

Ahmednagar Jilha Maratha Vidya Prasarak Samaj's

New Arts, Commerce and Science College,Ahmednagar
[Autonomous]



Department of Computer Application

A Project Report On

“Hosting Music Streaming Platform On AWS”

Submitted to Savitribai Phule Pune University for

Bachelor in Computer Application(Semester – VI)

Submitted by

Ghanashyam Auti

Vishal Akolkar

Saurabh Sathe

Mahesh Shinde

Under the guidance of

Prof. Shaheen Madam



Department of Computer Application

CERTIFICATE

This is to certify that **Mr. Auti Ghanashyam Nilesh, Mr. Sathe Saurabh Asaram, Mr. Akolkar Vishal Vitthal, Mr. Shinde Mahesh Subhash** of **Bachelor in Computer Application Sem-VI** has successfully completed project work entitled **“AWS EC2-HOSTING Music Streaming Site”** prescribed by Savitribai Phule University, Pune during academic year 2023-24 and this report represents their bonafide work.

Date: / /2024

Place: Ahmednagar

Project Guide
Prof. Patil Madam

HOD
Prof. A. D. Gangarde

Internal Examiner

External Examiner

Acknowledgement

We would like to express our sincere gratitude to all those who have contributed to the successful completion of the "Music Streaming Site Project." This endeavor would not have been possible without the support, guidance, and encouragement from various individuals and organizations.

We extend our sincere thanks to our HOD, Gangarde.A.D. Sir, for giving us the opportunity to present this mini project. We are also thankful to our respected guide, Prof. Padmawati Patil, for providing valuable insights, constructive feedback, and continuous support throughout the development process. Their expertise and mentorship played a crucial role in shaping the project.

We are also grateful to the entire project team for their dedication, hard work, and collaborative spirit. Each member brought unique skills and perspectives to the table, contributing significantly to the success of the music streaming site.

Finally, we want to express our gratitude to the academic institution for providing the necessary resources and an environment conducive to learning and innovation.

Thank you to everyone who played a role, big or small, in making this Music Streaming Site Project a reality.

Auti Ghanashyam

Akolkar Vishal

Sathe Saurabh

Shinde Mahesh

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Introduction:

Embark on a melodious journey with our cutting-edge music streaming platform, a project that redefines simplicity and sophistication in the digital realm of music. This project report unveils a streamlined platform, focused on three essential pillars: user login, an extensive repertoire of tracks, and detailed artist information. Our goal is to offer users an uncomplicated and immersive experience, allowing them to seamlessly access and enjoy their favorite tunes without unnecessary complexities. In this report, we delve into the meticulous development process, shedding light on strategic decisions made to ensure secure user logins, an expansive selection of tracks spanning various genres, and a user-friendly interface that places the spotlight on artists. Join us as we navigate the intricate landscape of music streaming, prioritizing the core elements that make the experience truly resonate with our audience.

Abstract:

Title :- A Simplified Music Streaming Platform

Our music streaming platform is designed with a user-friendly approach, emphasizing simplicity and ease of use. The platform includes essential features such as user login, a well-organized catalog of tracks, and artist names, fostering a minimalist design for enhanced accessibility. Users can create accounts, log in securely, and explore an extensive collection of tracks spanning various genres. The platform's user-centric focus allows for easy navigation, enabling users to discover new artists and curate a personalized music experience. This project report provides insights into the development process, covering design choices, technological aspects, and considerations for user experience. It also addresses challenges faced during development and outlines potential future enhancements, positioning our platform as a scalable and evolving solution in the dynamic landscape of online music streaming.

Scope:

The scope of this music streaming platform project is to create a focused and minimalist digital space for users to access, explore, and enjoy music effortlessly. By limiting the platform's features to user login, track availability, and artist details, we aim to streamline the user experience, making it accessible to a wide audience. The platform's scope includes the development of a secure and user-friendly interface, ensuring that users can seamlessly navigate through an extensive library of tracks while gaining insights into the artists' backgrounds..

Key Features:

❖ ****Search Functionality:****

- Robust and intuitive search capabilities to enable users to easily discover their favorite tracks, artists, and albums.

❖ ****User Profile:****

- Option to update profile information and change password for enhanced security.
- Hassle-free logout functionality for quick and convenient account

❖ ****Playlist Management:****

- Creation and management of custom playlists for users to curate their own musical journeys.
- Collaborative playlist features, allowing users to share and collaborate on playlists with friends.

❖ ****Explore Section:****

- Curated and algorithm-driven recommendations for discovering new tracks, artists, and genres.
- Trending and popular sections to stay updated on the latest music trends.
- Genre-specific exploration options for users to dive into their preferred music categories.

❖ ****Singles and Albums:****

- Dedicated sections for singles and albums, providing users with easy access to individual tracks or entire collections.
- Detailed information about each single and album, including release date, genre, and artist credits.

Technology Stack

- **Frontend:**

- **HTML/CSS:** The fundamental building blocks for structuring and styling the web pages, providing a user-friendly interface.
- **JavaScript:** Enhancing interactivity, enabling dynamic content updates, and handling client-side functionalities for a responsive and engaging user experience.

- **Backend:**

- **PHP:** Serving as the server-side scripting language to handle user requests, process data, and interact with the database.
- **MySQL:** A relational database management system used to efficiently store and retrieve user data, playlists, track information, and other relevant content.

- **Web Server:**

- **Apache:** Providing a reliable web server environment to host and serve the PHP-based web application.

