Birla Institute of Technology & Science, Pilani, K. K. BIRLA Goa campus
Database Systems (CS F212)
Second Semester 2019-2020
Lab-1
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) Create a database called 'db212BITSStream'. In this database, 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 (Primary Key)
    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 above table by executing desc <table name> command. Justify 'Not Null' constraint automatically applied on 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 number of hours streamed to a decimal type with precision 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, Linkin Park, A Thousand Suns, 128, Warner Bros, Rock, 2016/06/17
2) 14573, Maroon 5, Overexposed, 452, A&M, Funk, 2016/11/11
3) 24573, Maroon, Overexposed, 400, A&M, Funk, 2016/11/31

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 select Label and select distinct Label?

Q7) List all premium users.

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

Q9) BITSGians have developed 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 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: arithmetic operation in select query

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

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

Q15) Violate some of the constraints like Not Null, primary key, 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 find and email the .sql file it to yourself.

Q18) Drop all the three tables. Drop the database. Test using show tables or use db212BITSStream.

Q19) Import the database into a new database called 'db212BITSGaana'. Test by show database.

Q20) Are the tablenames, database name, keywords in the query like insert, alter, case sensitve?

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

Challenge

Q22) Use db212BITSGaana database and write a query to display name of the albums with genre Rock and genre Funk.