
Project Vision Document

for

Music Streaming System

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Table of Contents

1. Introduction	1
1.1. Purpose	1
1.2. Scope	1
1.3. References	1
2. Problem Statement	1
3. Stakeholder and User Descriptions	2
3.1. Market Demographics	2
3.2. Stakeholder Summary	2
3.3. User Summary	4
3.4. User Profiles	5
3.4.1. Guest	5
3.4.2. Normal User	5
3.4.3. Premium User	5
3.4.4. Artist	5
3.4.5. Administrator	6
3.5. User Environment	6
3.5.1. Physical Environment	6
3.5.2. Social Environment	6
3.5.3. Technological Environment	6
3.5.4. Organizational Environment	6
3.5.5. Task Environment	7
3.5.6. Legal Environment	7
4. Product Overview	7
4.1. Product Perspective	7
4.2. Product Scope	8
5. Product Features	8
5.1. Guest Features	8
5.1.1. Play the track	8
5.1.2. Search the track	8
5.1.3. Search an artist	8
5.1.4. Search the genre	8
5.2. Normal User Features	9
5.2.1. Create an account	9
5.2.2. Log in	9
5.2.3. Log out	9
5.2.4. Modify account details	9
5.2.5. View own information	9
5.2.6. Play the track	9

5.2.7. Search the track	9
5.2.8. Search an artist	9
5.2.9. Search the genre	9
5.2.10. Download the track	9
5.2.11. Create playlists	9
5.2.12. Add track to playlist	10
5.2.13. Manage playlists	10
5.2.14. Use advanced filters	10
5.3. Premium User Features	10
5.3.1. Upgrade account	10
5.4. Artist Features	10
5.4.1. Create artist account	10
5.4.2. Upload the track	10
5.4.3. Modify track's information	10
5.4.4. Create album	10
5.4.5. Manage album	10
5.5. Administrator Features	11
5.5.1. Manage users	11
5.5.2. Manage contents	11
5.5.3. Configure system	11
6. Operating environment	11
7. Design and Implementation Constraints	11
A. Appendix	12

1. Introduction

1.1.Purpose

The purpose of this document is to collect, analyze, and define high-level needs and features of the Music Streaming System. It focuses on the capabilities needed by the stakeholders, and the target users, and why these needs exist. The details of how the Music Streaming System fulfills these needs are detailed in the use-case and supplementary specifications.

1.2.Scope

This Vision Document applies to creating an immersive and inclusive music streaming experience. By prioritizing high-quality audio, personalized recommendations, seamless integration, and vibrant social features, the project aims to redefine how users engage with music, podcasts, and videos worldwide. The vision is to establish the MusicStreaming application as a go-to platform for discovering, sharing, and enjoying diverse content from creators globally, fostering a vibrant community of music enthusiasts.

1.3.References

2. Problem Statement

The problem of	music industry faces the challenge of providing seamless access to a vast library of songs and personalized playlists across various devices. Existing platforms often lack amazing extensions for user and efficient content discovery
affects	music enthusiasts, artists, and content providers
the impact of which is	inadequate music streaming experiences lead to user frustration, missed revenue opportunities, and a disjointed ecosystem for artists and listeners
a successful solution would be	an innovative music streaming platform that offers high-quality streaming, personalization and uniqueness. This product will have crystal-clear audio with minimal buffering. This contains tailored playlists, recommendations, and artist insights. It will be able to brings more new extensions to experience and explore amazing things in music world
For	music enthusiasts, artists, and content providers
Who	seeking an exceptional streaming experience. Our product aims to serve both casual listeners and dedicated music

	aficionados
The Music Streaming System	is a web application software product
That	provide users with access to a vast library of musical content. It stands as an independent, full-featured service that allows for the streaming of music tracks, albums, and artist-curated playlists. The system is conceptualized to seamlessly integrate with users' digital ecosystems, offering compatibility across various devices and operating systems.
Unlike	existing platforms with limited number of features, expensive costs, and do not have best support for personalization.
Our product	will prioritize user satisfaction, artist collaboration. We propose a cutting-edge music streaming service that harmonizes technology, content, and community.

3. Stakeholder and User Descriptions

3.1. Market Demographics

The target market segment encompasses a wide spectrum of age groups, with Millennials (born 1981-1996) and Generation Z (born late 1990s to early 2010s) being primary users, valuing convenience and customization. Urban areas exhibit heavy reliance on streaming for entertainment, while suburban and rural areas show growing adoption, albeit at a slower pace. Socioeconomic factors influence preferences, with high-income individuals seeking premium services and exclusive content, while middle to low-income users prioritize affordability. Additionally, technological proficiency varies, with tech enthusiasts embracing advanced features and casual users preferring simplicity.

