



NEXT GEN EMPLOYABILITY PROGRAM

Creating a future-ready workforce

Team Members

Student Name : Prithiviraj A
Student ID : au311121104045

College Name

Loyola-ICAM College of
Engineering and Technology

CAPSTONE PROJECT SHOWCASE

Project Title

Music Web Application using Django Framework

Abstract | Problem Statement | Project Overview | Proposed Solution |
Technology Used | Modelling & Results | Conclusion



Abstract

The music web application is a platform built using the Django Framework, designed to provide users with a seamless music streaming experience. Users can browse a vast library of songs, albums, and artists, create playlists, and discover new music based on their preferences. The application offers a user-friendly interface, responsive design, and efficient search functionality, making it easy for users to find and enjoy their favorite music. With features such as personalized recommendations and social sharing, the music web application aims to enhance the way users discover and engage with music online

Problem Statement

In a crowded digital music landscape, users struggle to find personalized music streaming platforms with user-friendly interfaces. This project aims to develop a Django-based music web application that offers a seamless experience, including a vast music library, personalized playlists, and smart recommendations. By filling this gap, the application seeks to enhance how users discover and enjoy music online.

Project Overview

Title: Harmonix

Objective: Develop a Django-based music web application to provide users with a seamless music streaming experience, including personalized playlists and smart music recommendations.

Key Features:

Vast music library: Provide access to a wide range of songs, albums, and artists.

Personalized playlists: Allow users to create and manage playlists based on their preferences.

User-friendly interface: Design an intuitive and responsive interface for easy navigation.

Social sharing: Enable users to share their favorite music with friends on social media platforms.

Target Audience: Music enthusiasts looking for a personalized and user-friendly music streaming platform.

Outcome: The project aims to revolutionize how users discover and enjoy music online by offering a seamless and personalized music streaming experience.

Proposed Solution

Title: Harmonix

Description: Harmonix is a cutting-edge music web application built using the Django Framework, offering a next-level music streaming experience. The application boasts a vast library of songs, albums, and artists, enhanced by features such as personalized playlists, smart music recommendations, and a visually stunning user interface.

Key Features:

Dynamic Music Library: Harmonix's music library is continuously updated with the latest songs, albums, and artists from around the world.

Personalized Playlists: Users can create, customize, and share playlists based on their unique preferences and moods.

Intelligent Music Discovery: Harmonix utilizes machine learning algorithms to analyze user listening habits and provide tailored music recommendations.

Engaging User Interface: The application features a modern and responsive design, with interactive elements that enhance the user experience.

Social Integration: Users can connect with friends, share favorite tracks, and discover new music together through social media integration.

Technical Stack:

Frontend: HTML, CSS, JavaScript, React.js

Backend: Django Framework, Django REST framework

Database: PostgreSQL

Hosting: AWS EC2, S3 for media storage

Machine Learning: Python, TensorFlow for recommendation engine

Target Audience: MeloTune targets music enthusiasts who seek a sophisticated and personalized music streaming platform that goes beyond conventional offerings.

Outcome: MeloTune aims to set a new standard in music streaming by combining cutting-edge technology with a user-centric approach, providing a unique and immersive music experience for all users.

Technology Used

Front-end



Back-end



Modelling & Results

Modeling:

Data Model: Utilize Django's ORM to define models for songs, albums, artists, playlists, and user interactions (e.g., likes, shares).

Machine Learning Model: Use TensorFlow or scikit-learn to develop a recommendation engine based on user listening history and preferences.

Results:

