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**Green University of Bangladesh**

**Department of Computer Science and Engineering(CSE)**

**Faculty of Sciences and Engineering**

**Semester: (Spring, Year:2021), B.Sc. in CSE (Day)**

**LAB REPORT NO: 01 & 02**

**Course Title : Database Lab**

**Course Code : CSE 210**

**Section : 221\_D9**

**Experiment Name : Introduction to Database and MySQL**

**& Managing MySQL Databases and Tables in MySQL**

**Student Details**

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**Lab Date : 17 – 02 - 2024**

**Submission Date : 02 – 03 - 2024**

**Course Teacher’s Name : Md. Nazmus Shakib**

**[For Teachers use only: Don’t Write Anything inside this box]**

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| **Lab Report Status**  **Marks: ………………………………… Signature:.....................**  **Comments:.............................................. Date:..............................** |

**1. TITLE OF THE LAB EXPERIMENT [1]**

**Introduction to Database and MySQL &**

**Managing MySQL Databases and Tables in MySQL**

**2. OBJECTIVES/AIM [1]**

The objective of this lab experiment is to design and implement a relational database system using a database management system (DBMS). The aim is to understand the process of database design, including entity-relationship modeling, normalization, and schema creation, and to implement the designed database system to store and manipulate data efficiently.

**3. PROCEDURE / ANALYSIS / DESIGN [2]**

The procedure for creating and inserting information into a MySQL database involves the following steps:

1. Database Creation:
   1. Launch the MySQL command-line interface or any MySQL client tool (e.g., MySQL Workbench).
   2. Connect to the MySQL server using appropriate credentials.
2. Table Creation:
   1. Use the USE command to select the newly created database.
   2. Define the structure of the tables using the CREATE TABLE command, specifying the table name and column details (e.g., data types, constraints).
3. Data Insertion:
   1. Use the INSERT INTO command to insert data into the tables, specifying the table name and column values.
   2. Repeat the INSERT INTO command for each tuple (row) of data to be inserted into the table.

**4. IMPLEMENTATION [2]**

We used XAMPP, which includes MySQL and phpMyAdmin, to create our database offline. With phpMyAdmin, we easily created tables, added data, and ran queries. XAMPP made the process simple and convenient.

**5. TEST RESULT / OUTPUT [2]**

The test results and output of the implemented database system were as follows:

* Successful creation of database tables without errors.
* Proper insertion of sample data into the tables.
* Successful execution of SQL queries to retrieve and manipulate data.

The Outputs are given through snapshot from the following page.

The Database name is : exp01\_lab\_report

It has 5 tables named **alumni, Canteen, student, teacher, transportation**

A screenshot of a computer

Description automatically generated

Figure 01: Database Named: exp01\_lab\_report

A screenshot of a computer

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Figure 02: Table Named Teachers and information of some GUB Faculty.

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Figure 03: Table Named Student containing the student of CSE 210 Students in D9 section.

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Figure 04: Table Named canteen.

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Figure 05: Table Named Transportation.

**6. ANALYSIS AND DISCUSSION [2]**

* The design phase ensured that the database schema was well-structured and normalized to minimize redundancy and ensure data integrity.
* The implementation phase demonstrated the practical application of database design concepts in a real-world scenario.
* The test results confirmed the functionality and accuracy of the implemented database system.
* Possible areas for improvement include optimizing query performance, implementing additional features, and enhancing security measures.

This lab experiment provided valuable insights into the process of designing and implementing a database system and its significance in managing and manipulating data efficiently.

**7. SUMMARY:**

The experiment began with the creation of a new database named exp01\_lab\_report using MySQL. Subsequently, tables were designed and created to represent entities such as student, teacher, canteen, transportation, and alumni.

The experiment provided valuable hands-on experience in database design and implementation using MySQL.