EAST WEST UNIVERSITY

Summer – 2022

Lab Report

Course Code: CSE464

Course Title: Advance database

Section: 02

Project Title: EWU Club Management

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EWU Club Management

Introduction

EWU Club management is a software which allows students to register for joining any club in East West University. The software is implemented using PHP language and user input form is designed using HTML/CSS. MongoDB NoSQL database has been used as backend where data inserted in the form gets automatically updated in the student table.

Project specification

EWU Club management can be accessed by all students of East West University, where they can view all information about all the club present and can fill up the student form which gets automatically updated in the database and the admin then choose/assign the students different available position in the club.

- **Actors**
  - ***Students***
    - ID, Name, Department, Mobile number and email.
  - ***Admin***
    - Modify and assign membership/position of students for each club.

- **Software Used**
  - ***Operating system***
    - We have chosen Windows operating system for its best support and user-friendliness.
  - ***Database***
    - To save student information we have chosen MongoDB, an open-source non-relational database management system.
  - ***Language***
    - PHP
  - ***Web Server***
    - XAMPP is used which is a free and open-source cross-platform web server solution stack package.

MongoDB

MongoDB is a NoSQL database system (Non-Relational Database Management System) which is used for high-volume data storage. It is an open-source document-oriented database. It uses dynamic schemas which means we do not have to define the structure of the table (rows and columns) beforehand and can also modify the structure later if needed. NoSQL databases

are more scalable as it does not run on a single server, it scales by adding more and more servers which increases its performance and flexibility. MongoDB currently supports all popular programming languages like C, C++, Rust, C#, Java, Node.js, Perl, PHP, Python, Ruby, Scala, Go, and Erlang.

Difference between MongoDB and MySQL:

- MongoDB represents data as of JSON documents whereas MySQL represents data in tables and rows.
- MongoDB, supports dynamic schema whereas MySQL has defined tables and columns its schema cannot be changed.
- MongoDB doesn't support JOIN and foreign key but MySQL supports both the operations.
- MongoDB uses JavaScript as query language while MySQL uses the Structured Query Language (SQL).
- It has the ability to handle large unstructured data compared to MySQL.
- MySQL is a bit complex compared to MongoDB because of the schema of tables, foreign keys, normalization, etc.

Advantages:

1. MongoDB has high performance as it stores most of the data in the RAM so data retrieval while executing queries is much faster.
2. It has high speed and higher availability as it uses replication which increases data availability
3. MongoDB uses a simple query syntax that is much easier than SQL.
4. It is faster and easier to set up than RDBMS and offers modern JavaScript frameworks.
5. It is flexible as it allows dynamic schema (not predefined).
6. MongoDB uses sharding (data is divided and distributed to multiple servers) while handling large datasets which increases scalability.

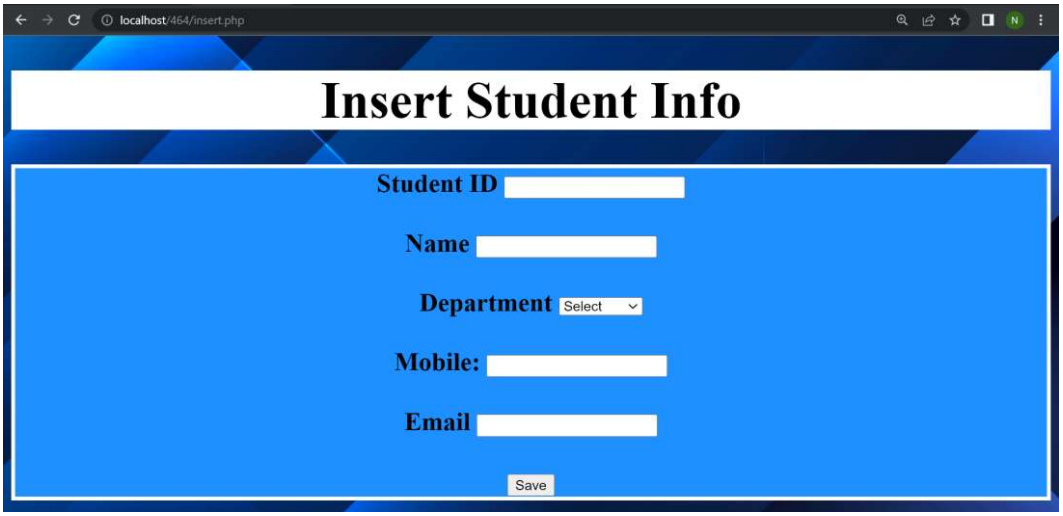
Disadvantages:

1. MongoDB may lead to corruption of data as it is not strong ACID (Atomic, Consistency, Isolation & Durability) when compared to many other RDBMS systems.
2. Transactions using MongoDB are complex
3. It does not support joins operations.
4. There are many duplications of data.
5. MongoDB requires a high amount of storage due to the lack of joins functionalities which increases data redundancy.