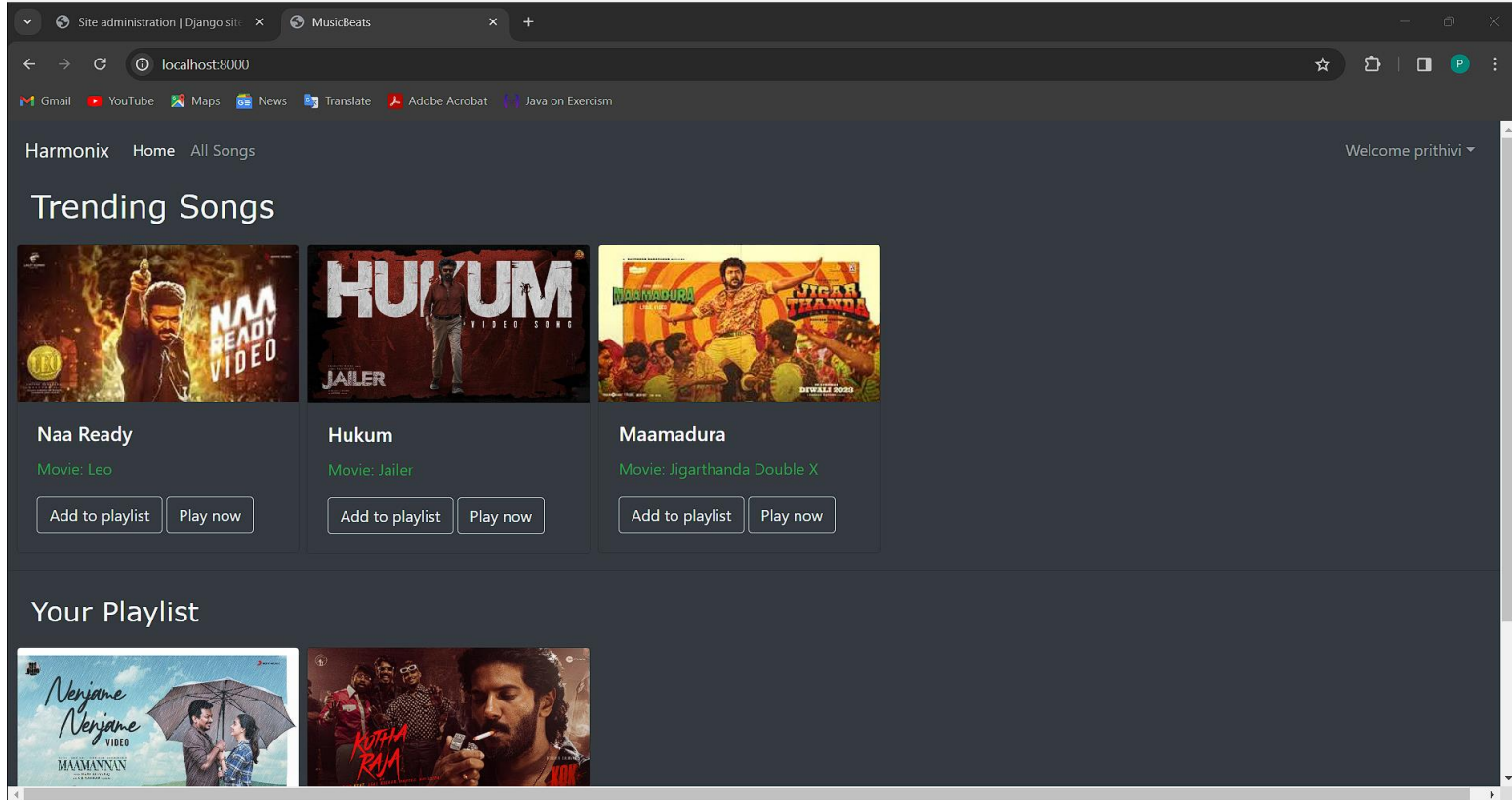
Dynamic Music Library: Users will have access to a diverse and continuously updated music library, ensuring a wide selection of songs, albums, and artists.

Personalized Playlists: The recommendation engine will enhance user experience by suggesting songs and artists based on their listening habits, leading to more personalized playlists.

Engaging User Interface: The modern and responsive design will provide a visually appealing and intuitive user interface, enhancing user engagement and satisfaction.

Social Integration: Users will be able to connect with friends, share favorite tracks, and discover new music together, fostering a sense of community within the application.

Homepage



The screenshot shows a web browser window with two tabs: 'Site administration | Django sit...' and 'MusicBeats'. The address bar shows 'localhost:8000'. The browser's bookmark bar includes links to Gmail, YouTube, Maps, News, Translate, Adobe Acrobat, and Java on Exercism. The web application has a dark theme and a navigation bar with 'Harmonix', 'Home', and 'All Songs' links. A user greeting 'Welcome prithivi' is on the right. The main section is titled 'Trending Songs' and features three song cards: 'Naa Ready' (Movie: Leo), 'Hukum' (Movie: Jailer), and 'Maamadura' (Movie: Jigarthanda Double X). Each card has a video thumbnail, the song title, the movie name, and buttons for 'Add to playlist' and 'Play now'. Below this is a 'Your Playlist' section with two video thumbnails: 'Nenjane Nenjane' and 'Kutham Raa'.

