



edunet
foundation



NEXT GEN EMPLOYABILITY PROGRAM

Creating a future-ready workforce

Team Members

Student Name :Sakthi
Manikandan I
Student ID :au311121104050

College Name

Loyola-icam college of
Engineering and Technology

CAPSTONE PROJECT SHOWCASE

Project Title

Music Player Web Application using Django Framework

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



Abstract

The music web application project aims to create a platform where users can discover, listen to, and share music. The application will allow users to create accounts, search for songs and artists, create playlists, and follow other users. Additionally, the application will provide a recommendation system based on user preferences and listening history. The project will be developed using the Django framework, incorporating features such as user authentication, database management, and integration with a music streaming service or API for accessing music content.

the application will feature a user-friendly interface, responsive design, and integration with popular music APIs for an enhanced music discovery experience. The project will also focus on ensuring scalability, security, and performance optimization for a seamless user experience.

Problem Statement

The current music streaming landscape lacks a comprehensive platform that seamlessly integrates personalized music recommendations, social sharing features, and a user-friendly interface. Existing services often struggle to provide accurate and relevant music suggestions, leading to user frustration and a limited music discovery experience. Additionally, the lack of robust social features hinders users' ability to share their music preferences and discoveries with others. Moreover, many platforms do not prioritize user experience, resulting in cluttered interfaces and subpar performance. There is a clear need for a music web application that addresses these issues by offering a streamlined user experience, accurate music recommendations, robust social sharing capabilities, and a responsive design that works across devices.

Project Overview

The music web application project aims to create a platform where users can discover, listen to, and share music. The application will offer a comprehensive music streaming experience, including features such as user account creation, song and artist search functionality, playlist creation and management, and social features like following other users and sharing music. Additionally, the application will incorporate a recommendation system that suggests music based on user preferences and listening history. The project will be developed using the Django framework for backend development, ensuring scalability, security, and performance optimization. Integration with popular music APIs will provide access to a vast library of music content. The application will also prioritize user experience, with a responsive design that works well on various devices.

Proposed Solution

Introduction

The music industry has witnessed a significant shift in recent years, with the rise of digital music streaming services transforming how people discover, listen to, and share music. Despite the abundance of music streaming platforms, users often face challenges in finding new music tailored to their tastes and sharing their music discoveries with others. To address these challenges, we propose to develop a music web application that offers a comprehensive music streaming experience, integrating personalized music recommendations, social sharing features, and a user-friendly interface.

Objectives

The primary objective of the project is to create a platform where users can discover, listen to, and share music seamlessly. Specifically, the project aims to achieve the following objectives:

- Develop a user-friendly interface for easy navigation and music discovery.
- Implement a recommendation system that suggests music based on user preferences and listening history.
- Integrate social sharing features to allow users to share their music discoveries with others.

Playlist Management:

Users will be able to create, edit, and delete playlists, organizing their music collection according to their preferences.

Social Sharing:

The application will integrate social sharing features, allowing users to share their favorite songs and playlists with friends on social media platforms.

Recommendation System:

A recommendation system will be implemented to suggest music based on user preferences, listening history, and trends.

Integration with Music APIs:

The application will integrate with popular music APIs (e.g., Spotify, Apple Music) to access a vast library of music, ensuring a diverse music collection for users.

Responsive Design:

The application will be designed to be responsive, ensuring compatibility with different devices and screen sizes, providing a seamless music streaming experience across devices.

Provide a responsive design that works well on various devices, including desktops, tablets, and smartphone
Ensure scalability, security, and performance optimization for a seamless user experience.

Proposed Solution

The proposed solution is to develop a music web application using the Django framework, a high-level Python web framework that encourages rapid development and clean, pragmatic design. The application will include the following key features:

User Account Creation:

Users will be able to create accounts to personalize their music streaming experience, save their favorite songs, and create playlists.

