

Bangladesh University of Business & Technology (BUBT)



Click To Buy

*Submitted to the Department of Computer Science and Engineering
Bangladesh University of Business and Technology (BUBT) Dhaka
in Partial Fulfillment of the requirements for the degree*

BACHELOR OF COMPUTER SCIENCE AND ENGINEERING

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DECLARATION

We declare that this project is our own work and been submitted in any form for another degree or diploma at any university or other institute of tertiary education. Information derived from the published work of others has been acknowledged in the text and a list of reference is given.

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DEDICATION

We dedicate this project to God Almighty our creator, our strong pillar, our source of inspiration, wisdom, knowledge and understanding. I also dedicate this dissertation to our family who have supported us throughout the process.

APPROVAL

The Project Designing and Implementation of “**Click To Buy**” report is submitted by Md. Merajul Islam -15163203017, Sunil Chandra Karmakar -15163203028, Mir Jobair Mahamud - 15163203041 Department of Computer Science and Engineering, Bangladesh University of Business and Technology under the supervision of M.M Fazle Rabbi, Assistant Professor, Department of Computer Science and Engineering has been accepted as satisfactory for the partial fulfillment of the requirements for degree of Bachelor of Science (B. Sc. Engg.) in Computer Science and Engineering.

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ACKNOWLEDGEMENTS

First of all, we want to thank our Allah Almighty and then we are thankful to our parents who supported me in this whole study and always pray for our success and good health.

We would like to express our sincere gratitude and profound indebtedness to my supervisor M.M Fazle Rabbi for his guidance, valuable suggestions, commendable support and endless patience towards the completion of this project. We feel very proud to have worked with him. Without the inspiring enthusiasm and encouragement of our supervisor, this work could not have been completed.

We thank all the staffs and graduate students at Bangladesh University of Business and Technology (BUBT) and all the friends for their support and encouragement. We would also like to extend our elder and younger brothers.

Finally, I wish to express my gratitude to Bangladesh University of Business and Technology (BUBT) for providing an excellent environment for research and all the other facilities to complete the project successfully.

With Best Regards,
Click To Buy, Team.

ABSTRACT

E-commerce (Electronic Commerce) is the buying and selling of goods and services on the Internet, especially the World Wide Web. In practice, this term and a newer term, e-business is often used interchangeably. For online retail selling, the term e-tailing sometimes used. The drivers for electronic commerce are both technological and business oriented. This paper will highlight some guidelines for companies who are entering into E-commerce to create E-commerce strategy or who already have an E-commerce presence to revise their existing strategy. E-Commerce is now seen as a reality for many businesses and a normal part of a business plan. The immediate benefits, in terms of cost savings,

efficiencies and enhanced profitability are clear at every stage in the supply chain. Adopting e-business is no longer a competitive advantage, but a normal business process, without which an enterprise is unlikely to survive in the New economy. An online store is a virtual store on the Internet where customers can browse the catalog and select products of interest. The selected items may be collected in a shopping cart. At checkout time, the items in the shopping cart will be presented as an order. At that time, more information will be needed to complete the transaction. Usually, the customer will be asked to fill or select a billing address, a shipping address, a shipping option, and payment information. E-mail notification is sent to the customer as soon as the order is placed.

ABBREVIATIONS

Abbreviation	Description
RAM	R andom A ccess M emory
HTML	H yper T ext M arkup L anguage
CSS	C ascading S tyle S heet
ASP.NET	W ebs D evelopment T ools O ffered By M icrosoft.
SQL	S tructured Q uery L anguage
RDBMS	R elational D atabase M anagement S ystem
IIS	I nternet I nformation S ervices
BPR	B usiness P rocess R e-engineering
XML	E xtensible M arkup L anguage
DOM	D ocument O bject M odel
ERD	E ntity R elationship D iagram
DFD	D ata F low D iagram
GUI	G raphical U ser I nterface
URL	U niversal R esource L ocator
PC	P ersonal C omputer
MB	M ega B yte
GB	G iga B yte

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CHAPTER – 1

INTRODUCTION

1.1 Introduction

E-Commerce (Electronic Commerce) is the buying and selling of goods and services on the internet, Especially the world wide web. In practice, this term and a newer term, e-business, are often used interchangeably. For retail selling the term E-tailing is sometimes used. Electronic Commerce is generally considered be the sales aspect of e business. It also consists of the exchange of the data facilitate the financing and payment aspects of business transactions. Today E-commerce is an integral part of business because of various reasons like

1. Ease of use Accessibility all across the globe.
2. Great variety easy compassion of products from different vendors.
3. Trusted payment channels.

