National University of Computer and Emerging Sciences, Lahore Campus

	Course:	**Database Systems Lab**	**Course Code:**	**CL2005**
	Program:	**BSSE**	**Semester:**	**Spring 2024**
	Duration:	**1 hour 40 Minutes**	**Total Marks:**	**35**
	Paper Date:	**Mar 25, 2024**	**Weight**	**-**
	Section:	**BSSE-4B**	**Page(s):**	**2**
	Exam:	**Mid Exam**		
Instruction/Notes:	Understanding the question statement is a part of your exam. Plagiarism in any form shall not be tolerated and will result in F grade. Use SQLManagementServer Studio for solving this paper. No cell phones are allowed.			

PART - I

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

Machine (machineId, name, companyId)
Company (companyId, name, locationId)
Location (locationtId, locationName)
Project (projectId, machineId)

b. Create foreign constraints using alter table statements. Also, consider the following constraints for foreign key: (4 marks)

1. If a machine is assigned to a project, then the machine cannot be deleted.
2. If a company is updated, then it is updated for the machine as well.
3. If a location is deleted, then the locationtId of all companies in the deleted location is set to null.

PART - II - Use the schema given in file to solve the following

Tables:

Readers (readerId [PK], email, name, joinDate)
Books (bookId [PK], title, publicationYear, authorId)
Authors (authorId [PK], name, nationality)
Reviews (reviewId [PK], bookId [FK], readerId [FK], rating, reviewDate, content)
Favorites (readerId [FK], bookId [FK], dateAdded)

Use Subqueries to solve the below queries. (9 marks)

***Note**: Do not use Joins for the following two questions*

1. Retrieve the authors who have not received any reviews:
2. Find the readers who have given the lowest rating among all their reviews:

Write queries for the below questions (15 marks)

1. Identify the authors who have the highest average rating for their books, considering only books with at least 5 reviews:
2. Write a query to find the book with the highest number of reviews and display the book title, author's name, and the count of reviews.
3. Show the top 3 authors with the most prolific output in terms of the number of books published, along with the count of books they have published since the year 2000.