Site administration | Django sit... MusicBeats


localhost:8000

Gmail YouTube Maps News Translate Adobe Acrobat Java on Exercism


Harmonix Home All Songs

Welcome prithivi


Trending Songs



Naa Ready
Movie: Leo
Add to playlist Play now




Hukum
Movie: Jailer
Add to playlist Play now




Maamadura
Movie: Jigarthanda Double X
Add to playlist Play now

Your Playlist



Nenjane Nenjane
VIDEO
MAAMANNAN



KUTHAM RAA
KOR

All Songs

Site administration | Django site


All Songs

localhost:8000/musicbeats/songs/

[Gmail](#) [YouTube](#) [Maps](#) [News](#) [Translate](#) [Adobe Acrobat](#) [Java on Exercism](#)

[Harmonix](#) [Home](#) [All Songs](#)

Welcome prithivi




MARAKKUMA NENJAM
VIDEO SONG
வெங்கு
கனங்கு
காடு

Marakkuma Nenjam

Movie: Vendhu Thanindhathu Kaadu

[Play now](#) [Add to playlist](#)




NEE SINGAM DHAN
VIDEO SONG
PATHU THALA

Nee Singam dhan

Movie: Pathu Thala

[Play now](#) [Add to playlist](#)




KAATTUMALLI
VIDEO
விடுதலை

Kaattumalli

Movie: Viduthalai

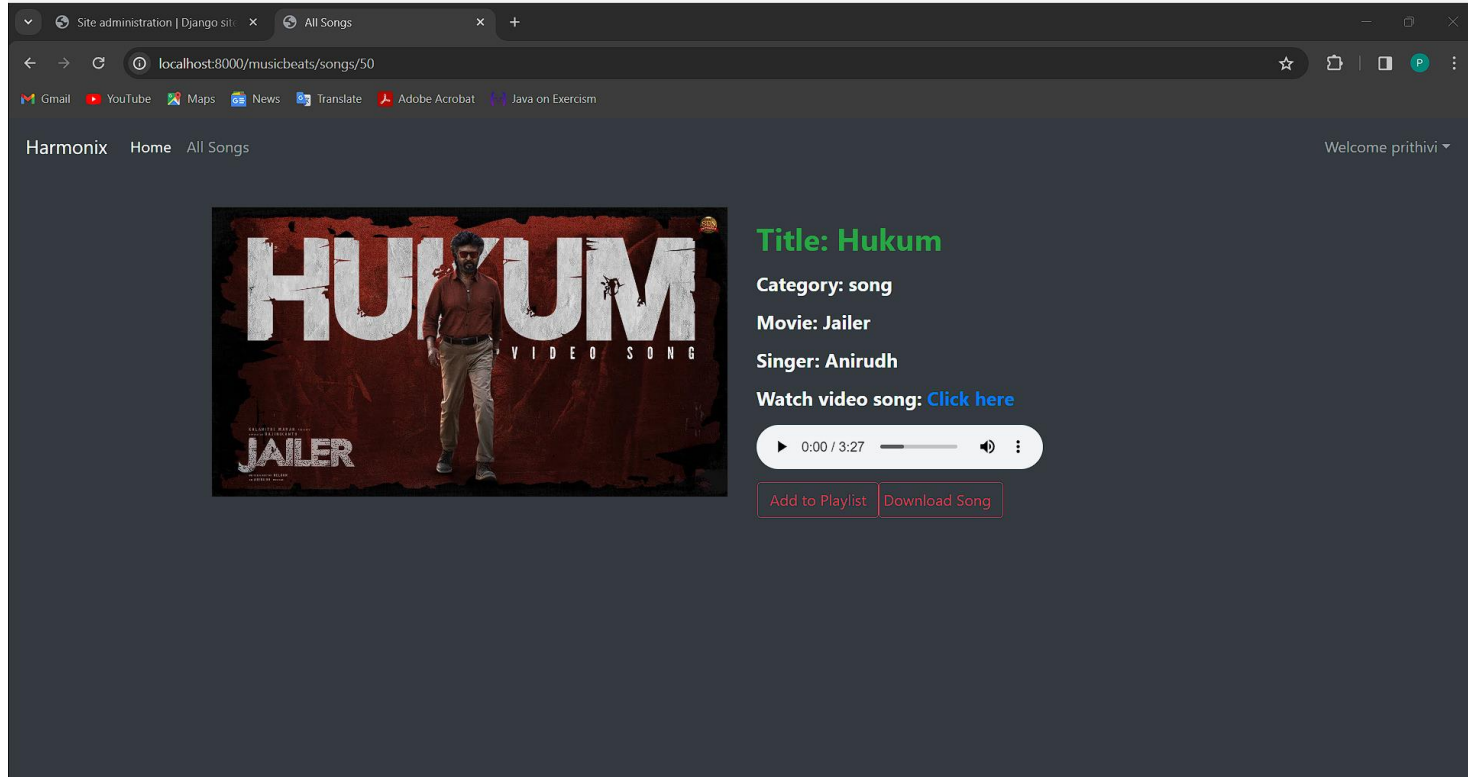
[Play now](#) [Add to playlist](#)



