SET-A

Movie Recommendation System – MovieLens

Task Overview:

You are provided with the MovieLens dataset, which contains user ratings for various movies. The objective is to develop a **Recommendation System** that can suggest the **Top-N movies** for a given user.

Requirements:

- ✅ **Implement Collaborative Filtering:**
  Use either **user-based** or **item-based** collaborative filtering techniques.
- ✅ **Explore Matrix Factorization:**
  Apply methods such as **Singular Value Decomposition (SVD)** for recommendations.
- ✅ **Optional Enhancement:**
  Experiment with **neural embeddings** or deep learning-based approaches to improve recommendation quality.
- ✅ **Evaluation Metrics:**
  Evaluate model performance using metrics like:
  - **Precision@K**
  - **Recall@K**
  - **NDCG (Normalized Discounted Cumulative Gain)**

Deliverables:

📓 **Clean and Documented Code/Notebook:**
Ensure the code is well-structured, clean, and includes appropriate documentation.

🎯 **Recommendation Function:**
Implement a function with the following signature:

```
def recommend_movies(user_id, N):
```

📝 **Short Report:**
A short explanation of which approach worked best and why.

Deployment:-

Deploy The model into Hugging Face Named (DataSynthis_ML_JobTask). Share Us the Link