

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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Angular Mini Project Report on “MUSIC STREAMING PLATFORM”

Submitted in Partial fulfillment of the Requirements for the V Semester of the Degree of

**Bachelor of Engineering in
Information Science & Engineering**

By

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DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

CMR INSTITUTE OF TECHNOLOGY

Affiliated to VTU, Approved by AICTE, Accredited by NBA and NAAC with “A++” Grade

ITPL MAIN ROAD, BROOKFIELD, BENGALURU-560037, KARNATAKA, INDIA

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CERTIFICATE

This is to certify that the Angular Project work entitled “**Music Streaming platform**” has been carried out by **DARSHAN S 1CR21IS189, PRASHANTH 1CR22IS410, NAVEEN GOWDA 1CR22IS409**, bonafide students of CMR Institute of Technology, Bengaluru in partial fulfillment for the award of the Degree of **Bachelor of Engineering in Information Science and Engineering** of the Visvesvaraya Technological University, Belagavi during the year **2023-2024**. It is certified that all corrections/suggestions indicated for the Internal Assessment have been incorporated in the report deposited in the departmental library. Angular Project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said Degree.

Signature of Guide

Prof. Partha C
Assistant professor
Dept. of ISE, CMRIT

Signature of HOD

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External Viva

Name of the Examiners

Signature with date

DECLARATION

We, the students of V semester from Department of Information Science and Engineering, CMR Institute of Technology, Bangalore declare that the project work entitled "**Music Streaming Platform**" has been successfully completed under the guidance of Prof. Partha C Assistant Professor Dept. of Information Science and Engineering, CMR Institute of technology, Bengaluru. This project work is submitted in partial fulfillment of the requirements for the award of the Degree of Bachelor of Engineering in Information Science and Engineering during the academic year 2023-2024. The matter embodied in the project report has not been submitted previously by anybody for the award of any degree or diploma to any university.

Place: Bangalore

Date:

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ABSTRACT

Mousike is a music streaming platform designed to offer users an immersive and personalized music discovery experience. Built using Angular 17 for the front end and Node.js for back end, Mousike provides features such as user authentication, music playback and search functionality management. The platform prioritizes simplicity, consistency, and accessibility in its design, aiming to create a seamless and intuitive user experience across various devices. Future scope involves enhancing user engagement, optimizing content curation and recommendation algorithms, and exploring monetization strategies.

Keywords:

1. Mousike
2. Music streaming
3. Angular 17
4. Node.js
5. User authentication

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CHAPTER 1

INTRODUCTION

In the digital age, music has become an integral part of people's lives, shaping their emotions, memories, and experiences. Recognizing the profound impact of music and the evolving landscape of digital consumption, Mousike emerges as a revolutionary platform poised to redefine how users interact with and explore music. Derived from the ancient Greek term for "music," Mousike encapsulates the essence of harmony, rhythm, and expression, serving as a beacon for music enthusiasts worldwide.

Mousike stands at the forefront of innovation in the music streaming industry, offering a seamless and immersive experience tailored to the preferences and diverse tastes of its users. With a vast library spanning across genres, languages, and cultures, Mousike opens the doors to a boundless musical journey, where users can discover new artists, rediscover classics, and curate playlists that resonate with their mood and moment.

In summary, Mousike represents more than just a music streaming platform; it embodies a vision of harmony, diversity, and connectivity in the digital age. As users embark on their musical odyssey with Mousike, they embark on a journey of discovery, expression, and belonging, where every beat, every lyric, and every note resonates with meaning and purpose.

