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**MIT WORLD PEACE
UNIVERSITY** | PUNE

TECHNOLOGY, RESEARCH, SOCIAL INNOVATION & PARTNERSHIPS

School of Computer Engineering and Technology
Academic Year: 2023-2024 Sem V
Fullstack Development

Lab Assignment : 07

Title: Develop a full stack web application using MERN stack to perform CRUD operations.

Prepared By
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Roll No:-PA12
Batch A1
November 23,2023

Aim: Develop a full stack web application using MERN stack to perform CRUD operations.

Objectives:

1. To develop full-stack web projects using the MERN stack.
2. To learn database connectivity using fetch api.
3. To perform insert, update, delete and search operations on database.

Theory:-

What is MERN Stack?

The MERN stack is a comprehensive technology stack used for developing web applications. The term "MERN" is an acronym representing the four main technologies:

- **MongoDB:** A NoSQL database that stores data in a flexible, JSON-like format.
- **Express.js:** A web application framework for Node.js, designed to simplify the process of building web applications and APIs.
- **React.js:** A JavaScript library for building user interfaces, focusing on creating interactive and reusable components.
- **Node.js:** A JavaScript runtime that executes server-side code, enabling the server to handle requests and responses.

MERN stack's integration of MongoDB, Express.js, React.js, and Node.js allows developers to use a single language, JavaScript, for both server-side and client-side development.

Use of Fetch API:

The Fetch API is a modern JavaScript API that provides an interface for making network requests. It simplifies the process

of handling HTTP requests and responses. Key aspects of the Fetch API include:

- **Promise-Based:** Fetch uses Promises, making it easier to work with asynchronous operations.
- **Cleaner Syntax:** It offers a more straightforward and cleaner syntax compared to older approaches like XMLHttpRequest.
- **Built-in JSON Support:** Fetch facilitates the handling of JSON data, providing convenient methods for working with responses.

FAQ:

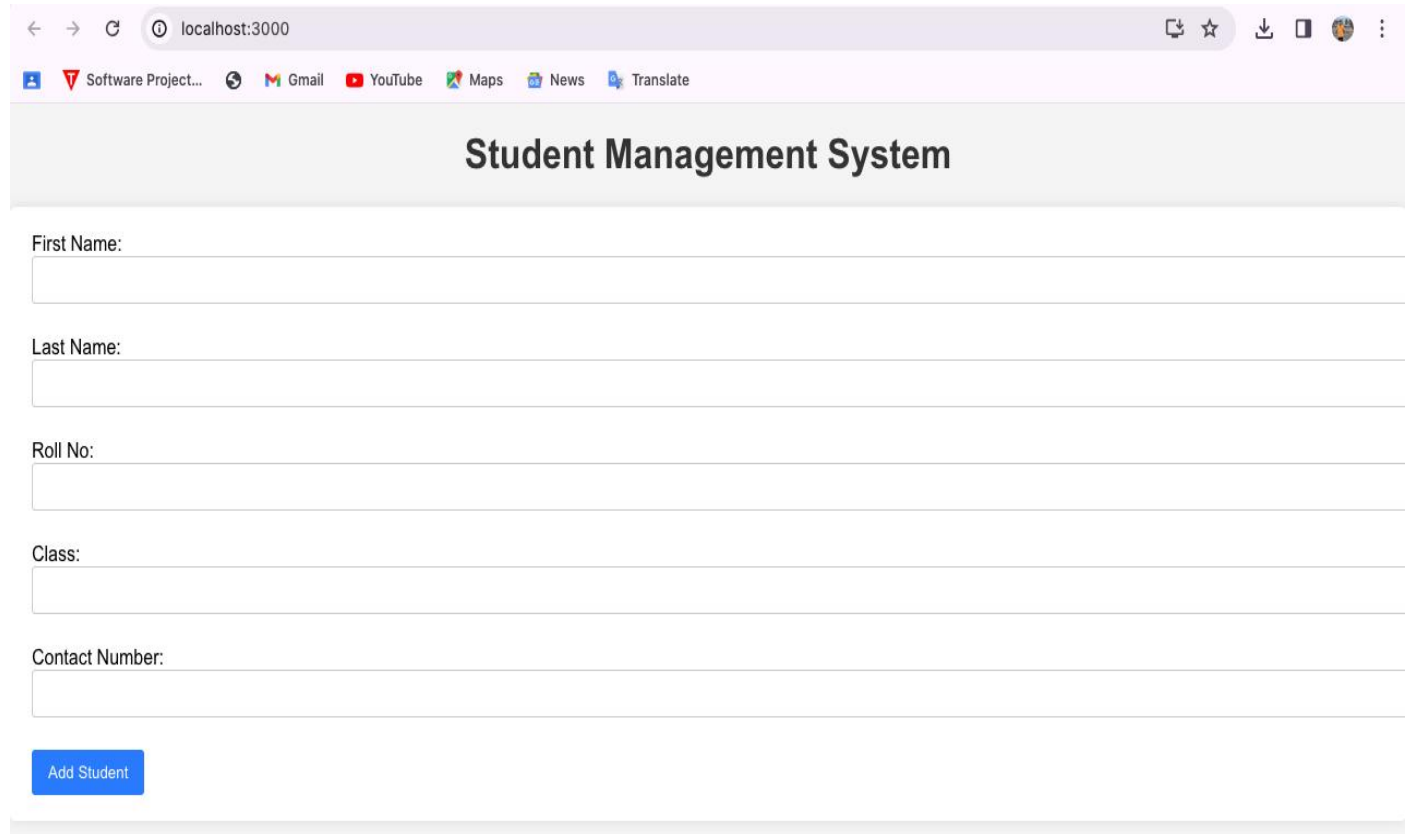
What makes MERN stack the fastest-growing tech stack?

