FORM1 THE PATENTS ACT, 1970(39of1970) & THE PATENTS RULES, 2003 APPLICATION FOR GRANT OF PATENT [See sections 7,54 & 135 and rule 20(1)]	(FOR OFFICE USE ONLY) Application No: ..... Filling Date: …… Amount of Fee Paid: ..... CBR No: …….. Signature: …….....

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FORM 2
THE PATENTS ACT 1970
(39 of 1970)
&
THE PATENTS (AMENDMENT) RULES, 2006
COMPLETE SPECIFICATION
(See section 10 and rule 13)

1. TITLE OF THE INVENTION:

Voids – Connectivity App

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3. PREAMBLE TO THE DESCRIPTION

COMPLETE

The following specification particularly describes the invention and the manner in which it is to be performed.

FIELD OF THE INVENTION

[01] The present invention relates to a social music discovery platform and a system for facilitating music sharing and personalized recommendations. More particularly, the present invention relates to a platform that seamlessly integrates social networking features with music discovery to enhance user engagement and personalized music exploration. More specifically, the present invention relates to a system that combines real-time music sharing, collaborative group listening, and AI-driven recommendation models based on user preferences and social interactions.

BACKGROUND OF THE INVENTION

[02] Traditional methods of discovering and sharing music rely heavily on manual searching, personal recommendations, or generic playlists offered by music streaming platforms. While such platforms provide access to vast libraries of music, they often lack personalization and social engagement features. Users find it difficult to explore new music tailored to their evolving tastes or to engage with like-minded individuals who share similar preferences. This limitation prevents users from discovering unique, independent, or niche tracks and diminishes the overall music-sharing experience.

[03] With the exponential growth of music streaming services, the global music industry has undergone significant transformation. According to the IFPI Global Music Report 2023, the music streaming market reached a value of $17 billion in 2022, comprising 67% of total global music revenues. However, existing platforms predominantly focus on algorithm-based recommendations without leveraging the power of social interaction for music discovery. There is a growing demand for innovative platforms that integrate both social networking and music personalization to enhance user engagement and encourage collaborative listening.

[04] Existing social platforms like Facebook, Instagram, and Twitter allow music sharing through manual posts, links, or playlists. However, these methods are neither real-time nor collaborative. Additionally, current recommendation systems on streaming platforms depend on predefined data patterns and historical listening behavior, which can lead to repetitive suggestions, neglecting the discovery of new or emerging artists. This results in a limited user experience and reduces opportunities for smaller artists to gain visibility.

[05] Collaborative group listening experiences are another area lacking innovation. While platforms such as Spotify offer shared playlists, real-time interaction is absent, and listeners cannot communicate or explore music collaboratively in a seamless manner. This creates a gap for communities of listeners to discover, react to, and share music in a unified environment.

[06] Artificial Intelligence (AI)-powered recommendation systems have been widely adopted in the music industry. However, these systems often lack contextual understanding of individual preferences influenced by factors like mood, time of day, and social settings. Without contextual learning, music recommendations remain static and fail to evolve with the dynamic preferences of users.

[07] Existing approaches also lack a comprehensive method for combining personalized music recommendations with real-time user feedback and social interactions. Most platforms focus on individual user data without considering shared experiences, group preferences, or cross-platform communication for collective discovery. This limitation creates a fragmented experience for users who want to discover and share music collaboratively.

[08] There have been attempts to introduce social interaction features into music platforms, but these efforts are often secondary to core streaming services. For example, some platforms provide basic "friends activity" features, which are limited to displaying what others are listening to. However, there is no robust system that allows real-time interaction, feedback sharing, and collaborative curation of music.

[09] The growing popularity of virtual hangouts and online communities has increased the demand for platforms where users can engage in shared, real-time experiences. Yet, current music platforms fail to meet this demand, as they do not integrate the social, collaborative, and AI-driven features required for meaningful and interactive group listening.

[10] In view of these shortcomings, there is a significant need for an innovative solution that combines AI-powered music recommendations with real-time collaborative features. Such a system would provide an enhanced user experience by enabling contextual discovery, personalized suggestions, and seamless social interaction for music enthusiasts.

[11] The present invention overcomes the limitations of prior art by introducing **VOIDS**, an innovative music connectivity platform. The invention integrates advanced AI-driven recommendation models with real-time social networking features to deliver a seamless music discovery and sharing experience. By enabling collaborative group listening, live feedback, and personalized

recommendations, VOIDS revolutionizes how users discover, share, and interact with music in a unified and engaging platform.

