


National University of Computer and Emerging Sciences, Lahore Campus

	Course:	Database Systems (Lab)	Course Code:	CL203
	Program:	BS (Computer Science)	Semester:	Spring 2019
	Duration:	2 Hours	Total Marks:	60
	Paper Date:	19-Mar-2019	Weight	20%
	Section:	All	Page(s):	3
	Exam:	Lab Midterm Exam	Reg. No	

EXAM_NO_1

Important Instructions (Please read them before attempting the exam):

- Submit **ONLY .sql File** in this format (All parts of a question in one SQL File **named** with your **Roll Number** e.g., L13-4152). Do not zip your file.
- Write question 1's solution in one file and questions 2's solution in another file.
- Copy the schema for question 2 from the following path \\cactus\xeon\Ishaq\ Database Systems- spring 2019\Lab Material\mid_schema.sql . Put the sql file in your D drive, and then **unplug the ethernet cable**.
- **Plagiarism** will result in **F grade** in lab.
- No cell phones are allowed. Sharing of **USBs** or any other items is **not allowed**.
- Submission path will be announced soon.
- **Write your roll number on this paper, and submit this paper to invigilator before leaving the lab.**

SQL Server Login Details:

- **Server: localhost**
- **username: sa**
- **password: fstky2e4mdt (OR) 12345678**

Question#1

- a. **Write DDL script to create all the required tables. Also add primary keys in tables. (Do not create foreign key constraints inside Create Table statements) (10 marks)**

Book(bookId, bookName, price, publisherId)

Publisher (publisherId, publisherName)

Genres (genreId, genreName)

BookGenre (bookId, genreId)

- b. **Create foreign constraints using alter table statement. Also consider the following constraints for foreign key: (4 marks)**

1. If any primary key is updated, then all of its corresponding foreign keys should also be updated.
2. If a book is deleted, then its information should also be deleted or updated from any other table referencing it.
3. If a publisher is deleted, then the publisherId of all books made by the deleted publisher is set to null.
4. A genre should not be deleted if a book has that genre.

c. Alter the tables so that the following requirements are fulfilled: (Use alter table statement) (5 marks)

1. A new column "yearPublished" of type int is required in movie table.
2. The year of a book cannot be greater than the current year.
3. The Name of each book needs to be unique.
4. The price of a book must be greater than 0.
5. Publisher name cannot be null.

Question#2 Write the SQL solution of the following questions. Clearly mention the part number above each SQL solution in comments. (The schema and its explanation are given on the next page.)

- a. Create a view to display the count of total number of questions asked in each category. (5 marks)
- b. Create a stored procedure which displays the nth least answered question along with its category and user who asked that question. N is passed as input parameter. (Hint: you may need to use top statement: Select top (@n) column1, column2...) (10 marks)
- c. Write a query to display the id of those users who have asked at least 1 question in each category. (5 marks)
- d. Write a query to display those user id pairs who are mutually following each other (u1 is following u2, and u2 is following u1). (7 marks)
- e. For every answer, write a query to display the answer id, the answer statement, user id and date of birth of the user who wrote that answer. (5 marks)
- f. Create a stored procedure which takes as input parameter the category name and the userid and returns the count of answers that the given user has written in the given category of questions. Return the result in an output parameter. Also write code to execute the procedure and display the result on the screen. (8+1 marks)

Schema Explanation:

1. The schema is about a forum where users can ask questions and give answers to different questions. (The forum is like Quora and Yahoo Answers.)
2. Each question has a category, such as programming, International Relations, medical, etc. One question can have only one category.
3. A user can give answers to different questions. One user can give only one answer to a particular question.
4. One question can be answered by many users.
5. A user can follow other users. Similarly, he can be followed by other users.