3.2. Stakeholder Summary

Non-User Stakeholders

Name	Description	Responsibilities
<i>Requirements Specifier</i>	This is a stakeholder that gathers and documents functional and non-functional requirements for the music streaming system. They bridge the gap between stakeholders and development teams	<ul style="list-style-type: none"> Collaborating with stakeholders to understand their requirements and preferences. Analyzing requirements to identify dependencies, conflicts, and potential gaps. Documenting requirements in a clear and structured manner, using techniques such as use cases, user stories, and

		<p>requirements specifications.</p> <ul style="list-style-type: none"> • Prioritizing requirements based on their importance and feasibility.
<i>Software Architect</i>	<p>This is a stakeholder that designs the overall structure of the music streaming system. They focus on ensuring that the system is scalable, reliable, and meets the desired performance requirements.</p>	<ul style="list-style-type: none"> • Designing the architecture of the system, including the selection of technologies and frameworks. • Collaborating with other stakeholders to understand requirements and constraints. • Defining the overall system structure, including components, modules, and their interactions. • Ensuring that the architecture aligns with the long-term goals of the project and allows for future enhancements and modifications.
<i>Project Manager</i>	<p>This is a stakeholder that oversees the planning, execution, and delivery of the music streaming system. They are responsible for ensuring that the project is completed within the specified scope, timeline, and budget</p>	<ul style="list-style-type: none"> • Creating and maintaining project plans, including schedules, milestones, and resource allocation. • Coordinating activities across different teams, including developers, testers, and designers. • Monitoring progress and identifying potential risks or issues that may impact the project's success. • Communicating regularly with stakeholders to provide updates on project status and address any concerns.
<i>User Interface Designer</i>	<p>This is a stakeholder that designs the interface, interactions, and overall look and feel of the system.</p>	<ul style="list-style-type: none"> • Conducting user research to understand the needs, preferences, and behaviors of the target audience. • Creating wireframes, prototypes, and mockups to visualize design concepts and gather feedback from stakeholders. • Designing the navigation flow, layout, and visual elements of the user interface. • Collaborating with developers to ensure that the design is implemented accurately and effectively.
<i>Database Administrator</i>	<p>This is a stakeholder that manages the databases that store the music streaming system's data.</p>	<ul style="list-style-type: none"> • Designing and implementing database schemas to efficiently store and retrieve data. • Monitoring database performance and optimizing queries for improved efficiency. • Managing backups, restores, and disaster recovery plans to ensure data integrity and availability.

		<ul style="list-style-type: none"> Implementing and enforcing security measures to protect sensitive data from unauthorized access or breaches.
<i>Content Curator</i>	This is a stakeholder that play a crucial role in ensuring a diverse and engaging library of music for users to explore	<ul style="list-style-type: none"> Identifying trending artists, albums, and tracks to feature prominently on the platform. Curating playlists and recommending personalized music recommendations based on user preferences and listening history. Collaborating with record labels, artists, and distributors to acquire new content and negotiate licensing agreements. Monitoring user feedback and engagement metrics to inform content selection decisions.

3.3. User Summary

Name	Description	Responsibilities
<i>Guest</i>	Users who have not registered or logged in. They have limited access to the application.	Can browse and listen to a limited number of songs. Cannot create playlists or follow artists.
<i>Normal User</i>	Registered users with basic access to the application.	Can browse and listen to songs, create and manage their own playlists, and follow their favorite artists.
<i>Premium User</i>	Registered users who have purchased a premium subscription. They have full access to the application.	In addition to the responsibilities of a Normal User, they enjoy ad-free music, and have access to premium content.
<i>Artist</i>	Users who create and upload their own music to the application.	Can upload and manage their own music, interact with followers, and view analytics of their music.
<i>Administrator</i>	Users who manage and maintain the application.	Responsible for managing users, handling reports, maintaining the music database, and ensuring the smooth operation of the application

3.4. User Profiles

3.4.1. Guest

- *Technical Background:* No technical background is required. The system should be intuitive enough for a guest to navigate and listen to music.
- *Main Responsibility:* Their main responsibility is to browse and listen to a limited number of songs.
- *Design Trend:* A user-friendly interface with clear instructions will make it easier for guests to use the system.
- *Difficulty:* The main difficulty for guests is the limited access to features. They can't create playlists or follow artists.
- *Benefits:* The system allows guests to get a taste of the music available on the platform, which might encourage them to register and gain more access.

