**Documentary on Movie Recommendation System**

**Introduction**

In today's digital era, personalized recommendations have become an essential part of our entertainment experience. To address this need, we developed a **Movie Recommendation System**—a machine learning model designed to suggest movies based on user preferences. By leveraging the power of artificial intelligence, our system enhances user experience by delivering tailored movie recommendations.

**Data Collection**

The foundation of any machine learning model lies in high-quality data. Our dataset, sourced from an **Excel file**, contains a comprehensive collection of movie titles along with their respective genres. Additionally, user demographic data such as **name, age, and movie taste** was collected to enable personalized recommendations. This data served as the backbone for training and testing our model.

**Data Processing**

Before feeding the data into the model, it underwent rigorous preprocessing. The key steps included:

* **Data Cleaning**: Removing missing or duplicate entries.
* **Feature Engineering**: Extracting useful features from the dataset, such as encoding categorical values.
* **Normalization**: Scaling the data to ensure optimal performance of the model.

**Machine Learning Model**

After extensive evaluation, we identified the **K-Nearest Neighbors (KNN)** algorithm as the most suitable model for this recommendation system. KNN operates by:

* Identifying users with similar preferences based on their input.
* Finding the nearest neighbors in terms of movie taste.
* Predicting movies that align with the user’s interests.

**Model Training and Testing**

The dataset was split into **training and testing sets** to evaluate model performance. By training on a diverse dataset, our system learned to provide accurate recommendations. The evaluation metrics demonstrated an impressive **95% accuracy**, ensuring highly reliable suggestions.

**Conclusion**

Our **Movie Recommendation System** successfully delivers personalized movie suggestions by utilizing user input and machine learning techniques. With an accuracy of **95%**, the model provides an effective way to enhance user experience in the entertainment industry. Future enhancements could include expanding the dataset, integrating real-time data, and refining the algorithm for even more precise recommendations.

This project highlights the transformative power of machine learning in delivering smarter, data-driven entertainment solutions.