

# Data Commerce

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## Abstract

MERN based forecasting mechanisms have proved their significance to anticipate in perioperative outcomes to improve the decision making on the future course of actions. The MERN models have long been used in many application domains which needed the identification and prioritization of adverse factors for a threat.

Several prediction methods are being popularly used to handle forecasting problems. This study demonstrates the capability of MERN models to forecast the number of upcoming patients affected by COVID-19 which is presently considered as a potential threat to mankind. In particular, standard forecasting models,

- 1) such as linear regression (LR),
- 2) least absolute shrinkage
- 3) selection operator (LASSO),
- 4) support vector machine (SVM),
- 5) exponential smoothing (ES)

Three types of predictions are made by each of the models, such as the number of newly infected cases, the number of deaths, and the number of recoveries in the next 10 days.

## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction

In an era characterized by rapid technological advancements and a dynamic educational landscape, our course selling project emerges as a pioneering platform designed to empower learners globally. This report delves into the intricacies of our venture, exploring the market dynamics, platform features, instructional quality, and the holistic user experience we offer. As we navigate the realms of online education, this project aims to not only meet but exceed the evolving needs of our diverse audience. Join us on a journey where knowledge knows no bounds, and learning becomes an enriching and accessible experience for all.

#### Introduction to User Management System

**User Registration:** Users can create new accounts by providing essential information such as username, email, phone number and password.

**User Authentication:** Registered users can log in using their credentials to access their accounts and perform various actions on the platform.

**Password Management:** Users can reset or change their passwords in case they forget them or want to update their security.

**User Roles and Permissions:** Administrators can assign different roles to users, user can buy courses according their needs. And also can visit posts. User also have free content.

#### **Introduction to Admin Management System**

**Admin Registration:** Admin can create new accounts by providing essential information such as username, email, phone number and password.

**Admin Authentication:** Registered admin can log in using their credentials to access their accounts and perform various actions on the platform.

**Password Management:** Admin can reset or change their passwords in case they forget them or want to update their security.

**Admin Roles and Permissions:** Admin can block and also unblock the user according to user's behaviour or as admin's choice, admin can also manage reviews and also filter them according to high ratings. Admin can also add courses, posts, free content. Admins are also have authority to add coupons and discounts. Admin also have an authority to manage courses, posts, free content, etc.

#### **Implementation Using MERN –**

React is typically used for the frontend (client-side) of web applications, while node is commonly used for the backend (server-side). MongoDB is used for the database of this project. Here's how the Data Commerce can be implemented using this technology stack:

**Frontend (React):** React is used to create the user interface, handle user interactions, and make AJAX requests to the backend for user-related operations. Libraries and frameworks like React, chakra UI, or Axio can be employed for building responsive and interactive user interfaces.

**Backend (node):** Node is used for the server-side logic, database interactions, and user authentication. Node frameworks like Express can expedite the development process. Here's how Node is used:

**User/Admin Registration:** Node scripts handle user registration by accepting user input, validating it, and then saving user details to a database.

**User/admin Authentication:** Node handles user login sessions, verifying user credentials, and maintaining user state throughout their interaction with the application.

#### **1.2 Problem statement**

In the dynamic landscape of online education, the burgeoning demand for diverse, accessible, and high-quality courses has led to the proliferation of online course selling platforms. However, amidst this growth, several challenges persist, hindering the optimal delivery of educational content and user satisfaction.

**Content Accessibility and Diversity:** Despite the abundance of online courses, ensuring accessibility for a diverse audience with varying learning preferences and needs remains a challenge. Addressing the diverse learning styles and requirements

#### **1.3 Objective**

**User Registration:** Allow users to create new accounts within the system. This includes collecting essential information such as usernames, email addresses, and passwords.

**User Authentication:** Verify the identity of users when they log in to the system, ensuring that only authorized

users gain access.

