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**Title : Final Project Summary**

Instructor: Ashish Gulati

Due Date: 4/14/24

1.

The main goal of this project is to create an extensive database system for an online music streaming service. Numerous pieces of information will be stored in this system, such as user profiles, artist information, song information, album information, playlist records, and listening patterns. This database's main objectives are to provide tailored music suggestions, track listening patterns, effectively handle user subscriptions, and manage artist payments.

Customized Music Suggestions: The platform will be able to provide personalized music suggestions thanks to the database's usage of advanced algorithms to examine user behavior and preferences. Through the utilization of user-provided data regarding preferred categories, creators, and music, the streaming service can generate customized playlists and recommend new music that suits individual preferences.

Perceptive Listening Trend Analysis: By monitoring users' listening behavior over time, the database will provide the platform with important information about their tastes and habits. The platform will be able to modify its offering of content and promotional activities in accordance with the identification of popular genres, trending performers, and upcoming music trends made possible by this analysis of data.

Effective Subscription Management: By keeping track of subscription details, expiration dates, and payment information, the database will make managing subscriptions easier. Customers will be able to select from a variety of subscription packages, such as family plans, student offers, premium ad-free memberships, and free tiers with advertising.

Entire Musician and Rights Management: The platform can efficiently handle the licensing of music and distribution by keeping up-to-date musician profiles as well as rights data in the database for all artists. This guarantees that artists are fairly compensated.

Collaborative Playlist Creation: Users will be able to create and communicate playlists with relatives, close companions, and followers thanks to the platform's support for collaborative playlist capabilities. Real-time editing and contribution by multiple individuals to communal playlists enhance the social component of streaming.

Offline Listening Features: Users will have increased accessibility to music material even in the absence of an internet connection by being able to save songs as well as playlists for listening offline via the database.

Integrating of Social Features: By allowing users to follow their favorite musicians, connect with friends, and exchange music suggestions across several social media platforms, integrating social features will help to create a feeling of community inside the streaming service.

Strong Content management: To guarantee that the audio collection is kept free of objectionable or improper content, the database will include content control features. Everyone may continue to enjoy a secure and pleasurable listening experience thanks to our active strategy for content filtering.

2.

Table **Users**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Null/ Not Null** | **Constraint** | **PK** | **Purpose of the column** |
| user\_id | Integer | - | Not Null | Auto-increment | Yes | Unique identifier for each user. |
| username | Varchar | 50 | Not Null | Unique | No | Username chosen by the user. |
| email | Varchar | 100 | Not Null | Unique | No | User's email address. |
| password | Varchar | 100 | Not Null | - | No | User's password |
| subscription\_type | ENUM | - | Not Null | [‘Free’,’Premium’] | No | Type of subscription the user has. |

Table **Artists**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Null/ Not Null** | **Constraint** | **PK** | **Purpose of the column** |
| artist\_id | Integer | - | Not Null | Auto-increment | Yes | Unique identifier for each artist. |
| name | Varchar | 100 | Not Null | Unique | No | Artist's name. |
| genre | Varchar | 50 | Null | - | No | Genre of music the artist performs. |

Table **Songs**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Null/ Not Null** | **Constraint** | **PK** | **Purpose of the column** |
| song\_id | Integer | - | Not Null | Auto-Increment | Yes | Unique identifier for each song |
| title | Varchar | 100 | Not Null | - | No | Title of the song |
| artist\_id | Integer | - | Not Null | Foreign key referencing artist\_id in Artists table. | No | Artist who performed the song |
| album\_id | Integer | - | Null | Foreign key referencing album\_id in Albums table | No | Album the song is part of, if applicable |

Table **Albums**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Null/ Not Null** | **Constraint** | **PK** | **Purpose of the column** |
| album\_id | Integer | - | Not Null | Auto-Increment | Yes | Unique identifier for each album |
| title | Varchar | 100 | Not Null | - | No | Title of the album |
| artist\_id | Integer | - | Not Null | Foreign key referencing artist\_id in Artists table | No | Artist who performed the album |

Table **Playlists**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Not Null/Null** | **Constraint** | **Purpose** |
| listid | Integer | N/A | Not Null | Auto increment, PK | Playlist’s unique identifier |
| userid | Integer | N/A | Not Null | Foreign Key | User who created playlist |
| title | VARCHAR | 100 | Not Null | N/A | Playlist title |

Table **Listening Habits**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Null/Not Null** | **Constraint** | **Purpose** |
| habitid | Integer | N/A | Not Null | Auto-increment, PK | Habit unique identifier |
| userid | Integer | N/A | Not Null | Foreign Key | User who involved in habit |
| songid | Integer | N/A | Not Null | Foreign Key | Listened Song |
| timestamp | timestamp | N/A | Not Null | N/A | Habit occurred time |

Table **Subscriptions**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Column Name** | **Data Type** | **Size** | **Null/Not Null** | **Constraint** | **Purpose** |
| Subscriptionid | Integer | N/A | Not Null | PK,Auto increment | Subscription unique identifier |
| userid | Integer | N/A | Not Null | Foreign Key | User who owns subscription |
| startdate | DATE | N/A | Not Null | N/A | Subscription start date |
| enddate | DATE | N/A | Null | N/A | End date subscription |

Table **Payments**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Column Name** | **Datatype** | **Size** | **Null/Not Null** | **Constraint** | **Purpose** |
| paymentid | Integer | N/A | NOT NULL | PK,Auto Increment | Payment unique id |
| subscription\_id | Integer | N/A | NOT NULL | Foreign key | Subscription payment |
| amount | DECIMAL | 10,2 | NOT NULL | N/A | Payment amount |
| payment\_date | DATE | N/A | NOT | N/A | Payment date |