- **Cloud Service :**

- **AWS: Amazon EC2** provides secure, resizable compute in the cloud, offering the broadest choice of processor, storage, networking, OS, and purchase model.

- **Development Tools:**

- **Code Editor (Visual Studio Code):** Providing a feature-rich environment for writing, editing, and managing code files.
- **Database Management Tool (phpMyAdmin):** Facilitating database administration, allowing for efficient data manipulation and maintenance.

- **JavaScript Libraries/Frameworks:**

- **jQuery:** Simplifying JavaScript programming tasks, enhancing DOM manipulation, and facilitating AJAX for seamless data retrieval.

Future Enhancements

1. ****Artist Login:****

- Artists can upload and manage their discography, update biographical information, and engage with their fanbase.

2. ****Label Login:****

- Implement a separate login system for music labels, providing them with tools to manage their signed artists, track performance metrics, and contribute to promotional activities on the platform.

3. ****Social Integration:****

- Integrate social media features to allow users, artists, and labels to share music, playlists, and achievements on external platforms. This promotes community engagement and expands the platform's reach.

4. ****Offline Listening:****

- Enable users to download tracks for offline listening, enhancing accessibility for users in areas with limited internet connectivity or during travel.

5. ****Lyrics Integration:****

- Partner with lyric databases to integrate lyrics into the platform, allowing users to follow along with their favorite songs. This feature enhances the overall music discovery experience.

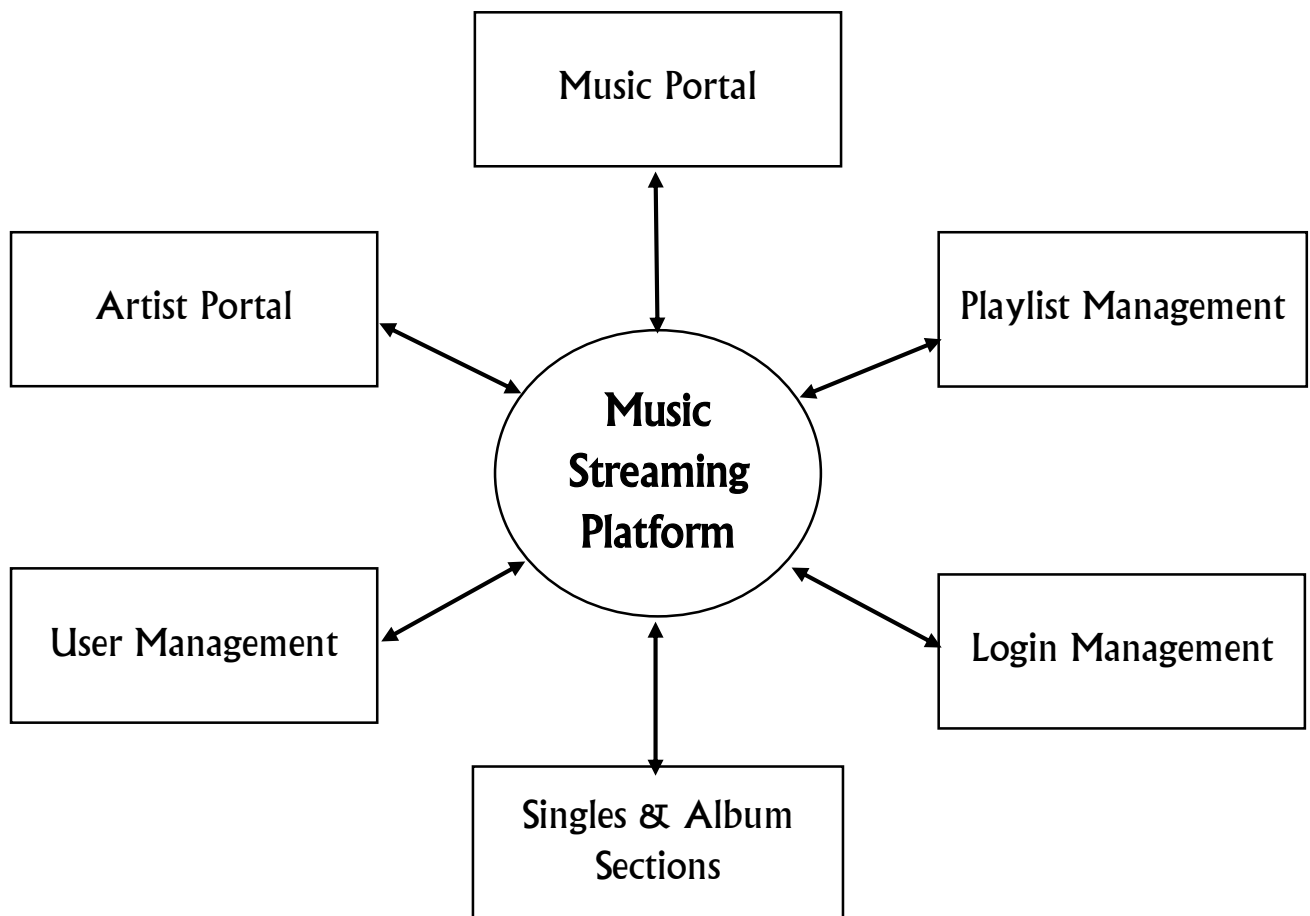
6. ****Recommendation Algorithms:****

- Enhance recommendation algorithms by incorporating machine learning and artificial intelligence techniques to provide more accurate and personalized music suggestions.

