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BatchCode: LISUM18

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Submitted to: Data Glacier

Deployment on Flask

This will involve deploying my anime hybrid recommendation model on Flask

we worked with an anime dataset that had the following columns:

anime_id

Title

Genre

Synopsis

Type

Producer

Studio

Rating

ScoredBy

Popularity

Members

Source

Aired

Flask Part x Microsoft x felix-n12/ x how to scr x Untitled d x Felix CV x History x Home Pa x hybrid rec x +

localhost:8888/notebooks/hybrid%20recommender%20system.ipynb

jupyter hybrid recommender system Last Checkpoint: an hour ago (autosaved) Logout

File Edit View Insert Cell Kernel Widgets Help Trusted Python (learn-env)

In [2]: data = pd.read_csv('Anime_data.csv')
data.head()

Out[2]:

	Anime_id	Title	Genre	Synopsis	Type	Producer	Studio	Rating	ScoredBy	Popularity	Members	Episodes	Source	Aired
0	1	Cowboy Bebop	['Action', 'Adventure', 'Comedy', 'Drama', 'Sci-Fi']	In the year 2071, humanity has colonized sever...	TV	['Bandai Visual']	['Sunrise']	8.81	363889.0	39.0	704490.0	26.0	Original	Apr 3, 1998 to Apr 24, 1999
1	5	Cowboy Bebop: no Tengoku no Tobira	['Action', 'Space', 'Mystery', 'Sci-Fi']	Another day, another bounty—such is the life o...	Movie	['Sunrise', 'Bandai Visual']	['Bones']	8.41	111187.0	475.0	179899.0	1.0	Original	Sep 1, 2001
2	6	Trigun	['Action', 'Sci-Fi', 'Adventure', 'Comedy', 'Drama']	Vash the Stampede is the man with a a \$560,000,0...	TV	['Victor Entertainment']	['Madhouse']	8.31	197451.0	158.0	372709.0	26.0	Manga	Apr 1, 1998 to Sep 30, 1998
3	7	Witch Hunter Robin	['Action', 'Magic', 'Police', 'Supernatural', ...]	Witches are individuals with special powers il...	TV	['Bandai Visual']	['Sunrise']	7.34	31875.0	1278.0	74889.0	26.0	Original	Jul 2, 2002 to Dec 24, 2002

Felix CV.pdf

Type here to search

25°C

ENG

12:07 PM 2/27/2023

Saved the hydrid recommendation model using pickle

Flas x Flas x css x Mic x onli x Unt x Fel x felix x Hor x app x hyb x Ext x Exc x Onl x Flat x blo x DS x +

localhost:8888/notebooks/Modelling.ipynb

jupyter Modelling Last Checkpoint: Last Monday at 10:42 AM (unsaved changes) Logout

File Edit View Insert Cell Kernel Help Trusted Python (learn-env)

```

query_vec = vectorizer.transform([title])
similarity = cosine_similarity(query_vec, tfidf).flatten()

# find the 5 most similar titles to the search term
indices = np.argsort(similarity, -5)[-10:]

# reverse results so that most similar result is at the top
results = data.iloc[indices].iloc[::-1]

return print(results['Title'])

```

In [81]: with open('search.pkl','wb') as f:
pickle.dump(search,f)

In [79]: search('dragon ball')

```

199          Dragon Ball
3953      Dragon Ball Kai
2108      Dragon Ball Specials
9016      Dragon Ball Super
200       Dragon Ball GT
10449     Dragon Ball Z The Real 4D
7404      Dragon Ball Z Zenbu Misemasu Toshi Wasure Drag...
767       Dragon Ball Z Saiyajin Zetsumetsu Keikaku
11908     Dragon Ball Super Movie Broly
5751     Dragon Ball Episode of Bardock
Name: Title, dtype: object

