

# 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.

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### 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