# Movie Recommendation System

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## Contents



## 1 Introduction

The Movie Recommendation System aims to provide personalized movie recommendations to users based on their preferences and historical interactions with movies. This documentation outlines the project's objectives, approach, technologies used, team segregation and implementation details.

## 2 Objectives

The primary objectives of the Movie Recommendation System project are as follows:

- Develop a recommendation system capable of providing accurate and diverse movie recommendations.

- Utilize machine learning algorithms such as collaborative filtering and content-based filtering to enhance recommendation quality.
- Design an intuitive and user-friendly web interface for users to interact with the recommendation system.
- Document the project comprehensively, including planning, progress reports, and user manuals.
- Successfully manage project timelines, resources, and team efforts to achieve project objectives.

# 3 Approach Overview

Our approach involves a combination of machine learning techniques, web development, and thorough documentation. The project is divided into three main teams: AI Model Training, Web Page Development, and Documentation.

## 3.1 AI Model Training

The AI Model Training team focuses on developing and fine-tuning machine learning models responsible for generating movie recommendations. Various algorithms, including collaborative filtering, content-based filtering, and potentially hybrid approaches, are explored to optimize recommendation accuracy and diversity.

## 3.2 Web Page Development

The Web Page Development team is responsible for designing and developing the user interface for the Movie Recommendation System. An intuitive and user-friendly web platform is created where users can input their preferences, receive personalized recommendations, and explore movie details.

## 3.3 Documentation

The Documentation team handles all aspects of project documentation, including project planning, progress reports, and user manuals. They ensure that all project activities are well-documented and easily accessible for future reference.

# 4 Implementation Details

The implementation details of the Movie Recommendation System project include data preprocessing, feature engineering, model development, web interface design, and documentation management.

## 4.1 Technologies Used

The following technologies are utilized in the project:

- Python
- Pandas
- NumPy
- scikit-learn
- Matplotlib
- Streamlit (for potential web app development)
- LaTeX (for documentation)

## 4.2 Development Schedule: Milestones and Activities

**Week 1-3:** Project planning, team formation, and initial research.
**Week 4-8:** AI model training and experimentation.
**Week 9-11:** Web page development and integration with AI models.
**Week 12-13:** Documentation, testing, and finalization of project deliverables.

## 4.3 Team Segregation

The project team is divided into three teams and managed by one Project Manager:

1. AI Model Training (4 members):
    - Fayaz Noor (22P-9012)
    - Kashif Khan (22P-9005)
    - Aashir Shehzad (22P-9268)
    - Saad Khan (22P-9007)
2. Web Page Development (3 members):
    - Muhammad Hussain (22P-9270)
    - Sami ur Rehman (22P-9006)
    - Alamzeb (22P-9266)
3. Documentation (2 members):
    - Muhammad Afnan (22P-9256)
    - Muhammad Huzefa (22P-9267)
4. Project Manager (1 member):
    - Ibrahim Aslam (22P-9275)

# 5 Conclusion

The Movie Recommendation System project aims to develop an efficient and user-friendly recommendation system for movie enthusiasts. By leveraging machine learning algorithms and web development technologies, we aim to provide personalized movie recommendations tailored to individual user preferences.

# 6 References


1. Python Documentation: `https://www.python.org/doc/`
2. Pandas Documentation: `https://pandas.pydata.org/docs/`
3. scikit-learn Documentation: `https://scikit-learn.org/stable/documentation.html`
4. Streamlit Documentation: `https://docs.streamlit.io/`