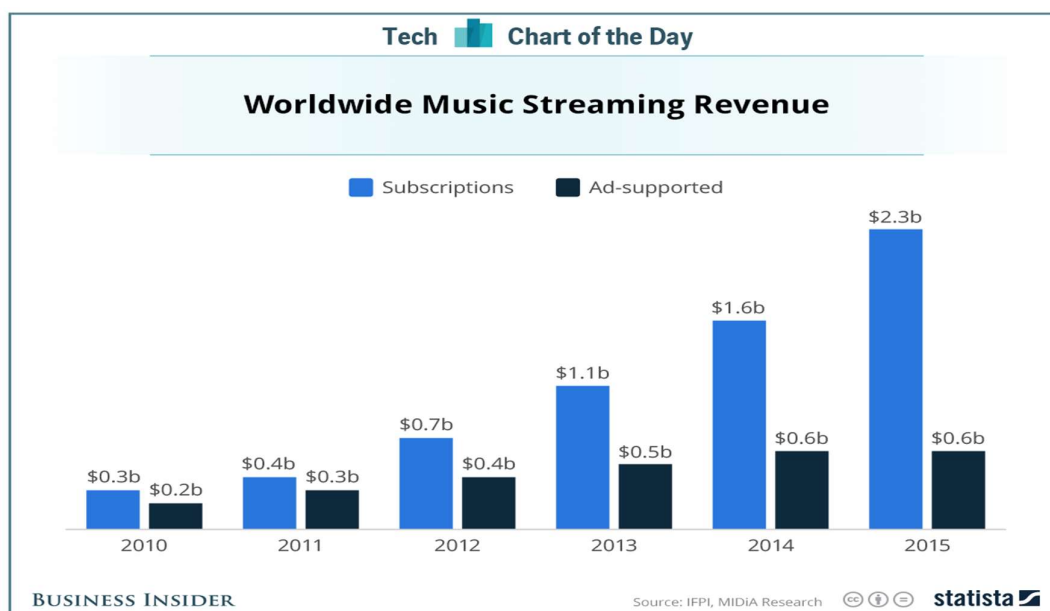


Figure 1.1

Fig 1.1 percentage of people willing to choose online platform for music streaming.

1.1 Objectives

- Mousike's primary objective is to enhance the music streaming experience for users by prioritizing their satisfaction and engagement. This overarching goal drives the platform's development and guides its evolution, ensuring that every feature and enhancement contributes to a more enjoyable and enriching music discovery journey.
- A key focus of Mousike is the development of a user-friendly interface that facilitates intuitive navigation and seamless interaction with the platform's vast music catalog. Through careful design and continuous iteration, Mousike aims to create an interface that is not only aesthetically pleasing but also highly functional, allowing users to easily explore, discover, and enjoy music.
- Central to Mousike's objectives is the expansion of its music library to encompass a diverse range of genres, languages, and artists. By offering a comprehensive selection of songs from around the world, Mousike seeks to cater to the varied tastes and preferences of its global user base, ensuring that every listener can find something that resonates with them.
- Mousike is committed to improving the discoverability of its content through the implementation of advanced search functionality. The platform's search feature is designed to be efficient, accurate, and user-friendly, allowing users to quickly find the music they love and discover new favorites with ease.
- Leveraging the power of artificial intelligence, Mousike aims to provide users with personalized music recommendations and curated playlists tailored to their individual preferences and listening habits. By analyzing user behavior and feedback, Mousike's recommendation engine continuously learns and adapts, ensuring that users are always presented with relevant and engaging content.
- In addition to personalized recommendations, Mousike seeks to foster a sense of community among its users through features such as playlist sharing and artist interactions. These features not only facilitate collaboration and connection but also enrich the overall music discovery experience, allowing users to engage with each other and with their favorite artists in meaningful ways.
- As Mousike continues to grow and evolve, the platform remains committed to exploring sustainable monetization strategies that prioritize user privacy and data security. By establishing transparent and ethical revenue streams, Mousike aims to ensure the long-term viability and success of the platform while maintaining the trust and loyalty of its users.
- Ultimately, Mousike's objectives are driven by a passion for music and a dedication to creating a platform that brings joy, inspiration, and connection to music lovers around the world. Through innovation, collaboration, and a relentless focus on user experience, Mousike strives to redefine the music streaming landscape and shape the future of music consumption in the digital age.

1.2 Scope of the project

The scope of the Mousike project encompasses the development and deployment of a music streaming platform that offers users an immersive and personalized music discovery experience. The project aims to create a robust and feature-rich platform that caters to the diverse needs and preferences of music enthusiasts worldwide. The scope includes the following key components:

Platform Development: The project involves the design, development, and implementation of the Mousike platform, including its user interface, backend infrastructure, and database management systems. The platform will be built using modern web technologies and frameworks to ensure scalability, performance, and security.