**User Authorization:** Assign and manage user roles and permissions to control what actions and features users can access within the system. Differentiate between administrators, regular users, and other roles as needed.

**Password Management:** Enable users to change or reset their passwords when necessary. Ensure that password policies are in place to enhance security.

**User Profile Management:** Allow users to update and manage their profile information, including personal details, avatars, contact information, and other customizable data.

## 1.4 Methodology

Developing a Data commerce in MERN involves a structured methodology to ensure a secure, scalable, and user-friendly system. Below is a step-by-step methodology for creating such a system

### Project Planning and Requirements Gathering:

Define the scope of your Data Commerce. Gather user requirements, including user registration, authentication, authorization, and other features like course, post, free data etc. Decide on the technology stack, including React for the frontend and node/express for the backend.

### Database Design:

Design the database schema to store user information, roles, permissions, and other relevant data. Choose a suitable database management system (e.g., MongoDB) and create the necessary document.

### Frontend Development (React):

Create user interfaces for registration, login, user profile management, and other

## CHAPTER 2

### LITERATURE SURVEY

#### 2.1 MongoDB installation steps

MongoDB is an open-source document-oriented database that is designed to store a large scale of data and also allows you to work with that data very efficiently. It is categorized under the NoSQL(Not only SQL) database because the storage and retrieval of data in MongoDB are not in the form of tables. This is the general introduction of MongoDB now we learn **how to install MongoDB on your Windows?.**

You can install MongoDB using two different methods one is using msi and another is using zip.

**Step 1:** Go to MongoDB Download Center to download MongoDB Community Server.

**Step 2:** When the download is complete open the msi file and click the next button in the startup screen.

**Step 3:** Now accept the End-User License Agreement and click the next button:

**Step 4:** Now select the complete option to install all the program features. Here, if you can want to install only selected program features and want to select the location of the installation, then use the Custom option

**Step 5:** Select "Run service as Network Service user" and copy the path of the data directory. Click Next

**Step 6:** Click the Install button to start the installation process

**Step 7:** After clicking on the install button installation of MongoDB begins

**Step 8:** Now click the Finish button to complete the installation process

**Step 9:** Now we go to the location where MongoDB installed in step 5 in your system and copy the bin path.

**Step 10:** Now, to create an environment variable open system properties << Environment Variable << System variable << path << Edit Environment variable and paste the copied link to your environment system and click Ok.

**Step 11:** After setting the environment variable, we will run the MongoDB server, i.e. mongod. So, open the

command prompt and run the following command

**Step 12:** Now, Open C drive and create a folder named “data” inside this folder create another folder named “db”. After creating these folders. Again open the command prompt and run the following command.

**Step 13:** Now we are going to connect our server (mongod) with the mongo shell.

## CHAPTER 3

### SYSTEM DEVELOPMENT

#### 3.1 Description Data Commerce:

The future of online course selling systems is poised for dynamic growth, driven by technological advancements and evolving educational trends. Expect personalized learning paths leveraging AI, immersive technologies like VR and AR, blockchain-secured credentials, and global collaboration platforms. Micro-credentials and nanodegree programs will gain prominence, and continuous learning will become a cornerstone, supported by robust data analytics for predictive insights. Mobile optimization, ethical/sustainable course offerings, and integration with workforce platforms are on the horizon, alongside a focus on inclusive learning design and innovative content formats. These adaptations reflect a commitment to providing flexible, accessible, and cutting-edge educational experiences for learners in the rapidly evolving digital era.

#### Front-End (React)

##### User Registration:

- Create a user registration form with fields like username, email, and password.
- Use React for client-side validation to ensure that the user provides valid input.

##### Authentication:

- Implement a login form with fields for username/email and password.
- Use React to make an asynchronous request (AJAX) to the server.

##### Course and Post section:

- Create a course and post section design using react.
- Both section have details page when user click on view details.

##### Admin panel:

- Admin panel have multiple things like user management, review management, Course and post management, coupon management etc. All this designed using react.

