**DBMS ASSIGNMENT 2**

#### **MUSIC STREAMING SERVICE**

A music streaming service database serves as the backbone for organizing, storing, and managing various aspects of the platform. Here's why each table and its data are relevant:

1. **Users Table:** Tracks information about users including their credentials, subscription types, and personal details. This is crucial for authentication, subscription management, and personalization.
2. **Artists Table:** Stores data about artists and their respective genres, aiding in categorizing and recommending music based on genres or artists.
3. **Albums Table:** Contains details about albums, including release dates and cover art references. This is fundamental for cataloging music and displaying album information.
4. **Tracks Table:** Holds data about individual tracks, including titles, durations, and play counts. This information is used for streaming music, keeping track of popular tracks, and maintaining play history.

#### **Role Table**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| role\_id | VARCHAR(10) | PRIMARY KEY |
| rolename | VARCHAR(50) | NOT NULL |

#### **User Table**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| user\_id | VARCHAR(10) | PRIMARY KEY |
| username | VARCHAR(50) | NOT NULL |
| email | VARCHAR(100) | NOT NULL |
| password | VARCHAR(80) | NOT NULL |

#### **Artist Table**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| artist\_id | VARCHAR(10) | PRIMARY KEY |
| artistname | VARCHAR(50) | NOT NULL |

#### **Album Table**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| album\_id | VARCHAR(10) | PRIMARY KEY |
| albumtitle | VARCHAR(50) | NOT NULL |
| releasedate | DATE | NOT NULL |
| coverart | VARCHAR(100) | NOT NULL |

#### **Category Table**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| category\_id | VARCHAR(10) | PRIMARY KEY |
| categoryname | VARCHAR(50) | NOT NULL |

#### **Track Table**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| track\_id | VARCHAR(10) | PRIMARY KEY |
| track\_title | VARCHAR(50) | NOT NULL |
| duration | VARCHAR(20) | NOT NULL |
| playscount | BIGINT | NOT NULL |

#### **Customer Table**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| customer\_id | VARCHAR(10) | PRIMARY KEY |
| firstname | VARCHAR(50) | NOT NULL |
| lastname | VARCHAR(50) | NOT NULL |
| dob | DATE | NOT NULL |
| phoneno | VARCHAR(20) | NOT NULL |

#### **Login Table**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| login\_id | VARCHAR(10) | PRIMARY KEY |
| user\_id | VARCHAR(10) | FOREIGN KEY |
| logindate | DATE | NOT NULL |
| logintime | TIME | NOT NULL |
| logouttime | TIME |  |

#### **User Role Mapping Table**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| id | VARCHAR(10) | PRIMARY KEY |
| user\_id | VARCHAR(15) | FOREIGN KEY |
| role\_id | VARCHAR(15) | FOREIGN KEY |

#### **Customer User Mapping Table**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| id | VARCHAR(10) | PRIMARY KEY |
| user\_id | VARCHAR(15) | FOREIGN KEY |
| customer\_id | VARCHAR(15) | FOREIGN KEY |

#### **Album Track Mapping Table**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| id | VARCHAR(10) | PRIMARY KEY |
| album\_id | VARCHAR(15) | FOREIGN KEY |
| track\_id | VARCHAR(15) | FOREIGN KEY |

#### **Category Album Mapping Table**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| id | VARCHAR(10) | PRIMARY KEY |
| category\_id | VARCHAR(15) | FOREIGN KEY |
| album\_id | VARCHAR(15) | FOREIGN KEY |

#### **Artist Album Mapping Table**

|  |  |  |
| --- | --- | --- |
| Column Name | Data Type | Constraints |
| id | VARCHAR(10) | PRIMARY KEY |
| artist\_id | VARCHAR(15) | FOREIGN KEY |
| album\_id | VARCHAR(15) | FOREIGN KEY |

TABLES

Roles Table

|  |  |
| --- | --- |
| **RoleID** | **RoleName** |
| R101 | Admin |
| R102 | User |

