**Functional Requirements:**

**1. User Authentication:**

* Users should be able to create accounts, log in, and securely authenticate themselves.

**2. Playlist Management:**

* + Users should be able to create, edit, and delete playlists. They should also be able to add or remove songs from playlists.

**3. Music Search and Discovery:**

* + Users should be able to search for music based on various criteria, such as artist, album, genre, or song title. The system should support music discovery features, such as recommendations and personalized playlists.

**4. Music Streaming:**

* + Users should be able to stream music seamlessly. The system should support features like play, pause, skip, and adjust volume.

**5. Offline Mode:**

* + Users should have the option to download music for offline listening.

**6. User Preferences and Recommendations:**

* + The system should capture user preferences and provide personalized recommendations based on listening history, liked songs, and user-generated playlists.

**7. Social Integration:**

* + Users should be able to connect with friends, share playlists, and see what others are listening to. Social features may include following users, liking and commenting on playlists, and collaborative playlist creation.

**8. Artist and Album Information:**

* + Users should have access to detailed information about artists, albums, and songs, including biographies, discographies, and related content.

**9. Multiple Devices Support:**

* + Users should be able to access their music library and playlists across multiple devices seamlessly.

**10. Account Management:**

* + Users should be able to manage their account settings, including profile information, subscription details, and privacy settings.

**Non-Functional Requirements:**

1. **Performance:**
   * The system should provide low-latency response times for music playback, search queries, and other user interactions.
2. **Scalability:**
   * The database should be scalable to handle a large number of users, songs, and concurrent streaming sessions.
3. **Reliability:**
   * The system should be highly reliable, with minimal downtime and robust error handling. It should recover gracefully from failures.
4. **Usability:**
   * The user interface should be intuitive, easy to navigate, and visually appealing. Users should be able to perform common tasks with minimal effort.
5. **Security:**
   * The system should implement strong security measures to protect user data, including encryption of sensitive information and secure authentication practices.
6. **Compatibility:**
   * The application should be compatible with a variety of devices, operating systems, and web browsers.
7. **Data Privacy:**
   * The system should comply with data privacy regulations and ensure that user data is handled with the utmost care.
8. **Maintainability:**
   * The database and system should be designed for easy maintenance, updates, and enhancements. Documentation should be comprehensive for future development.
9. **Legal Compliance:**
   * The system should comply with licensing agreements and copyright laws related to music distribution.
10. **Network Bandwidth:**
    * The system should be optimized to use network bandwidth efficiently, especially for streaming high-quality audio.Top of Form