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**ABSTRACT**

E-commerce websites play a big role in our lives, especially after Covid, as it’s

not always feasible to visit brick and mortar stores to buy the necessities due to risk of

infection. Such websites allow us to browse and shop for products at the comfort of

our homes.

In our project, we aim to provide a similar implementation of such an e-commerce

website for the specific case of an online product sale. wherein a user can

browse and purchase from assorted catalogue of products.

**1. INTRODUCTION**

Whenever we need something we dont have, we go to a store to buy it. But there was a time when options were limited. Now when we go to buy anything we have a lot of varieties and options to choose from. But instead of going to a shop, what is we could access the entire shop in our home. That was the basic Idea which gave birth to online shopping.

Not only you can get exactly what you want when you shop online, you can also try to get a better deal by browsing across some other online stores. This project " E- commerce website" is an effort to cater the people by providing them with products of various varieties. From your daily need things to things you need for your home, all in one place.

From a customer point of view, the customers can browse through a catalogue of

products, search for products, add the products to their cart and place orders. Customers can

even create an account and add addresses. They can easily browse products via category feature.

From an admin point of view, the admins can add new products, manage product stock and

edit products details for existing products. They can also manage details related to customer

orders and edit products according to categories.

**2. PRODUCT OVERVIEW AND**

**SUMMARY**

**2.1. PURPOSE**

Our project, “e-commerce website ”, is a web-based online e-commerce website which aims to provide users with an easy to navigate and visually appealing medium to browse through a catalogue of products and shop for the products they desire.

**2.2. SCOPE**

“e-commerce website ” aims to deliver a web-based application that hosts a wide collection of

products that users can browse through. Users can add to cart and place orders

for each product. They can update their profile, membership plan, add delivery address

and add payment methods. They can view their order history as well. If they no longer

wish to be associated with the site, they can deregister themselves. Admins can manage

various product details like stock, price, adding new products, etc. Admins can even delete users if the need arises.

This project does not support the actual logistics and delivery of productand actual

payment logic. We are assuming that the organization that implements it will be using

third-party payment API which can easily be integrated in our application if needed.

E-commerce website is only an interface for both customers (for browsing and shopping for

project ) and admins (for managing project ).

**2.3. OVERVIEW**

a. Front End – React, Bootstrap

b. Back End - Spring boot

c. Database Management System - MongoDB

**B.FEATURES PROVIDED**

**i. FOR CUSTOMERS**

a. Browse – Customers can browse the homepage to explore the entire

collection of products available, as well as view details for individual products.

b. Search – Customers can search for the products they like by the product title.

c. Advanced Search by Criteria – Customers can filter and search through

products by advanced criteria like product category, rating and price range.

d. View & Give Feedback – When a customer checks product details, they can

also view the average star rating for the product. They can view feedback given

by other customers for that product. They can even add their own feedbacks.

e. Register, Login & Logout – New customers can register on the site.

Existing customers can then login to access their account information and

logout when the account is not in use.

f. View & Update Profile – When logged in, customers can view their profile

and update their details.

g. Deregister – If the customer no longer wishes to be involved with the site,

we give them freedom so that they can deregister themselves.

h. Membership & Discounts – Customers can choose a membership plan

that is best suited for them in order to avail discounts based on the chosen

plan.

i. Add Delivery Address & Payment Method – When purchasing products, a

customer can choose from the multiple delivery addresses which they can

associate with their account. They also have the freedom to choose from

various payment methods associated with their account.

j. Add to Cart & Place Orders – If customers find products that they like, they

can save the products in the cart until they decide to purchase it. When they wish

to purchase it, they can place orders for those products by selecting a delivery

address and payment method registered on their account.

k. View Order History – Every customer can view their order history in order

to get an idea about their past spendings and how much they saved on each

order.

ii. FOR ADMINS

a. Login & Logout – Similar to customers, admins can login & logout to

access their account.

b. Delete Users –The admins can delete a customer account if they need to for

any purpose.

c. Add New products – Admins can add new products with all the necessary details

like product title, author, publication, genre, ISBN, price, product cover URL, as

well as stock.

d. Manage product Stock – If the admins find that the available stock of some

products has depleted, they can replenish it by adding more to the stock.

e. Update product Details – Often, the details of a product such as the publication,

price, and product cover etc., may change over time. In such cases, the admins

can update those product details to reflect the change on the application.

f. Manage Membership Plans – Admins can manage the discount

percentages that are provided under each membership plan, how much each

membership plan costs to the customers, and even activate/deactivate the

discounts of a particular plan if the need arises.

g. Update Shipping Status – Once a customer places an order, the immediate

default shipping status for that order is “PENDING”. Once the admin has

been notified by the logistics team that the order has been processed/shipped,

they can update the same on the application so that the customers are notified

about it.

**2.4. FEASIBILITY STUDY**

Feasibility is the determination of whether a project is worth undertaking or not.

Before actually recommending the new system, it is important to investigate if it is

feasible to develop it.

Before developing and implementing a system, we have to make sure that the system

is feasible in the following ways:

**A.TECHNICAL FEASIBILITY**

In this type of feasibility study, the system analyst has to check whether it is possible

or not to develop the requested system with the available manpower, software,

hardware, etc.