```

Felix CV.pdf

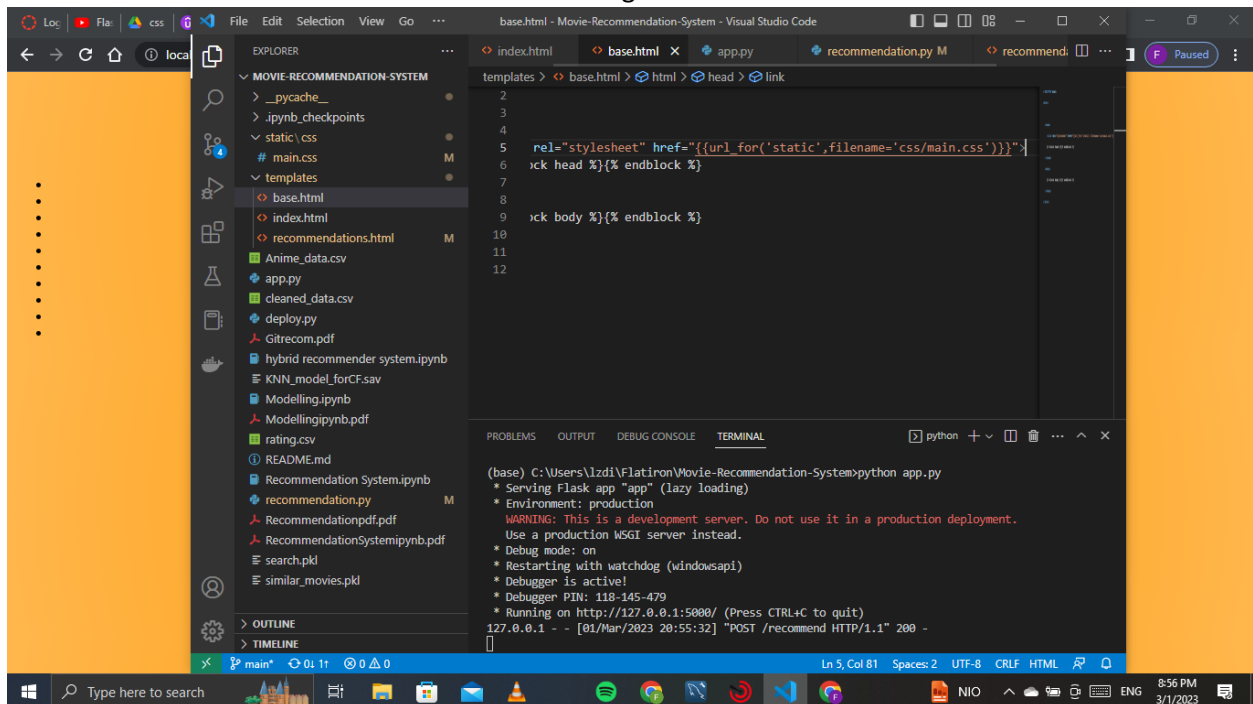
Type here to search

18°C

ENG

10:02 AM 3/1/2023

The base file for the foundation of the website image



The screenshot shows the Visual Studio Code interface with the 'base.html' file open in the editor. The file contains the following HTML code:

