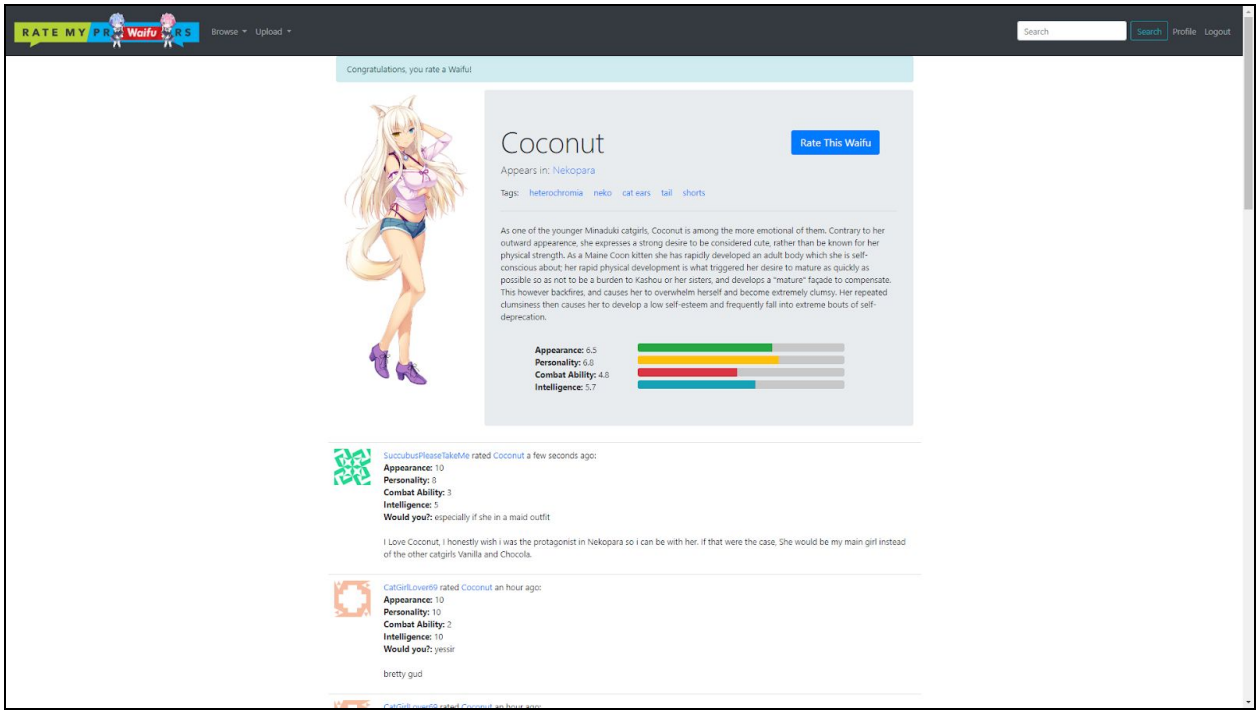

RATE MY Waifu RS
Browse
Upload
Search
Search
Profile
Logout
Upload Waifu
Name
Mine
Description
Mine is a young girl of below average height. :
Image
mine.jpg
URL
mine
Anime Name
Akame ga Kill
Tags (separate by commas)
twintails,weapon,dress
Upload