3.4.2. Normal User

- *Technical Background:* Normal users need basic computer skills for registration and navigation.
- *Main Responsibility:* They can listen to songs, create and manage playlists, and follow their favorite artists.
- *Design Trend:* Personalized recommendations based on listening history will enhance their experience.
- *Difficulty:* The presence of ads during music playback might be a bit annoying for normal users.
- *Benefits:* They have access to a wide variety of music and the ability to create personalized playlists.

3.4.3. Premium User

- *Technical Background:* Premium users need basic computer skills for registration, navigation, and subscription management.
- *Main Responsibility:* They can enjoy ad-free music, and have access to premium content.
- *Design Trend:* High-quality streaming options will enhance their experience.
- *Difficulty:* The subscription cost might be a barrier for some users.
- *Benefits:* They can enjoy ad-free, high-quality music streaming.

3.4.4. Artist

- *Technical Background:* Artists need basic computer skills for registration, navigation, and music upload.
- *Main Responsibility:* They can upload and manage their own music, interact with followers, and view analytics of their music.
- *Design Trend:* An analytics dashboard to track performance will be beneficial for artists.

- *Difficulty*: Artists need to maintain active engagement with followers, which might be challenging.
- *Benefits*: The platform provides artists with a way to reach a wide audience and gain insights from analytics.

3.4.5. Administrator

- *Technical Background*: Administrators need advanced technical skills for system management.
- *Main Responsibility*: They are responsible for managing users, handling reports, maintaining the music database, and ensuring the smooth operation of the application.
- *Design Trend*: An admin dashboard for efficient management will be beneficial for administrators.
- *Difficulty*: Handling user reports and maintaining system stability might be challenging.
- *Benefits*: Administrators have control over the system and ensure a smooth user experience.

3.5. User Environment

3.5.1. Physical Environment

The system is designed to be used in a variety of physical environments as it is a web application. Users can access the system from their home, office, during commute, or any place with internet connectivity. The system should be responsive and adaptive to different screen sizes for optimal user experience on various devices such as desktops, laptops, tablets, and smartphones.

3.5.2. Social Environment

The system fosters a social environment where users can follow their favorite artists and share playlists with other users. Artists can interact with their followers and gain feedback on their music. Administrators ensure a safe and respectful environment by moderating user interactions.

3.5.3. Technological Environment

The system is a web application accessible via a web browser. It does not require any specific hardware or software installation. However, it does require a stable internet connection for streaming music. For premium users, the system allows music to be downloaded.

3.5.4. Organizational Environment

The system is organized into different sections for browsing music, managing playlists, following artists, and user account management. Each user type has a different level of access and control over these sections. For example, administrators have the highest level of control, including user management and system maintenance.

3.5.5. Task Environment

The main task for all users is to listen to music. Normal and premium users can also create and manage playlists, follow artists, and interact with other users. Artists upload and manage their music, while administrators handle user management and system maintenance tasks.

3.5.6. Legal Environment

The system operates under the legal framework of digital music distribution and copyright laws. Users are expected to respect these laws when using the system. Administrators are responsible for ensuring that all music uploaded to the system complies with these laws.

