Software Test Plan (STP) - DramaTune

1. Introduction

This Software Test Plan outlines the testing strategy for
the **DramaTune** application, a web-based system that matches and merges music
tracks to uploaded dramatic video scenes. The objective is to ensure correct
functioning of video upload, music recommendation, merging, and download
features.

2. Test Items

- Video Upload and Display Module (Frontend/Backend)
- Music Recommendation Engine (ML Model & API)
- Audio/Video Merge and Download Feature

3. Features to be Tested

- Successful upload of video files via UI
- Accurate suggestion of top 3 music tracks for each uploaded video
- Playback and pausing of video and suggested tracks
- Merging selected music with the uploaded video
- Downloading the merged video file
- UI layout and responsiveness across major browsers

4. Features Not to be Tested

- User authentication or profile management (not in scope)
- Advanced music generation or effects (future version)

5. Testing Strategy

- **Unit Testing:** Core backend functions (rhythm extraction, model prediction)
- **Integration Testing:** Frontend-backend API interactions (upload, merge, download)
- **System Testing:** Complete user flow (upload → suggest → play → merge → download)
- **Acceptance Testing:** Manual end-to-end tests on main user stories and edge cases

6. Test Environment

- Backend: Python Flask server (localhost)

- Frontend: React web app (localhost)
- Music/Video Files: Local test dataset (mp4, mp3)
- Browsers: Chrome and Firefox (latest)

7. Responsibilities

Maayan: Backend Testing Lead
Kim: Frontend Testing Lead
Both: Frontend Testing Lead

8. Schedule

- Unit Testing: 26–27 May 2025
- Integration Testing: 28–29 May 2025
- System/Acceptance Testing: 30–31 May 2025

9. Risks and Contingencies

- Possible errors in video/audio merging (contingency: provide error messages and manual fallback)
- Library or dependency compatibility issues (contingency: use compatible versions, document any workarounds)
- Large file performance issues (contingency: restrict file size and provide user guidance)