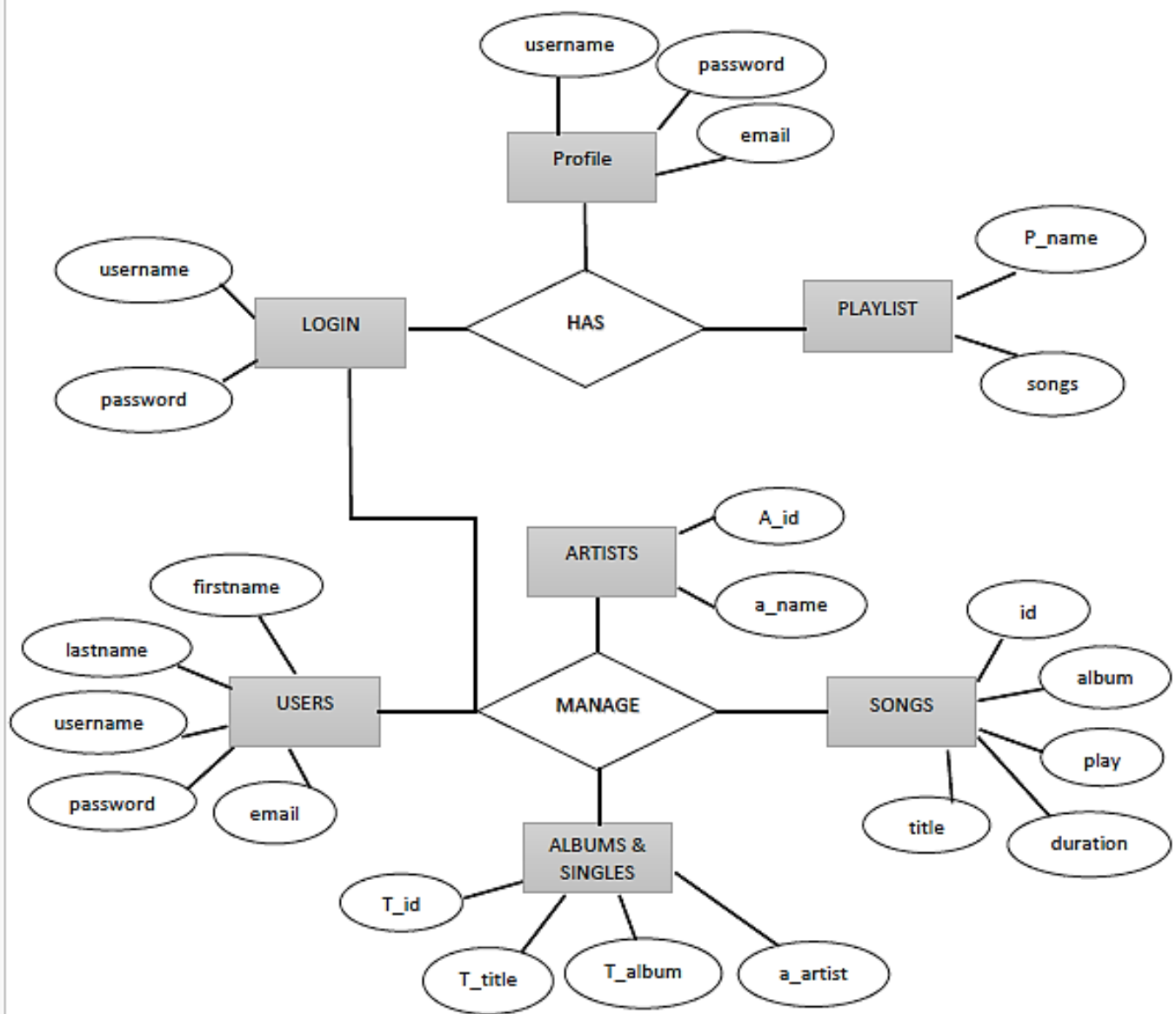
These future enhancements aim to elevate the music streaming platform by incorporating advanced features for artists, labels, and users. By expanding functionality and embracing technological advancements, the platform can stay competitive and continually offer an enriched experience to its diverse user base.

System Design:

i.DFD Diagram



ii.ER Diagram



AWS EC2 Instance Dictionary:

Instances (1) info

Find Instance by attribute or tag (case-sensitive)

Any state

| | Name | Instance ID | Instance state | Instance type | Status check | Alarm status | Availability Z |
|--------------------------|--------------|---------------------|----------------|---------------|-------------------|--------------|----------------|
| <input type="checkbox"/> | Music_Player | i-07bded8b2bd2995d5 | Running | t2.micro | 2/2 checks passed | View alarms | ap-south-1a |

Select an instance

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31°C Sunny 02:41 PM 19-02-2024

Instance details | EC2 | ap-south-1

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#InstanceDetails:instanceId=i-0...