- **3.2 Data flow diagram:**

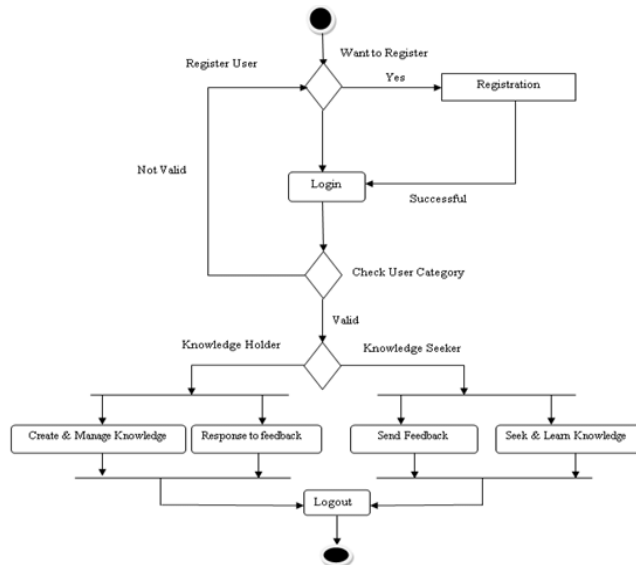


Fig. 3.2 Data flow diagram

### 3.3 Use-case diagram:

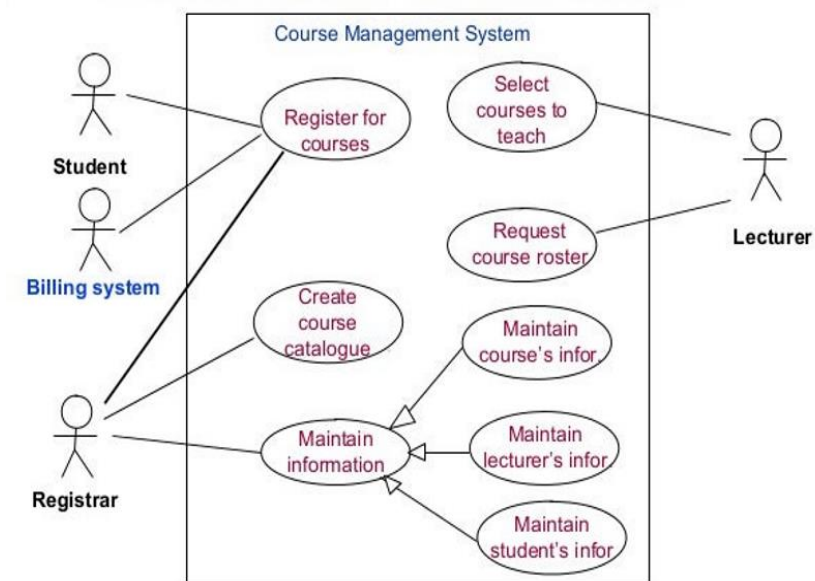


Fig. 3.3 Use-Case diagram

## CHAPTER 4

### PERFORMANCE ANALYSIS

#### 4.1 Analytics

In this project, we are to monitor what is going on in the backend of server. How data is being processed and how GET & POST commands are working. For this we use MongoShell to print out the details of flow of data for better understanding

Also in Google Chrome we use Inspect element and console features to tweak the scripts and template. This give us better understand of how the program is working.

Refresh command on browsers let user see quick changes in their templates.

