Assignment 3: Data Definition and Data Modification Language

MySql Commands

1. To login from linux shell use:
   mysql -u idbms4 -p
   Password: idbms4_2022
2. List all databases on the sql server
   show databases;
3. Create a database on the sql server
   create database [yourrollNo_databasename];
4. Switch to a database
   use [db_name];
5. To see all the tables in the database
   show tables;
6. To see databases's field format
   describe [tableName];
7. Returns the columns and column information pertaining to the designated table.
   show columns from [tableName];

Some useful commands related to Alter table.

Refer to slides for INSERT, SELECT, DELETE and UPDATE.

1. **Rename column**
   ALTER TABLE table_name
   CHANGE COLUMN old_column_name new_column_name DATA TYPE;
2. **Delete all records of a table**
   DELETE FROM table_name;
3. **Rename table name**
   ALTER TABLE table_name
   RENAME to new_table_name;
4. **Change datatype of column**
   ALTER TABLE table_name
   MODIFY column_name datatype;
5. **Add new column in table**
   ALTER TABLE table_name ADD new_column_name datatype;
6. **Add constraints on column**
   ALTER TABLE table_name ADD constraint;
7. **Delete column**
   ALTER TABLE table_name DROP COLUMN column_name;

Create a database named University having three tables namely, Instructor, Department, and Course.

Decide the appropriate data type for each attribute of the tables.

1. Instructor(*ID, name, dept_name, salary*)

2. Department(*dept_name, building, budget*)

3. Course(*course_id, title, dept_name, credits*)

After creating the database, perform the following operations on the created tables.

1. Rename *ID* attribute of the Instructor relation as *instructor_ID.*
2. Add *instructor_ID* as the primary key in Instructor relation.
3. Remove *instructor_ID* as the primary key in Instructor relation (Add it again as it would be required further in assignment).
4. Add *dept_name, course_id* as the primary key in Department and Course relations respectively.
5. Add constraint in the *dept_name* of Department relation, so that it can contain only 6 values (‘CCE’, ‘MME’, ‘CSE’, ‘ECE’,’PHY’,’BIO’).
6. Add constraint FOREIGN KEY with delete cascade to *dept_name* of the course relation referencing to *dept_name* of Department relation.
7. Add constraint FOREIGN KEY with delete cascade to *dept_name* of the instructor relation referencing to *dept_name* of Department relation.
8. Add column *email_id* to the Instructor relation.
9. Add a UNIQUE constraint to the *email_id* column in the Instructor relation.
10. Add column *dob* to the relation Instructor, where *dob* column is of DATE datatype.
11. Ensure that the column *budget* of Department relation has positive values only. The default value for this column must be 0.
12. Insert 5-6 records in all the relations containing names of all six departments.
13. Show the *name* and *email_id* of all the instructors of Instructor relation.
14. Set the budget of ‘CSE’ *department* of Department relation to 8,000,000.
15. Change the datatype of *dob* column of Instructor relation to varchar(30).
16. Delete the record of ‘BIO’ *department* from Department relation. (If you get an error, analyse it and modify the integrity constraint of Instructor or Course relation). Try to successfully delete the record of ‘BIO’ *department* from Department relation again.
17. Update the value of ‘PHY’ to ‘CHE’ in Department relation. (If you get an error, analyse it and modify the integrity constraint of Instructor or Course relation). Try to successfully update the value again.
18. Delete all the records of Course relation using TRUNCATE or DELETE command.