EC2 > Instances > i-07bded8b2bd2995d5

Instance summary for i-07bded8b2bd2995d5 (Music_Player) info

Updated less than a minute ago

| | | |
|---|--|---|
| Instance ID i-07bded8b2bd2995d5 (Music_Player) | Public IPv4 address 65.2.187.116 open address | Private IPv4 addresses 172.31.39.93 |
| IPv6 address - | Instance state Running | Public IPv4 DNS ec2-65-2-187-116.ap-south-1.compute.amazonaws.com open address |
| Hostname type IP name: ip-172-31-39-93.ap-south-1.compute.internal | Private IP DNS name (IPv4 only) ip-172-31-39-93.ap-south-1.compute.internal | Elastic IP addresses - |
| Answer private resource DNS name IPv4 (A) | Instance type t2.micro | AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations. |
| Auto-assigned IP address 65.2.187.116 [Public IP] | VPC ID vpc-0d047932d8b9b45ce | Learn more |
| IAM Role | Subnet ID | Auto Scaling Group name |

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Database Dictionary:

The screenshot shows the phpMyAdmin interface with the 'music_player' database selected. The 'Structure' tab is active, displaying a list of tables and their properties. The left sidebar shows the database hierarchy, including 'music_player' and its sub-databases like 'albums', 'artists', 'genres', 'playlists', 'playlistsongs', 'songs', and 'users'.

Filters

Containing the word:

| Table | Action | Rows | Type | Collation | Size | Overhead |
|--|------------|-----------|---------------|---------------------------|------------------|------------|
| <input type="checkbox"/> albums | | 10 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| <input type="checkbox"/> artists | | 9 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| <input type="checkbox"/> genres | | 3 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| <input type="checkbox"/> playlists | | 1 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| <input type="checkbox"/> playlistsongs | | 1 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| <input type="checkbox"/> songs | | 20 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| <input type="checkbox"/> users | | 1 | InnoDB | latin1_swedish_ci | 16.0 KiB | - |
| 7 tables | Sum | 45 | InnoDB | utf8mb4_general_ci | 112.0 KiB | 0 B |

☐ Check all With selected:

[Print](#) [Data dictionary](#)

[Create new table](#)

Table name: Number of columns: [Create](#)

Console

The screenshot shows the phpMyAdmin interface with the 'users' table selected. The 'SQL' tab is active, displaying the SQL query 'SELECT * FROM `users`'. The left sidebar shows the database hierarchy, including 'music_player' and its sub-databases like 'albums', 'artists', 'genres', 'playlists', 'playlistsongs', 'songs', and 'users'.

Showing rows 0 - 0 (1 total, Query took 0.0003 seconds)

[SELECT * FROM `users`](#)

☐ Profiling [\[Edit inline \]](#) [\[Edit \]](#) [\[Explain SQL \]](#) [\[Create PHP code \]](#) [\[Refresh \]](#)

☐ Show all Number of rows: 25 Filter rows:

Extra options

| | id | userName | firstName | lastName | email | password | signUpDate | profilePic |
|---|----|-----------------|------------|----------|--------------------|----------------------------------|---------------------|-------------------------------------|
| <input type="checkbox"/> Edit Copy Delete | 0 | ghanashyam_auti | Ghanashyam | Auti | Gnauti79@gmail.com | 8664dc82e2060cc084ee3ec78de4afb6 | 2024-01-26 00:00:00 | assets/images/profiles/head_emer... |

☐ Check all With selected: [Edit](#) [Copy](#) [Delete](#) [Export](#)

☐ Show all Number of rows: 25 Filter rows:

Query results operations

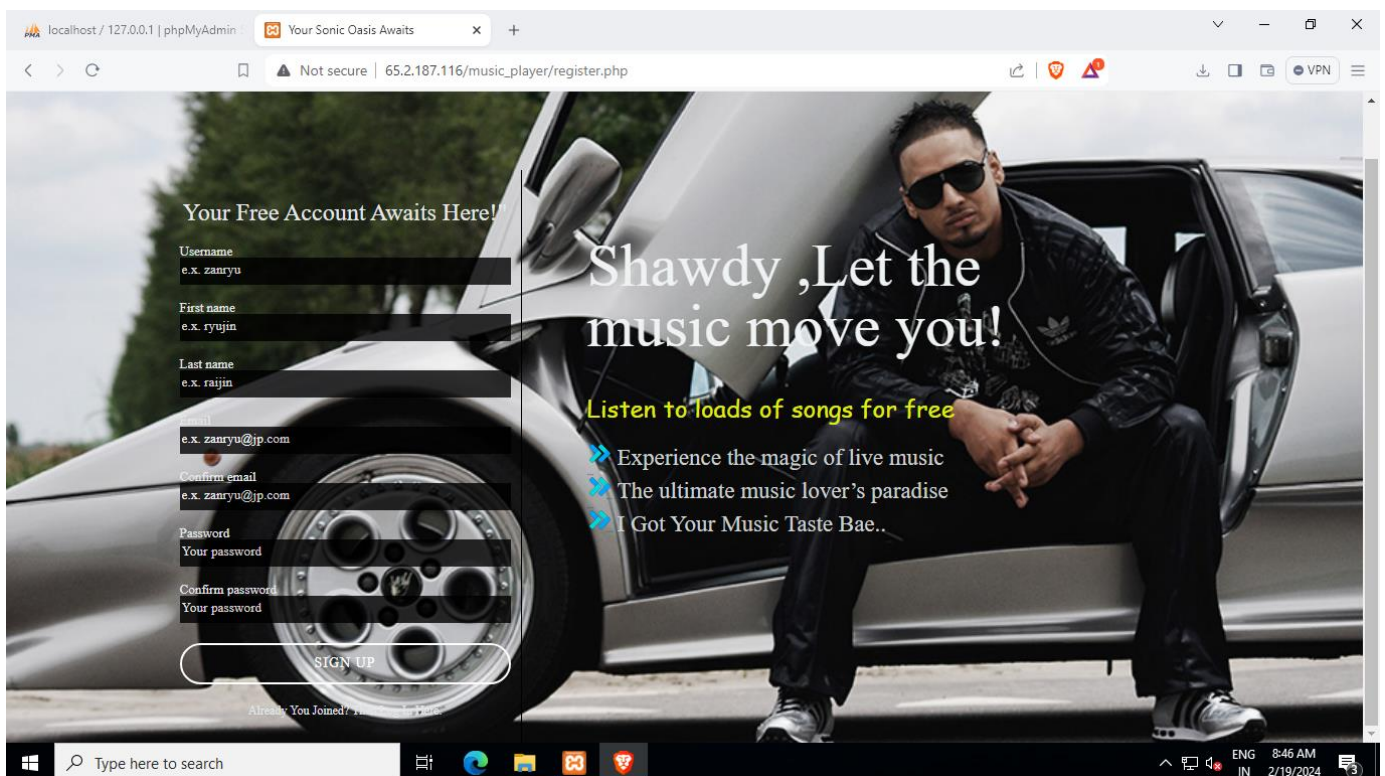
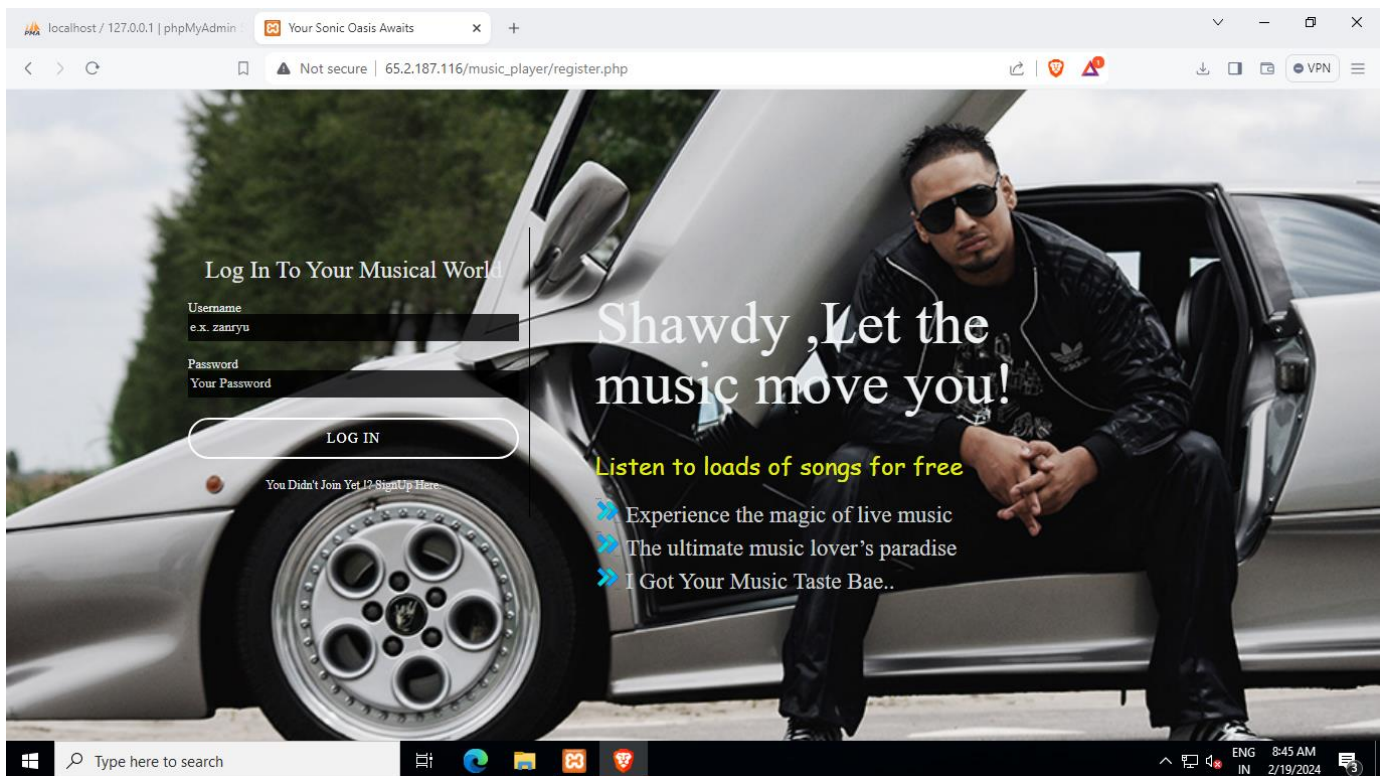
[Print](#) [Copy to clipboard](#) [Export](#) [Display chart](#) [Create view](#)

[Bookmark this SQL query](#)