Shopping can be done sitting in the convenience of home shopping, hence it is less time consuming. It is therefore very important for any new entrepreneur to understand the significance of E-Commerce and should know how to utilize this tool for the growth and development of business. So, whether you have an existing business or launching a brand new business, whether the volume of your business is large or small, you can always generate profit demonstrating products or services online, thereby acquiring a large amount of viewer exposure. In concise, buying and selling will result in profits and returns.

There are so many factors which makes e-commerce to come to the fore front in today's world. Saving precious time involved in business transactions is really a prominent factor. Like for instance, net banking makes it easy to carry out money and baking transactions in a break neck speed as compared to the real banking scenario. This asserts the fact that E-commerce is beneficial to both business and consumer wise as payment and documentations can be completed with greater efficiency and reliability. Another important factor determining the flow of whole business connectivity. Connectivity very important for both consumers and business. E-commerce provides better connectivity for all the potential candidates all over the globe, thus helping enhancing business without any geographical barriers. From the view point of the customer, E-commerce is a good platform for hassle free shopping by sitting in your home. The customer can browse through all the products and services available and can review and compare the prices of the similar products available in the online space. More and more resources are being directed into electronic securities, internet facilities, business plans and new technologies due to the boom in the space of

E-commerce. As a result, various new markets have emerged from E-commerce itself giving a boost to the global market.

An online store is a virtual store on the Internet where customers can browse the catalog and select products of interest. The selected items may be collected in a shopping cart. At checkout time, the items in the shopping cart will be presented as an order. At that time, more information will be needed to complete the transaction. Usually, the customer will be asked to fill or select a billing address, a shipping address, a shipping option, and payment information such as credit card number. An e-mail notification is sent to the customer as soon as the order is placed.

1.2 Existing Model

Customer: -

- Customer need to visit our website. Choose products from our product gallery and add to the cart.
- After successfully adding all products to cart customer need to login or signup into our site then customer can see what he/she was added to the cart.
- Then customer needs to fill-up all required field (Customer Name, Mobile No, Full address etc.) for order products.
- After successfully place order customer can track the order from our website. Also can customer check the order history.

Admin: -

- Our website have dynamic system of upload home page slider, we can add home slider as much we want.
- Our website have category management system we can set all category as our requirement
- We can easily manage our products with product management. Product management have brands, origin etc. We can manage all this things easily.
- Our website have customer management system so that we can see our customer details easily
- Our website have order management system. With this system we can easily manage our order. It has status system so that we can easily understand which order is in which status.
- Our website have little accounting we can calculate our profit with this.

1.3 Problem Statement

- **An Absence of Online Identity Verification:**
When a person goes to and signs up for an e-commerce website, the server is oblivious of the customer, baring the details they accessed. Whether the knowledge regarding consumers is real or not remains unclear. Cash-On - Delivery (COD) transactions using false or incorrect phone numbers or addresses will result in massive losses in revenue.
- **An Absence Online Payment Processing:**
Our website hasn't online payment system, so that which customers want to uses their debit or credit card or other online payment system, they can't use.
- **SEO Implications of Product Pages:**
Our website doesn't have any module or system for SEO, so it's difficult to do SEO. We can't reach to our targeted customer easily.
- **Missing of Live Chat:**
Our website doesn't have any kind of live chat option. Which customer visits our website they can't reach to us through any live chat.
- **Missing of Coupon Management:**
We can't give anyone discount, because our website not have any coupon management.
- **Share Ability of Product Pages:**
That is the vision of any Marketer? For them to do their marketing for their customers. By social media you limit the ability of your consumers to do so on each of your web sites. But our website doesn't have this.

