Project Title	E-commerce Application
Technologies	MERN
Domain	Entertainment
Project Level	Difficult

Table

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1. Problem Statement:

Web development has seen major advances in every area during the past ten years. Web development has advanced to a new level thanks to the quick development of front-end libraries and frameworks as well as web technologies as a whole, greatly easing the work of developers. The MERN stack, which is one of the most popular and up-to-date full-stacks today, is crucial to web development. The MongoDB database, Express as a back-end web framework, React.js as a front-end library, and Node.js as a JavaScript environment are the four elements that make up the MERN stack. The goal of this thesis was to examine the usability and functionality of each MERN technology, and as a result, to create an E-commerce web application using MERN that was completely functioning**.**

Introduction:

. The rapid innovation of hardware devices makes software technologies to advance as well, automatically take place of old technologies. Because of the significant expanding in the number of electronic devices that use Internet and real-time feature, performance is key.

2.Methodology:

The five phases of the project are as follows:

1.3.1: Scoping and planning: This phase focuses on the planning of the project's overall direction, including the definition of the project's scope, objectives, and timelines. The deliverable from this phase is this Design Plan.

1.3.2: Conceptual Design and Research:

In this phase, the conceptual design of the methodology is developed and research on existing methodologies is conducted. Research is performed from independent research firms, such as the Gartner Group, Forrester Research, and CIO.com. These research firms sometimes publish the methodologies that consulting firms use. Consulting firms' websites are another source for researching E-commerce strategy methodologies.

1.3.3: Development of Methodology:

The actual methodology is developed in this phase. Detailed descriptions of each task in the methodology are documented, including the objectives, inputs, approach, relevant models, applicable tools and techniques, outputs, and any references. The methodology is to be documented in an appropriate format, be it a Word document or HTML pages.

1.3.4: Implementation of Methodology:

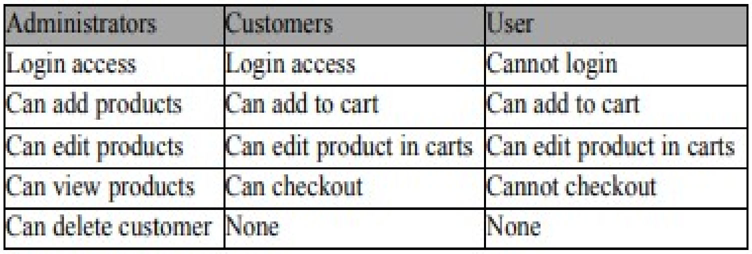
The methodology will be implemented with a client. This phase includes the marketing of E-commerce strategy development services and the closing of the sale, followed by the actual implementation.

1.3.5: Revision of Methodology:

Final touches and revisions to the methodology are made in this phase. The majority of these revisions come from experiences on the client project. Sample reports and any additional references are added to the methodology.

1.3.6: Results and discussion:

This project has several parts to it, but the most essential are three listed in Table 1. Table 1: The overview of the three major parts of the shop



Administrators	Customers	User
Login access	Login access	Cannot login
Can add products	Can add to cart	Can add to cart
Can edit products	Can edit product in carts	Can edit product in carts
Can view products	Can checkout	Cannot checkout
Can delete customer	None	None

1.3.7: Administrators Detailed Attribute:

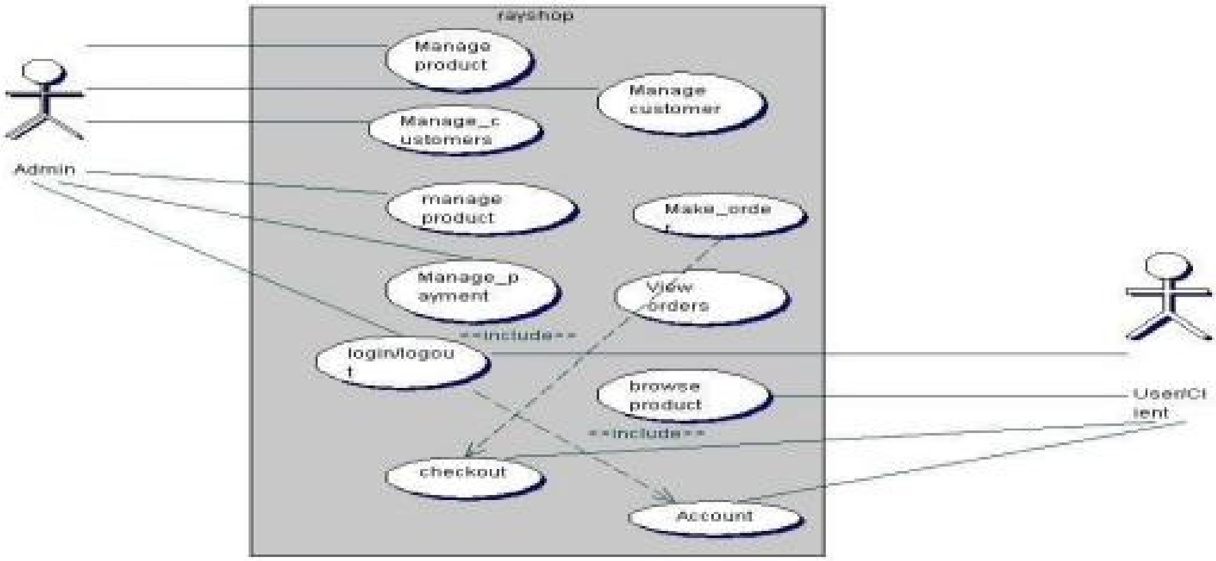
Admin Register: The administrator needs to register before they can have access to the core data of the shop.