Users Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **UserID** | **Username** | **Email** | **Password** | **SubscriptionType** |
| U101 | FrostyFalcon | johndoe@fastmail.com | g#7HJd9$ | S103 |
| U102 | SapphireSparrow | sarahsmith@protonmail.com | 5^rK@p2! | S102 |
| U103 | CrimsonCobra | janedoe@temp-mail.org | dN8%kL6 | S101 |
| U104 | GoldenGazelle | johndoe@emailondeck.com | jP3$gF9^ | S103 |

Subscription Table

|  |  |  |
| --- | --- | --- |
| **SubscriptionID** | **SubscriptionName** | **SubscriptionCost** |
| S101 | Free | 0 |
| S102 | Premium | 100 |
| S103 | Family | 180 |

Artists Table

|  |  |
| --- | --- |
| **ArtistID** | **ArtistName** |
| AR101 | Ed Sheeran |
| AR102 | Glass Animals |
| AR103 | Olivia Rodrigo |
| AR104 | Billie Ellish |
| AR105 | Summer Walker |

Albums Table

|  |  |  |  |
| --- | --- | --- | --- |
| **AlbumID** | **AlbumTitle** | **ReleaseDate** | **CoverArt** |
| AL101 | The Wall | 2019-05-18 | the\_wall\_cover.jpg |
| AL102 | The Fame | 2022-08-24 | the\_fame\_cover.jpg |
| AL103 | The Chronic | 2023-05-12 | the\_chronic\_cover.jpg |
| AL104 | The Blueprint | 2023-06-30 | the\_blueprint\_cover.jpg |
| AL105 | The Sun and the Moon | 2023-12-25 | the\_sun\_and\_the\_moon\_cover.jpg |

Category Table

|  |  |
| --- | --- |
| **CategoryID** | **Category** |
| CAT101 | Country |
| CAT102 | Pop |
| CAT103 | Rap |
| CAT104 | EDM |
| CAT105 | Rock |

Tracks Table

|  |  |  |  |
| --- | --- | --- | --- |
| **TracksID** | **TrackTitle** | **Duration** | **PlaysCount** |
| TR101 | Fading Away | 3:45 | 1000 |
| TR102 | Broken Dreams | 5:20 | 450 |
| TR103 | Lost in Time | 4:20 | 300 |
| TR104 | Whispers in the Wind | 2:30 | 900 |
| TR105 | Echoes of the Past | 4:30 | 1200 |

Customer Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CustomerID** | **FirstName** | **LastName** | **Date of Birth** | **PhoneNum** |
| C101 | John | Doe | 1975-05-01 | 02225418991 |
| C102 | Sarah | Smith | 1994-06-28 | 01123940095 |
| C103 | Jane | Doe | 2000-12-25 | 02256607795 |
| C104 | Johns | Doe | 1982-11-17 | 02228891647 |

Login Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **LoginID** | **UserID** | **Login Date** | **Login Time** | **Logout Time** |
| 1 | U101 | December 14, 2024 | 06:23 | 10:34 |
| 2 | U102 | June 22, 2025 | 11:57 | 14:23 |
| 3 | U101 | August 7, 2025 | 15:48 | 17:00 |
| 4 | U104 | February 26, 2025 | 07:12 | 09:00 |
| 5 | U103 | May 16, 2025 | 21:34 | 23:00 |

User-Role Mapping

|  |  |  |
| --- | --- | --- |
| **ID** | **UserID** | **RoleID** |
| 1 | U101 | R101 |
| 2 | U102 | R102 |
| 3 | U103 | R101 |
| 4 | U104 | R101 |

Customer-User Mapping

|  |  |  |
| --- | --- | --- |
| **ID** | **UserID** | **CustomerID** |
| 1 | U101 | C101 |
| 2 | U102 | C102 |
| 3 | U103 | C103 |
| 4 | U104 | C104 |

Album-Track Mapping

|  |  |  |
| --- | --- | --- |
| **ID** | **AlbumID** | **TracksID** |
| 1 | AL104 | TR101 |
| 2 | AL103 | TR102 |
| 3 | AL102 | TR103 |
| 4 | AL101 | TR104 |
| 5 | AL105 | TR105 |

Artist-Album Mapping

|  |  |  |
| --- | --- | --- |
| **ID** | **ArtistID** | **AlbumID** |
| 1 | AR101 | AL101 |
| 2 | AR101 | AL102 |
| 3 | AR104 | AL103 |
| 4 | AR105 | AL104 |
| 5 | AR102 | AL105 |