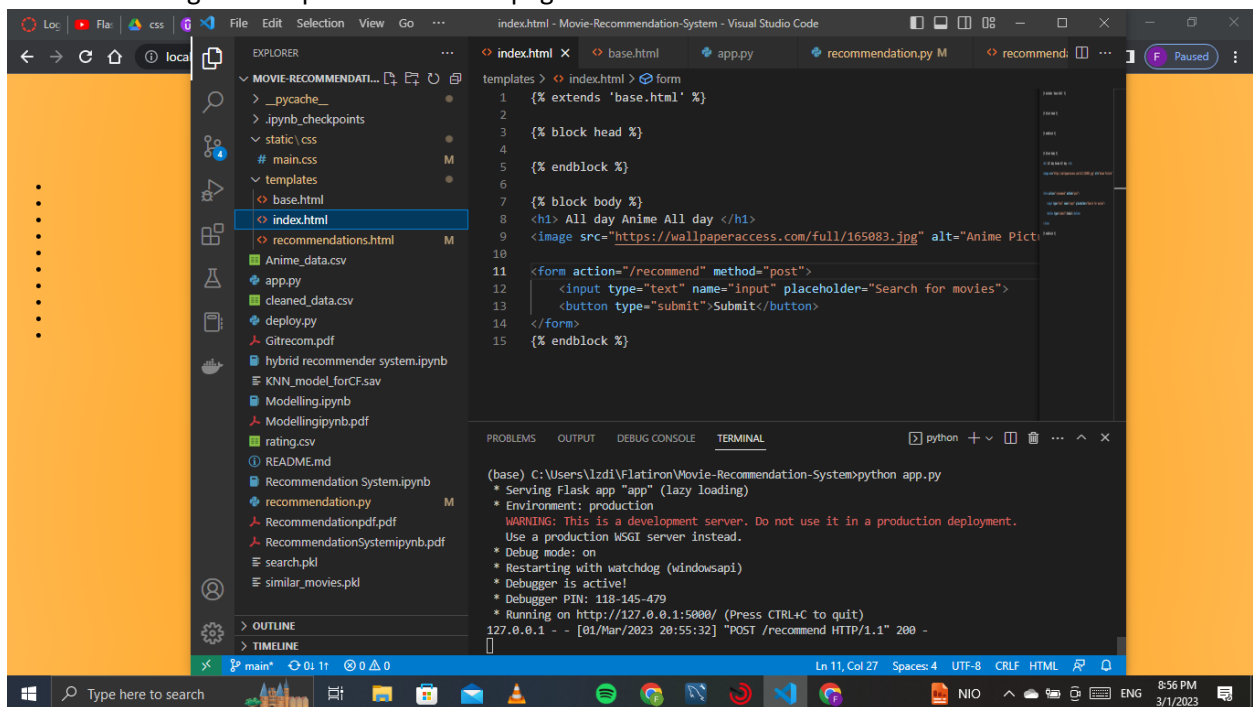
```
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <title>Movie Recommendation System</title>
5 <link rel="stylesheet" href="{{url_for('static',filename='css/main.css')}}">
6 </head>
7 <body>
8 </body>
9 </html>
```

The Explorer panel on the left shows the project structure, including files like 'base.html', 'index.html', 'recommendations.html', 'Anime_data.csv', 'app.py', 'cleaned_data.csv', 'deploy.py', 'Gitrecom.pdf', 'hybrid recommender system.ipynb', 'KNN_model_forCF.sav', 'Modelling.ipynb', 'Modelling.ipynb.pdf', 'rating.csv', 'README.md', 'Recommendation System.ipynb', 'recommendation.py', 'Recommendationpdf.pdf', 'RecommendationSystemipynb.pdf', 'search.pkl', and 'similar_movies.pkl'.

The terminal at the bottom shows the output of running the Flask application:

```
(base) C:\Users\lzd1\Flatiron\Wovie-Recommendation-System>python app.py
* Serving Flask app "app" (lazy loading)
* Environment: production
WARNING: This is a development server. Do not use it in a production deployment.
Use a production WSGI server instead.
* Debug mode: on
* Restarting with watchdog (windowsapi)
* Debugger is active!
* Debugger PIN: 118-145-479
* Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
127.0.0.1 - - [01/Mar/2023 20:55:32] "POST /recommend HTTP/1.1" 200 -
```

