CS-GY 6083 Spring 2024 Project

Project Description

The project is to build an application that interfaces with a database to store and retrieve data. The application will be a simple command line interface that will allow the user to Create, Read, Update and Delete (CRUD) data. The data will be stored in a database and the application will use SQL to interact with the database.

Project Requirements

The project will construct a database with a minimum of 7 tables. The tables will be related to each other in a way that makes sense for the data. The application will allow the user to interact with the database by adding, retrieving, updating and deleting data. The application will also allow the user to query the database for specific data.

Project Details

For this project I will construct a database using MySQL to store information about record album: the name of the album, the recording date, the artists behind the album (bands), the members of the recording group, the record label which produced the album, genre and sales information. This will utilize a 2-tier architecture using Python as the primary Language.

I will construct business object classes to represent the data in Python using data classes. These classes will call on a database utility class to connect and interact with the database. Lastly I will construct a series of UI classes to perform Create, Read, Update and Delete operations on one of the tables.

Database Schema

Entity Relationship Diagram

RECORD_ALBUMS

album_id	int	PK
name	varchar(255)	
release_date	date	
artist_id	int	FK
genre_id	int	FK
record_label_id	int	

RECORD_ARTISTS

artist_id	int	PK
artist_name	varchar(255)	

GROUP_MEMBERS

member_id	int	PK
member_name	varchar(255)	

RECORD_LABELS

record_label_id	int	PK
record_label_name	varchar(255)	

RECORD_TRACKS

track_id	int	PK
album_id	int	FK
track_number	int	
track_name	varchar(255)	
genre_id	int	FK

RECORD_SALES

sale_id	int	PK
sale_album_id	int	FK
sale_date	date	
sale_quantity	int	
unit_sale_price	decimal	

MEMBERS_TO_ARTIST

MEMBERS_TO_ARTIST_id	int	PK
member_id	int	FK
artist_id	int	FK
member_from_date	date	
member_to_date	date	

RECORD_GENRES

genre_id	int	PK
genre_name	varchar(255)	
genre_description	varchar(255)	

Relationships:
- Album Artist
- Developed by
- Songs
- Sales on
- Is of Genre
- Band Members
- Is Member of
- Is of Genre