Category-Album Mapping

|  |  |  |
| --- | --- | --- |
| **ID** | **CategoryID** | **AlbumID** |
| 1 | CAT101 | AL101 |
| 2 | CAT102 | AL102 |
| 3 | CAT103 | AL103 |
| 4 | CAT104 | AL104 |
| 5 | CAT105 | AL105 |

SQL QUERIES TO CREATE TABLES

Role Table

CREATE TABLE role (

role\_id VARCHAR(10) NOT NULL PRIMARY KEY,

rolename VARCHAR(50) NOT NULL

);

User Table

CREATE TABLE user (

user\_id VARCHAR(10) NOT NULL PRIMARY KEY,

username VARCHAR(50) NOT NULL,

email VARCHAR(100) NOT NULL,

password varchar(80) NOT NULL

);

Artist Table

CREATE TABLE artist (

artist\_id VARCHAR(10) NOT NULL PRIMARY KEY,

artistname VARCHAR(50) NOT NULL

);

Album Table

CREATE TABLE album (

album\_id VARCHAR(10) NOT NULL PRIMARY KEY,

albumtitle VARCHAR(50) NOT NULL,

releasedate DATE NOT NULL,

coverart varchar(100) NOT NULL

);

Category Table

CREATE TABLE category (

category\_id VARCHAR(10) NOT NULL PRIMARY KEY,

categoryname VARCHAR(50) NOT NULL

);

Track Table

CREATE TABLE track (

track\_id VARCHAR(10) NOT NULL PRIMARY KEY,

track\_title VARCHAR(50) NOT NULL,

duration VARCHAR(20) NOT NULL,

playscount bigint NOT NULL

);

Customer Table

CREATE TABLE customer (

customer\_id VARCHAR(10) NOT NULL PRIMARY KEY,

firstname VARCHAR(50) NOT NULL,

lastname VARCHAR(50) NOT NULL,

dob DATE NOT NULL,

phoneno varchar(20) NOT NULL

);

Login Table

CREATE TABLE login (

login\_id VARCHAR(10) NOT NULL PRIMARY KEY,

user\_id varchar(10) not null,

foreign key(user\_id) references user(user\_id),

logindate DATE NOT NULL,

logintime time NOT NULL,

logouttime time

);

User – Role Mapping

CREATE TABLE user\_role\_mapping (

id VARCHAR(10) NOT NULL PRIMARY KEY,

user\_id VARCHAR(15) NOT NULL,

foreign key(user\_id) references user(user\_id),

role\_id VARCHAR(15) NOT NULL,

foreign key(role\_id) references role(role\_id)

);

Customer - User Mapping

CREATE TABLE customer\_user\_mapping (

id VARCHAR(10) NOT NULL PRIMARY KEY,

user\_id VARCHAR(15) NOT NULL,

foreign key(user\_id) references user(user\_id),

customer\_id VARCHAR(15) NOT NULL,

foreign key(customer\_id) references customer(customer\_id)

);

Album – Track Mapping

CREATE TABLE album\_track\_mapping (

id VARCHAR(10) NOT NULL PRIMARY KEY,

album\_id VARCHAR(15) NOT NULL,

foreign key(album\_id) references album(album\_id),

track\_id VARCHAR(15) NOT NULL,

foreign key(track\_id) references track(track\_id)

);

Category – Album Mapping

CREATE TABLE category\_album\_mapping (

id VARCHAR(10) NOT NULL PRIMARY KEY,

category\_id VARCHAR(15) NOT NULL,

foreign key(category\_id) references category(category\_id),

album\_id VARCHAR(15) NOT NULL,

foreign key(album\_id) references album(album\_id)

);

Artist - Album Mapping

CREATE TABLE artist\_album\_mapping (

id VARCHAR(10) NOT NULL PRIMARY KEY,

artist\_id VARCHAR(15) NOT NULL,

foreign key(artist\_id) references artist(artist\_id),

album\_id VARCHAR(15) NOT NULL,

foreign key(album\_id) references album(album\_id)

);

ER DIAGRAM