#### 4.2 Outputs

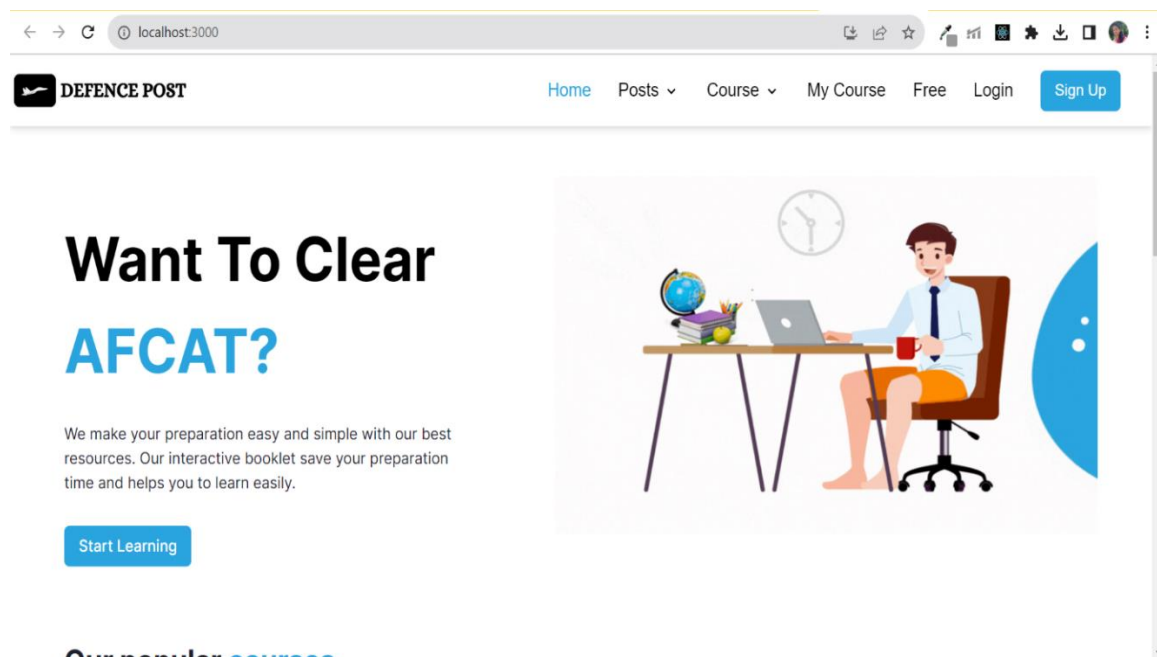


Fig 4.2.1 User Home page.

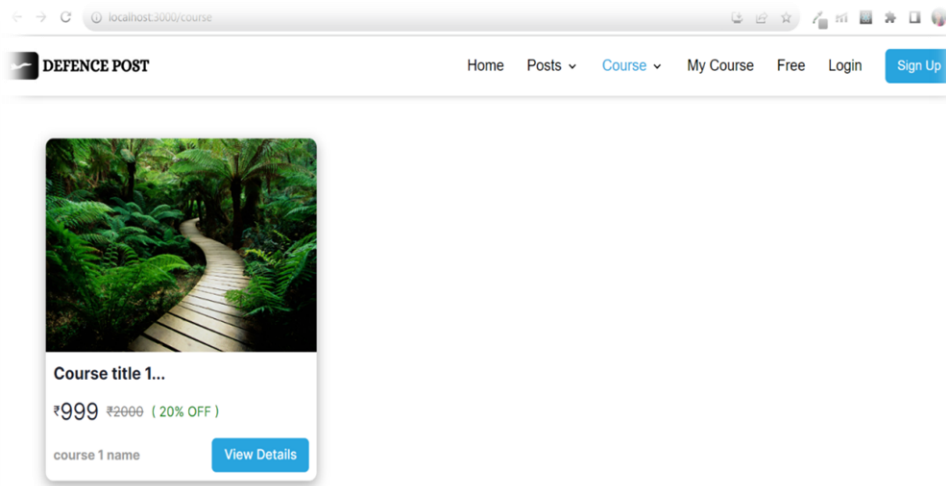


Fig4.2.2 User registration.