4. Product Overview

4.1. Product Perspective

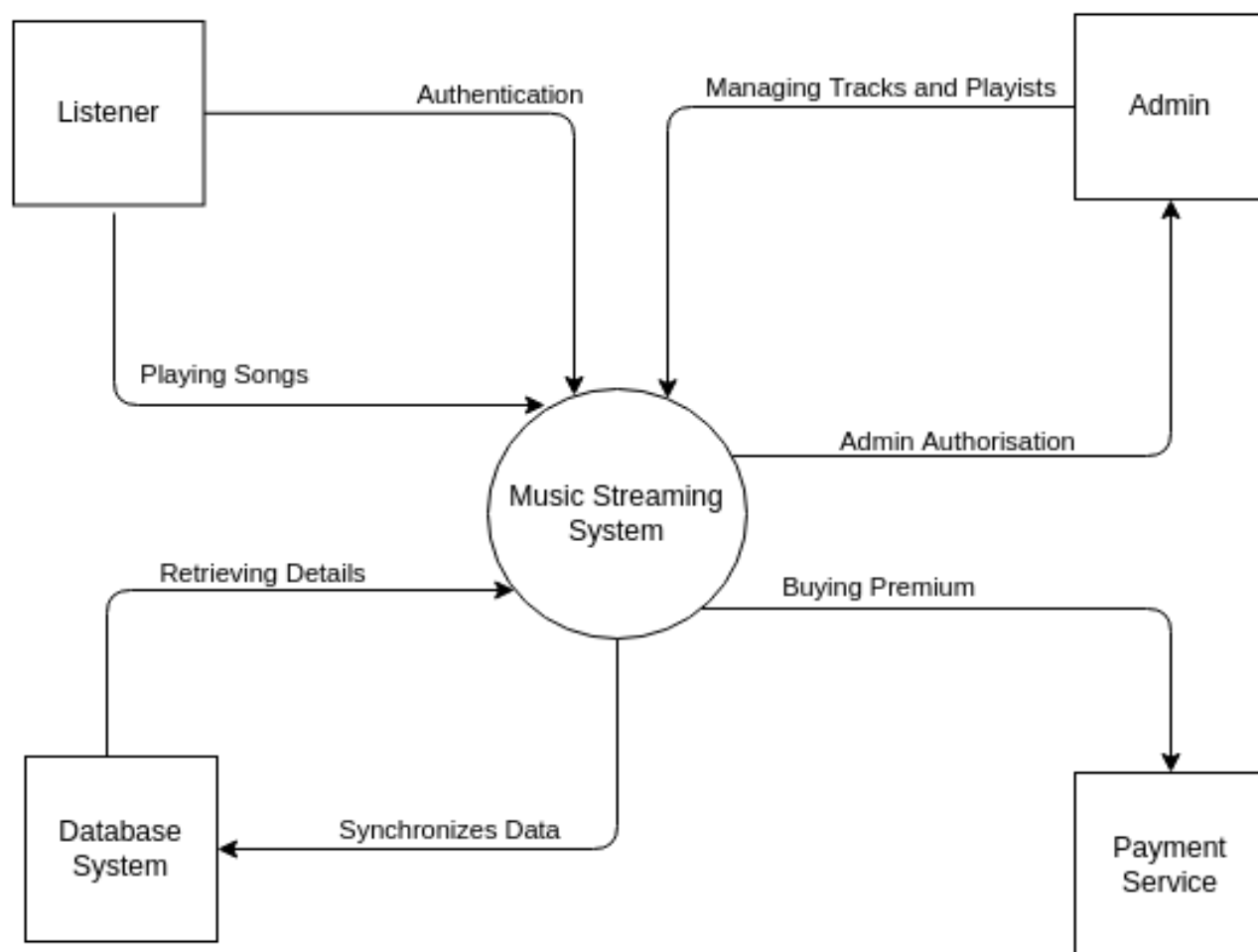


Figure 1: Context Diagram of System

The Music Streaming system is envisioned as a comprehensive digital platform designed to provide users with access to a vast library of musical content. It stands as an independent, full-featured service that allows for the streaming of music tracks, albums, and artist-curated

playlists. The system is conceptualized to seamlessly integrate with users' digital ecosystems, offering compatibility across various devices and operating systems.

4.2.Product Scope

The Music Streaming Web Application is designed with the primary purpose of revolutionizing the way users access and enjoy music. Moving away from a transaction-based model of buying and owning audio content, it introduces an access-based model where users can stream music on demand. The vision of this application is to create a cultural platform where professional creators can break free of their medium's constraints and where everyone can enjoy an immersive artistic experience that enables us to empathize with each other and to feel part of a greater whole. Its mission is to unlock the potential of human creativity—by giving a million creative artists the opportunity to live off their art and billions of fans the opportunity to enjoy and be inspired by it. The application aims to cater to a wide range of users, from casual listeners to professional artists. It provides a platform for artists to share their work and for listeners to discover, manage, and enjoy a vast array of audio content. The application offers features such as personalized recommendations based on listening history, high-quality streaming options and an analytics dashboard for artists. The application also focuses on sustainability, integrating lowering emissions as part of its everyday business. It strives to ensure fair competition, providing equal opportunities for all developers. Lastly, the application aims to provide clarity about the economics of music streaming, shedding light on the global streaming economy and royalty system.

5. Product Features

5.1. Guest Features

The following features relate to the ability of guest users.

5.1.1. *Play the track*

Guests can select a specific track which they want to listen and serve immediately.

5.1.2. *Search the track*

Guest can search any tracks they like, artist they admire or their favorite genre to explore more nice tracks

5.1.3. *Search an artist*

Guest can search any tracks they like, artist they admire or their favorite genre to explore more nice tracks

5.1.4. *Search the genre*

Guest can search any tracks they like, artist they admire or their favorite genre to explore more nice tracks

5.2. Normal User Features

The following features relate to the ability of normal users.

