**Cover Page**

**Moodlalala**

**Mood-Based Book & Movie Recommender System**

Streamlit app link:

<https://moodlalala-kaf59agxkiqfkd7rj4cpod.streamlit.app/>

AI project Prepared by:

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A black and white logo

AI-generated content may be incorrect.

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**II. Executive Summary**

Moodlalala is a mood-based recommender system leveraging Natural Language Processing (NLP) and Machine Learning (ML) techniques to deliver personalized entertainment suggestions. By analyzing user sentiment and preferences, the system intelligently recommends books and movies based on mood, genre, timing, and user ratings. This innovative AI solution enhances emotional engagement, streamlines content selection, and promotes mental wellness through personalized recommendations.

**III. Table of Contents**

**1.**Movie recommender

**2.**Novel Recommender

**IV. Introduction**

Moodlalala is a smart recommendation engine developed to bridge emotional states with entertainment preferences. Using sentiment analysis and NLP tools, user emotions are interpreted from textual inputs, and customized recommendations are made from a curated database of books and movies. The core idea is to use artificial intelligence to improve user experience and promote emotional health through engaging, tailored content.

**V. Objectives**

* Develop a mood-driven recommender system using NLP and ML.
* Enhance user experience by aligning recommendations with emotional states.
* Build a system capable of adapting to different genres, moods, and timing preferences.
* Provide an intuitive and user-friendly interface.
* Deliver emotional comfort through suitable content recommendations.

**VI. Scope**

The system focuses on the analysis of user-generated textual input for emotion detection using NLP techniques. It is restricted to recommending movies and books and is limited to data available through open APIs and datasets. The scope includes:

* Sentiment analysis and emotion recognition.
* Use of Google API for data extraction.
* Machine learning for generating recommendations.
* A web-based user interface for input and output.

**VII. Methodology**

1. **Data Collection**: Gathered from open-source datasets and APIs.
2. **Preprocessing**: Text cleaning and normalization to improve accuracy.
3. **Sentiment Analysis**: Applied using NLP techniques to extract mood.
4. **Model Training**: Used ML models for classifying mood and generating suggestions.
5. **Recommendation Engine**: Matches moods with content based on mood-content correlation matrices.
6. **User Interface**: Developed a frontend to gather input and display results.

**IX. Team**

* **Syeda Khadija Hassan** (Reg No: 2024626)
* **Rabia Yasin** (Reg No: 2024528).

**X. Risk Assessment**

|  |  |
| --- | --- |
| **Risk** | **Mitigation Strategy** |
| Incorrect mood classification | Use of improved sentiment models and feedback loop. |
| API quota limits | Caching and using multiple API keys. |
| Limited dataset diversity | Use hybrid sources and perform manual vetting. |
| User interface complexity | Simplify input fields and output display. |

**XI. Benefits & Deliverables**

* Personalized content matching emotional state.
* Real-time, mood-sensitive suggestions.
* Mental wellness and engagement through tailored media.
* Final project includes:
  + Trained ML model
  + NLP sentiment engine
  + User interface (frontend)
  + Documentation and performance report

**XII. Evaluation & Measurement**

* **Quantitative Metrics**: Precision, recall, and F1 score for model accuracy.
* **User Feedback**: Collected through surveys and real-time testing.
* **Performance Testing**: Measured response time and recommendation accuracy.
* **Usability Testing**: Conducted to ensure the interface is intuitive.

**XIII. Conclusion**

Moodlalala is an innovative AI-driven solution that aligns technology with emotional intelligence. By understanding users' moods and delivering content accordingly, it serves both entertainment and emotional wellness. The project demonstrates how NLP and ML can be used to create deeply personalized digital experiences.

**XIV. Appendices**

* A. Dataset samples and preprocessing logs
* B. Code snippets for NLP and ML models
* C. API integration details
* D. Screenshots of the user interface
* E. Training and performance logs