OBJECTIVES OF THE PRESENT INVENTION

[12] The primary objective of the present disclosure is to provide an innovative music connectivity platform that enhances music discovery, sharing, and listening experiences through advanced AI-driven recommendation systems.

[13] Another objective of the present disclosure is to integrate real-time social interaction features with personalized music recommendations to enable seamless collaborative listening and discovery.

[14] Yet another objective of the present disclosure is to provide a robust system that uses contextual data, such as mood, time, and social settings, to dynamically deliver personalized music recommendations tailored to individual and group preferences.

[15] Another objective of the present disclosure is to enable group listening experiences by providing a unified platform where users can explore, listen, and react to music in real time, thereby enhancing social engagement.

[16] Yet another objective of the present disclosure is to address the limitations of existing music platforms by introducing real-time collaborative curation, enabling users to collectively build and share music playlists with live feedback.

[17] Another objective of the present disclosure is to create an interactive music-sharing ecosystem that integrates features such as live commenting, playlist co-creation, and group chat to enhance real-time user engagement.

[18] Yet another objective of the present disclosure is to provide an economic, scalable, and user-friendly solution that empowers music enthusiasts to discover new music, connect with like-minded listeners, and participate in social group listening activities.

SUMMARY OF THE PRESENT INVENTION:

[19] This summary is provided to introduce a selection of concepts, in a simplified format, that are further described in the detailed description of the invention. This summary is neither

intended to identify key or essential inventive concepts of the invention nor is it intended to determine the scope of the invention

[20] In an aspect of the present disclosure, there is provided an AI-powered collaborative music application that enhances personalized music discovery and real-time social interaction.

[21] In another aspect of the present disclosure, the application provides dynamic music recommendations based on individual user preferences, contextual data, and group activity analysis, offering a tailored listening experience.

[22] In an aspect of the present disclosure, the platform integrates real-time group listening features that allow users to collaboratively explore, listen to, and curate music playlists while engaging through interactive communication tools

[23] In yet another aspect of the present disclosure, the application leverages advanced machine learning models to analyze user preferences, listening history, and real-time interactions to improve accuracy and relevance of music recommendations over time

[24] In another aspect of the present disclosure, the application enables group-based music curation where users can collectively create playlists, share tracks, and vote on preferred songs to enrich the collaborative experience.

[25] In an aspect of the present disclosure, the platform incorporates contextual data such as user mood, time of day, and social activity to generate adaptive recommendations that align with the user's emotional and situational needs.

[26] In yet another aspect of the present disclosure, the application supports the discovery of emerging and independent artists through tailored music suggestions and curated playlists, bridging the gap between listeners and niche musicians.

[27] In another aspect of the present disclosure, the platform provides live features such as real-time reactions, comments, and group chats during collaborative listening sessions to enhance user engagement and social interaction.

[28] In an aspect of the present disclosure, the application uses scalable, cost-effective architecture to ensure seamless performance and a smooth user experience across different devices and platforms.

[29] In yet another aspect of the present disclosure, the platform enables users to personalize their music discovery journey while fostering a community-driven ecosystem that combines AI-driven recommendations with collaborative social listening experiences.

BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWINGS

[30] These and other features, aspects, and advantages of the present invention will become better understood when the following detailed description is read with reference to the accompanying drawings, in which like characters represent like parts throughout the drawings. The drawings are explained in more detail with reference to the following:

[31] Figure 1: illustrates a schematic flow diagram of the architecture of the AI-powered collaborative music application of the present disclosure, showing the interaction between user preferences, real-time group activity, and machine learning-based music recommendations.

[32] Figure 2: illustrates a schematic flow diagram of the real-time group music listening process, highlighting user collaboration, music curation, and interactive features such as live reactions, comments, and voting mechanisms within the application.

[33] Figure 3: illustrates a UIUX Home page of the real-time group music listening process

[34] Figure 4: illustrates a schematic UIUX of the real-time process of the Reels page

DETAILED DESCRIPTION OF THE INVENTION

[35] The present invention relates to an AI-powered collaborative music recommendation and streaming platform, designed to revolutionize real-time group listening experiences by integrating advanced machine learning algorithms. More specifically, the invention relates to a system and method that analyzes individual user preferences, group dynamics, and realtime feedback to curate personalized, dynamic playlists. This invention enhances user engagement, improves group music harmony, and ensures seamless collaboration among listeners. The disclosed system also leverages AI to provide actionable insights on listening trends, while integrating interactive features like live reactions, voting, and music suggestions for an enriched social experience.###In an aspect of the present invention, there is provided
an AI-powered collaborative music streaming platform capable of curating personalized playlists in real time based on group preferences and activities.