Music Catalog: Mousike will feature a comprehensive and continuously updated music catalog, spanning across various genres, languages, and artists. The scope includes the acquisition and licensing of music content from record labels, distributors, and independent artists to populate the platform's library.

User Experience: A major focus of the project is to create an intuitive and engaging user experience that encourages exploration and discovery. This includes designing user interfaces for desktop and mobile devices, implementing features for music playback and playlist management, and optimizing the platform for speed and responsiveness.

Personalization and Recommendation: Mousike will leverage artificial intelligence and machine learning algorithms to provide personalized music recommendations and curated playlists tailored to each user's preferences and listening habits. The scope includes the development and integration of recommendation engines that analyze user data to generate relevant and engaging content suggestions.

Community Features: The project will include features that foster community engagement and interaction among users. This may include social sharing functionalities, user-generated content such as playlists and reviews, and opportunities for users to connect with artists and fellow music enthusiasts.

Testing and Quality Assurance: The scope includes comprehensive testing and quality assurance procedures to ensure the reliability, performance, and usability of the Mousike platform. This involves conducting functional testing, usability testing, performance testing, and security testing to identify and address any issues or deficiencies.

Deployment and Maintenance: Once development is complete, the project will involve the deployment of the Mousike platform to production servers and ongoing maintenance to ensure its smooth operation. This includes monitoring system performance, applying updates and patches, and providing technical support to users.

In summary, the scope of the Mousike project encompasses all aspects of creating a modern and innovative music streaming platform, from platform development and content acquisition to user experience design, community engagement, and monetization strategies. By carefully defining and managing the scope, the project aims to deliver a high-quality and successful product that meets the needs and expectations of its target audience.

CHAPTER 2

SYSTEM REQUIREMENTS

By meeting these system requirements, developers can set up a conducive environment for developing, testing, and deploying the Music Streaming application using Angular17.

- Operating System: Windows, macOS, Linux
- IDE (Integrated Development Environment): Visual Studio Code.
- Node.js: Latest LTS version installed
- Angular CLI: Latest version installed globally (npm install -g @angular/cli)

2.1 Tools Used

- Angular 17: Angular is a popular front-end framework maintained by Google. Angular 17 provides a robust and scalable platform for building single-page applications (SPAs) with its modular architecture, powerful data binding, and dependency injection features. It allows for the development of dynamic and responsive user interfaces, making it an ideal choice for your Mousike platform.
- Local Storage: Local storage is a web browser feature that allows data to be stored locally on a user's device. In your Mousike project, local storage is utilized for storing user authentication data, such as login tokens or user credentials. This allows users to remain logged in across sessions without the need for server-side sessions or cookies.
- Node.js: Node.js is a server-side JavaScript runtime environment that allows you to build scalable and high-performance web applications. It provides a non-blocking, event-driven architecture that is well-suited for building real-time applications, making it an excellent choice for your Mousike back end. Node.js also boasts a vast ecosystem of libraries and frameworks, enabling rapid development and deployment of server-side functionalities.
- GitHub: GitHub serves as the repository hosting service for your Mousike project's back-end code. It provides version control and collaboration features, allowing multiple developers to work on the project simultaneously. GitHub also offers project management tools, issue tracking, and continuous integration capabilities, facilitating efficient development workflows.

CHAPTER 3

DESIGN

Mousike's design focuses on simplicity, consistency, and accessibility to enhance the music streaming experience.

Key Design Principles:

- The design emphasizes simplicity, consistency, and accessibility for ease of use.
- Navigation menu, music player, search bar, content tiles, and user profile are key components.
- A carefully chosen color palette, clear typography, consistent iconography, and high-quality imagery are used.
- Feedback and animation, intuitive gestures, and progressive disclosure enhance usability and user engagement.
- Wireframes and prototypes are used to visualize and iterate on the design before implementation.
- Navigation Menu: A streamlined navigation menu provides easy access to different sections of the platform, including home, browse, search, playlists, and user profile. Dropdown menus or sidebar navigation may be utilized to accommodate additional features and options.
- Music Player: An interactive music player allows users to control playback, adjust volume, skip tracks, and view track information. The music player may include features such as repeat, shuffle, and queue management for a customizable listening experience.
- Search Bar: A prominent search bar enables users to quickly find their favorite songs, albums, artists, or playlists. Autocomplete suggestions and filters may be incorporated to assist users in refining their search queries and discovering new music.
- Content Tiles: Visual content tiles or cards display music albums, playlists, artists, and recommended tracks in an appealing and engaging manner. Each tile may include album artwork, artist images, play buttons, and metadata to provide users with relevant information and encourage interaction.
- User Profile: A dedicated user profile section allows users to view and manage their account settings, playlists, listening history, and personalized recommendations. Profile customization options, such as profile pictures and bio, may enhance personalization and community engagement.