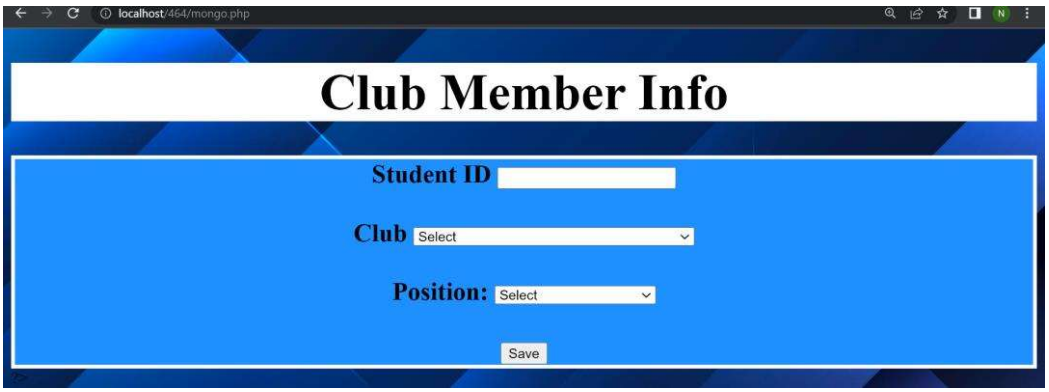
Design

- **Home page**

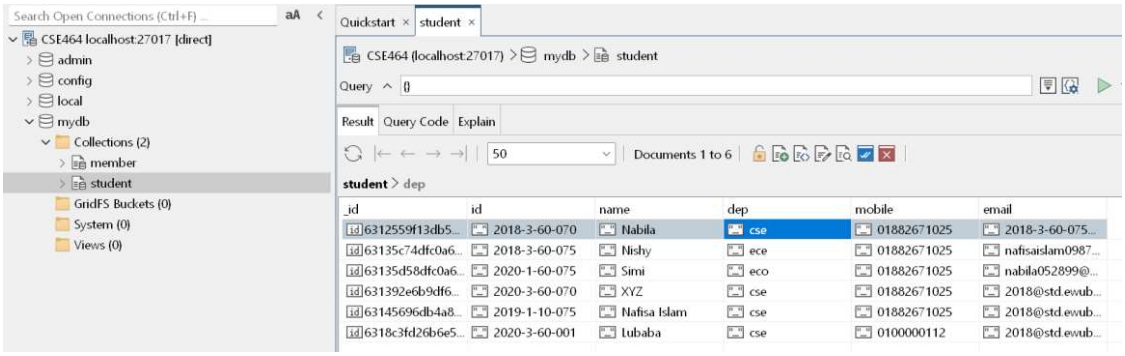
- **Student form**



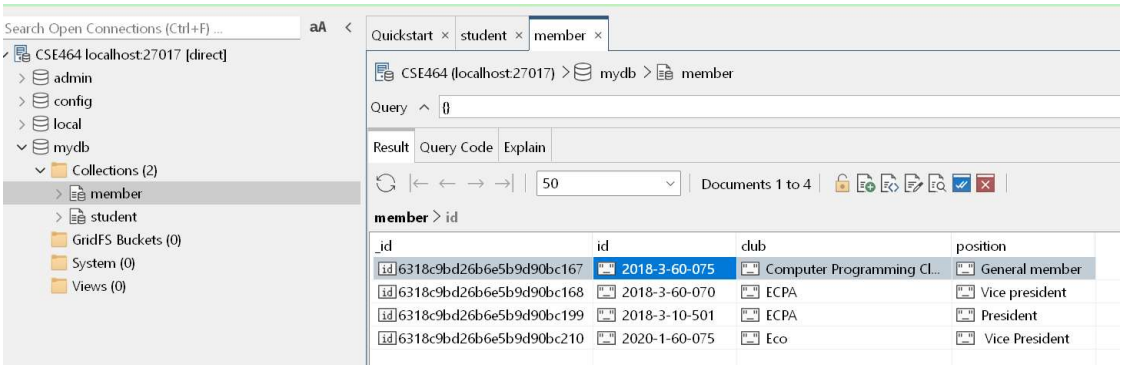
- **Admin panel**



- **Student Table**



- **Member Table**



References

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3. https://www.knowledgenile.com/blogs/pros-and-cons-of-mongodb/