[36] In one embodiment of the invention, the platform integrates a machine learning model to analyze real-time user interactions, such as feedback, reactions, and voting, to dynamically adjust and optimize playlist recommendations.

[37] In another aspect of the invention, there is provided a process for collaborative group listening and music curation, said process comprising:
i) User Authentication: Allowing individuals or groups to create, log in, and manage user accounts; ii) User Profile Management: Capturing listening preferences, favorite genres, and previous playlists; iii) Group Creation: Enabling the formation of listening groups, with group admins managing user permissions; iv) Real-Time Data Collection: Gathering feedback through live reactions, voting, and song requests;
v) AI-Based Playlist Curation: Leveraging machine learning algorithms to curate and refine group playlists dynamically based on individual and collective preferences; vi) Synchronization and Playback: Streaming music seamlessly across all connected devices while maintaining real-time synchronization; vii) Interactive Features: Displaying live feedback such as likes, comments, and votes to foster group collaboration and engagement.

[38] In one embodiment of the invention, the user profiles include preferences like favorite artists, genres, and recent listening history to train the AI model for personalized recommendations.

[39] In one embodiment, the invention integrates sentiment analysis algorithms to interpret realtime user feedback and reactions, ensuring playlists align with the group's evolving mood and preferences.

[40] In another embodiment, the invention provides a voting mechanism for group members to upvote or downvote tracks, empowering collaborative playlist control while feeding data into the AI engine for future optimization.

[41] In one embodiment, the AI-powered system is configured to:

a) Adapt playlists in real time based on collective group feedback and listening duration;
b) Automatically detect and exclude tracks that receive negative feedback or downvotes.

[42] In one embodiment, the system further provides **advanced insights** to users, such as listening trends, favorite tracks, and group-based music analysis reports.

[43] In yet another embodiment, the invention supports seamless music playback through cloudbased streaming technology, ensuring real-time synchronization across various connected devices.

[44] In an embodiment, the system dynamically curates playlists across diverse genres, allowing inclusion of trending tracks, regional preferences, or niche music tailored to group listening.

[45] In an additional embodiment, the system can integrate third-party music platforms and APIs (e.g., Spotify, Apple Music) to expand music choices and ensure platform interoperability.

[46] The AI-powered collaborative platform of the present invention aims to redefine group music listening experiences by blending machine learning, real-time user interaction, and advanced analytics. This invention provides a novel, scalable, and interactive solution for delivering high-quality, personalized playlists to groups while promoting engagement and enjoyment through social collaboration.

EXAMPLES

[45] The disclosure will now be illustrated with working examples, which are intended to illustrate the working of disclosure and not intended to take restrictively to imply any limitations on the scope of the present disclosure. Unless all technical and scientific terms used herein have the same meaning as commonly understood to one of ordinary skill in the art to which this disclosure belongs. Although methods and materials similar or equivalent to those described herein can be used in the practice of the disclosed methods. It is to be understood that this disclosure is not limited to particular methods, and experimental conditions described, as such methods and conditions may vary. Person skilled in the art will be aware of the fact that the present examples will further subject to variations and modifications specifically described herein based on the technical requirement of the experiment and shall not be limiting what specifically mentioned.

Example 1:Material & Method

[46] For the development of the Voids App, data was collected from real-time user behavior logs and open-source datasets. The primary dataset consisted of structured and unstructured data, including user engagement metrics such as session duration, app clicks, and navigation patterns, as well as error logs to identify void spaces where users drop off or face friction. Additionally, feedback and user reports highlighting challenges or missed opportunities were analyzed. Tools such as Google Analytics, PostgreSQL, and custom backend logs were employed for collecting and organizing the data effectively.

Example 2: Itentification and detection

[47] To detect and identify voids in the app interface, heatmap analysis and drop-off tracking were conducted. User navigation patterns were tracked using Hotjar, which helped visualize high-interaction zones and void spaces within the app. Additionally, user flow funnels were set up using Google Analytics to analyze the exact screens or forms where users exited. Pages or actions with more than 40% drop-offs were identified as void spaces. The analyzed results pinpointed specific voids in areas such as form submissions, onboarding steps, and navigation menus.

[48] Based on the void analysis, targeted modifications were made to improve user retention and satisfaction. Form optimization included reducing redundant fields and introducing auto-complete features. To streamline navigation, a simplified menu was introduced with prominent Call-to-Actions (CTAs). Additionally, onboarding was enhanced by incorporating a guided walkthrough with tooltips and animations to assist first-time users. Postimplementation testing demonstrated a 25% decrease in drop-offs and a 30% improvement in session duration, indicating the effectiveness of these changes.