The file showing the template for the first page is called the index.file



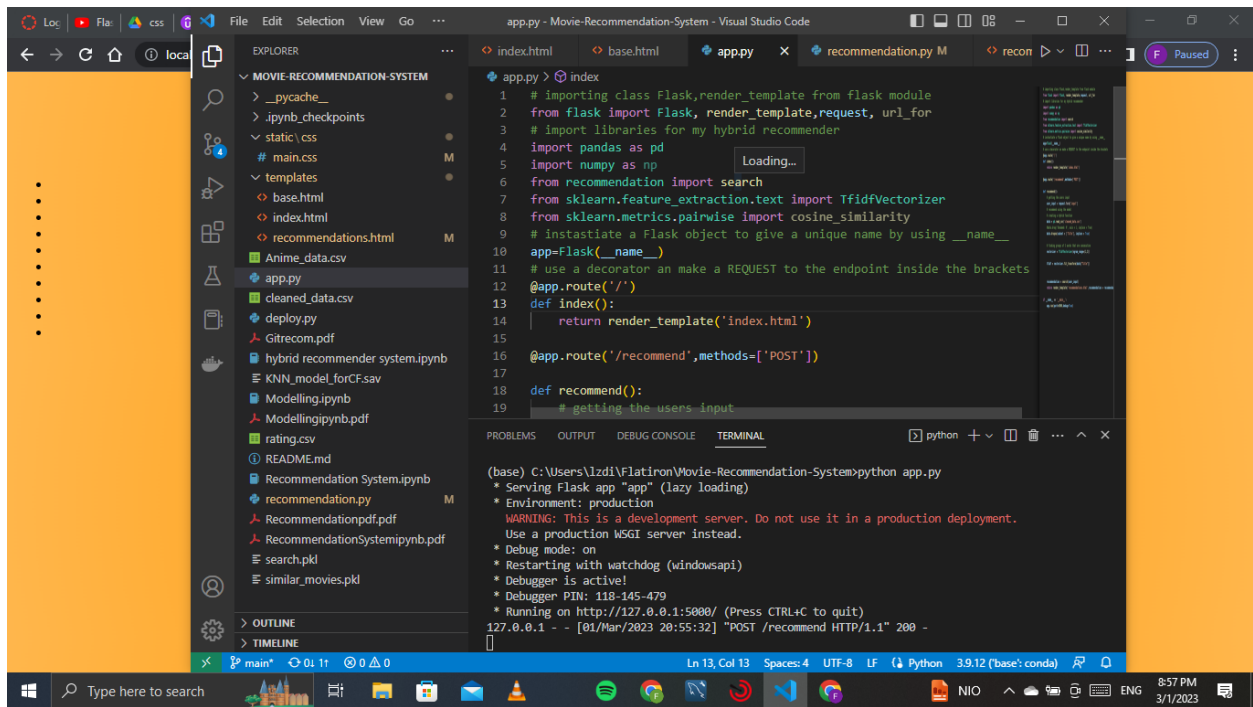
The screenshot shows the Visual Studio Code interface with the 'index.html' file open in the editor. The file contains the following HTML code:

```
1 {% extends 'base.html' %}
2
3 {% block head %}
4
5 {% endblock %}
6
7 {% block body %}
8 <h1> All day Anime All day </h1>
9 
10
11 <form action="/recommend" method="post">
12   <input type="text" name="input" placeholder="Search for movies">
13   <button type="submit">Submit</button>
14 </form>
15 {% endblock %}
```

The Explorer panel on the left shows the project structure, including files like 'base.html', 'index.html', 'recommendations.html', 'Anime_data.csv', 'app.py', 'cleaned_data.csv', 'deploy.py', 'Gitrecom.pdf', 'hybrid recommender system.ipynb', 'KNN_model_forCF.sav', 'Modelling.ipynb', 'Modelling.ipynb.pdf', 'rating.csv', 'README.md', 'Recommendation System.ipynb', 'recommendation.py', 'Recommendationpdf.pdf', 'RecommendationSystemipynb.pdf', 'search.pkl', and 'similar_movies.pkl'.