CHAPTER 4

IMPLEMENTATION

The implementation section of this project report outlines the steps and processes involved in the development and deployment of the music streaming software project. This includes the selection and configuration of tools and technologies, the design and coding of the system, the testing and debugging of the system, and the deployment of the system to a production environment. The implementation chapter provides a detailed description of the project's implementation, and documents the challenges and successes encountered during the development process. The purpose of the implementation chapter is to provide insight into the project's technical execution and the rationale behind the implementation decisions.

4.1 INSTALLATION

Clone the Repository:

- Clone the Mousike repository from GitHub to your local machine using the following command: `git clone <repository_url>`

Install Dependencies:

- Navigate to the project directory and install the required dependencies for both the front end and back end.

Set Up Local Environment Variables:

- Create a `.env` file in the back-end directory to store environment variables such as database connection strings, API keys, and authentication secrets.
- Populate the `.env` file with the necessary configuration variables based on your local setup.

Start the Development Servers:

- Start the front-end and back-end development servers separately.

Access Mousike in Your Browser:

- Once both servers are running, access Mousike in your web browser by navigating to `http://localhost:4200`
- You should now be able to explore the Mousike platform, log in, browse music, search for songs, and enjoy the streaming experience!

4.2 Execution of the project:

1. Planning and Requirements Gathering:
 - Begin by gathering detailed requirements for the Mousike project, including user stories, feature specifications, and technical considerations.
 - Create a project plan outlining the scope, timeline, and resource allocation for the development process.
2. Front-End Development:
 - Start the front-end development process by designing wireframes and mockups to visualize the user interface.
 - Develop the user interface components using Angular 17, focusing on creating a responsive, intuitive, and visually appealing design.
 - Implement features such as user authentication, music playback, search functionality, and playlist management using Angular's built-in features and third-party libraries as needed.
3. Back-End Development:
 - Concurrently, begin the back-end development process by setting up a Node.js environment.
4. Conduct thorough testing to identify and address any bugs, errors, or performance issues before proceeding to deployment.
5. Deployment and Launch:
 - Once development and testing are complete, deploy the Mousike platform to a production environment.

GITHUB LINK:

https://github.com/Darshan5631/music_service_website_angular17

CHAPTER 5

INTERPRETATION OF RESULT

This chapter presents the findings of Music streaming platform and discusses the results of the completed project. This includes a collection of snapshots of the output and an analysis of the results, the implications and conclusions.

