Birla Institute of Technology & Science, Pilani, K. K. BIRLA Goa campus
Database Systems (CS F212)
Second Semester 2022-2023
Lab-0
To study DDL and DML commands.

Create a database for a music streaming service started by BITSGians using the following information. Decide the appropriate datatype for each attribute. For all the constraints specified, try to understand why they are suitable.

Q1) In the database db212, create the following 3 tables:

1. **Albums:** The table has the following attributes:
    a. AlbumID (Primary Key)
    b. AlbumName (Cannot be NULL)
    c. ArtistName(Cannot be NULL)
    d. HoursStreamed(Int, Default is 0)
    e. Label
    f. Genre
    g. ReleaseDate(Cannot be NULL)

2. **Artists:** The table has the following attributes:
    a. ArtistID (Primary Key)
    b. Name
    c. ActiveSince (date)
    d. RetirementDate
    e. NumberOfFollowers
    f. Nationality
    For the above attributes, think about which of them can be NULL and which can't be. Add the NOT NULL constraint accordingly.

3. **Users:** The table has the following attributes:
    a. UserID
    b. UserName
    (UserID and UserName form the composite primary key).
    c. EmailID (Unique)
    d. MembershipCategory (Enum with values {'P', 'F'} (Premium, Free)).
    By default, every user has free membership.
    For the above attributes, think about which of them can be NULL and which can't be. Add the NOT NULL constraint accordingly.

Add any other constraints you think are realistic and necessary.

Q2) See the description of the above table by executing the desc <table name> command. Justify the 'Not Null' constraint automatically applied on the primary key attribute.
Q3) Make the following modifications to the database:

1. Change the name of column 'Membership Category' to 'Account_Type' in the Users table.
2. Remove the nationality attribute from the Artists table.
3. Change the number of hours streamed to a decimal type with a precision of 6 and scale as 2. If you had already made it a floating point value, simply change the precision and scale. (If you don't know the terms precision and scale in this context, check MySQL documentation for decimal datatype).

Q4) **try mysql>** show create table Albums;
What could you see?

Q5) Insert the following entries into the corresponding tables:

Albums:

1) 39391, A Thousand Suns, Linkin Park, 128, Warner Bros, Rock, 2016/06/17
2) 14573, Overexposed, Maroon 5, 452, A&M, Funk, 2016/11/11
3) 24573, Overexposed, Maroon, 400, A&M, Funk, 2016/11/31 //observe the error on entering the wrong date.

Artists:

1) 100, Maroon 5, 2007/11/13, NULL, 16000123
2) 101, Linkin Park, 2000/02/14, 2017/07/20, 21174672
3) 102, Eminem, 2001/01/15, NULL, 14093412
4) 103, Coldplay, 2002/05/13, NULL, 18000992

Users:

1) 10003, Anurag Dwivedi, adwivedi@gmail.com, F
2) 10004, Sana Kothari, sana123@gmail.com, P
3) 10005, Vishal Ghosh, vishy@gmail.com

Write SQL query to do the following:

Q6) Display the distinct labels from the Albums table. What is the difference between a select Label and a select distinct Label?

Q7) List all premium users.

Q8) List all album names by Maroon 5 with the genre Rock.

Q9) BITSGians have developed an interest in Rock music. Increase the hours streamed of all Rock albums by 200. Display the table after modification.

Q10) Add a column Duration to the Artists table with NOT NULL constraint.

Q11) Delete only those rows where HoursStreamed is greater than 400.

Q12) Display using select query (do not update) the HoursStreamed and name of the Album if HoursStreamed is increased by 20% on all albums. //Hint: an arithmetic operation in select query

Q13) Increase the number of followers of the Artist with ID 100 by 200.

Q14) Update all the records in the Artists table with duration as the difference between ActiveSince date and today's date information. Write only one query. //Hint: use CURDATE() and datediff().

Q15) Violate some of the constraints like Not Null, primary key, and unique and study the errors.

Q16) Display today's date. What is the difference between sysdate() and curdate()?

Q17) Export the database into a .sql file. Find the path of exported .sql file.

Q18) Import the database into a new database called 'db212BITSGaana'. Test by show database.

Q19) Drop all three tables in db212BITSGaana database. Drop the database db212BITSGaana. Test using show tables or use <database name>.

Q20) Are the table names, database names, and keywords in the query like insert, alter, and case sensitive?

Q21) When to use the keyword 'table' in the query and when not to use it?