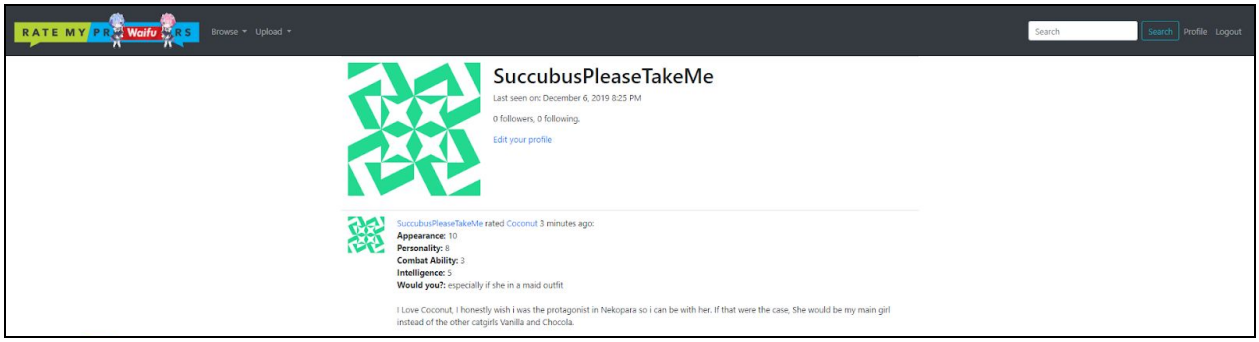

RATE MY Waifu RS
Browse
Upload
Search
Search
Profile
Logout
Congratulations, you make a Waifu! (Acceptance Pending)
Browsing Waifus
Name
Anime
Inori Yuzuriha
Guilty Crown
Ayase Shinomiya
Guilty Crown
Shimakaze
Kantai Collection: Kancolle
Amatsukaze
Kantai Collection: Kancolle
Tokitsukaze
Kantai Collection: Kancolle
Hibiki
Kantai Collection: Kancolle
Akatsuki
Kantai Collection: Kancolle
Inazuma
Kantai Collection: Kancolle
Ikazuchi
Kantai Collection: Kancolle
YunYun
Kono Subarashii Sekai ni Shukufuku wo! 2
Aqua
Kono Subarashii Sekai ni Shukufuku wo!
Megumin
Kono Subarashii Sekai ni Shukufuku wo!
Darkness
Kono Subarashii Sekai ni Shukufuku wo!
Twiska
Brandish
Azusu Nakano
K-On!
Yui Hirasawa
K-On!
Mio Akiyama
K-On!
Ritsu Tainaka
K-On!
Tsumugi Kotobuki
K-On!
Coconut
Nekopara
Chocola
Nekopara
Vanilla
Nekopara
Azuki
Nekopara