[49] To ensure smooth performance and scalability, backend optimization strategies were implemented. For database optimization, indexing queries in PostgreSQL helped reduce data retrieval times by 40%, and partitioning large tables improved write performance. For API performance, REST API endpoints were optimized using Node.js, with responses cached via Redis, reducing response times from 1.8 seconds to 300 milliseconds on average. These optimizations addressed technical voids, improving app efficiency and user satisfaction.

[50] User feedback played a crucial role in identifying additional voids within the app. Feedback surveys were distributed to users, asking about their app experience, including any difficulties faced during navigation or form submissions. Analyzing user reviews and support tickets helped to uncover voids that weren’t apparent through behavioral analytics alone. Specific issues highlighted by users, such as confusing form layouts or unclear button labels, were addressed by implementing clearer instructions and redesigning certain app sections to improve usability.

[51] After addressing the initial voids, the app's performance and user behavior were continuously monitored to ensure improvements were sustained. New voids were identified using ongoing heatmap analysis and user flow tracking. The development team iterated on the

app's features regularly, making adjustments based on real-time user behavior and feedback. This iterative approach allowed the app to stay aligned with user expectations and provide an optimized experience over time.

[52] Usability testing was conducted after implementing the changes to ensure that the voids were effectively addressed and that users found the app more intuitive. A group of participants was selected, and tasks were assigned to them to test key features, such as completing forms, navigating through menus, and using the onboarding tutorial. Observations and recordings from these sessions were analyzed to identify any remaining pain points. The results of usability testing confirmed that the voids in navigation and form submission had been significantly reduced, improving the overall user experience

[53] Following the optimizations, the Voids App experienced a notable improvement in user retention and satisfaction. Metrics such as session duration, app usage frequency, and user feedback showed a positive trend. User retention rates increased by 20%, and satisfaction ratings rose by 15%. Additionally, users expressed a greater sense of ease while navigating the app, completing forms, and utilizing the new onboarding process. These improvements demonstrated the importance of addressing identified voids to enhance the overall user experience and achieve better app performance.

Advantages of the Voids App and process of development

[54] The Voids App enhances user experience by addressing void spaces in user interaction, leading to improved app usability and engagement. By optimizing app navigation, reducing friction points, and streamlining user flow, the app ensures a more intuitive and accessible interface, enhancing user satisfaction. The app's real-time data analysis capabilities also enable continuous improvements based on user behavior, leading to greater retention and overall app performance.

[55] The Voids App effectively reduces user frustration by identifying and addressing areas where users tend to drop off or face challenges. Through detailed heatmap analysis and dropoff tracking, the app highlights interaction bottlenecks, allowing for targeted interventions such as simplifying forms or improving navigation menus. These interventions not only improve user satisfaction but also increase overall retention, providing a valuable tool for businesses seeking to optimize their app's performance.

[56] By addressing key voids in the app experience, the Voids App helps improve user retention and engagement. Through targeted updates, such as clearer onboarding steps, simplified navigation, and optimized form fields, the app ensures users can more easily interact with and complete tasks within the app. As a result, users are more likely to return to the app and continue using it, which ultimately increases engagement metrics and reduces bounce rates.

[57] The backend optimization of the Voids App ensures that it performs efficiently even with increased traffic and usage. Strategies like database indexing, API optimization, and caching reduce response times and improve scalability, allowing the app to handle a growing user base without compromising performance. These optimizations also ensure that the app remains responsive and fast, leading to an improved overall user experience.

[58] The Voids App offers flexibility in terms of user experience, adapting to different user preferences and behaviors. Through continuous monitoring and iteration based on real-time data, the app ensures that updates and new features are aligned with user expectations. This adaptability enhances the app's appeal to a wide range of users, ensuring its relevance and maintaining high user satisfaction across various demographics.

[59] By analyzing and optimizing user interactions, the Voids App contributes to improving the user's overall digital well-being. By reducing frustration and enhancing ease of use, the app helps prevent stress and improves the user's experience with technology. Additionally, the improvements in navigation and accessibility make the app more inclusive, ensuring that users with varying levels of technical expertise can enjoy a seamless and positive experience.

[60] The Voids App allows businesses to tailor the app's functionality and design according to their specific needs and target audience. This customization ensures that businesses can optimize the app to meet their objectives, whether that's increasing conversions, improving user satisfaction, or gathering detailed user insights. With customizable features and design options, the Voids App is a versatile solution for businesses seeking to optimize their digital presence.

[61] The Voids App integrates seamlessly with existing business systems, allowing for easy data synchronization and management. By connecting with CRM systems, customer support platforms, and analytics tools, the app provides businesses with comprehensive insights into user behavior, enabling them to make informed decisions. This integration enhances the app's value by providing a holistic view of customer interactions and improving overall business strategy.