- Admin Login: The admin logs in and can view, add products, manage customers.
- Admin Edit: The Admin can make changes to the shop such as delete customers, add a customer or, upload new products

. • Manage Customer: The administrator has the authority to delete or add a customer.

1.3.8 Customer Detailed Attribute

- Signup: This refers to registering as a customer. The registered member has a lot of privileges associated with the shop when one becomes a customer.
- Login: After the user has registered, the user becomes a customer, and he or she can log in with their personal information.
- View: The customer can see all the products in the catalog and able to look at the products and some features on the homepage.
- Edit: The customer can make changes to their data displayed on the customer page.
- Update Cart: This refers to putting or removing products from a shopping cart. Figure 5 is the use case diagram of the shop. One can see the essential attributes associated with both Administrator and Customers/Users.



Conclusion:

The main objective is to create a web application for online shopping that combines the front end, back end, and database. This website's functionality, including the ability to add products to a shopping cart and use a payment method, is completely guaranteed. Any product may utilize it, whether on a small or large basis. They can easily use the online application, and without much effort, they can add goods and establish new categories. The buyer will find it quite appealing to view the items while seated at home or at work. It will be particularly beneficial for small-scale businesses since they may sell to customers directly instead of going via giant retail or wholesale intermediaries.

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2. Project Evaluation metrics:

2.1. Code:

- You are supposed to write code in a modular fashion ● Safe: It can be used without causing harm.
- Testable: It can be tested at the code level.
- Maintainable: It can be maintained, even as your codebase grows.
- Portable: It works similarly in every environment (operating system).
- You have to maintain your code on GitHub.
- You must keep your GitHub repo public so anyone can check your code.
- Proper readme file you have to maintain for any project development.
- You should include the basic workflow and execution of the entire project in the readme file on GitHub.
- Follow the coding standards.

2.2. Database:

MongoDB is a source-available cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with optional schemas.

2.3. API Details or User Interface:

You have to expose your complete solution as an API or try to create a user interface for your model testing. Anything will be fine for us.

2.4. Deployment:

Deploy the application on your preferred service.

2.5. Solutions Design:

You have to submit complete solution design strategies in High-level Document (HLD), Lowlevel Document (LLD), and Wireframe documents.

2.6. System Architecture:

You have to submit a system architecture design in your wireframe document and architecture document.

2.7. Optimization of solutions:

Try to optimize your solution on the code level, and architecture level, and mention all of these things in your final submission.

Mention your test cases for your project.

3. Submission requirements:

3.1. High-level Document:

You have to create a high-level document design for your project. You can reference the HLD form below the link.

Sample link: HLD Document Link

3.2. Low-level document:

You have to create a Low-level document design for your project; you can refer to the LLD from the link below.

Sample link: LLD Document Link

3.3. Architecture:

You have to create an Architecture document design for your project; you can refer to the Architecture from the link below.

Sample link: Architecture sample link

3.4. Wireframe:

You have to create a Wireframe document design for your project; refer to the Wireframe from the link below.

Demo link: Wireframe Document Link

3.5. Project code:

You have to submit your code to the GitHub repo in your dashboard when the final submission of your project.

Demo link: Project code sample link

3.6. Detail project report:

You have to create a detailed project report and submit that document as per the given sample.

Demo link: DPR sample link

Demo link: DPR sample link

3.7. Project demo video:

You have to record a project demo video for at least 5 Minutes and submit that link.

3.8. The project LinkedIn a post:

You have to post your project details on LinkedIn and submit that post link in your dashboard in your respective field.