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* Debugger PIN: 118-145-479
* Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
127.0.0.1 - - [01/Mar/2023 20:55:32] "POST /recommend HTTP/1.1" 200 -
```



The app.py file shows the routes for the server for which to make requests from

The image displays two screenshots of a Visual Studio Code editor window, showing the `app.py` file for a movie recommendation system. The Explorer pane on the left shows the project structure, including files like `index.html`, `base.html`, `recommendations.html`, `app.py`, `cleaned_data.csv`, `deploy.py`, `Gitrecom.pdf`, `hybrid recommender system.ipynb`, `KNN_model_forCF.sav`, `Modelling.ipynb`, `Modelling.ipynb.pdf`, `rating.csv`, `README.md`, `Recommendation System.ipynb`, `recommendation.py`, `Recommendationpdf.pdf`, `RecommendationSystemipynb.pdf`, `search.pkl`, and `similar_movies.pkl`.

The top screenshot shows the `recommend()` function in `app.py`, which handles the recommendation logic. The bottom screenshot shows the `app.run()` call at the end of the file, which starts the Flask application.

```
def recommend():
    # getting the users input
    user_input = request.form['input']
    # recommend using the model
    # creating a hybrid function
    data = pd.read_csv('cleaned_data.csv')
    #data.drop('Unnamed: 0', axis = 1, inplace = True)
    data.dropna(subset = ['Title'], inplace = True)

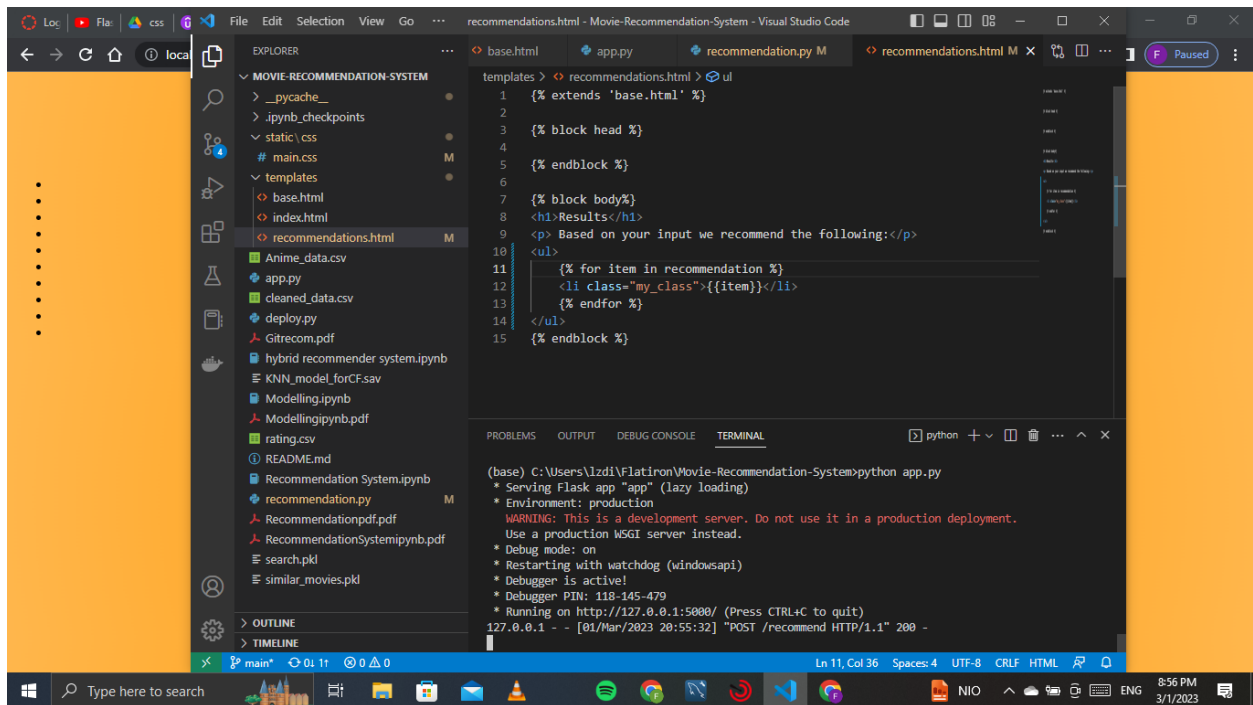
    # finding groups of 2 words that are consecutive
    vectorizer = TfidfVectorizer(ngram_range=(1,2))

