

46 Shops an E-Commerce Web Application

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Abstract– Now-a-days the ongoing phase of Covid-19, Shop keepers faced lots of problems selling their products and had to go through much loss. So, here comes the Solution to the problem, we have created an e-commerce website which can be beneficiary in such ongoing circumstances. The other benefit of our website is that when we visit an ad or any other e-commerce website, many of the users leave the site because of slow loading and the speed at which the website is working. So, here we give you the solution to this problem too, as we have created a website that is faster than Walmart itself. The website is created using MERN stack which is the most popular field nowadays in the development world. We have also provided online transactions for the products that the user buys using PayPal. “The main advantage of e-commerce over traditional commerce is the user can browse online shops, compare prices and order merchandise sitting at home on their PC. For increasing the use of e-commerce in developing countries the B2B e-commerce is implemented for improving access to global markets for firms in developing countries. For a developing country advancement in the field of e-commerce is essential. The study approach demonstrates the significance of E-commerce for business software in emerging nations”[1].

1. INTRODUCTION

It is true that technology has become an essential tool for online marketing nowadays. However, there are numerous small shops and grocery stores with mostly offline business model in our town/city recently. With this commerce model, it will bring a lot of bad experiences for both buyers and sellers. For instance, the seller has the product want to offer but the buyer may not know it, or the buyer may urgently need to purchase something, but the store is out of stock. Moreover, online shopping helps customers to choose a wide range of products, prices and they can compare them to each other easily. Encountering the inadequacies and the weaknesses of the offline business model, making a website application for searching and buying things for each shop is very necessary right now. Recently, there have been many e-commerce sites exported such as Amazon, e-bay or the stores that can sell products via social media channels like Facebook. However, customers still find it difficult to choose the products they want because of the large variety of products on these sites and not focus on specific things. Moreover, the sellers have to spend a high amount of money on marketing or paying for fees. From there disadvantages, implement an online e-commerce web application for small

grocery stores helps retailers can manage products on their own systems and not depend on the 3rd party website. For the customers, they can quickly search the products if it is available and come to store to pick it up and they can contact directly to the shop owner to learn more about the products that they are looking for. In order to make a website that can acquire the needs of both customers and retailers, MERN (MongoDB, Express.js framework, ReactJS library, NodeJS platform) is one of the powerful stacks that can help us to develop an e-commerce web application.

1.1 PROBLEM DEFINITION

Internet access required: When participating in the EC, to be able to buy and sell, you need a device connected to the internet. Currently, most people have internet access but, in many areas, it is still very limited. Not enough to trust: Products and services that cannot be seen, touched, held or felt directly, are not allowed to try as a prudent buyer. Doubt in both buyers and sellers leads to many incomplete transactions, especially when they have dealt with untrusted partners before. Limited payment methods: Currently, the most popular payment method in Vietnam when buying goods online is to receive and pay. Payment gateway in Vietnam is growing quite strong, but not reliable enough for users to use as the main payment method. Therefore, it also contributes to teething. In addition, online sellers confront a slew of extra issues: technical, competitors, payment, etc. In the *misuse*, there are some sets of signatures in the database and the system always tries to match. If there is a connection between the inbound attack and the attack tendencies contained in the system, then the attack is detected.

1.2 PROJECT OBJECTIVE

This site's goal is to create an e-commerce Java web application for a small business, where the store owner (also called the administrator or admin) can sell goods over the internet. In the application, the admin will be able to manage products, customers, and orders, while the customers will be able to order and pay for products. Also, the buyers will have the opportunity to subscribe to an email list in order to get announcements about new arrivals and sales promotions. Furthermore, there will be an email notification after completing an order or subscribing to an email list.

2. LITERATURE SURVEY

Customers would have to go to typical "brick and mortar" establishments to buy products and services well before introduction of e-commerce and the internet, and vendors would have to find a venue to offer their wares, but due to the arrival of e-commerce and the internet some decades ago shoppers do not have to visit these stores to make a purchase, neither do the sellers have to find a place to locate their stores. In fact, buying and selling without any form of e-commerce is unthinkable, complicated and cumbersome to many these days.