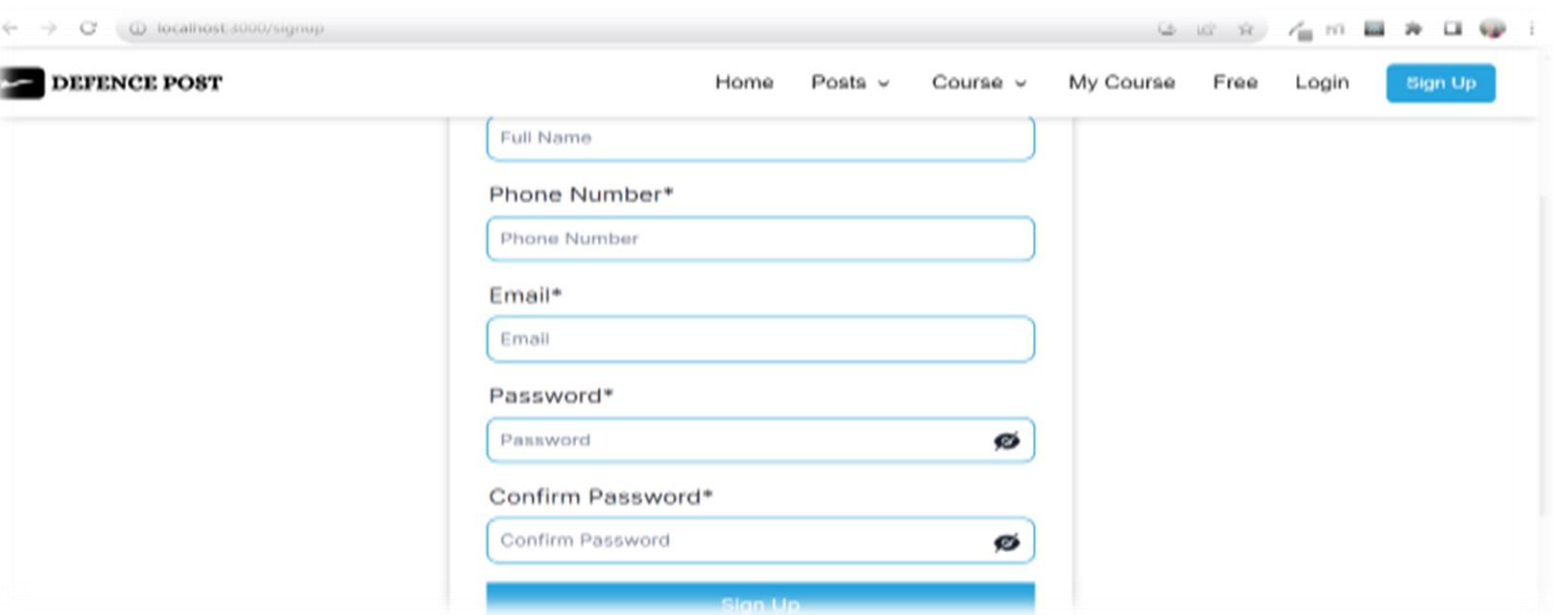


Fig 4.2.3 Course section.