Naan Gaali

Naan Gaali

Song



The screenshot shows a web browser window with the address bar displaying `localhost:8000/musicbeats/songs/50`. The browser's address bar includes navigation buttons (back, forward, refresh) and a search bar. Below the address bar, there are several icons for various services: Gmail, YouTube, Maps, News, Translate, Adobe Acrobat, and Java on Exercism. The web application's header features the text "Harmonix" followed by navigation links "Home" and "All Songs". On the right side of the header, it says "Welcome prithivi" with a dropdown arrow. The main content area is dark-themed and displays a song player interface. On the left, there is a large image of a man in a red shirt and khaki pants standing in front of a red background with the word "HUKUM" in large white letters. Below this, the word "JAILER" is visible. On the right, the song details are listed: "Title: Hukum" in green, "Category: song", "Movie: Jailer", "Singer: Anirudh", and "Watch video song: [Click here](#)". Below the text is a video player with a progress bar showing "0:00 / 3:27" and a play button. At the bottom right, there are two buttons: "Add to Playlist" and "Download Song".

Site administration | Django site x All Songs x +

localhost:8000/musicbeats/songs/50

Gmail YouTube Maps News Translate Adobe Acrobat Java on Exercism

Harmonix Home All Songs Welcome prithivi

HUKUM
VIDEO SONG
JAILER

Title: Hukum
Category: song
Movie: Jailer
Singer: Anirudh
Watch video song: [Click here](#)

0:00 / 3:27

Add to Playlist Download Song

Upload Music

Site administration | Django site x Login

localhost:8000/musicbeats/upload

Gmail YouTube Maps News Translate Adobe Acrobat Java on Exercism

Harmonix Home All Songs Welcome prithivi

Upload Your Music

Your Music Name

Singer Name

Image Link: (Associated With Your Music)

