Group 4 – Assignment 2

Proposal for Music Library

# Introduction:

This application serves as a personal album management system, organizing multiple albums where the primary entities are Album, Artist, and Song. The system is designed to handle various attributes and relationships among these entities, ensuring a comprehensive management solution for music collections.

# Data Model Description:

The application implements four main data types to structure the music collection:

1. **Artist Table**: This table categorizes artists into solo artists or groups, ensuring that each artist's type is accurately represented to meet the 'is-a' relationship.
2. **Song Table**: Songs are detailed with track number, which helps in sequencing songs within an album, fulfilling the 'contains' relationship.
3. **Contributor Table**: Contributors are linked to songs through this table. This setup allows for 'hierarchies' where contributors can be grouped under.
4. **Album Table**: Album table establishes 'related-to' relationships with both the artist and genre, allowing for a dynamic association.

To manage the historical changes of multi-value fields like an artist's type, an album's genre, or a song's track number, intermediate tables are introduced:

* **ArtistType**: Tracks the historical changes in an artist's type over time.
* **AlbumGenre**: Records the genre history for each album, allowing genres to evolve or change.
* **SongTrackNumber**: Manages the sequence of songs within albums, accommodating changes in track listings.

# Group Membership and Tasks:

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| Group 4 member | Task breakdown |
| Zhennan Deng | Front End  o set of forms to update ALL underlying tables – including new multi-valued  o set of reports to navigate and display relevant data (esp. hierarchies)  o set of reports &/or forms for convenient updates/inserts/imports |
| Jiu Cheng | Physical model  o covered all the minimum required entities; hierarchies, is-a, contains, related-to  o appropriate use of surrogate keys  o relationships match business rules; with correct cardinality |
| Xin Wang | Data logistics  o test data complete, useful  o test Data and database creation script supplied  o database creation steps identified, concise, clear (Users, Instance names…) |