E-commerce, which is now an integral part of many businesses, is used primarily to boost sales revenue, to attract new customers and to survive in today's competitive business environment.

Also, it has benefitted the customers as they now have easy access to a wide range of goods and services at anytime and anywhere in the world. Amazon and eBay are well-known e-commerce enterprises.

2.1 HISTORY OF E-COMMERCE

Electronic commerce started in the 1960s when Electronic Data Interchange (EDI) was used by companies to carry out their daily business transactions electronically. In 1979, Michael Aldrich invented online shopping from which the term teleshopping was coined. In 1990, Tim Berners-Lee invented the World Wide Web, and thereafter he was able to establish communication between a Hypertext Transfer Protocol (HTTP) client and a server through the internet, leading to the advent of Amazon and eBay in the 1990s. These two prominent online stores have revolutionized the e-commerce market since their inception as more and more online shops spring up every day.

2.2 TYPES OF E-COMMERCE

Basically, there are four types of E-commerce-

Business to Business (B2B)

A situation where transaction take place between companies. For example, a computer manufacturing company selling computers to another company.

Business to Consumers (B2C)

This takes place when a business sells directly to consumers. an example is when a customer buys a product from amazon web store.

Consumer to Business (C2B)

This happens when a individual or end user sells goods or services to companies. this is reverse B2C. an example is

when a paid amazon advert is hosted on a consumer's website.

Consumers to Consumer (C2C)

Involves business transaction between consumers. an example is when a consumer wants to sell a use product to another consumer on E-bay.

2.3 WHY E-COMMERCE WEB APPLICATION?

In today's business world, it has become inevitable for any small, medium or large enterprise to have an e-business store. The following are some of the reasons a business should have an online presence. To break the barrier posed by physical limitations. To reach more shoppers in order to increase revenue. To make products available to customers 24/7 globally. To allow shoppers purchase goods at their own convenience, with just some mouse clicks. To reduce the operational cost of running a business. To provide better customer relations.

3. SCOPE OF PROJECT

"The potential for e-commerce development is enormous. Now a days one can buy products online through some sites like Flipkart and Amazon. In the age of e-commerce everything from gym equipment to laptops are available online. E-Commerce is a super set of business cases"[2]. It includes E-trading, E-Franchising, E-Mailing, E-Engineering etc. Scope of e-commerce can be enumerated as follows:

1. Exchange of digitized information.
2. Technology-enabled.
3. Customers retention.
4. Accounting.
5. Supplier integration.
6. Support the exchange.

4. PROBLEM STATEMENT

"Analysis is concerned with understanding and modeling the application and domain within which it operates. The initial input to the analysis phase is problem statement, which describes the problem to be solved, and provides a conceptual view of the proposed system" Subsequent dialog with the customer and real-world background knowledge are additional inputs to analysis. The output from analysis is a formal model that captures the three essential aspects of the system: the assets and their interactions, the dynamical intake of authority, and the constraint-based functional transformation of data.

The gap between system engineering and software analysis design is bridged by necessary analysis. System requirements study include gathering, classifying, organizing, prioritizing, and validating requirements. Requirement analysis consists of user requirements Analysis is concerned with understanding and modeling the application and domain within which it operates. The initial input to the analysis phase is problem statement, which describes the problem to be solved, and provides a conceptual view of the proposed system.

SOFTWARE PROCESS MODEL

“Every software developed is different and requires a suitable SDLC approach to be followed based on the internal and external factors. We choose **Waterfall Model** as software process model”[3], because

- It is useful for the projects in which the requirements are well understood.
- It has sequential nature.

“In a waterfall model, each phase must be completed before the next phase can begin and there is no overlapping in the phases Waterfall model is the earliest SDLC approach that was used for software development. The waterfall Model illustrates the software development process in a linear sequential flow”[4]; hence it is also referred to as a linear-sequential life cycle model.