Movie Name

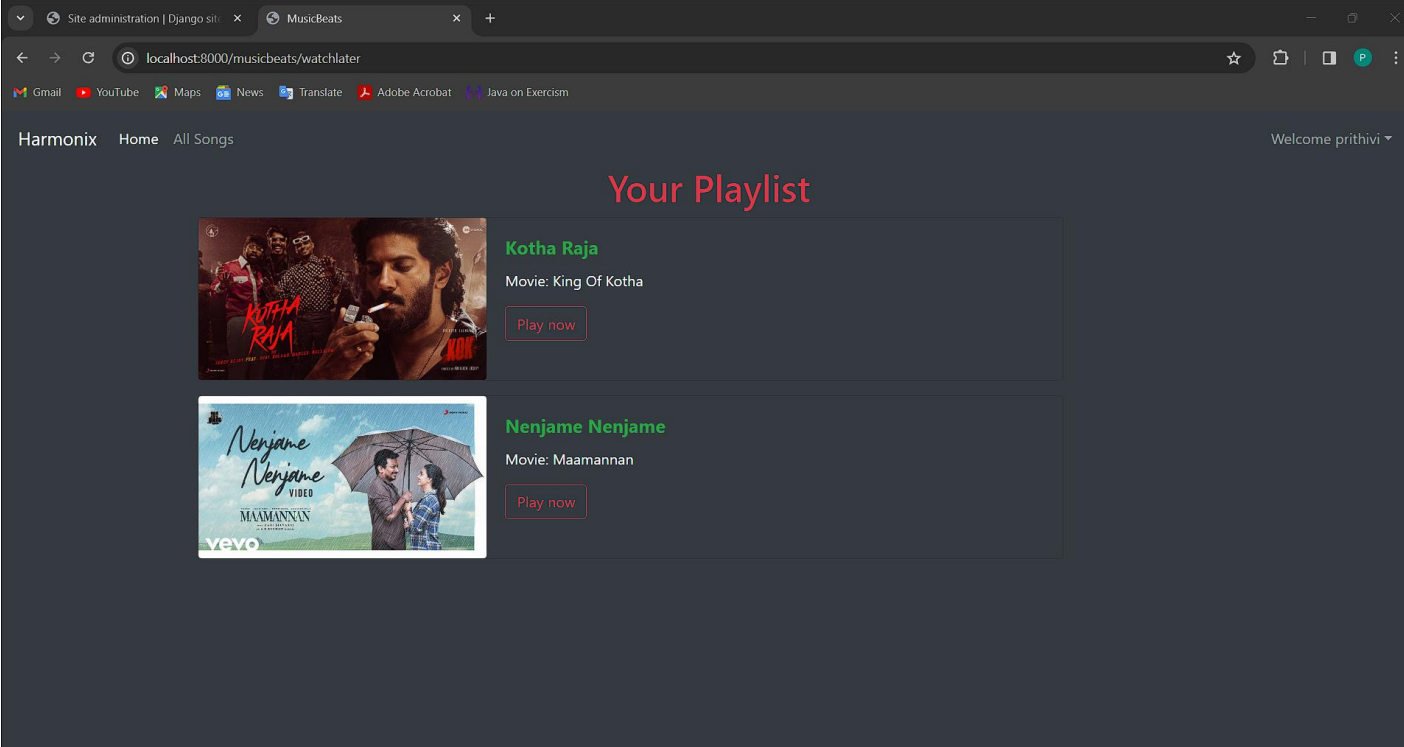
Credit

Example file input

Choose File Vikram-Title-Track-MassTamilan.so.mp3

Upload...

