

Development of E-Commerce site with JavaScript and AJAX using Java platform on Apache Tomcat as server via Spring Boot and MySQL as Database

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Abstract— In this digital age, e-commerce is expanding and far surpassing the growth of brick and mortar businesses. Brick-and-mortar companies are frequently turning to having a web-based or e-commerce-based rival. Ecommerce websites are now regularly used by people in the developed world and an increasing number of people in the developing world to make daily purchases. Even so, there is much to be desired and there is not a large e-commerce proliferation in the poor countries. The best way to overcome the difficulties associated in creating one is described in this paper along with several aspects of creating an e-commerce website. It entails the planning procedure, which begins with choosing the use case, domain modelling, and web application architecture pattern. Also, the database design is covered, with a focus on relational connectivity. This straightforward approach of creating an e-commerce website can be easily copied and used to create e-commerce websites in developing and undeveloped nations where computing resources are expensive and scarce due to their socio-economic situation.

Keywords— E-Commerce, Brick-and-mortar firms, proliferation, Socio-economic.

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I. INTRODUCTION

Electronic commerce, sometimes known as e-commerce, covers a broad spectrum of online business ventures involving goods and services. It is typically related to conducting any transaction involving the transfer of ownership or rights to use products or services through a computer-mediated network, such as online buying and selling over the internet. In our opinion, it adds a new depth to the diverse ways people use the internet, and our goal is to popularize it in our nation, where usage is especially low. The high context culture makes building trust among the parties involved in a transaction crucial. E-commerce in Bangladesh actually began in 1999, with a few non-resident Bangladeshis working out of the USA. Our mission is to create a rich e-commerce platform in our nation that the customers would generally approve. free online registration is required. can perform a search for a certain product. Online ordering is presently available with the "Cash on Delivery" payment option. The sole authority to add a product, change its price, or remove a product belongs to the administrator. can advertise large or little and also erase a specific advertisement. Consumers are always free to update their personal data. Customers can place whatever order they desire after logging into the site without repeatedly providing their billing information. The categories and brands used to classify the products on this website. By just moving the mouse over any product image in the product details area, customers may explore the product in detail. A computerized inventory system is also inherited by the website. So, whenever a consumer purchases a product, it is automatically subtracted from the inventory system. If any product's number falls below five, an email should also be sent automatically to the admin and supplier. Also, if a product runs out of supply, no client

II. LITERATURE REVIEW

Electronic commerce, sometimes known as e-commerce, covers a broad spectrum of online business ventures involving goods and services. It is typically related to conducting any transaction involving the transfer of ownership or rights to use products or services through a computer-mediated network, such as online buying and selling over the internet. In our opinion, it adds a new depth to the diverse ways people use the internet, and our goal is to popularize it in our nation, where usage is especially low. The high context culture makes building trust among the parties involved in a transaction crucial. E-commerce in Bangladesh actually began in 1999, with a few non-resident Bangladeshis working out of the USA. Our mission is to create a rich e-commerce platform in our nation that the customers would generally approve.

III. METHODOLOGY

The methodology of an online shopping cart refers to the process that a customer goes through to add products to their virtual shopping cart, review their selections, and complete their purchase. The steps involved in this process typically include:

- a) **User Register:** To create a new user, utilize the class save function. An email will be sent to the user's email after they have entered all the relevant information and clicked the "submit" button. Information such as name, password, and email are validated using a class function prior to registration.
- b) **Load User:** the process used to load the user's username and password when they want to log in to a website. This technique can locate emails in databases and check a user's role during login. This crucial technique aids in retrieving all user data from the database.
- c) **Add Product:** the process for adding products when an administrator wants to add more to the website. In order to use this method, the admin must log in to the administration page and click the add product button. Once the form is filled out, the data is stored to the database. If there are any problems, the data won't be saved to the database.
- d) **Order:** When a user wants to order a product from a website, the process is displayed. When a user clicks the checkout button to make a purchase, the method adds the quantity in stock and stores order information to the database.