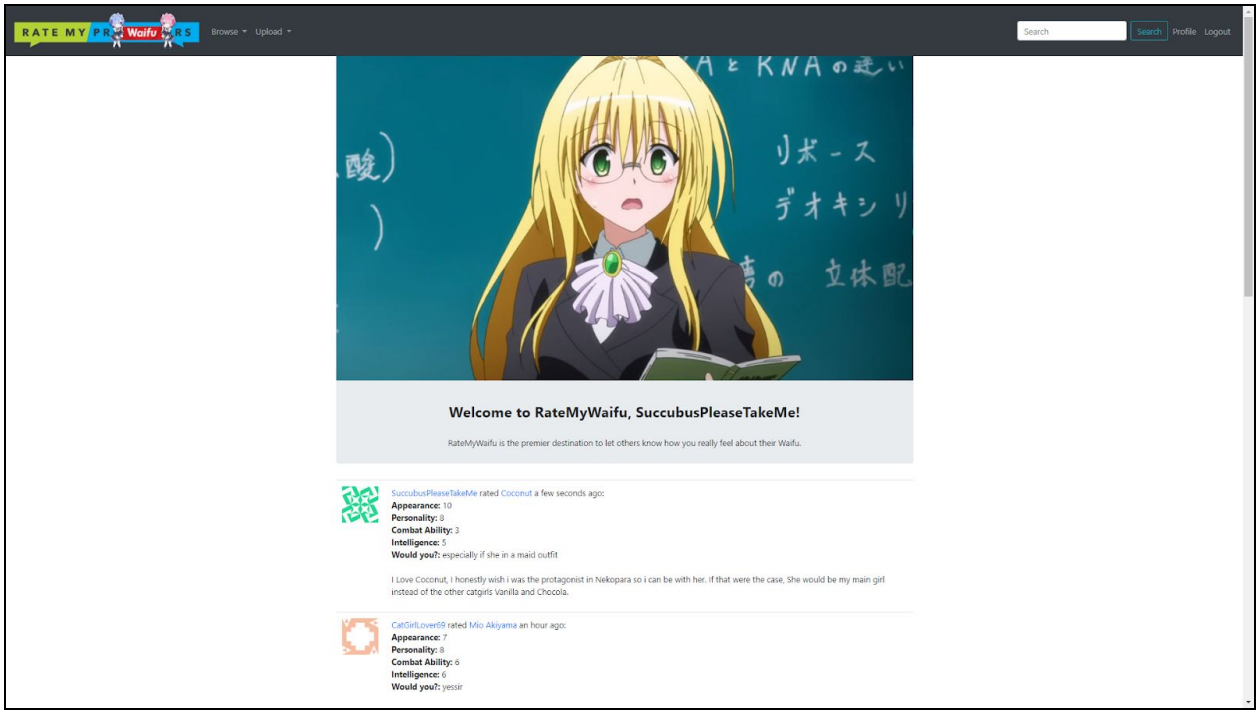
Rating Waifus

Every rating posted will have a score for different attributes which is used to calculate the overall average of each attribute from all the comments on that character. In addition to the character page, ratings can be viewed on the user's profile page and the home page and is sorted by newest rating.





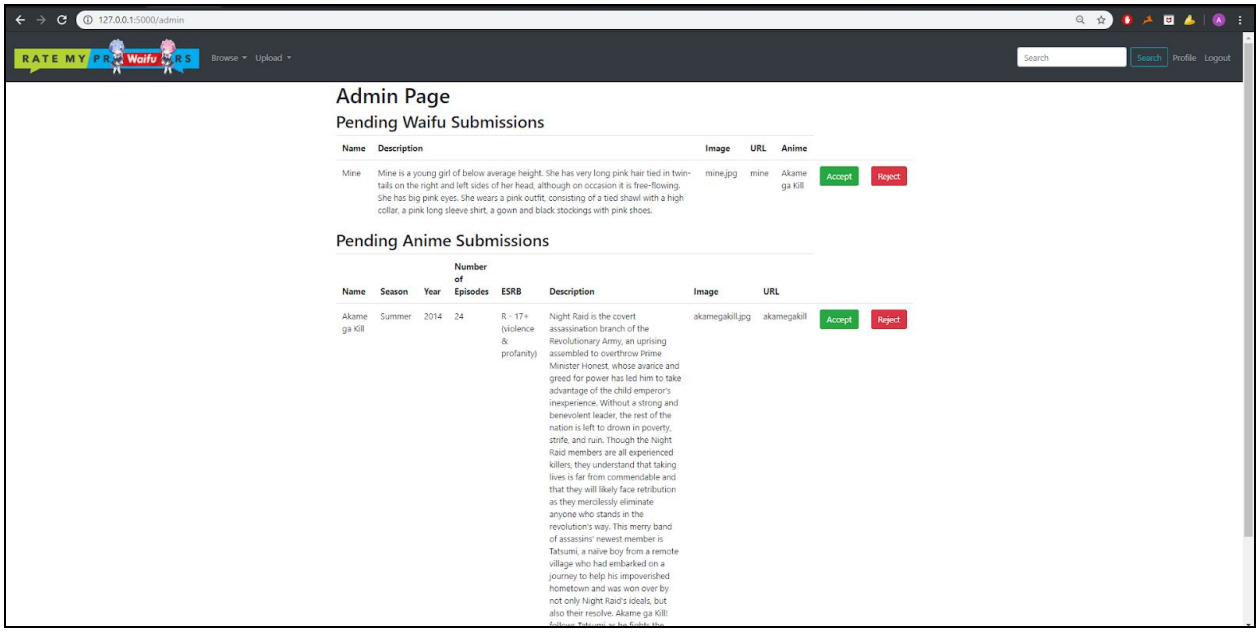

RATE MY Waifu RS
Browse
Upload
Search
Search
Profile
Logout
SuccubusPleaseTakeMe
Last seen on: December 6, 2019 8:25 PM
0 followers, 0 following.
Edit your profile
SuccubusPleaseTakeMe rated Coconut 3 minutes ago:
Appearance: 10
Personality: 8
Combat Ability: 3
Intelligence: 5
Would you?: especially if she in a maid outfit
I Love Coconut, I honestly wish i was the protagonist in Nekopara so i can be with her. If that were the case, She would be my main girl instead of the other catgirls Vanilla and Chocola.