Your Playlist




Site administration | Django site x MusicBeats x +

localhost:8000/musicbeats/watchlater


Gmail YouTube Maps News Translate Adobe Acrobat Java on Exercism

Harmonix Home All Songs Welcome prithivi

Your Playlist

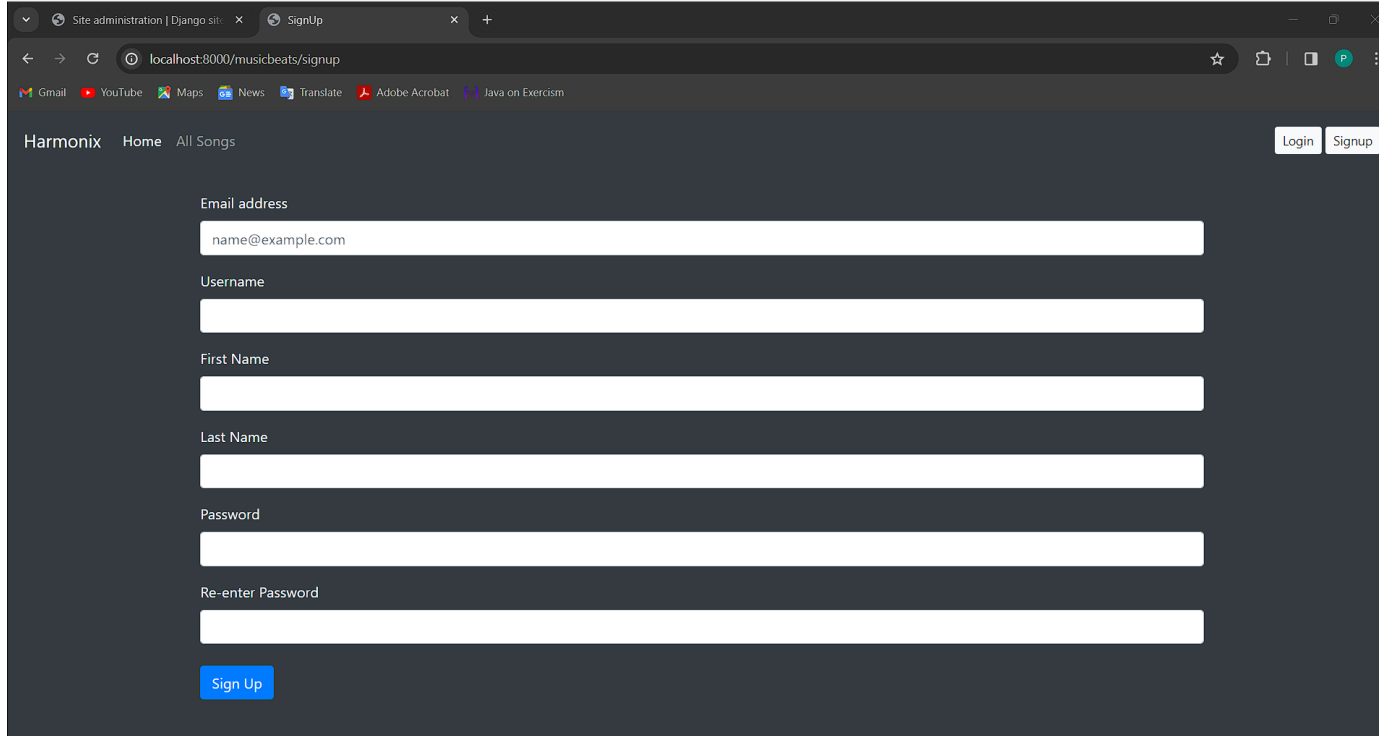


Kotha Raja
Movie: King Of Kotha
[Play now](#)



Nenjame Nenjame
Movie: Maamannan
[Play now](#)

Signup



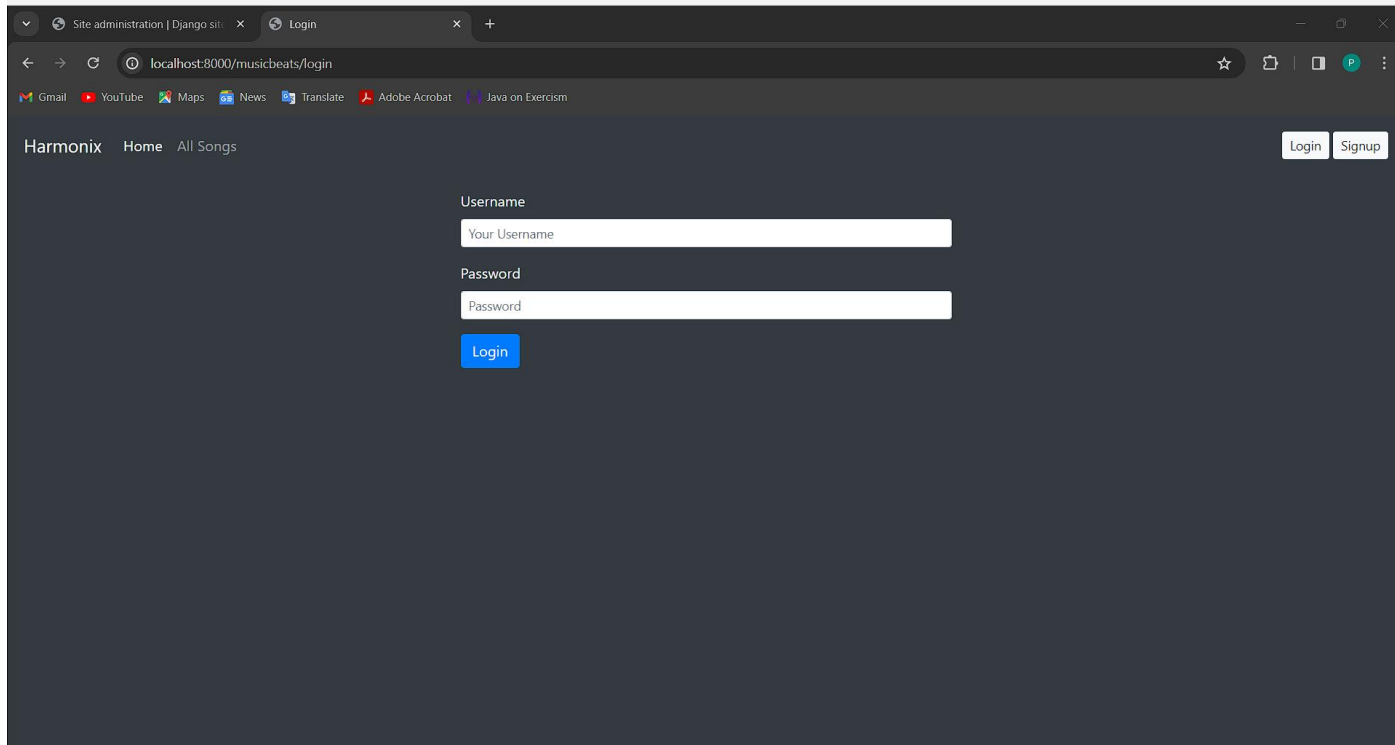
The screenshot shows a web browser window with two tabs: 'Site administration | Django site' and 'SignUp'. The address bar displays 'localhost:8000/musicbeats/signup'. The browser's taskbar at the bottom includes icons for Gmail, YouTube, Maps, News, Translate, Adobe Acrobat, and Java on Exercism.