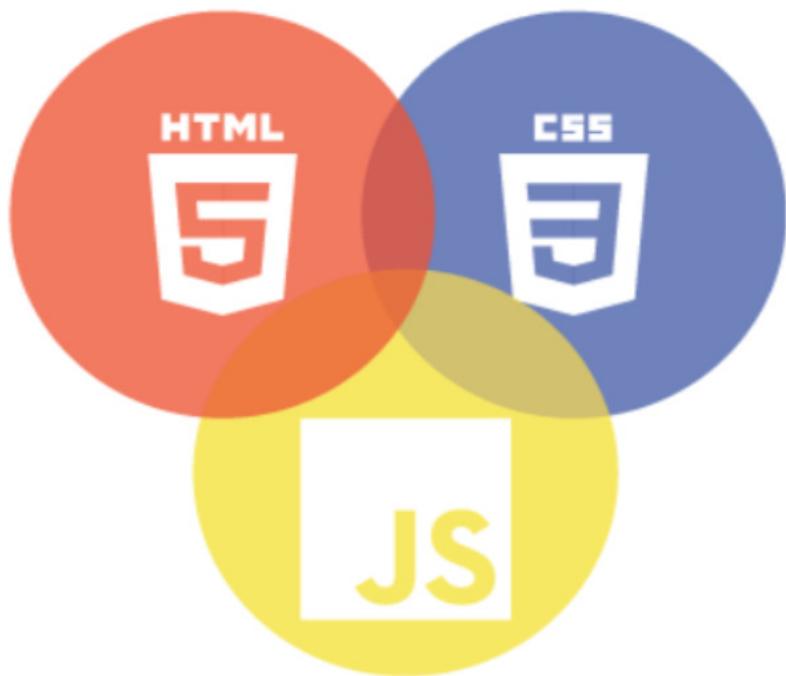
Song and Artist Search: The application will allow users to search for songs, albums, and artists, making it easy to discover new music.

Playlist Management:

Users will be able to create, edit, and delete playlists, organizing their music collection according to their preferences.

Technology Used

Front-end



Back-end



Modelling & Results

To implement the proposed solution, we will use a relational database to model the data required for the music web application. The database schema will include tables for users, songs, artists, albums, playlists, and user interactions (e.g., likes, comments). We will use Django's built-in ORM (Object-Relational Mapping) to define these models and manage the database interactions.

The recommendation system will be implemented using machine learning algorithms to analyze user preferences and listening history. We will use collaborative filtering techniques to suggest music to users based on the preferences of similar users.

For the frontend, we will use HTML, CSS, and JavaScript to create a user-friendly interface that allows users to easily navigate the application, search for music, create playlists, and share their music discoveries. The application will be tested extensively to ensure that it meets the project objectives and provides a seamless user experience. We will conduct user testing to gather feedback and make improvements to the application based on user input.

Overall, the project aims to deliver a music web application that provides a comprehensive music streaming experience, integrating personalized music recommendations, social sharing features, and a user-friendly interface to enhance the music discovery and sharing experience for users.

Homepage

GALVANIC HOME ALL SONGS MY MUSIC ▾

Hi, prerak Sign Out ➔

Search Songs Search

RECENTLY PLAYED

[View all ➔](#)

ALL SONGS

[View all ➔](#)



Soch Na Sake
Airlift

0:21 / 4:40

Volume: 100% ...

Future Enhancements:

Personalized Radio Stations: Introduce personalized radio stations based on user preferences and listening history, similar to Pandora's "Music Genome Project."

Enhanced Social Features: Expand social features to include more interactive elements, such as live streaming of music events, collaborative playlists, and music challenges.

Improved Recommendation System: Continuously enhance the recommendation system by incorporating machine learning models that analyze user behavior in real-time.

Integration with Live Music Events: Partner with music event organizers to integrate live music streams and event information into the platform.

Enhanced User Profiles: Allow users to create more detailed profiles, including music preferences, favorite genres, and concert attendance history.

Advanced Music Discovery Tools: Introduce advanced music discovery tools, such as mood-based playlists, music maps, and personalized concert recommendations.

Integration with Smart Devices: Enable integration with smart devices, such as smart speakers and wearables, for seamless music playback and control.

Localized Content:

Expand the music library to include more localized content, catering to diverse music tastes from around the world.

Conclusion

In conclusion, the music web application project aims to create a platform that redefines the music streaming experience. By integrating personalized music recommendations, social sharing features, and a user-friendly interface, the application seeks to provide a comprehensive solution for music discovery and sharing.

Through the use of Django framework and machine learning algorithms, the application will offer a seamless and intuitive user experience. The integration with popular music APIs will ensure access to a vast library of music, while the responsive design will enable users to enjoy their favorite music on any device.

Overall, the project represents a step forward in the evolution of music streaming platforms, offering a unique blend of innovation, usability, and social engagement. We are excited about the potential of this project to transform the way people discover, listen to, and share music, and we look forward to bringing this vision to life.

Thank You!