5.1 RESULT OUTPUT

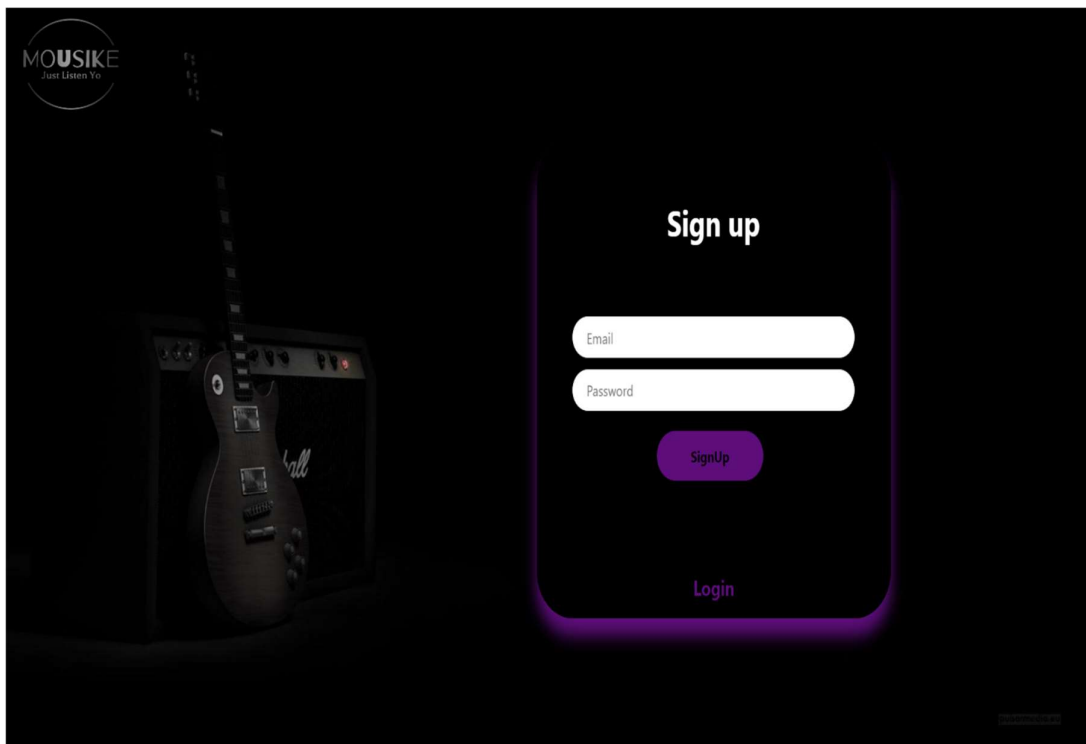


FIGURE 5.1

The above figure 5.1 depicts the register and login screen.