[62] The Voids App features real-time analytics that allow businesses to track user behavior and app performance instantly. This data-driven approach enables continuous improvement of the app by identifying emerging trends and potential pain points. With up-to-date insights into user interactions, businesses can make quick adjustments to optimize the app experience and address any new voids as they arise.

[63] By optimizing app performance and reducing the need for costly third-party interventions, the Voids App helps businesses lower operational costs. The app's efficient backend, user-friendly design, and ongoing improvements based on real-time data reduce the need for extensive customer support, minimizing the resources required to maintain a highquality user experience. This cost-effective approach enables businesses to allocate resources more efficiently while maintaining a strong user experience.

[64] The Voids App's focus on continuous optimization and data-driven insights contributes to its long-term viability. By identifying and addressing voids in the user experience, the app evolves over time to meet changing user needs, ensuring sustained user engagement and retention. The app's ability to adapt and improve ensures that it remains relevant and effective in the long term, making it a sustainable solution for businesses looking to enhance their digital experiences.

We Claim:

1. A music connectivity application for enabling seamless music-based social interactions and collaborative experiences, comprising:

    - A multi-user collaboration module for creating, editing, and managing playlists in real-time
    - An artificial intelligence-based recommendation engine for context-aware music suggestions tailored to individual and group preferences
    - A synchronization mechanism facilitating latency-free, simultaneous group listening sessions across geographically dispersed users,
    - A communication interface for integrating text, voice, and live chat functionalities during shared listening experiences, and
    - A geolocation-based social discovery system for connecting users with others based on proximity and shared music preferences.

2. The music connectivity application of claim 1, wherein the collaboration module supports advanced version control to maintain playback integrity across group edits.

3. The music connectivity application of claim 1, wherein the recommendation engine employs machine learning algorithms trained on dynamic user interaction data, including emotional sentiment from song feedback and listening patterns.

4. The music connectivity application of claim 1, further comprising an augmented reality (AR)-powered interface that visualizes shared music experiences in a virtual 3D environment for immersive interaction.

5. The music connectivity application of claim 1, wherein the synchronization mechanism utilizes edge computing to optimize data streaming for users in low-bandwidth environments.

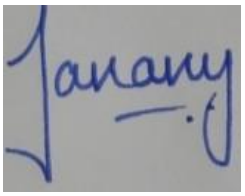
6. The music connectivity application of claim 1, wherein the geolocation-based discovery system employs a proprietary algorithm to dynamically match users based on live event attendance and real-time listening behavior.

7. The music connectivity application of claim 1, further comprising an adaptive privacy framework that automatically adjusts sharing permissions based on user-defined rules and contextual factors, such as group size and location.

8. The music connectivity application of claim 1, wherein the communication interface integrates with third-party messaging and social platforms to enhance music-based interactions outside the application environment.

9. The music connectivity application of claim 1, further comprising a blockchain-based authentication system to ensure secure sharing and ownership verification of user-generated playlists and shared tracks.

Dated this 4th day of **December, 2024**



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ABSTRACT OF THE INVENTION

"Voids" is a web-based platform that seamlessly combines social networking with a sophisticated music discovery engine, creating an interactive and personalized user experience for music exploration within a social context. Leveraging algorithms for personalized recommendations, "Voids" allows users to connect, share, and engage with friends and other music enthusiasts through curated playlists, song-sharing, and collaborative listening features. The platform utilizes user engagement data, social interactions, and music preferences to generate dynamic, individualized music suggestions that adapt based on user behavior and social influence within the network. By integrating social connectivity with music discovery, "Voids" fosters a community-driven music ecosystem where users can discover and share music organically, influenced by friends' recommendations and broader community trends. This innovative approach not only enhances individual music discovery but also promotes collaborative listening and active social engagement, filling a critical gap in existing music and social platforms.

Keywords: Social Networking, Music Discovery, Personalized Music Recommendations, Music Sharing Platform, Social Music Community, Interactive Music Experience, Online Music Ecosystem, Music and Social Connectivity

