PART A

EXPERIMENT NO. 7

A.1 AIM: - Designing the database for your system

A.2 Theory

The design process

The design process consists of the following steps:

- **Determine the purpose of your database**

This helps prepare you for the remaining steps.

- **Find and organize the information required**

Gather all of the types of information you might want to record in the database, such as product name and order number.

- **Divide the information into tables**

Divide your information items into major entities or subjects, such as Products or Orders. Each subject then becomes a table.

- **Turn information items into columns**

Decide what information you want to store in each table. Each item becomes a field, and is displayed as a column in the table. For example, an Employees table might include fields such as Last Name and Hire Date.

- **Specify primary keys**

Choose each table's primary key. The primary key is a column that is used to uniquely identify each row. An example might be Product ID or Order ID.

- **Set up the table relationships**

Look at each table and decide how the data in one table is related to the data in other tables. Add fields to tables or create new tables to clarify the relationships, as necessary.

- **Refine your design**

Analyze your design for errors. Create the tables and add a few records of sample data. See if you can get the results you want from your tables. Make adjustments to the design, as needed.

- **Apply the normalization rules**

Apply the data normalization rules to see if your tables are structured correctly. Make adjustments to the tables, as needed.

PART B

(PART B: TO BE COMPLETED BY STUDENTS)

(Students must submit the soft copy as per the following segments within two hours of the practicals. The soft copy must be uploaded on Blackboard LMS or emailed to the concerned Lab in charge Faculties at the end of practical; in case Blackboard is not accessible)

Roll No: A016 A038	Name: Varun K, Yashasvi T
Class: Btech CsBs 4th Year	Batch: 1
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Grade:	

B. *(Students have to paste the screenshots)*

Users Table

Field	Data Type	Constraints
user_id	INT	PRIMARY KEY
username	VARCHAR	NOT NULL
password	VARCHAR	NOT NULL
email	VARCHAR	NOT NULL
user_type	VARCHAR	NOT NULL

Courses Table

Field	Data Type	Constraints
course_id	INT	PRIMARY KEY
course_name	VARCHAR	NOT NULL
course_desc	VARCHAR	NOT NULL
course_code	VARCHAR	NOT NULL
instructor	VARCHAR	NOT NULL

Lessons Table

Field	Data Type	Constraints
lesson_id	INT	PRIMARY KEY
lesson_name	VARCHAR	NOT NULL
lesson_desc	VARCHAR	NOT NULL
lesson_num	INT	NOT NULL
course_id	INT	FOREIGN KEY

Assessments Table

Field	Data Type	Constraints
assessment_id	INT	PRIMARY KEY
assessment_name	VARCHAR	NOT NULL
assessment_type	VARCHAR	NOT NULL
course_id	INT	FOREIGN KEY

Progress Table

Field	Data Type	Constraints
progress_id	INT	PRIMARY KEY
user_id	INT	FOREIGN KEY
course_id	INT	FOREIGN KEY
lesson_id	INT	FOREIGN KEY
assessment_id	INT	FOREIGN KEY
score	FLOAT	NOT NULL