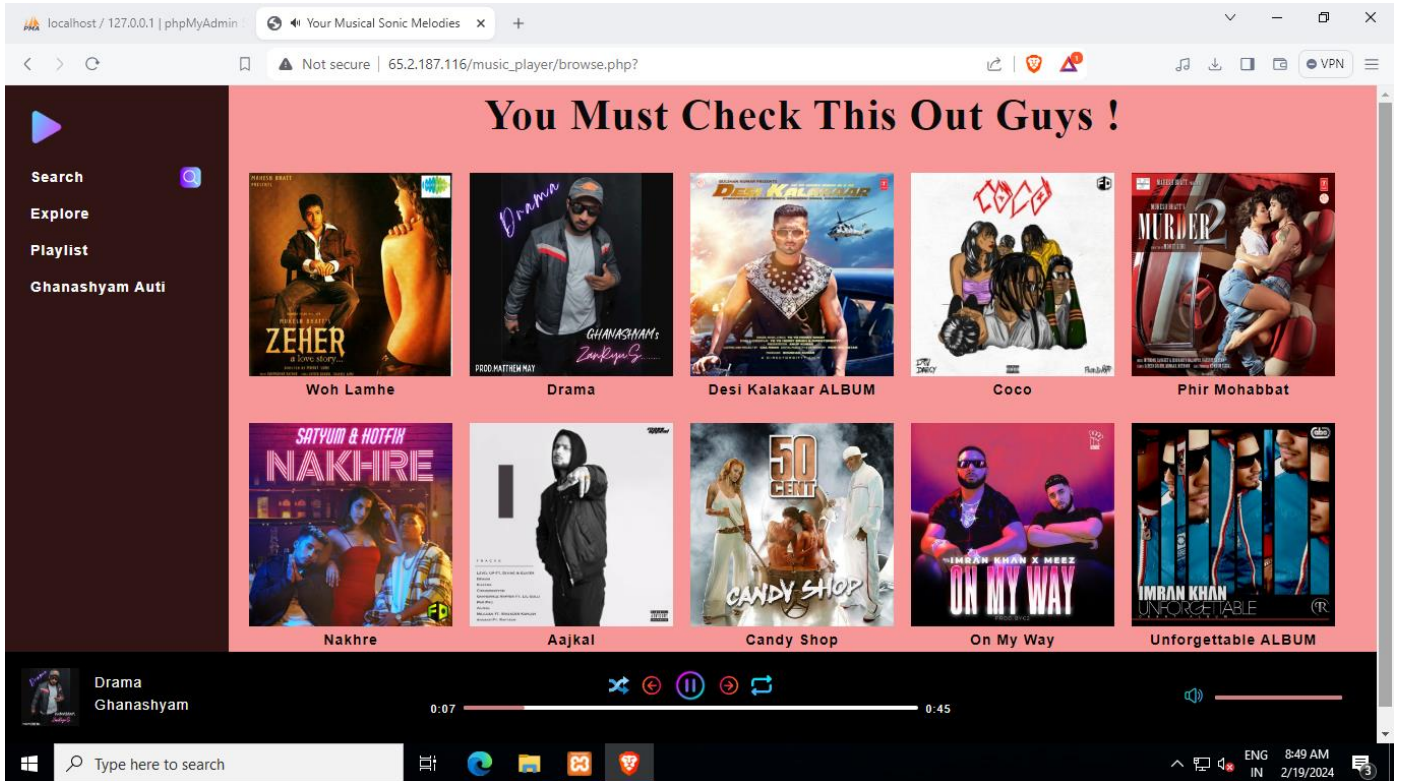
Console ☐ Let every user access this bookmark

