"MANGOLEAF"

Your Personalized Book and Manga Guide

Project Description

❏ The app is a recommendation system designed to guide our users and help them find books and mangas that match their taste (maybe provide a link to immediately purchase or download the manga/book)

❏ Our users can keep track of all their previous read literature and save future ones

❏ It is integrated with a chatbot (maybe have a personalized one for books and a second one for mangas) that enhances user interaction and makes the book/manga discovery engaging and conversational

❏ Utilizing machine learning and AI, our APP makes recommendations based on user feedback, ratings, preferences and their reading history

Data Sub-Fields

❏ **Data Collection** - datasets for broad range of book and mangas

❏ **Data Processing** - cleaning, preprocessing and structuring our data

❏ **Machine Learning** - model learns from our user interactions

❏ **AI/LLM** - personalized and intelligent chatbot

Tools and Technologies

❏ **Python and Libraries:** Pandas, Scikit-learn, BeautifulSoup, HuggingFace

❏ **Streamlit**

❏ **SQL Database**

❏ **Google Cloud**

Data Sources

❏ Manga Dataset:

https://www.kaggle.com/datasets/drahulsingh/best-selling-manga -> best to use

❏ (https://www.kaggle.com/datasets/cardbored/myanimelist-manga-dataset) -> not the best dataset

❏ Books Dataset:

https://www.kaggle.com/datasets/arashnic/book-recommendation-dataset

Roadmap

Step 1:
- Set up Git and GitHub
- Review datasets
- Do some research about recommendation systems

Step 3:
- develop model for profile setup, login, storing using Python
- develop recommendation algorithms

Step 5:
- setting up basic app with Streamlit
-making sure login page and user session works

Step 7:
- test the app and debugging
- make the steamlit app more interesting (visuals)

Step 9:
- finishing final presentation

Step 2:
- Clean and process data
- set up SQL database to store user profile
- design database schema
-store datasets in google cloud

Step 4:
- set up user profile page to save and view their books
-show purchase links
-check recommendation display function

Step 6:
- chatbot integration/ train the bot
- (first question from the bot: Are you looking for books or manga? -> Bot will change to better answer the questions

Step 8:
- deploying the app

Weekly Schedule

Tuesday, 23.7.	Wednesday, 24.7.	Thursday, 25.7.	Friday, 26.7.
Data cleaning & popularity recommender	Item-based & user-based recommender	Finish up the recommenders	- 1st iteration presentation - Research login and layout **Milestone**: **Finish initial recommenders**

Monday, 29.7.	Tuesday, 30.7.	Wednesday, 31.7.	Thursday, 1.8.	Friday, 2.8.
Combine our recommenders/datasets (same format)	Implement Streamlit app	- Add login and user profiles - Move data to postgreSQL	- Setup GitHub and deploy - Integrate user profiles - Plan presentation	- 2nd iteration presentation - Improve explorer and profile **Milestone**: **Finish basic Streamlit app**

Monday, 5.8.	Tuesday, 6.8.	Wednesday, 7.8.	Thursday, 8.8.
- Add user registration - Add user profile operations - Add other optional features	- Make a screen recording - Practice the presentation	- Practice the presentation - Rehearsal presentation **Milestone**: **Completion**	Final presentation

Recommendation types

- Popularity recommender: By user ratings from other users (most popular ones) -collaborative item-based filtering (LMS)
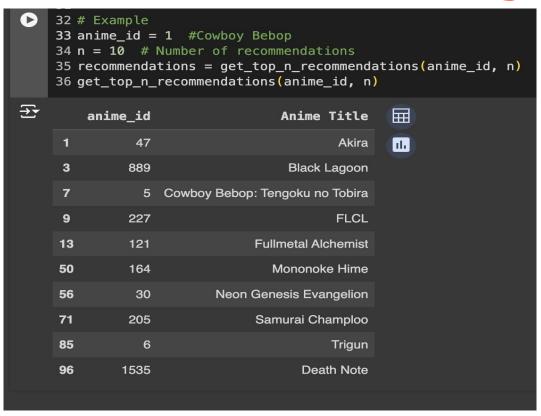

- item based recommender: because you liked this movie -collaborative item-based filtering (LMS)

- Fully personalized recommender - user based filtering - (surprise) -codeacedemy and LMS

Popularity recommender - Manga Data

```
1 top_n_mangas
```

	anime_id	Genres	English name	Other name	Rank	Score	Combined_metric
3961	5114	Action, Adventure, Drama, Fantasy	Fullmetal Alchemist: Brotherhood	鋼の錬金術師 FULLMETAL ALCHEMIST	1.0	9.10	2.000000
16617	41467	Action, Adventure, Fantasy	Bleach: Thousand-Year Blood War	BLEACH 千年血戦篇	2.0	9.07	1.996654
5667	9253	Drama, Sci-Fi, Suspense	Steins;Gate	STEINS;GATE	3.0	9.07	1.996604
9880	28977	Action, Comedy, Sci-Fi	Gintama	銀魂°	4.0	9.06	1.995455
17572	43608	Comedy, Romance	Kaguya-sama: Love is War - Ultra Romantic	かぐや様は告らせたい-ウルトラロマンティック-	5.0	9.05	1.994306
14865	38524	Action, Drama	Attack on Titan	進撃の巨人 Season3 Part.2	6.0	9.05	1.994257
6456	11061	Action, Adventure, Fantasy	Hunter x Hunter	HUNTER×HUNTER（ハンター×ハンター）	10.0	9.04	1.992959
17216	42938	Drama, Romance, Supernatural	Fruits Basket: The	フルーツバスケット The Final	13.0	9.00	1.988414
22622	52034	Drama, Supernatural	[Oshi No Ko]	【推しの子】	14.0	8.98	1.986166
12829	35180	Drama	March Comes In Like A Lion	3月のライオン 第2シリーズ	18.0	8.93	1.980473