The Sequential phases in Waterfall Model:

- **Feasibility Study:** Feasibility study is performed by, considering the factors such as development cost, operating cost, response time, development time, accuracy and reliability.
- **“Requirement Analysis:** All possible requirements of the system to be developed are captured in this phase and documented in a requirement specification doc”[3].
- **System Design:** This phase examines the requirements specifications from the previous phase and prepares the system design. “System Design helps in specifying hardware and system requirements and also helps in defining overall system architecture.
- **Implementation:** With inputs from system design, the system is first developed in small programs called units, which are integrated in the next phase. Each unit is developed and tested for its functionality which is referred to as Unit Testing.

- **Integration and Testing:** All the units developed in the implementation phase are integrated into a system after testing of each unit. Post integration the entire system is tested for any faults and failures.
- **Deployment of system:** Once the functional and non-functional testing is done, the product is deployed in the customer environment or released into the market”[3].

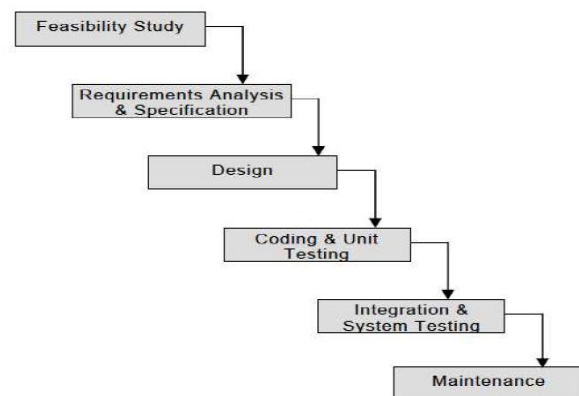


Figure 1. Classical Waterfall Model

5. METHODOLOGY

Through Online Shopping a person who wants to buy is a lifestyle e-commerce web application, “which retails various fashion and lifestyle products. This project allows viewing various products available enables registered users to purchase desired products instantly using payment methods. This project provides an easy access to Administrators and Managers to view orders placed using pay later and instant pay options. In order to develop an e-commerce website, a number of technologies must be studied and understood”[5].

6. ARCHITECTURE

Below figure shows the System Architecture of the system. The admin will first input the product details to the system. The admin will have the control and access to all the information in the system such as user, product order details as well as the details of the customers logged in. The customer is then asked for his login details on the login page and afterwards he/she is able to select the product. The user can then check the availability of the product, as per the user requirements, user will select the product and then he can add to cart. The user can now enter his shipping address and the payment method. The user can even review the product. The user then can confirm his order and then the payment is done.

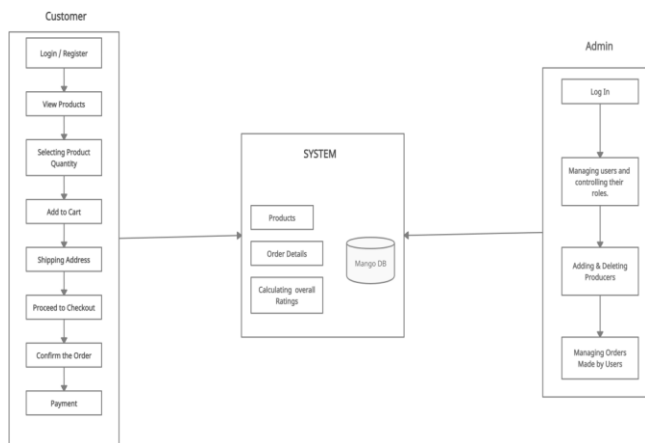


Figure 2. Architecture of Project

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BIOGRAPHIES



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7. FUTURE SCOPE

The project “46shops” has a very vast scope in future. The project can be implemented on intranet in future. “Project can be updated in near future as and when requirement for the same arises, as it is very flexible in terms of expansion. With the proposed software of database Space Manager ready and fully functional the client is now able to manage and hence run the entire work in a much better, accurate and error free manner”[7].

The following things can be done in future:

- a) The current system can be extended to allow the users to create accounts and save products in to the wish list.
- b) The users could subscribe for price alerts which would enable them to receive messages when price for products fall below a particular level.
- c) “Multiple shipping and billing addresses can be saved by the user. They can utilize the frictional pressure feature to select shipping and billing details while settle up process”[6].
- d) And many features can be added this project to make it more robust.

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