The web application interface has a dark grey background. At the top left, there are navigation links: 'Harmonix', 'Home', and 'All Songs'. At the top right, there are 'Login' and 'Signup' buttons. The 'Signup' form consists of the following fields:

- Email address:** A text input field containing 'name@example.com'.
- Username:** An empty text input field.
- First Name:** An empty text input field.
- Last Name:** An empty text input field.
- Password:** An empty text input field.
- Re-enter Password:** An empty text input field.

At the bottom of the form is a blue 'Sign Up' button.

Login



Site administration | Django site | Login

localhost:8000/musicbeats/login

Gmail YouTube Maps News Translate Adobe Acrobat Java on Exercism

Harmonix Home All Songs

Login Signup

Username

Your Username

Password

Password

Login

Future Enhancements:

- **Advanced Recommendation System:** Implement more advanced machine learning algorithms to improve the accuracy of music recommendations based on user preferences, listening history, and behavior.
- **Social Features:** Expand social integration by allowing users to follow each other, create public playlists, and see what their friends are listening to in real-time.
- **Lyrics Integration:** Add a feature to display lyrics for songs, enhancing the overall music listening experience.
- **Artist and Album Insights:** Provide users with more information about artists and albums, such as biographies, discographies, and related content.
- **Podcast and Audiobook Support:** Extend the platform to include podcasts and audiobooks, offering users a wider range of audio content.
- **Music Discovery Tools:** Develop tools for users to discover new music based on genres, moods, or themes, helping them explore a broader range of music.
- **Integration with Smart Devices:** Allow users to access MeloTune on smart speakers, TVs, and other connected devices for a seamless music listening experience across different platforms.

Conclusion

In conclusion, Harmonix is poised to revolutionize the music streaming experience with its sophisticated features and user-centric design. By offering a dynamic music library, personalized playlists, an engaging user interface, and social integration, Harmonix caters to the diverse needs of music enthusiasts.

The application's technical stack, including HTML, Bootstrap, Django Framework, Django REST framework, and sqlite, ensures a robust and scalable platform. Harmonix's target audience, comprising music enthusiasts seeking a personalized music streaming experience, is well served by its innovative features and user-friendly interface.

With potential future enhancements such as advanced recommendation systems, social features, and integration with smart devices, Harmonix is positioned to remain at the forefront of the music streaming industry. Overall, Harmonix is not just a music streaming platform but a destination for music lovers to discover, share, and enjoy music in a whole new way.

Thank You!