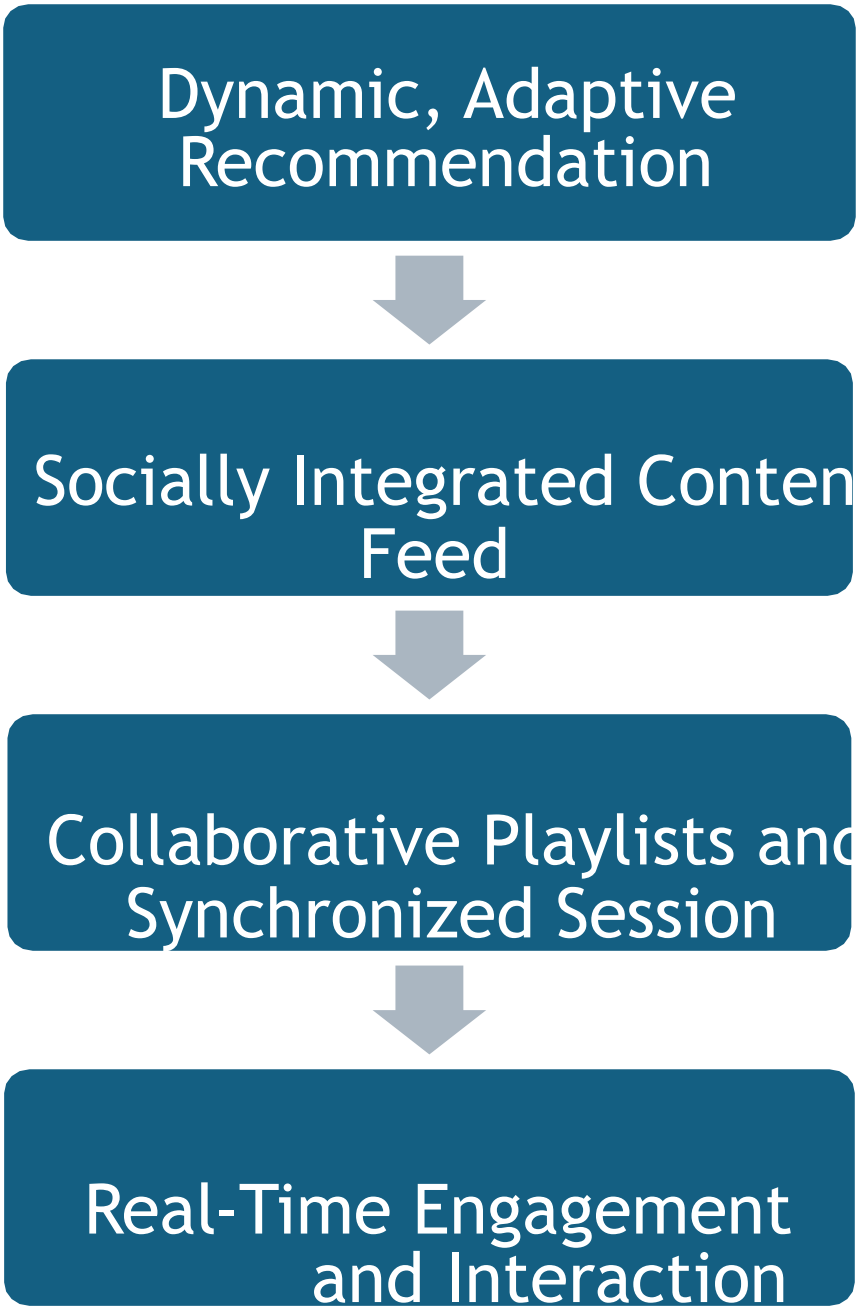
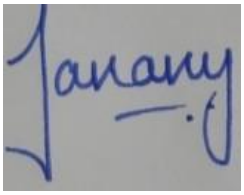