5.2.1. *Create an account*

Users can create their own accounts to manage personalized music experiences. Users can create playlists, save favorite tracks and albums, and potentially enjoy additional features like customized recommendations or offline listening (if applicable).

5.2.2. *Log in*

User can access their own accounts to continue to listen to music and experience privacy extensions

5.2.3. *Log out*

User can back to guest view and log in other account.

5.2.4. *Modify account details*

User can edit their profile for authentication and update their information

5.2.5. *View own information*

This allows a user to retrieve and review their personal details within the system

5.2.6. *Play the track*

User can select a specific track which they want to listen and serve immediately

5.2.7. *Search the track*

User can search any tracks they like, artist they admire or their favorite genre to explore more nice tracks

5.2.8. *Search an artist*

User can search any tracks they like, artist they admire or their favorite genre to explore more nice tracks

5.2.9. *Search the genre*

User can search any tracks they like, artist they admire or their favorite genre to explore more nice tracks

5.2.10. *Download the track*

User can download their favorite tracks to their own devices for offline listening

5.2.11. *Create playlists*

User can have a list of favorite tracks to have private experience and listen sequentially

5.2.12. Add track to playlist

User can add more tracks into their own playlists which they create before

5.2.13. Manage playlists

User can edit such as add more tracks, edit playlist name, remove some songs,... in their own playlists which they create before

5.2.14. Use advanced filters

User can explore more feature by some clicks into advance filters

5.3. Premium User Features

The ability of premium users has all the abilities of normal users and the following features are unique compared to normal users.

5.3.1. Upgrade account

Allows a user to elevate their account status by opting for a premium or advanced subscription level. Upgrading provides additional features, benefits, and an enhanced music experience.

5.4. Artist Features

The ability of artist users has all the ability of premium users and the following features are unique compared to artist users.

5.4.1. Create artist account

Artists can create their own accounts to create albums and upload more tracks to serve listeners. Artist can create their own styles to attract more listeners.

5.4.2. Upload the track

Upload artist's track with a catchy title and choose a genre to help listeners find it.

5.4.3. Modify track's information

Artists can edit their own track information.

5.4.4. Create album

Artists can create one or some albums.

5.4.5. Manage album

Artists can edit such as add more tracks, edit album name, remove some songs,... in their own album which they create before

5.5. Administrator Features

The following features relate to the ability of administrators.

5.5.1. *Manage users*

Administrator is the process of adding, editing, deleting accounts, assigning roles, granting/revoking permissions, monitoring, and reporting user activity.

5.5.2. *Manage contents*

A Content Management Administrator keeps the content flowing by managing users, content, and the system itself.

5.5.3. *Configure system*

System Configuration refers to the process of managing a system's settings to optimize performance, security, and user experience. This typically involves an administrator making adjustments through built-in tools or configuration files.

6. Operating environment

- MusicStreaming Web is accessible through web browsers, eliminating the need for specific hardware requirements. It supports integration with various commercial hardware for music streaming, such as smart speakers and AV receivers, through MusicStreaming Connect.
- MusicStreaming is compatible with major desktop and mobile operating systems, ensuring broad accessibility. It supports:
 - Desktop: Windows 7 and above, macOS Yosemite 10.10 and above, and Linux distributions via the web browser.
 - Mobile: Available on Android and iOS devices with web browser support.
- The web application is compatible with the latest versions of major web browsers such as Google Chrome, Mozilla Firefox, Apple Safari, and Microsoft Edge. It also integrates with various browser extensions and plugins that do not interfere with its functionality.

7. Design and Implementation Constraints

- *Performance Constraints:* The application must be able to handle a large number of simultaneous users without performance degradation. This requires efficient use of server resources and robust database design.
- *Security Constraints:* The application must ensure the security of user data. This includes secure handling and storage of sensitive information such as user credentials and payment details.
- *Legal and Regulatory Constraints:* The application must comply with all relevant laws and regulations. This includes copyright laws for music streaming and data protection laws for handling user data.
- *User Interface Constraints:* The application must provide an intuitive and user-friendly interface. This requires careful design of navigation elements and user workflows.

- *Network Constraints:* The application must be designed to work with varying network speeds. This includes providing lower quality streaming options for users with slower internet connections.
- *Maintenance Constraints:* The application must be designed for easy maintenance and updates. This requires a modular design that allows for parts of the application to be updated without affecting the whole system.

A. Appendix

