“To design a Movie Recommendation System that provides personalized movie suggestions to users based on their preferences, behavior, and past interactions.”

**✅ Requirements of the Problem Statement**

**1. User Requirements**

* Users should be able to:
  + Register and log in to the system.
  + View recommended movies.
  + Rate or like/dislike movies.
  + Search for specific movies.
  + Create a watchlist or favorites list.

**2. System Requirements**

**a. Functional Requirements**

* Collect user preferences and ratings.
* Store and manage movie data (genre, director, actors, etc.).
* Generate personalized movie recommendations using:
  + Content-Based Filtering
  + Collaborative Filtering
  + Hybrid Approach
* Display trending or top-rated movies.
* Provide a user-friendly interface for interaction.

**b. Non-Functional Requirements**

* High performance and low latency in generating recommendations.
* Secure storage and transmission of user data.
* Scalable to handle large datasets of movies and users.
* Responsive and intuitive UI across devices.

**3. Data Requirements**

* Movie dataset with features like:
  + Title, Genre, Director, Cast, Language, Year, Ratings, etc.
* User dataset:
  + User profiles, ratings, watch history, preferences.
* Optional: Social data (e.g., friends' ratings or trending lists).

**4. Technical Requirements**

* **Backend Technologies**: Python, Flask/Django.
* **Frontend Technologies**: HTML, CSS, JavaScript (React/Angular optional).
* **Database**: MySQL, MongoDB, PostgreSQL, or Firebase.
* **Machine Learning**: Libraries like scikit-learn, Surprise, or TensorFlow.
* **Recommendation Algorithms**:
  + Matrix Factorization (SVD)
  + KNN-based methods
  + Neural networks (for deep learning-based models)

**5. Evaluation Requirements**

* Accuracy of recommendations using metrics like:
  + RMSE (Root Mean Square Error)
  + Precision, Recall, F1-score
* User satisfaction through feedback and engagement.