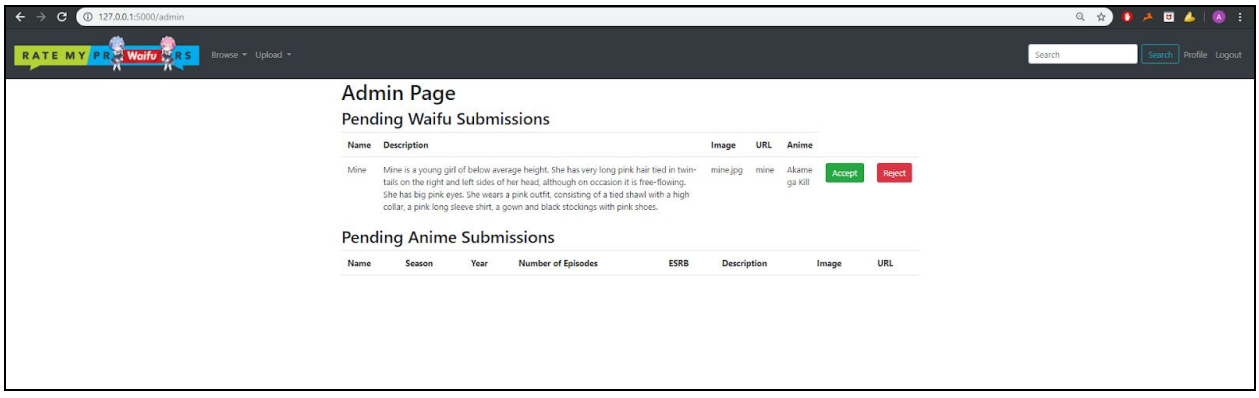

RATE MY Waifu RS
Browse
Upload
Search
Search
Profile
Logout
Welcome to RateMyWaifu, SuccubusPleaseTakeMe!
RateMyWaifu is the premier destination to let others know how you really feel about their Waifu.
SuccubusPleaseTakeMe rated Coconut a few seconds ago:
Appearance: 10
Personality: 8
Combat Ability: 3
Intelligence: 5
Would you?: especially if she in a maid outfit
I Love Coconut, I honestly wish i was the protagonist in Nekopara so i can be with her. If that were the case, She would be my main girl instead of the other catgirls Vanilla and Chocola.
CatGirlLover69 rated Mio Akiyama an hour ago:
Appearance: 7
Personality: 8
Combat Ability: 6
Intelligence: 6
Would you?: yessir

Features where user sign-in IS required

Reviewing Upload Submissions

The “localhost:5000/admin” page can only be accessed by users that are admins. Anyone else will be redirected to the home page. This contains all the pending submissions which are removed when the submission is approved or declined. If approved, the upload will be entered in the database, and can now be browsed or searched.





RATE MY Waifu RS Browse Upload Search Search Profile Logout

Browsing Anime

Name	Season	Year	Number of Episodes	Rating
Guilty Crown	Fall	2011	22	R - 17+ (violence & profanity)
Kantai Collection: Kancolle	Winter	2015	12	PG-13 - Teens 13 or older
Kono Subarashii Sekai ni Shukufuku wo!	Winter	2016	10	PG-13 - Teens 13 or older
Kono Subarashii Sekai ni Shukufuku wo! 2	Winter	2017	10	PG-13 - Teens 13 or older
Brandish	Summer	2012	2	Rx - Hentai
K-On!	Spring	2009	13	PG-13 - Teens 13 or older
Nekopara	Winter	2017	1	PG-13 - Teens 13 or older
Oni Chichi: Re-birth	Spring	2011	1	Rx - Hentai
K	Fall	2012	13	PG-13 - Teens 13 or older
Demon Slayer	Spring	2019	26	Rating: R - 17+ (violence & profanity)
No Game No Life	Spring	2014	12	PG-13 - Teens 13 or older
Attack on Titan	Spring	2013	25	R - 17+ (violence & profanity)
Sword Art Online	Summer	2012	25	PG-13 - Teens 13 or older
Akame ga Kill	Summer	2014	24	R - 17+ (violence & profanity)