The MERN stack's rapid growth can be attributed to several factors:

- **JavaScript Unification:** MERN allows developers to use JavaScript throughout the entire development stack, providing a seamless and consistent experience.
- **Flexibility and Scalability:** MongoDB's flexible schema and the overall stack's scalability make it suitable for a wide range of project sizes and requirements.
- **React's Component-Based Architecture:** React's component-based architecture promotes modular and reusable code, contributing to faster development cycles.
- **Active Community Support:** Each component of the MERN stack has a large and active community, fostering collaboration, knowledge sharing, and continuous improvement.
- **Open Source Nature:** The MERN stack is built on open-source technologies, making it accessible and encouraging a collaborative and innovative development environment.

Implementation Screenshots:-

Frontend:-



The screenshot shows a web browser window at localhost:3000. The page title is "Student Management System". Below the title, there are five input fields labeled "First Name:", "Last Name:", "Roll No:", "Class:", and "Contact Number:". At the bottom left of the form area, there is a blue button labeled "Add Student".

Student Display:-

First Name	Last Name	Roll No	Class	Contact Number	Actions
Saurabh	Jadhav	PA12	TY BTECH CSF	7858525852	<button>Delete</button> <button>Modify</button>
Avishkar	Pokale	PA12	TY BTECH CSF	7858525852	<button>Delete</button> <button>Modify</button>

Delete Student:-

localhost:3000

Software Project... Gmail YouTube Maps News Translate

Student Management System

First Name:

Last Name:

Roll No:

Class:

Contact Number:

Add Student

First Name	Last Name	Roll No	Class	Contact Number	Actions
Avishkar	Pokale	PA12	TY BTECH CSF	7858525852	<div>Delete</div> <div>Modify</div>

Modify Student:-

BTech.Third-Year/DF x Fwd: Announcement x FSD_LabAssignment x React App x New Tab x React App x

localhost:3000

Software Project... Gmail YouTube Maps News Translate

Student Management System

First Name:

Last Name:

Roll No:

Class:

Contact Number:

Add Student

Update Student

Update First Name:

Avishkar

Update Last Name:

Pokale

Update Roll No:

PA12

Update Class:

TY BTECH CSF

Update Contact Number:

7858525852

Update

Cancel

First Name	Last Name	Roll No	Class	Contact Number	Actions
Avishkar	Pokale	PA12	TY BTECH CSF	7858525852	<div>Delete</div> <div>Modify</div>

MONGO DASHBOARD:-

cloud.mongodb.com/v2/65465c0da074885041228dd5#/metrics/replicaSet/655876bac50ba451919c22fd/explo...

Atlas

Saurabh's O...

Access Manager

Billing

All Clusters

Get Help

Saurabh

Project 0

Data Services

App Services

Charts

Overview

DEPLOYMENT

Database

Data Lake

SERVICES

Device Sync

Triggers

Data API

Data Federation

Search

Stream Processing

SECURITY

Quickstart

Backup

Database Access

Network Access

Advanced

Search Namespaces

CyberGuardian

Mern-Lab07

students

STORAGE SIZE: 36KB

LOGICAL DATA SIZE: 148B

TOTAL DOCUMENTS: 1

INDEXES TOTAL SIZE: 36KB

Find

Indexes

Schema Anti-Patterns

Aggregation

Search Indexes

INSERT DOCUMENT

Filter

Type a query: { field: 'value' }

Reset

Apply

Options

QUERY RESULTS: 1-1 OF 1

_id: ObjectId('6563a092f681ec076264d6e4')

firstName: "Avishkar"

lastName: " Pokale"

rollNo: "PA12"

class: "TY BTECH CSF"

contactNumber: "7858525852"

__v: 0

System Status: All Good

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