RINEX Major Project

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Major Project Details:

Topic: **Movie Recommendation System**

Dataset: TMDB 5000 Movie Dataset

https://www.kaggle.com/datasets/tmdb/tmdb-movie-metadata

Code:

1. Reading the datasets and forming dataframes.
   Pre-processing the data.
   Forming the Similarity and Movies_List files in Google Colab by using various libraries, to further use that to recommend 5 similar movies.

   Google Colab file link:
   https://colab.research.google.com/drive/1b4n-vxcW-kwjOlI4MISB7dQjKw4MVdJ5?usp=sharing

2. Using Pycharm IDE, to create the Streamlit Application using the files of Movies_List and Similarity obtained earlier

```
import streamlit as st
#Streamlit is an open source app framework in Python language.
# It helps us create web apps for data science and machine learning
in a short time
import pickle
import pandas as pd
import requests  # The requests module allows you to send HTTP
requests using Python
# used here to hit the API


def fetch_poster(movie_id):  # function to fetch the posters of the
recommended movies
    response = requests.get('https://api.themoviedb.org/3/movie/{}'

'?api_key=751ff1283f4d9dfa385344db835f2020&language=en-
US'.format(movie_id))
    # it contains the API key taken from the TMDB website for movies
    data = response.json()
    return "https://image.tmdb.org/t/p/w500/" + data['poster_path']
# returns the path of the poster of movie
```

```
def recommend(movie):  # function which recommends the 5 movies
    movie_index = movies[movies['title'] == movie].index[0]
    distances = similarity[movie_index]

    movies_list = sorted(list(enumerate(distances)), reverse=True,
key=lambda x: x[1])[1:6]

    # sorted(list(enumerate(similarity[0])),reverse=True,key=lambda
x:x[1])[1:6]

    # 1. enumerate -> to make tuple for keeping the index even after
sorting
    # 2. [1:6] -> first 5 movies, excluding itself
    # 3. reverse=True for making the sorted list in descending
order, for the movie with the most similarity at the top

    recommended_movies = []
    recommended_movies_posters = []

    for i in movies_list:
        movie_id = movies.iloc[i[0]].movie_id

        recommended_movies.append(movies.iloc[i[0]].title)
        # fetch poster from API
        recommended_movies_posters.append(fetch_poster(movie_id))
    return recommended_movies,recommended_movies_posters


movies1 = pickle.load(open('movies.pkl','rb'))
movies = pd.DataFrame(movies1)

similarity = pickle.load(open('similarity.pkl','rb'))

st.title('Movie Recommender System')  # to keep the title of the
Streamlit app

# st.selectbox is for searching and selecting a movie
selected_movie_name = st.selectbox(
'Enter movie name:',
movies['title'].values
)

# st.button is for creating a button, which on pressing will
recommend 5 movies along with their posters
if st.button('Recommend'):
    names,posters = recommend(selected_movie_name)

    # st.columns is to create 5 columns for the 5 recommended movies
    col1, col2, col3, col4, col5 = st.columns(5)

    with col1:
        st.text(names[0])  # st.text for the Name of the movie
        st.image(posters[0])  # st.image for the Poster of the movie
    with col2:
        st.text(names[1])
```

