**A PROJECT REPORT**

ON

E-COMMERCE WEBSITE

*Submitted by*

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*in partial fulfillment for the award of the degree of*

**BACHELOR OF TECHNOLOGY**

**IN**

**COMPUTER SCIENCE**

**GLA University, Mathura**

Nov 2023

#### **BONAFIDE CERTIFICATE**

Certified that this project report **“ E-COMMERCE WEBSITE ”** is the bonafide work of “ Ayush Dubey and Suraj Omar **”** who carried out the project work under my/our supervision.

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Submitted for the project viva voce examination held on

**INTERNAL EXAMINER EXTERNAL EXAMINER**

**CERTIFICATE**

**This is to certify that we Ayush Dubey and Suraj Omar of B.Tech. (C.S.E.) 5th Semester from G.L.A. University, Mathura has presented this project work entitled “E-COMMERCE WEBSITE”, an online auction website in partial fulfillment of the requirements for the award of the degree of Bachelor of Computer Applications under our supervision and guidance.**

**ACKNOWLEDGEMENT**

The success of this project has been a result of our dedication, and the immense contributions of individuals who have shown me their support, guidance, and encouragement. I would like to take this opportunity to express my heartfelt gratitude to these wonderful souls.

I would also express my appreciation to my project mentor, Mr. Suman Kumar Das, for their unwavering mentorship for the entire duration of this project. Through their expertise, timely feedback, high standards, and support, I have been able to come up with quality work that I am immensely proud of. Their constant support has provided adequate guidance to us. Their words of encouragement dispel all forms of fear of failure and give me the strength and determination to carry on even in the face of challenges.

I would like to acknowledge my participants whose contributions provided me with the required data for this project. They gave me their precious time and provided me with valuable insights that made the process of data analysis without errors.

I am indebted to my family for their never-ending encouragement and support throughout my academic journey. Their unwavering life and belief in me have always propelled me to do better. Also, I would like to appreciate my friends for being with me on this journey and encouraging me to see this through despite the stress and difficulties encountered.

In conclusion, I am forever grateful for the gift of wonderful humans who have made this mini project a success. Their immense support fueled my passion and determination to excel. I am grateful to have been blessed with these amazing individuals and organizations.

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1. **Abstract**

This abstract provides an overview of a dynamic e-commerce website project that leverages HTML, CSS, Node.js, and MongoDB to create a user-friendly online shopping experience. The project aims to seamlessly integrate front-end and back-end technologies to ensure a responsive and efficient platform for both customers and administrators.

The front-end development utilizes HTML and CSS to design an intuitive user interface that enhances the overall user experience. Responsive web design principles are implemented to ensure accessibility across various devices, providing users with a consistent and visually appealing interface.

On the server side, Node.js is employed to build a scalable and high-performance backend infrastructure. This technology facilitates real-time data processing, ensuring quick response times and a seamless shopping experience. Node.js also enables the implementation of asynchronous operations, enhancing the overall efficiency of the e-commerce platform.

For data storage and management, MongoDB, a NoSQL database is chosen to handle the dynamic and diverse nature of e-commerce data. The document-oriented database structure of MongoDB allows for flexible and scalable data storage, accommodating the growing needs of an expanding e-commerce platform.

Throughout the development process, emphasis is placed on security, scalability, and performance optimization. The combination of HTML, CSS, Node.js, and MongoDB provides a robust foundation for building a modern e-commerce platform capable of handling diverse user interactions and data management requirements.

**2. Introduction**

Welcome to our innovative e-commerce website project, where cutting-edge technologies converge to create an online shopping experience. Built with HTML and CSS for a sleek and responsive design, powered by Node.js for dynamic server-side functionalities, and supported by MongoDB for robust and scalable data management. We redefine online shopping with a user-friendly interface and a secure, efficient backend infrastructure.

**3. Objective of the Project**

The objective of the e-commerce website project is to create a dynamic and user-friendly online platform using HTML, CSS, Node.js, and MongoDB. This project aims to provide a seamless shopping experience by implementing secure payment gateways, robust product management, and user authentication features. Additionally, the system will leverage MongoDB for efficient data storage and retrieval, ensuring scalability and responsiveness for an enhanced e-commerce experience.

**4. Technologies Used**

1. Frontend Development with HTML and CSS:

HTML (Hypertext Markup Language): The standard markup language for creating the structure of web pages.