SCREENSHOTS

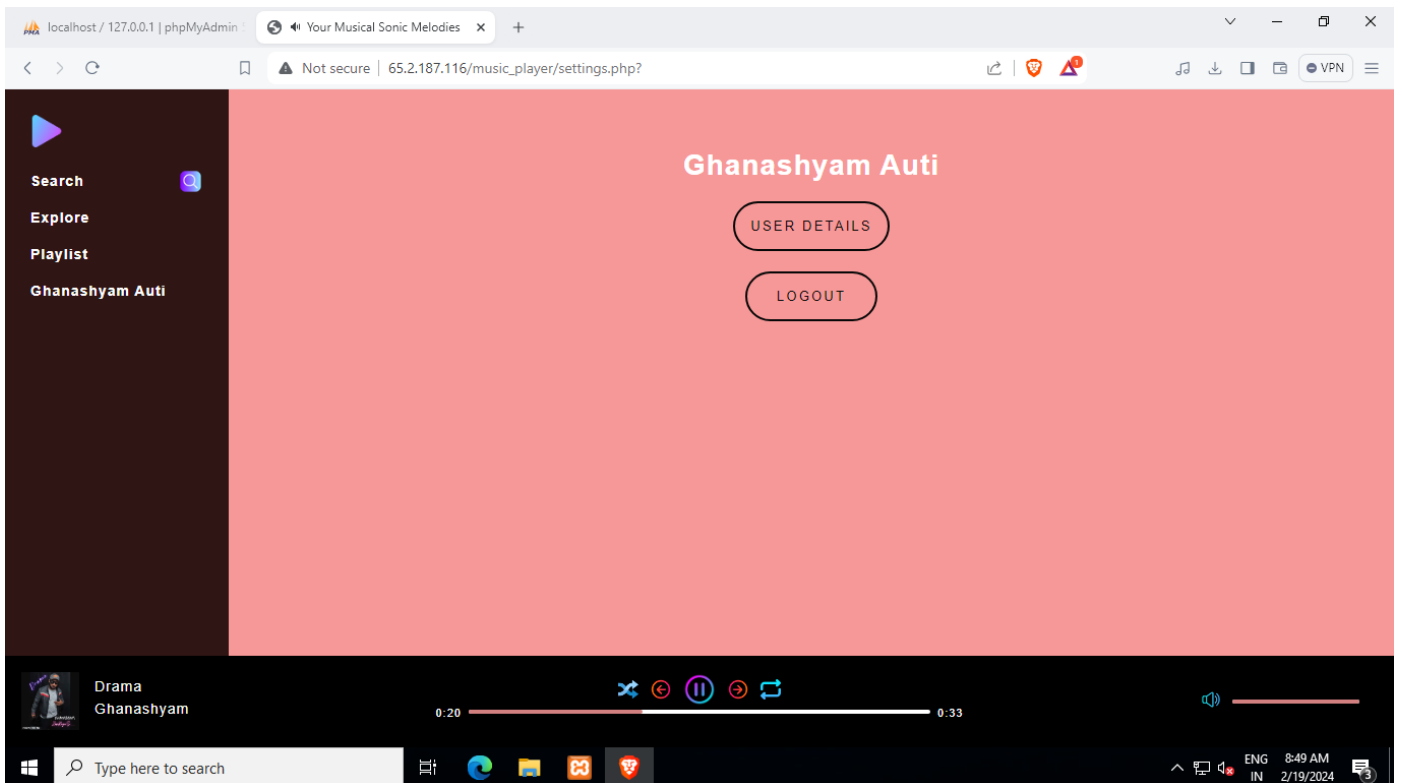
Login Page & Sign Up Page



Interface



Profile Page



A Single Song


▶

Search

Explore


Playlist

Ghanashyam Auti






Drama
By Ghanashyam
1 songs

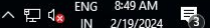
| | | |
|---|---------------------|------|
| 1 | Drama Ghanashyam | 0:52 |
|---|---------------------|------|



Drama
Ghanashyam

0:47  0:06 

Type here to search 

ENG IN 8:49 AM 2/19/2024 

An Album


▶

Search

Explore


Playlist

Ghanashyam Auti






Desi Kalakaar ALBUM
By Yo Yo Honey Singh
7 songs

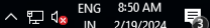
| | | |
|---|---|------|
| 1 | Desi Kalakaar Yo Yo Honey Singh | 4:18 |
| 2 | Love Dose Yo Yo Honey Singh | 3:48 |
| 3 | One Thousand Miles Yo Yo Honey Singh | 4:47 |
| 4 | Stardom Yo Yo Honey Singh | 3:47 |
| 5 | IM Your Dj Tonight | 4:41 |