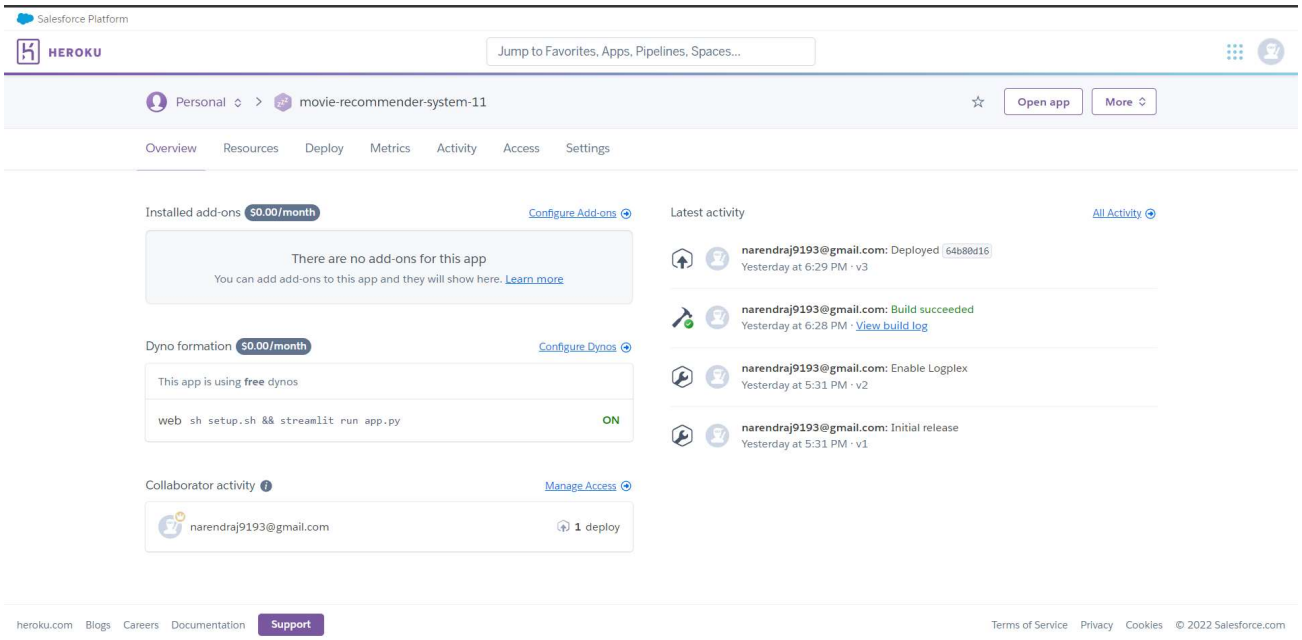
```
        st.image(posters[1])
    with col3:
        st.text(names[2])
        st.image(posters[2])
    with col4:
        st.text(names[3])
        st.image(posters[3])
    with col5:
        st.text(names[4])
        st.image(posters[4])
```

3. Deploying the Streamlit Application on Heroku

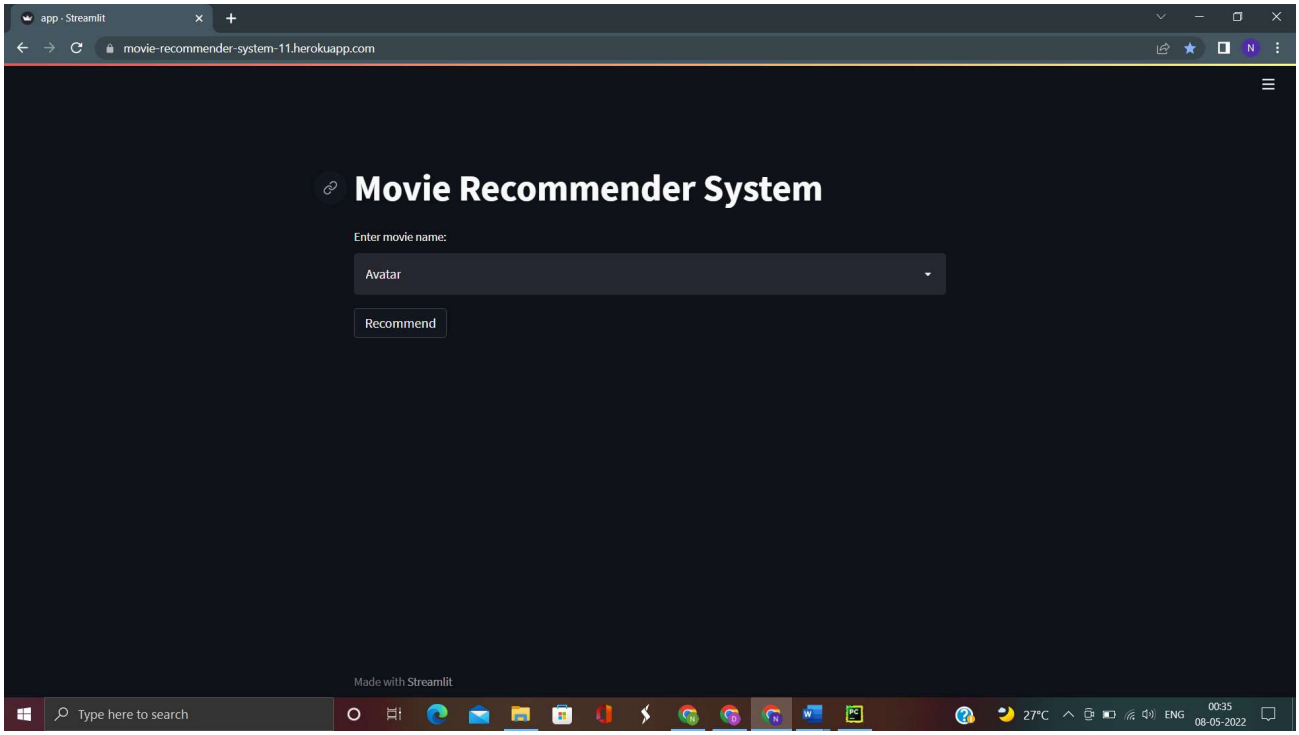
i. Installing Git and Heroku CLI on our device.
ii. Creating 4 files in the Directory of our app – Procfile, setup.sh, .gitignore, requirements.txt
iii. Logging into Heroku and Creating New App
iv. Running the required command given there to deploy the app on Heroku