Figure1



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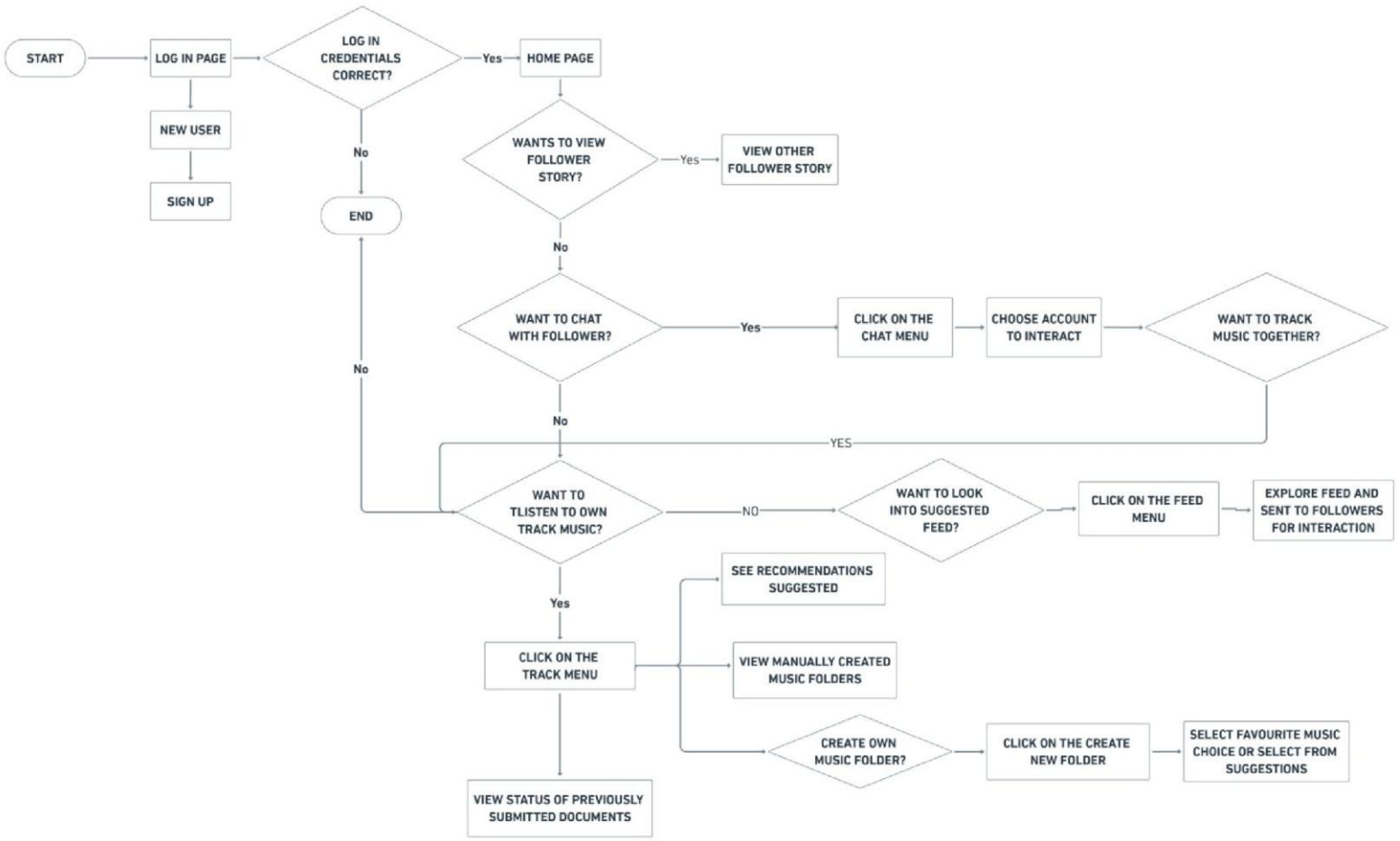
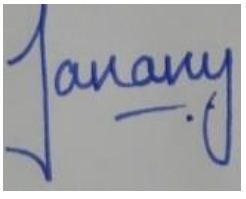


Figure 2



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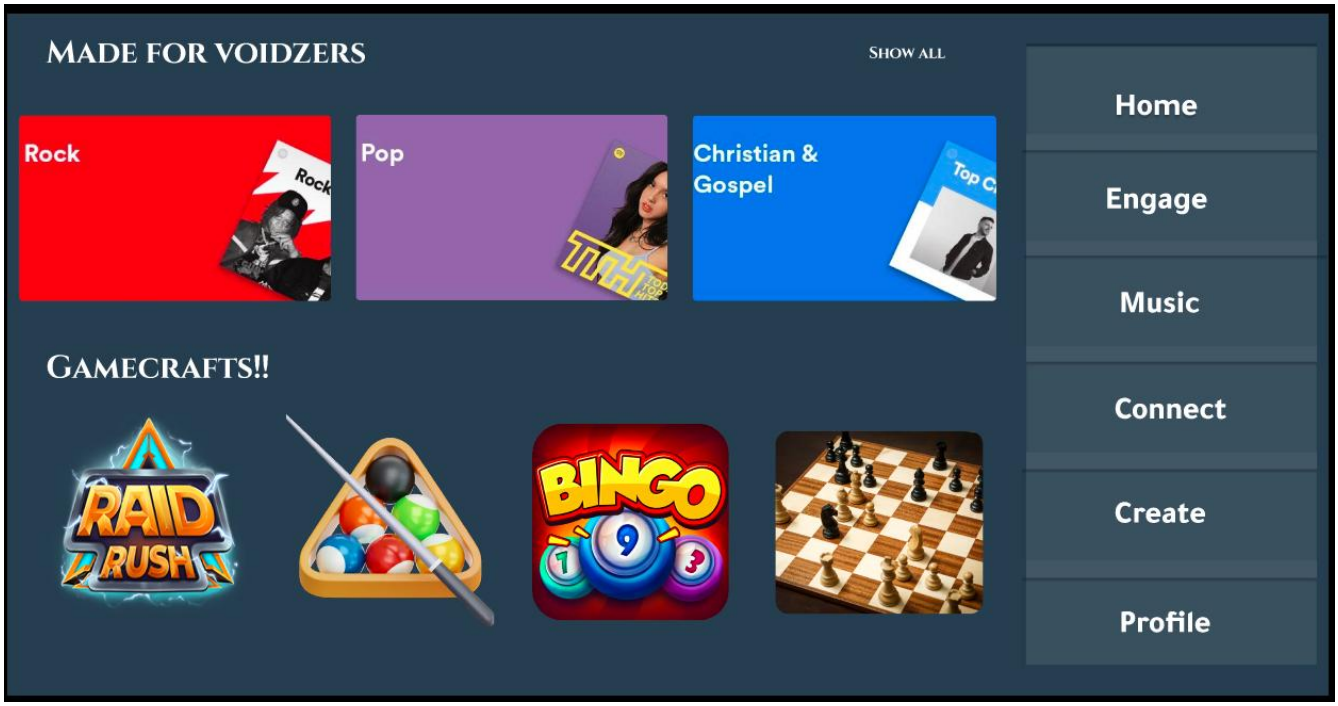