    tfidf = vectorizer.fit_transform(data['Title'])

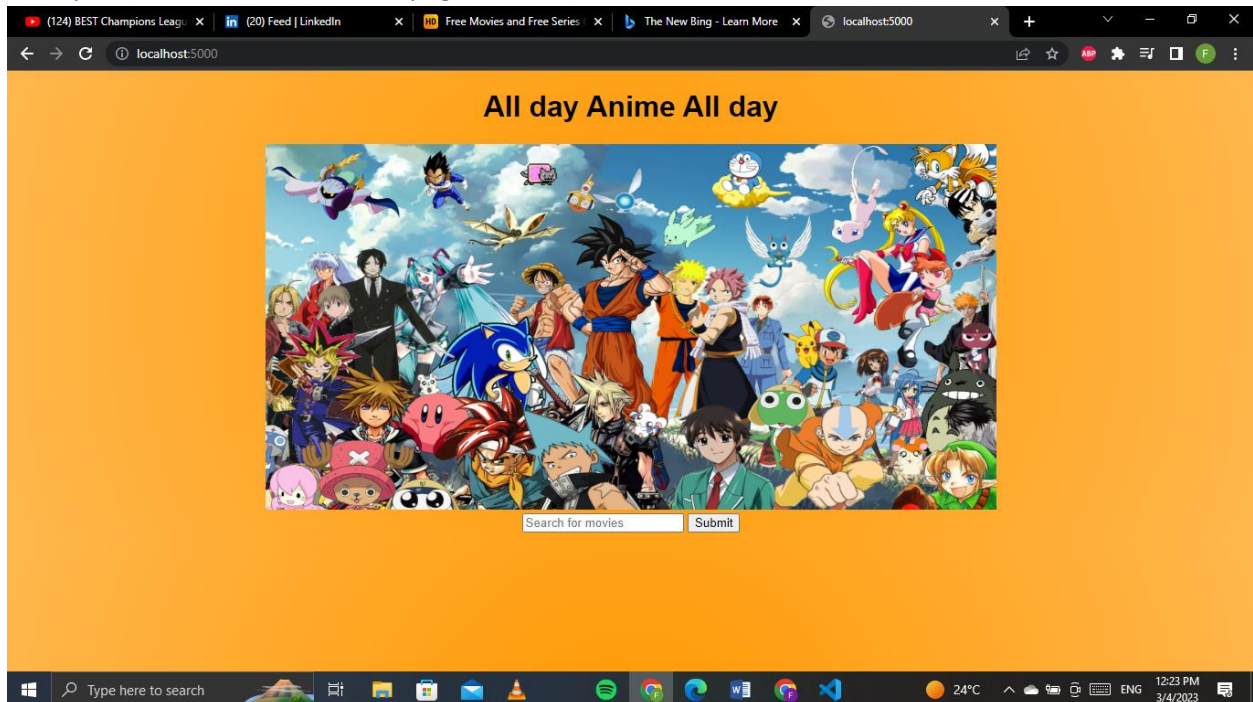
    recommendation = search(user_input)
    return render_template('recommendations.html', recommendation = recom

if __name__ == '__main__':
    app.run(port=5000, debug=True)
```

Putting the recommendation template for the output result



after you run the servers the first page of the web is this



When you enter bleach as the movie you want to search for the recommendation template comes up