1.4 Motivation

History of e-commerce:

One of the most popular activities on the Web is shopping. It has much allure in it — you can shop at your leisure, anytime, and in your pajamas. Literally anyone can have their pages built to display their specific goods and services.

History of ecommerce dates back to the invention of the very old notion of "sell and buy", electricity, cables, computers, modems, and the Internet. Ecommerce

became possible in 1991 when the Internet was opened to commercial use. Since that date thousands of businesses have taken up residence at web sites.

At first, the term ecommerce meant the process of execution of commercial transactions electronically with the help of the leading technologies such as Electronic Data Interchange (EDI) and Electronic Funds Transfer (EFT) which gave an opportunity for users to exchange business information and do electronic transactions. The ability to use these technologies appeared in the late 1970s and allowed business companies and organizations to send commercial documentation electronically.

- Why we interested:
 - i. A wide range of products and services
 - ii. Simplicity and comfort
 - iii. E-commerce saves money
 - iv. E-commerce saves time
- When this problem is arise:

E-commerce website allows your business to sell you're offered products and services to your online customers all over the world. These websites break the barrier of geographical location of business and offers you a vast spectrum of audience and hence possibility of better overall sales.
- This problem is already solved and there are so many e-commerce companies are in the market. We think it in our vision and design it. Now we are developing this module with our own ideas. So that customer can trust us and easily purchase products.
- There are so many similar websites like us (amazon.com , evaly.com.bd , chaldal.com etc.). We have discussed briefly in the 2nd chapter.
- We will make so many improvements in our future versions. This is our beta version we will publish so many version in recent future.

1.5 Objectives of the project

- Proper management and opportunities securely store all records.
- To increase the efficiency of online based E-commerce system.
- Technical assistance for any difficulty for seamless operation site.
- The system built make components reusable future developments.
- Unlimited changes without functional difficulties addressing ever-changing business requirements.
- Tailor-made design with value-added features for gaining and retaining customers on the site.
- Safe and secure payment options and mechanism for generating trust among customers and building up their confidence for the particular site.
- All these and some other objectives make E-commerce Website Design Company a choice.
- of numerous companies for establishing online store.
- Complete online solution for SEO and SMO techniques for making website popular and get higher ranking on search engines.

1.6 Contributions

As the goal of the application is ease of use and to provide an interactive interface, extensive research has been done to gain an insight into the needs and behaviors of various users. The working of the application is made convenient and easy to use for the end user.

Users can be classified into two types based on their knowledge of the products that suit their needs. They can be classified as users who know about the product that would satisfy their needs and users who have to figure out the product that would satisfy their needs. Users who know about the product should be able to find the product easily with the click of a button. Such users can search for the product by using the product name as the search term. Users who have to figure out the product that would satisfy their needs could use a search term to find a list of products and then should be able to filter the results based on various parameters like product type, manufacturer, price range, platform supported etc.

The users should be able to view the complete specification of the product and various images at different Zoom levels. The user should be able to read the customer reviews for the product and the ratings provided. They should be able to write their own reviews. They should be able to print out the specifications for a product or email the product page to a friend's etc.

To increase the ease of use the user should be able to add a product to the shopping cart by dragging a product and dropping it in the shopping cart. A user should be able to edit the contents of a shopping cart. They should be able to update the quantities of the products added to the cart and remove the

products from the cart. The user should be able to remove the product from the shopping cart by dragging the product and dropping it outside the cart.

The application can be made interactive by pop up messages when a product has been dropped in to the shopping cart or out of the shopping cart. The user can be notified if the cursor enters a drop area and the object that could be dropped. Also users are impatient making it important to load pages soon. [3]

1.7 Organization of project

In chapter 2 clarifies existing framework, existing or supporting writing and investigation of existing framework. Besides, in this part we will likewise examine about the numerous sorts of existing on the web shop and functionalities of the current online shop. In supporting writing we will portray about a wide range of apparatuses that we have utilized in our framework. From investigation of existing framework, we will come to know upsides and downsides of online business framework.

