**Birla Institute of Technology & Science, Pilani, K. K. BIRLA Goa campus**
**Database Systems (CS F212)**
**Second Semester 2021-2022**
**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
    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, 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