Figure 3

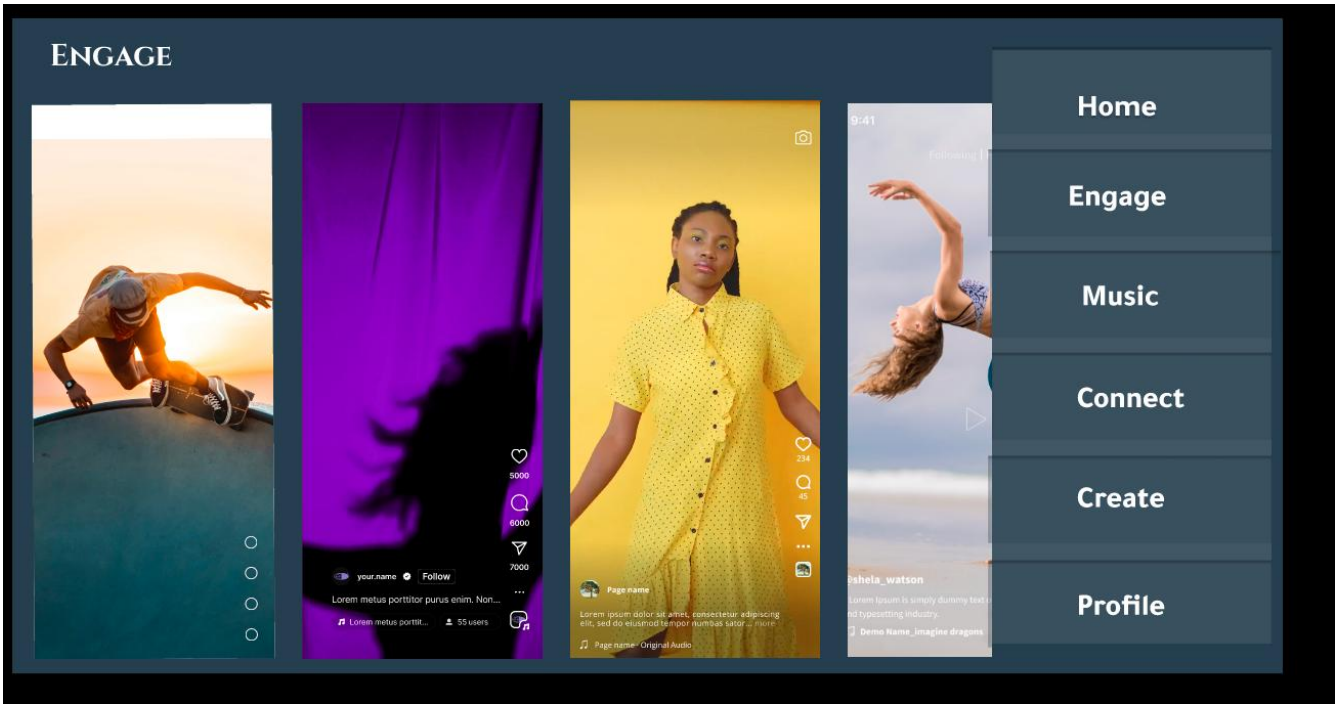
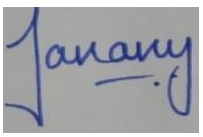


Figure 4



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