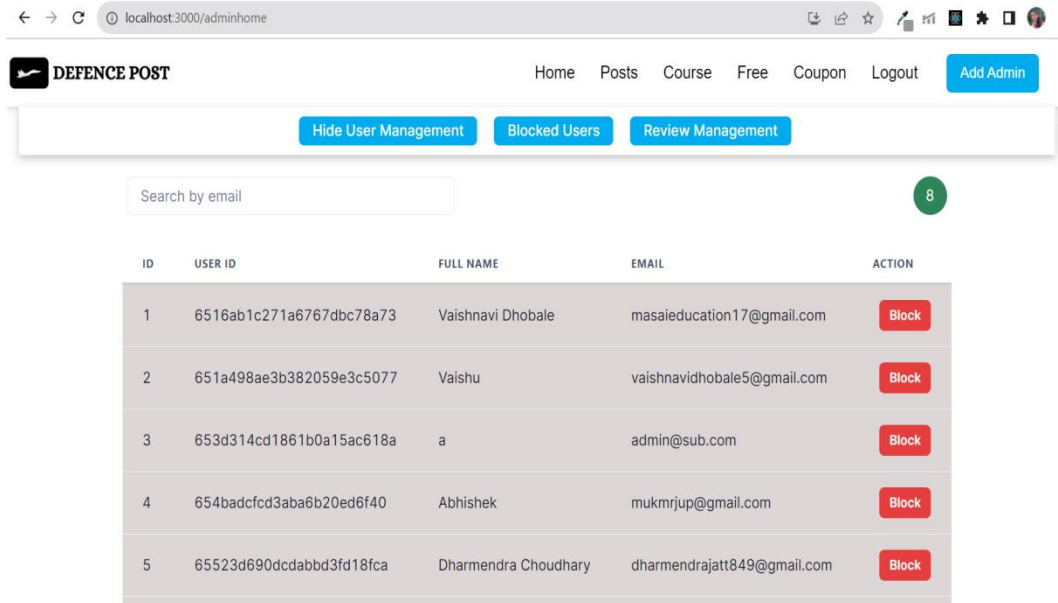
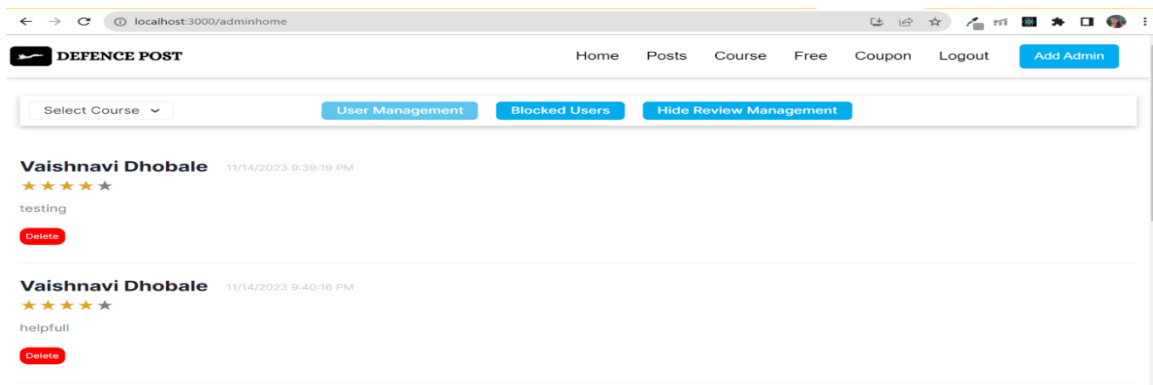


Fig 4.2.4 User Management for admin side.



## CHAPTER 5

## CONCLUSION

### 5.1 Conclusion

The development and implementation of an online course selling system represent a significant stride in the realm of education and e-commerce. This innovative platform not only addresses the evolving needs of modern learners but also caters to the dynamic landscape of the digital marketplace.

The primary objective of any online course selling system is to provide a seamless and user-friendly experience for both educators and learners. Through robust features such as intuitive course creation tools, secure payment gateways, and personalized learning experiences, these platforms empower instructors to share their expertise globally while enabling students to access high-quality education from the comfort of their homes.

One of the key advantages of an online course selling system is the democratization of education. It breaks down geographical barriers, making knowledge accessible to individuals across diverse backgrounds and locations. This inclusivity fosters a diverse learning community, enriching the educational experience with



different perspectives and ideas.

## 5.2 Future Scope

The future scope for an online course selling system is incredibly promising, with several trends and developments expected to shape the landscape of online education. Here are some key areas of future growth and enhancement

- **Personalized Learning Paths:**
- **Immersive Technologies:**
- **Continuous Learning and Lifelong Education:**
- **Mobile Learning:**
- **Inclusive Learning Design:**
- **Evolving Content Formats:**