This project makes use of cross-platform software and solutions like Java, and hence

can run on any operating system. React, used in front-end, is swift and light weight

framework when it comes to delivering the requested page as it doesn’t reload the

entire page for every HTTP request. It only re-renders the components that need to

fetch new data. Also, as React is modular in nature, it is easy to develop new

components and scale up existing components in order to add new features to the

system. The combination of Spring Boot for backend make for a fast, easy to set-up and reliable system to interact with the database, as they are secure and transactional in nature. Since the sensitive data of customers and admins need to be stored in a robust and secure database, MySQL database management system was chosen as it is an industry standard.

**B.OPERATIONAL FEASIBILITY**

In this type of feasibility study, the operation of the system is considered. An analysis

is performed on whether it is feasible for the user department to use the application.

Thus, the proposed system is said to be operationally feasible only if clients are able to

understand the system clearly and correctly, and can use it with ease.

In the design of this project, we always kept user experience in mind. We made an

effort to have a good user interface with consistent theme and alluring design to keep

the users interested and engaged. In our project, the use of universally known icons

and instructions that are easy to understand makes sure that the user will not need any

special technical know-how to use the application. We made sure that the information

available throughout the application is arranged in a logically coherent and consistent

manner, guaranteeing that the users will have a smooth and effortless experience and

even enjoy using the application.

**C.ECONOMIC FEASIBILITY**

In this type of feasibility study, the benefits of the system to the organization are

considered by taking into consideration the cost-benefit analysis. All the software and

technologies used in our project free, open-source, and widely available, with each of

the technologies having an extensive community support. This makes “e-commerce website ”

an economically feasible solution to the organizations that wish to implement it.

**3.REQUIREMENTS FULFILLED**

**3.1. FUNCTIONAL REQUIREMENTS**

Following are the functional requirements fulfilled by our project:

 Customers can browse through all available products and search through them

based on product title or perform an advanced search by filtering using various

criteria.

 Customers can place orders for products and view their order history.

 Based on their experience with the product, customers can add feedbacks for a

product or view existing ones.

 Customers can avail discounts based on membership plans.

 Admins can manage various product details like product stock, price, adding new

products, etc.

 Admins can delete customers if the need arises.

 Admins can update the shipping status of orders placed.

**3.2. NON-FUNCTIONAL REQUIREMENTS**

Following are the non-functional requirements fulfilled by our project:

 Since the application uses lightweight and established software components

that are also cross-platform, it is remarkably performant and has good support

for every operating system.

 The use of React for front end and Spring Bootfor back end delivers quick response times to admins and customers

alike.

 Card-style UI and well-known icons and symbols used throughout the

application provides a consistent theme and user-friendly interface that

anyone can grasp easily, even without a technical background.

**6. TESTING**

One of the main purposes of testing is to validate and verify that the system works as

intended. No program or system design is perfect. However, if we implement the

system without proper testing, then it may cause problems and lead to a bad user

experience.

Testing and checking outcomes of each test gives us the best chance to detect and

correct errors before the system is implemented in a production environment.

In the course of our project, we made an effort to manually test each component. In

all cases, we obtained the desired results as demonstrated below.

**7. CONCLUSION**

“e-commerce website ”, an online productstore application, was developed by our project team

to simplify the online sale and purchase of products. We tried using the latest

technologies that are cross-platform and robust. Each an every software we used was

open-source in nature, which keeps the cost of production at a minimum.

We were also meticulous about the user experience aspect of our application so that

navigating our website is an easy and seamless experience.

In conclusion, “e-commerce website ” as an application would definitely be a good choice for

any product trading business that wishes to enter the online market. We are confident

that the numerous features and visually appealing look of the application will certainly

give a big boost to the business.

**8. FUTURE SCOPE**

Using whatever we have learnt over the duration of this course, we tried to make our

project as user-friendly and gave it as many features as possible in the limited time

allotted for the project work. That said, there are certainly more features that can be

added to our application. Some of those are mentioned below:

1. The most purchased products can be highlighted as customer favourite to

promote those products further.

2. Discounts can be given on a per-user basis depending on the customer’s

purchase history as well as how many products they buy at the same time.

3. Customers can upvote/downvote/report feedbacks.

4. Additional payment means can be added other than cards.

5. After a confirmed purchase, an email with the invoice of the orders can be sent

to the customer.

6. In case the user forgets the password, a ‘reset password’ functionality can be

added.

7. CAPTCHA can be added to login page.

8. An email notification can be sent to the users for an item in their cart, which

may have been out of stock, but is now available.

**9. REFERENCES**

Following is the list of websites we referred during the course of our project:

1. <https://getbootstrap.com/docs/5.1/getting-started/introduction/>

2. <https://reactjs.org/docs/getting-started.html>

3. <https://www.baeldung.com/>

4. <https://www.w3schools.com/>

5. <https://docs.spring.io/spring>\_data/jpa/docs/current/reference/html/#reference

6. <https://javaee.github.io/javaee-spec/javadocs/>