Item-based recommender - Manga Data

```
32 # Example
33 anime_id = 1   #Cowboy Bebop
34 n = 10    # Number of recommendations
35 recommendations = get_top_n_recommendations(anime_id, n)
36 get_top_n_recommendations(anime_id, n)
```

	anime_id	Anime Title
1	47	Akira
3	889	Black Lagoon
7	5	Cowboy Bebop: Tengoku no Tobira
9	227	FLCL
13	121	Fullmetal Alchemist
50	164	Mononoke Hime
56	30	Neon Genesis Evangelion
71	205	Samurai Champloo
85	6	Trigun
96	1535	Death Note

User-based recommender - Manga Data

	anime_id	English name	estimated_rating
0	44042	Holo Graffiti	10.000000
1	52826	Tsurune - The Linking Shot -	10.000000
2	29829	UNKNOWN	9.498665
3	5114	Fullmetal Alchemist: Brotherhood	9.125000
4	1698	Nodame Cantabile	9.075000
5	4565	Gurren Lagann The Movie: The Lights in the Sky...	9.025280
6	1889	Higurashi: When They Cry – Kai	9.025000
7	24701	Mushi-shi: Next Passage Part 2	9.024992
8	41361	Pompo: The Cinéphile	9.000000
9	2001	Gurren Lagann	9.000000

14 final_df

Popularity recommender - Book Data

Example usage to obtain the top 10 most popular books in the dataset.

```
1  popularity_recommender(10)
```
✓ 0.1s

	ISBN	Book-Title	Book-Author	Year-Of-Publication
0	0345339738	The Return of the King (The Lord of the Rings,...	J.R.R. TOLKIEN	1986
1	0439139597	Harry Potter and the Goblet of Fire (Book 4)	J. K. Rowling	2000
2	0446310786	To Kill a Mockingbird	Harper Lee	1988
3	0441172717	Dune (Remembering Tomorrow)	Frank Herbert	1996
4	0451524934	1984	George Orwell	1990
5	0812550706	Ender's Game (Ender Wiggins Saga (Paperback))	Orson Scott Card	1994
6	0440498058	A Wrinkle In Time	MADELEINE L'ENGLE	1998
7	0553296981	Anne Frank: The Diary of a Young Girl	ANNE FRANK	1993
8	0345348036	The Princess Bride: S Morgenstern's Classic Ta...	WILLIAM GOLDMAN	1987
9	0345342968	Fahrenheit 451	RAY BRADBURY	1987

Item-based recommender - Book Data

Example usage to obtain the top 10 most similar books in the dataset.

```
1   harry_potter_book2_isbn = "0439064872"
2
3   item_based_recommender(harry_potter_book2_isbn, 10)
✓   17.0s
```

	ISBN	Book-Title	Book-Author	Year-Of-Publication
0	059035342X	Harry Potter and the Sorcerer's Stone (Harry P...	J. K. Rowling	1999
1	043935806X	Harry Potter and the Order of the Phoenix (Boo...	J. K. Rowling	2003
2	0439139597	Harry Potter and the Goblet of Fire (Book 4)	J. K. Rowling	2000
3	0439136350	Harry Potter and the Prisoner of Azkaban (Book 3)	J. K. Rowling	1999
4	0064400557	Charlotte's Web (Trophy Newbery)	E. B. White	1974
5	0553284789	F Is for Fugitive (Kinsey Millhone Mysteries (...	Sue Grafton	1990
6	0345339703	The Fellowship of the Ring (The Lord of the Ri...	J.R.R. TOLKIEN	1986
7	0060928336	Divine Secrets of the Ya-Ya Sisterhood: A Novel	Rebecca Wells	1997
8	0842329129	Left Behind: A Novel of the Earth's Last Days ...	Tim Lahaye	1996
9	0553280341	B Is for Burglar (Kinsey Millhone Mysteries (P...	Sue Grafton	1986

User-based recommender - Book Data

Example usage to obtain the top 10 most recommended books for a user in the dataset.

```
1  user_id = 114368
2
3  user_based_recommender(user_id, 10)
```

✓ 51.2s

	ISBN	Book-Title	Book-Author	Year-Of-Publication
0	843760494X	Cien AÃ±os de Soledad	Gabriel GarcÃa MÃ¡rquez	1994
1	0439176824	The Fall (The Seventh Tower, Book 1)	Garth Nix	2000
2	0440228352	Whirligig (Laurel Leaf Books)	Paul Fleischman	1999
3	0140283641	Kits Law	Donna Morrissey	0
4	0689831404	The Wind in the Willows (Aladdin Classics)	Kenneth Grahame	1999
5	0330328743	Butcher Boy	Patrick Mccabe	0
6	0345419081	The Eight	KATHERINE NEVILLE	1997
7	060961004X	Eat Cake : A Novel	JEANNE RAY	2003
8	0152099905	The Borrowers	Mary Norton	1989
9	0553213113	Moby-Dick	HERMAN MELVILLE	1981