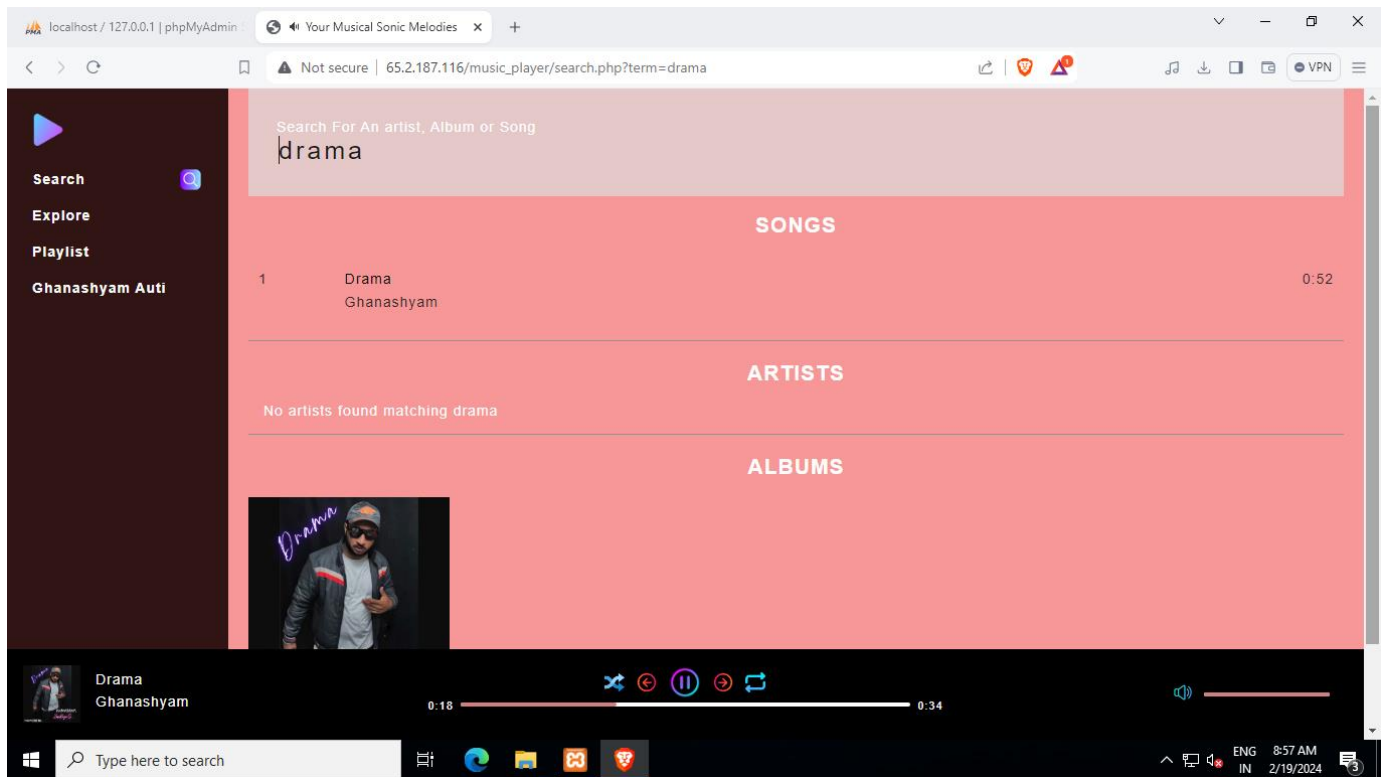
Drama
Ghanashyam

0:14  0:38 

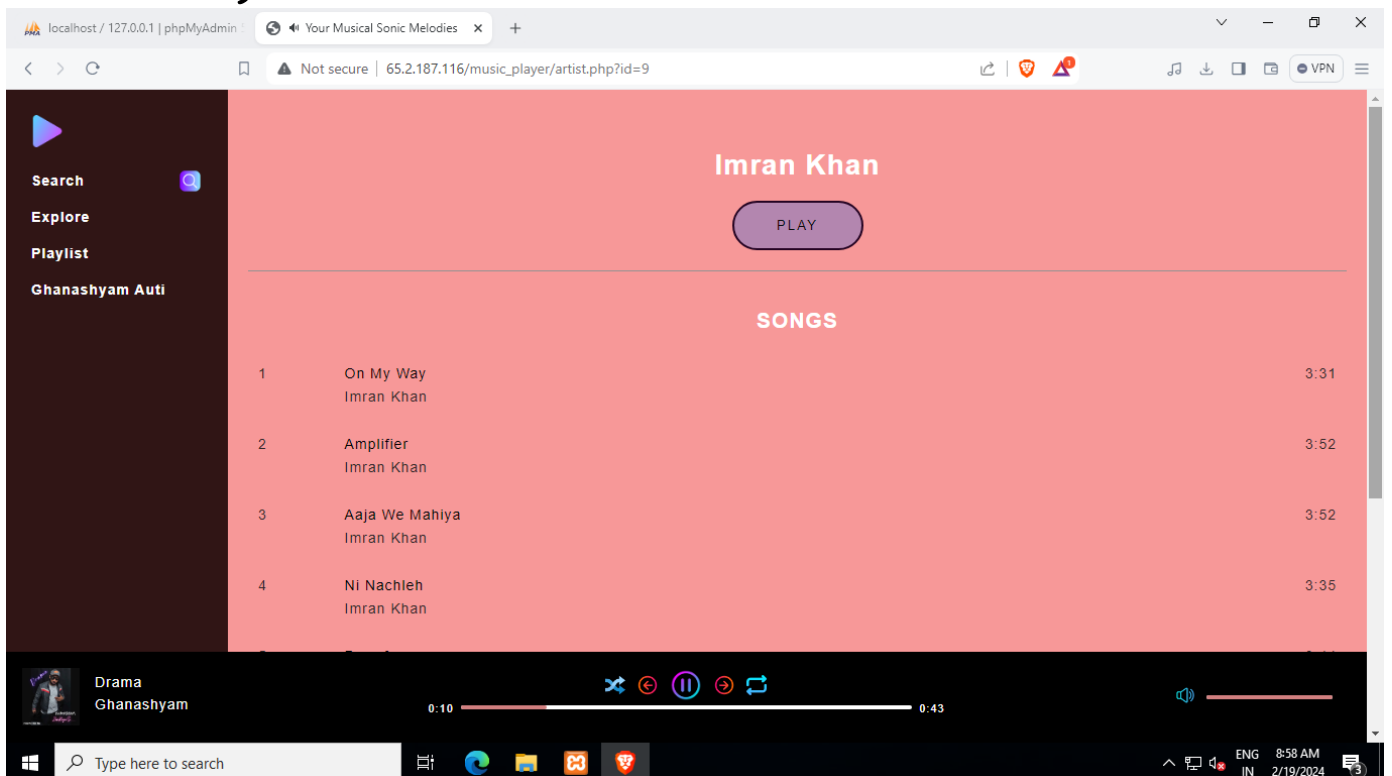
Type here to search 

ENG IN 8:50 AM 2/19/2024 

Search Bar



Artist Page



Playlist Page

Search

Explore

Playlist

Ghanashyam Auti

sound

By ghanashyam_auti

4 songs

DELETE PLAYLIST

1

Coco
DRV , Daroy

3:02

2

Woh Lamhe
Atif Aslam

5:50

3

Phir Mohabbat
Emraan Hashmi

5:31

4

Nakhre

2:33

Amplifier
Imran Khan

0:01

3:52

Type here to search

23°C Mostly cloudy

08:18 PM
02-02-2024

Challenges Overcome:

- **User Authentication Challenges:**

- Achieved a secure login system.
- Balanced security measures with user convenience.

- **Database Optimization:**

- Designed an efficient database schema.
- Implemented query optimization for quick data retrieval.

- **Responsive User Interface:**

- Developed an intuitive and responsive design.
- Conducted iterative user testing for usability improvements.

- **Infrastructure Scalability:**

- Ensured robustness and scalability for growing data.
- Implemented effective caching mechanisms.
- Optimized database indexing for optimal performance.

These challenges, when addressed successfully, contributed to the creation of a seamless and user-friendly music streaming platform.

Conclusion

Our music streaming site, with features like user login, extensive track library, and artist information, ensures a personalized and diverse musical experience. The project prioritizes user-friendliness, performance optimization, and responsive design. Moving forward, we aim to continually improve and innovate, taking user feedback into account, and expanding features to create a vibrant music community. In essence, our platform harmoniously blends technology and artistry, fostering a universal love for music.

References

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Amazon Web Services : <https://aws.amazon.com/>

ChaGPT : <https://www.chat.openai.com/>