CPE241 Database Systems

Week-6 Assignment: SQL Data Definition Language

Submission Deadline: March 10 2024, 23:59

- 1. Open Command Prompt/Terminal and access MySQL/MariaDB using command line. Login with root or any user that has permission to create database.
- **2.** Type SHOW DATABASES; to see what databases you have. Screenshot your result. If the database conference already exists, please delete it first using command below.

```
In [ ]: DROP DATABASE IF EXISTS conference;
```

3. Create a database named conference with utf8 character set and utf8_general_ci collation using the following command. After the command is executed, take a screenshot of the result shown on your screen.

```
In [ ]: CREATE DATABASE conference
    DEFAULT CHARACTER SET utf8
    DEFAULT COLLATE utf8_general_ci;
```

- 4. Execute USE conference to select the database conference as the one you are going to operate with.
- 5. Create a table named tb_account . Then, show your result.

6. Change the name of attribute _id to account_id by using the following command.

```
In [ ]: ALTER TABLE tb_account CHANGE _id account_id int(11);
```

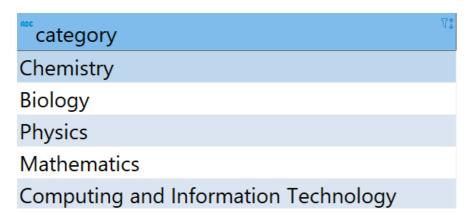
7. Next, create another table named tb_paper . Set _id as the primary key of the table. Show your CREATE statement and screenshot of the result.

Field T	ype	Null	Key	Default	Extra
account_id in account_id in created to to category in category in category in correspond in correspond in correspond in category to abstract to correct c	Int(11) Int(11) Int(11) Inmestamp Int(11) Int(11) Int(11) Int(11) Int(11) Int(11) Int(11) Int(11) Int(11) Int(11)	NO NO YES YES NO NO NO NO NO NO NO NO	PRI	NULL CURRENT_timestamp() 0000-00-00 00:00:00 NULL NULL NULL NULL NULL NULL NULL NU	

- 8. Next change the name of _id to paper_id . Show your statement and result.
- **9.** Add account_id as another primary key by using an ALTER TABLE statement. What is the result? and why? For example, ALTER TABLE statement for adding a primary key is
- In []: ALTER TABLE table_name ADD PRIMARY KEY (column_name);
 - 10. Next, try to use following command, show your result. What is it used for?
- In []: ALTER TABLE tb_paper DROP PRIMARY KEY, ADD PRIMARY KEY(paper_id, account_id);
 - **11.** Use a SHOW COLUMNS statement to show the list of columns in tb_account . Show your result. Example statement:
- In []: SHOW COLUMNS from table_name;
 - **12.** Use SHOW COLUMNS again to show the information of the columns in tb_paper . Show captured screen. What is the primary key of the table?
 - **13.** Delete modified, present, and correspond. Show your command and captured screen of the table after deleting columns.

Example statement:

- In []: ALTER TABLE table_name DROP COLUMN column_name;
 - **14.** Change the data type of status from int(11) to Boolean . Show your command and captured screen. Note that the status column is used for storing either 0 (False) or 1 (True). Example statement:
- In []: ALTER TABLE table_name MODIFY column_name new_type NOT NULL;
 - **15.** After Step 14, what is the datatype of the status column? Why is the data type of the column not Boolean? Is it acceptable or valid for storing the status information?
 - **16.** Execute following statement. Show your result. What is the command used for?
- In []: ALTER TABLE tb_paper ADD comment VARCHAR(60) AFTER abstract;
 - 17. Create a table named tb_category with two attributes; category_id and category . The primary key is category_id and its data type is int(11) with AUTO_INCREMENT . And the data type of category is TEXT . Show your CREATE statement.
 - **18.** Add the list of categories as shown in the figure below into tb_category using an INSERT statement. Show your command.



- 19. Show all the data in tb_category by using SELECT * FROM tb_category;
- **20.** Add a foreign key constraint on the category column of tb_paper table which points to the category_id column of the tb_category table by using ALTER TABLE statement.

 Example statement:
- In []: ALTER TABLE table_name ADD FOREIGN KEY
 (column_name) REFERENCES
 reference_table(reference_column);

- **21.** Add a foreign key constraint on the account_id column of tb_paper table which points to the account_id column of tb_account table. Show your statement and captured result.
- **22.** Execute statement below. Show your result. What is it used for? What is the constraint name of the foreign key of tb_paper table?

```
In [ ]: SELECT COLUMN_NAME, CONSTRAINT_NAME, REFERENCED_COLUMN_NAME, REFERENCED_TABLE_NAME
FROM information_schema.KEY_COLUMN_USAGE
WHERE TABLE_NAME = 'tb_paper';
```

23. Use the following statement. Note that your have to replace constraint_name with the actual constraint name of the foreign key of tb_paper table found in Step 22. Show your result.

```
In [ ]: ALTER TABLE tb_paper
DROP FOREIGN KEY constraint_name,
ADD CONSTRAINT `fk_account_id` FOREIGN KEY (`account_id`) REFERENCES `tb_account` (`account_id`);
```

- **24.** Then, repeat the same statement in Step 22 again. Do you see any changes? What is it? What is the statement in Step 23 used for?
- **25.** Insert any dummy data into the tables tb_account and tb_paper by using INSERT statement.

```
In [ ]: INSERT INTO table_name (column1, column2, column3, ...) VALUES (value1, value2, value3, ...);
```

- **26.** Then, use SELECT * FROM tb_account; Do you see your inserted data?
- 27. Delete the database. Show your captured screen