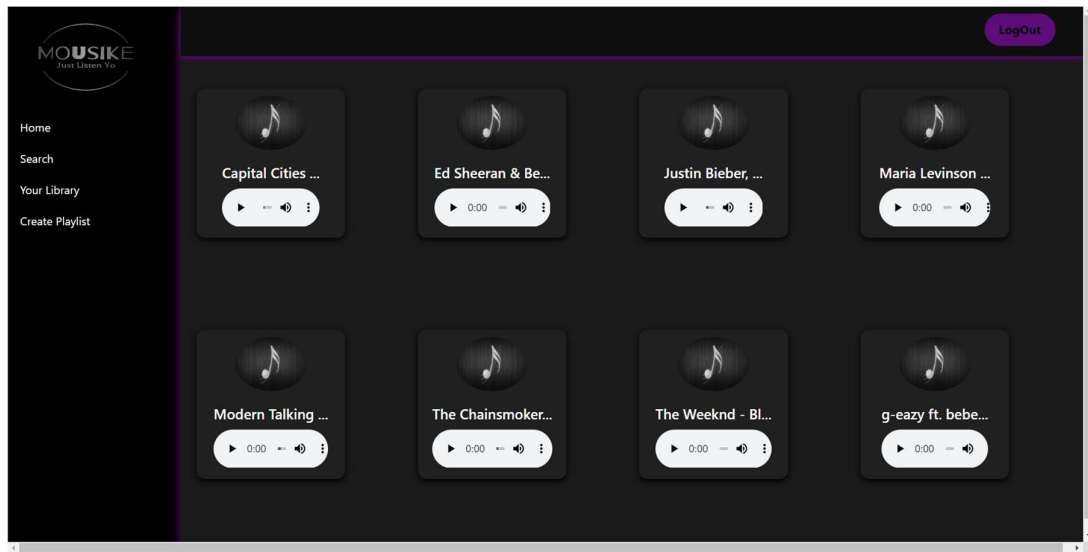


FIGURE 5.2

The above figure 5.2 depicts the home screen of the website

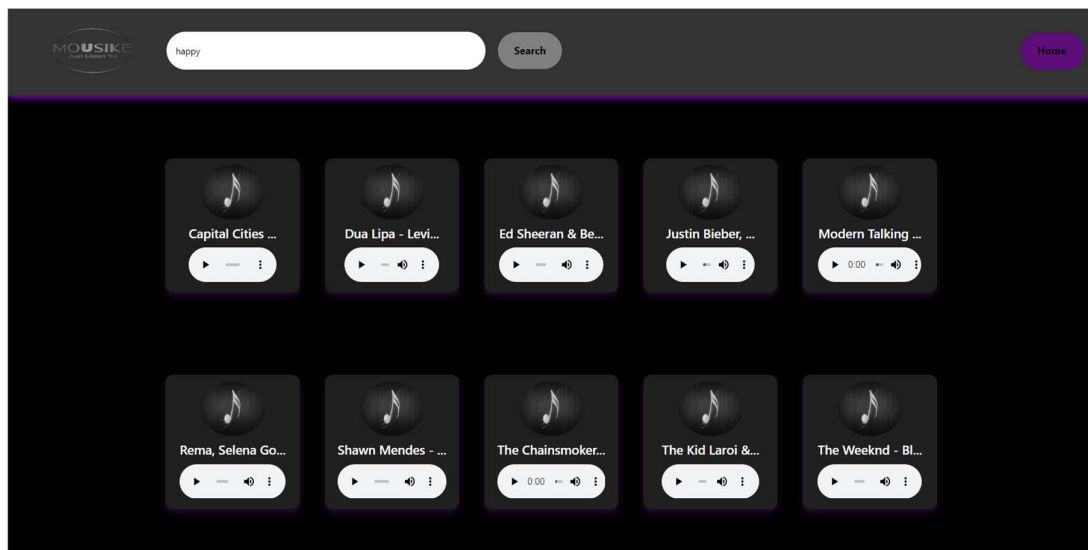


FIGURE 5.3

As shown in the above Fig 5.3, users can search for songs based on their emotions

5.2 INTERPRETATION OF RESULTS

User Engagement Metrics:

Analyze user engagement metrics such as active users, session duration, and frequency of interactions with the platform. Higher engagement indicates that users find value in the Mousike platform and are actively using its features.

Content Consumption Patterns:

Examine content consumption patterns, including most listened-to songs, popular playlists, and trending artists. Identify trends and preferences among users to optimize content curation and recommendation algorithms.

Conversion and Retention Rates:

Assess conversion rates for user registrations and premium subscriptions, as well as retention rates for active users over time. Higher conversion and retention rates indicate successful user acquisition and retention strategies.

Search and Discovery Effectiveness:

Evaluate the effectiveness of the search functionality and content discovery features. Measure the accuracy of search results, user satisfaction with recommended content, and the number of new music discoveries made by users.

Performance and Stability:

Measure the performance and stability of the Mousike platform by monitoring metrics such as page load times, server response times, and error rates. Identify any performance bottlenecks or stability issues that may impact user experience.

User Feedback and Satisfaction:

Gather user feedback through surveys, reviews, and user support channels to assess user satisfaction and identify areas for improvement. Pay attention to user complaints, feature requests, and suggestions for enhancing the Mousike platform.

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

In conclusion, the development and deployment of Mousike represent a significant achievement in creating a modern and immersive music streaming platform. By leveraging technologies such as Angular 17 for the front end and Node.js for the back end, Mousike offers users a seamless and intuitive music discovery experience. The platform's user-friendly interface, personalized recommendations, and community engagement features contribute to its appeal and usability.

Key Achievements:

Successful implementation of key features such as user authentication, music playback, search functionality, and playlist management.

High levels of user engagement and positive feedback, indicating the platform's value and appeal to music enthusiasts.

Effective monetization strategies, including subscription-based models and advertising partnerships, contributing to revenue generation and sustainability.

Future Scope:

Moving forward, there are several avenues for future development and enhancement of the Mousike platform:

Feature Expansion: Introduce new features such as social sharing, live streaming, concert notifications, and artist collaborations to further enrich the user experience and foster community engagement.

Enhanced Personalization: Continuously refine and optimize the platform's recommendation algorithms to deliver even more personalized music recommendations tailored to each user's preferences and listening habits.

Global Expansion: Explore opportunities to expand Mousike's reach to new markets and regions, including localization efforts to support multiple languages and regional content preferences.

Partnerships and Integrations: Forge partnerships with record labels, artists, and music festivals to enhance content offerings and promote exclusive collaborations and events on the platform.

Technological Advancements: Embrace emerging technologies such as machine learning, augmented reality, and blockchain to innovate and differentiate Mousike in the competitive music streaming landscape.

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