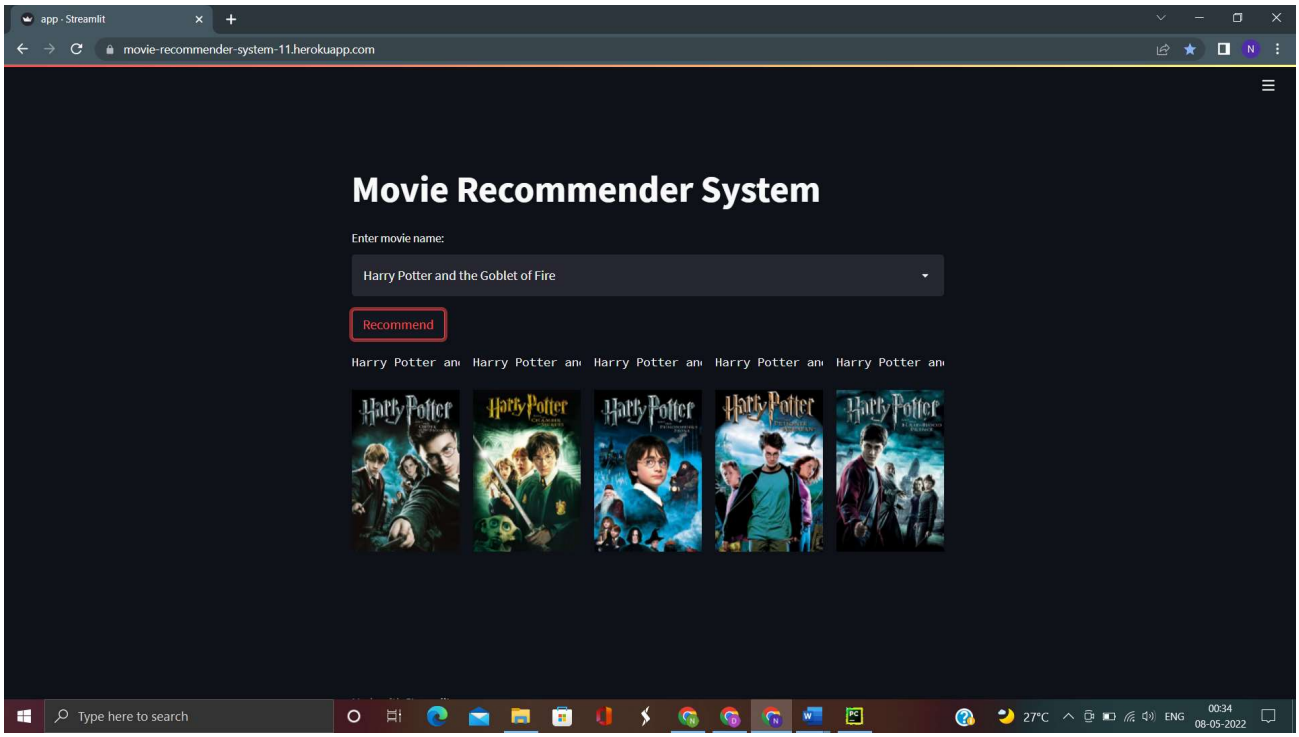
Output Screenshots:

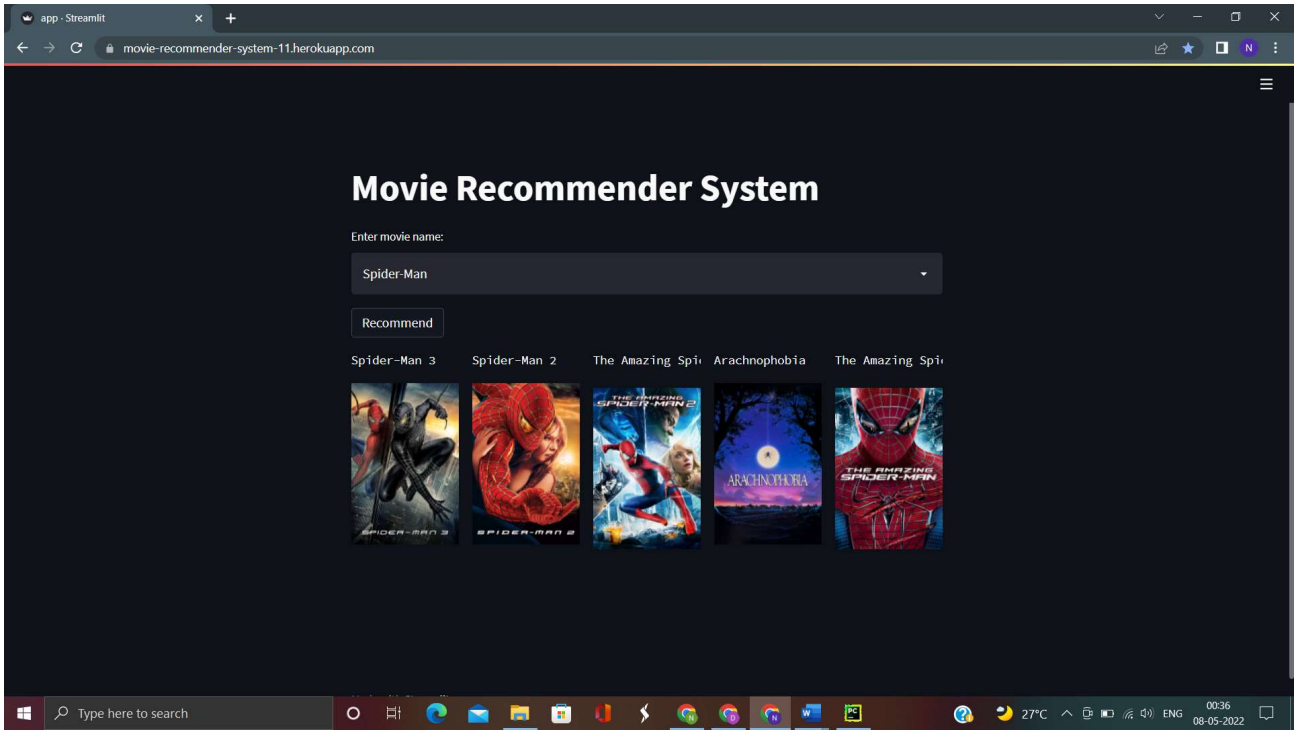
- **Heroku Deployment**



- **Web Application Link:**
  https://movie-recommender-system-11.herokuapp.com/







Google Drive Link of all the files:

https://drive.google.com/drive/folders/1vXnqKUK8U-t5S4UnwyFro24R0kJ6XFnU?usp=sharing