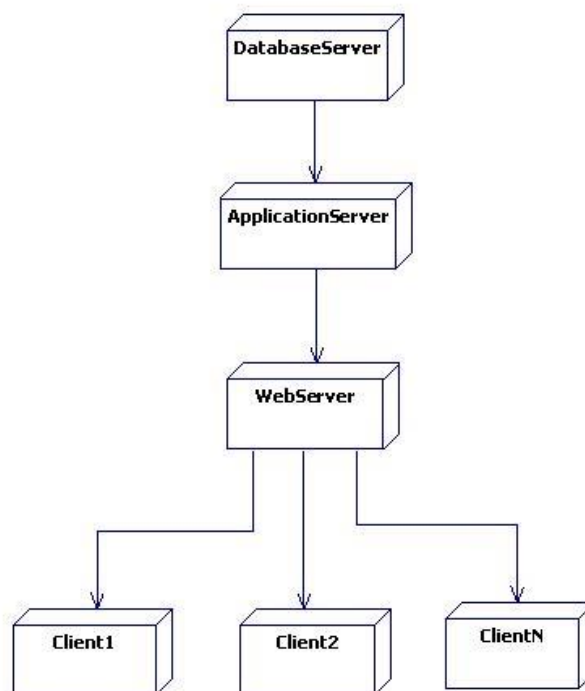


Fig: Flow diagram.

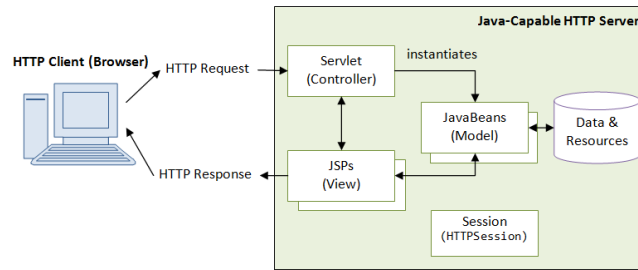


Fig: Technical Architecture.

3.1 Algorithm used:

There are several algorithms that can be used to develop an online shopping cart web application using Java. Here are some commonly used algorithms:

Sorting Algorithms:

Sorting algorithms can be used to sort the products in the shopping cart based on various criteria such as price, category, or popularity. Some commonly used sorting algorithms are Bubble Sort, Merge Sort, Quick Sort, and Heap Sort.

Search Algorithms:

Search algorithms can be used to search for products in the online store or within the shopping cart. Some commonly used search algorithms are Linear Search, Binary Search, and Hashing.

Recommendation Algorithms:

Recommendation algorithms can be used to suggest products to the customer based on their purchase history, browsing history, or other relevant data. Some commonly used recommendation algorithms are Collaborative Filtering, Content-based Filtering, and Hybrid Filtering.

Encryption Algorithms:

Encryption algorithms can be used to encrypt and decrypt sensitive information such as passwords and credit card information to ensure that it is transmitted and stored securely. Some commonly used encryption algorithms are AES, RSA, and Blowfish.

Authentication Algorithms:

Authentication algorithms can be used to verify the identity of the user and ensure that only authorized users have access to the shopping cart and related data. Some commonly used authentication algorithms are OAuth, JWT, and Basic Authentication.

Fraud Detection Algorithms:

Fraud detection algorithms can be used to detect and prevent fraudulent activities such as credit card fraud or identity theft. Some commonly used fraud detection algorithms are Machine Learning-based algorithms, Decision Trees, and Neural Networks.

These algorithms can be used in combination to create a secure and efficient online shopping cart web application using Java. It's important to choose the right algorithms based on the specific needs of the project and to ensure that they are integrated correctly.

