

Data Management Strategy

1. Database Choice:

- For the MP3 Files Database, a relational database management system (RDBMS) like MySQL, PostgreSQL, or SQLite could be a suitable choice. These systems provide structured storage, enforce data integrity through relationships, and support complex queries.

2. Database Design:

- Single Database vs. Multiple Databases:
 - A single database could be used to store all related data, including information about songs, artists, albums, genres, and user data.
 - Alternatively, a multi-database approach could be considered, with separate databases for user management, content metadata, and access logs.
- Table Structure:
 - Tables may include entities such as Users, Songs, Artists, Albums, Genres, and Playlists.
 - Relationships between tables should be well-defined using primary and foreign keys.
- Indexing:
 - Proper indexing on commonly queried columns can improve query performance.
- Data Encryption:
 - Sensitive information, such as user credentials, should be encrypted to enhance security.
- Normalization and Denormalization:
 - Normalization can reduce redundancy and improve data integrity, while denormalization might be considered for performance optimization in certain scenarios.

3. Data Splitting:

- Consider splitting data logically based on access patterns and usage.
- Hot data (frequently accessed) and cold data (less frequently accessed) can be stored separately for optimization.