RATE MY Waifu RS Browse Upload Search Search Profile Logout

Akame ga Kill

Studio: None

Premiered: Summer 2014

Number of Episodes: 24

Rating: R - 17+ (violence & profanity)

Genres: Action Adventure Drama Fantasy Shounen

Night Raid is the covert assassination branch of the Revolutionary Army, an uprising assembled to overthrow Prime Minister Honest, whose avarice and greed for power has led him to take advantage of the child emperor's inexperience. Without a strong and benevolent leader, the rest of the nation is left to drown in poverty, strife, and ruin. Though the Night Raid members are all experienced killers, they understand that taking lives is far from commendable and that they will likely face retribution as they mercilessly eliminate anyone who stands in the revolution's way. This merry band of assassins' newest member is Tatsumi, a naive boy from a remote village who had embarked on a journey to help his impoverished hometown and was won over by not only Night Raid's ideals, but also their resolve. Akame ga Kill! follows Tatsumi as he fights the Empire and comes face-to-face with powerful weapons, enemy assassins, challenges to his own morals and values, and ultimately, what it truly means to be an assassin with a cause. [Written by MAL Rewrite]

Waifus from this Anime

Name	Anime
Mine	Akame ga Kill

RATE MY Waifu RS Browse Upload Search Search Profile Logout

Mine

Rate This Waifu

Appears in: Akame ga Kill

Tags: twintails weapon dress

Mine is a young girl of below average height. She has very long pink hair tied in twin-tails on the right and left sides of her head, although on occasion it is free-flowing. She has big pink eyes. She wears a pink outfit, consisting of a tied shawl with a high collar, a pink long sleeve shirt, a gown and black stockings with pink shoes.

Appearance: N/A
Personality: N/A
Combat Ability: N/A
Intelligence: N/A

How to run our project:

We used pipenv to handle the virtual environment of our project.

After unzipping our project file and 'cd'-ing into it.

Install pipenv if you do not already have it with "**pip3 install pipenv**" or "**pip install pipenv**" depending on your python version. Note that our project itself requires python3 installed.

Then create and enter the virtual environment with "**pipenv shell**".

Install required dependencies with "**pipenv install**".

Finally, start the application on localhost:5000 with "**python3 ratemywaifu.py**".

We have pre-filled a database called **app.db** by parsing **animeCharacters.txt** and **animeList.txt** using the python scripts called **scraper.py, scraper2.py.** We also used **scraper3.py** to create an example user and generate many random ratings for the Waifus.

In case the database needs to be regenerated, run this command in the project directory (tested on a unix system).

rm -rf migrations/ && rm app.db && flask db init && flask db migrate -m "init" && flask db upgrade && python3 fill_db_with_waifus.py < waifus.txt && python3 fill_db_with_anime.py < anime.txt && python3 generate_ratings.py

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We used DB Browser to view (and manually edit if necessary) our data from app.db which can be downloaded from: https://sqlitebrowser.org/

If you want to give a user admin privileges you will have to manually set the admin_flag in the "user" table:

1. Open DB Browser and open app.db by clicking Open Database.
2. Under the 'Browse Data' tab, select the 'user' table in the dropdown box.
3. Find the user you wish to update, and set its admin_flag from *Null* to 1.
4. Click 'Write Changes' to update the db.

Otherwise, app.db will already come with an admin user.

(username: CatGirlLover69, password: cat)

References

We followed this Flask tutorial and used its code to get a baseline for the project:

https://blog.miguelgrinberg.com/post/the-flask-mega-tutorial-part-i-hello-world

We referred to the following websites to implement string searching:

https://stackoverflow.com/questions/10434599/get-the-data-received-in-a-flask-request

https://stackoverflow.com/questions/4926757/sqlalchemy-query-where-a-column-contains-a-substring

https://stackoverflow.com/questions/14680145/sqlalchemy-returning-result-as-query-object-instead-of-mymodel-type

Websites that inspired the look and feel of our website:

https://www.ratemyprofessors.com

http://mywaifulist.moe

Pre-filled anime and character information taken from:

https://fandom.com

https://myanimelist.net

http://www.animecharactersdatabase.com

DB Browser:

https://sqlitebrowser.org/