IV. EXPERIMENTAL RESULT:

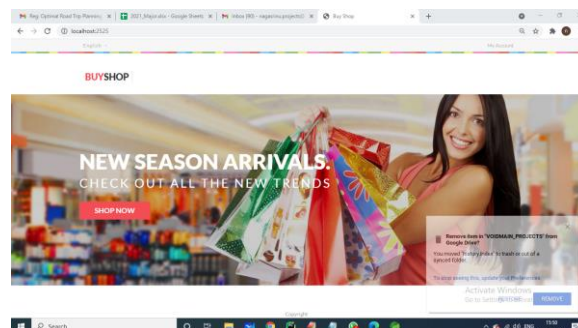


Fig.1: Home screen

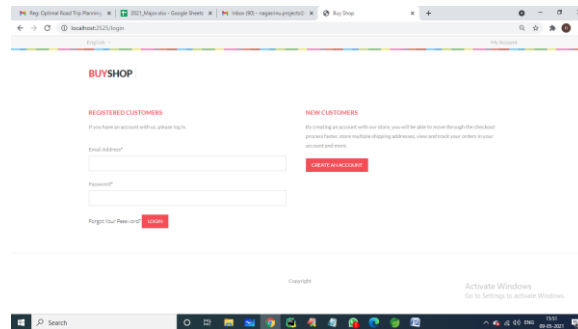


Fig.2: User registration

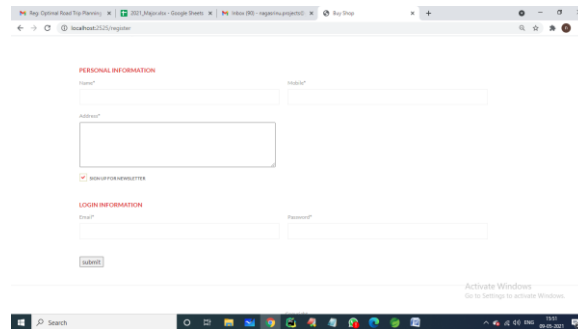


Fig.3: user login

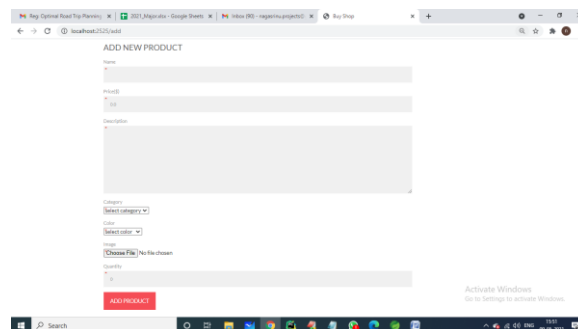


Fig.4: Add product

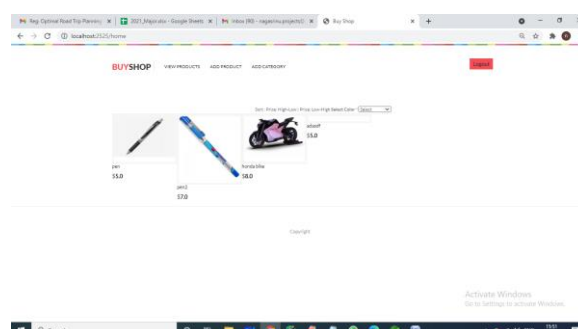


Fig.5: products displaying screen

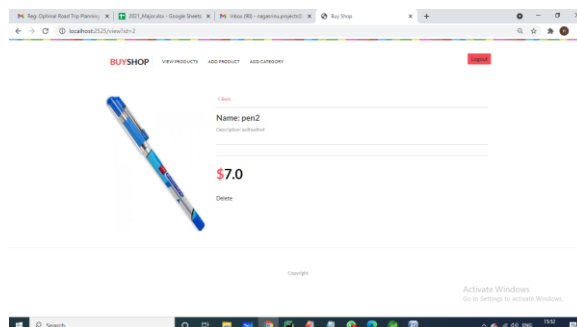


Fig.6: Product description

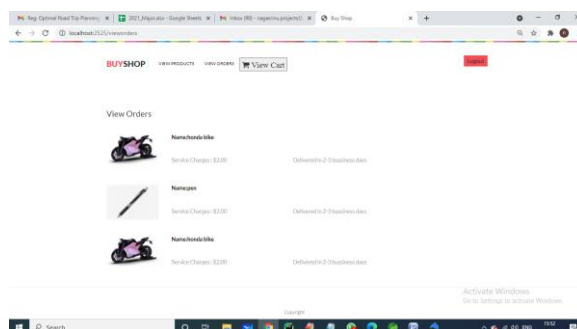


Fig.7: view orders

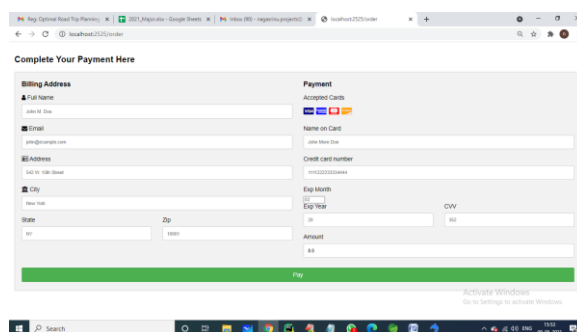


Fig.8s: payment screen

V. CONCLUSION

Because we no longer need to spend time and money travelling to the market, e-commerce has completely revolutionized our way of life. With the aid of web development and e-commerce application development services, one can quicken the pace of his online business. It is one of the least expensive ways to do business because the growth of e-commerce has made it feasible to lower the cost of advertising goods and services.

Selling the merchandise has no time restrictions. Even at one in the morning, one can access the internet and instantly sell goods. An online store that is engaging, user-friendly, and targeted can bring in strong business. Thus, we are of the opinion that big corporations should invest more on research and development for e-commerce.

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