CSS (Cascading Style Sheets): Used for styling and layout to enhance the visual presentation of HTML elements.

2. Backend Development with Node.js:

Node.js: A JavaScript runtime that allows server-side execution of JavaScript. It is commonly used to build scalable and efficient backend systems for web applications.

3. Database Management with MongoDB:

MongoDB: A NoSQL database that stores data in JSON-like documents with a flexible, schema-less structure. It's well-suited for handling large volumes of unstructured or semi-structured data, common in e-commerce applications.

4. Express.js for Web Application Framework:

Express.js: A minimalist and flexible Node.js web application framework. It simplifies the process of building robust and scalable web applications, making it popular for creating the backend of e-commerce sites.

**5. Project Scope**

1. Platform Overview:

- Develop a comprehensive e-commerce website using HTML and CSS for frontend presentation, Node.js for backend server logic, and MongoDB for efficient data storage.

- Implement a user-friendly interface with responsive design, ensuring seamless navigation across various devices, such as desktops, tablets, and smartphones.

2. Core Functionality:

- Build essential e-commerce features, including product catalog management, user authentication, shopping cart functionality, and secure checkout processes.

- Implement a robust product management system, allowing administrators to add, edit, and remove products, along with features like product categorization and search functionality.

3. User Authentication and Authorization:

- Develop a secure user authentication system, allowing customers to create accounts, log in, and manage their profiles.

- Implement role-based access control to differentiate between customers, administrators, and potentially other user roles, ensuring data security and privacy.

4. Integration with MongoDB:

- Establish a connection to MongoDB for efficient data storage and retrieval, focusing on the organization of product information, user profiles, and transaction history.

- Implement data validation and error handling mechanisms to ensure data integrity and enhance the overall reliability of the system.

**6. FRONT-END:**

Home Page: The home page of the web Application mainly contains a list of the t-shirts that are saved in the database. Some options will be in the menu bar if the user does not sign in/log in yet then the "Sign in" and "Sign up" options will be there. The home page will show you all types of T-shirts and they will be displayed to customers, for example, this homepage has types of T-shirts such as Doggy T-shirt, Coffee T-shirt, friend T-shirt, If we want to add another type of T-shirt we can simply add a wide range of T-shirts, we can give different prices for different t-shirts based upon their quality, customers have the facility to add the product to the cart which they like, the customer will have another facility to contact the admin if he has any issues regarding products, prices, and any other issues all these things have appeared preview image is mentioned below: Sign in and Sign up These two-option redirect to the page where the user can find a form to fill either to create an account or to sign in to an account. Cart After selecting any product users can see their product on this page and the payment will be carried on. Stripe Payment is included in the cart which is a third-party tool that helps users to do payments on some debit cards, credit cards, and UPI.

**7. Dashboard:**

This page will be different for the user. Admin Dashboard will have a chance to create some categories and can add products to those categories, as well as admin can delete products and he can change prices.

**8. BACK-END:**

Models:

Here we define the structure of the data that should be in the database. By using some models which help to store the data in the database like Mongoose, it is one of the famous libraries in NodeJS. Creating the schemas by Mongoose can mention the names and types of the data.

Routers:

All the work related to the routing of the pages was done here. ExpressJS is a popular library for routing. CURD operations and routing-related code are saved in this folder.

Controllers:

In controllers, the definitions of the functions that are declared in the routing will be stored and the codes of the middleware are stored in this folder. In the controller phase, the function definitions of the function that are declared in the Routers will be done. We are having some middleware also defined here.

**9. DATABASE:**

Data that is entered by the users will be stored in the database. There are so many databases that are been used nowadays. In this project, we have MongoDB as a database. Using the Mongoose library, we can connect to MongoDB. There are so many methods in this library to create schema and also to save the data in the database.

**10. CONCLUSION**

The main theme is to build an e-commerce t-shirt selling web application with all three i.e., Front end, back end, and database. This web application is a fully pledged working web application right from the login authentication, admin authorization, and adding items to the cart, using a payment gateway. It can be used by any textile industry on either a small scale or a larger scale. The web application is easy for them to access and without any effort, categories can be created and products can be added by them. It will be very attractive for the customer to see the products by sitting at home or office. It will be very helpful for small-scale industries without selling to wholesales, large retail mediators they can directly sell to the customer by saving money for both.

**11.** **REFERENCES**

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