Chapter 3 consists of the feasibility study, requirement analysis, system design and implementation. In feasibility study part we will discuss technical feasibility, economic feasibility, operational feasibility, behavioral feasibility and legal feasibility. In this chapter next part is requirement analysis. Here, we will discuss about the functional and non-functional requirements. Then next part is system design. In this part we will describe how we have designed our system. In implementations part of this chapter we will discuss about front end, forms design, report design, back end, database design.

Chapter 4 explains about the experimental results of our project and analysis of the result and also discuss about the applications of our project. In result analysis part we will discuss about the report or output of our system and we will know about the daily, weekly and yearly sales chart of our system. In application part we will describe about the real time uses and financial benefits of our system.

Chapter 5 discusses about the system requirements, user interfaces or the screenshots of our system. In system requirements part we will discuss about the hardware requirements and software requirements for client and server. In user interfaces part we will give all the screenshots of our system.

Chapter 6 concludes the report of our system. In this chapter we will discuss about limitation and future works. In limitation part we will discuss about the limitation of our system. In future works we will discuss about the modules which we will develop in future.

1.8 Conclusions

E-commerce is an evolution” By using electronic technology through the internet, it achieved, more competitions, more marketplaces, faster transactions, and more advanced technologies to make activities between customers and producers more active. We as customers and internet users are responsible to keep our e-commerce healthy and safe so that e-business can be more reliable in the future. The internet has leads to the birth and evolution of e-commerce. E-commerce has now become a key component of several organizations in the daily running of their business. As the internet and in turn, E-commerce has developed, and continues to evolve and grow, it is vital that any organization, in any particular, must base its strategic planning around such rapidly growing medium. There are plenty of options available for selling online, and that can make choosing your platform a challenge. Rather than guessing, or making a selection based on name alone, you should aim to use the criteria we've highlighted here to narrow down and ultimately select the right solution for you.

CHAPTER - 2

EXISTING SYSTEM & LITERATURE REVIEW

2.1 Introduction

The ebb and flow writing on shopper web based buying choices has for the most part focused on distinguishing the elements which influence the eagerness of buyers to participate in web ecommerce the space of purchaser conduct research, there are general models of purchasing conduct that delineate the procedure which customers use in settling on a buy choice.

These models are essential to advertisers as they can clarify and anticipate shoppers buy conduct. Fast development of world's web populace and reception of ICT in various areas have reshaped the method of correspondence and request using its possibilities to the improvement of exchange and business. Speed, productivity, viability, vitality and different uniqueness of the innovation made it as the quickest embraced and diffused innovation until the 21st century.

The blast in the utilization of electronic trade (internet business) by the business area has been gigantic since its commencement just a couple of years prior. From governments to worldwide organizations to one-individual new businesses, web based business is progressively seen as a key business methodology of things to come. Simplicity of exchange, extending markets, and diminished overheads are factors that make web based business arrangements increasingly appealing, as clear with the development of online deals.

The world exchange association and distinctive round conversations on the exchange related issues have opened up another field of worldwide rivalry. Creating nations mechanical wellness is should in looking through new market and making purchaser merchant relationship to accomplish the intensity in the worldwide market.

The World Wide Web (WWW) can be considered as the correct way which gives the chance to defeat the obstruction of time and spot in building purchaser merchant relationship. Hence, E-Commerce ought to be embraced as the compelling media for advertising and selling of an item or administrations through the web.

2.2 Existing System

We have tried to finding a unique project idea. The **click to Buy** is an existing idea, but we tried to represents it with new look and new architecture.

expending. Reports are arranged physically as and when required. Keeping up of reports is exceptionally monotonous undertaking. To purchase any item client needs to gather data about it either by visiting the shop or asking individuals which is the better one.

There is no PC framework for taking care of payments. All estimations are performed physically which may not be exact consistently. Keeping up the record is actually a dreary assignment. There is no PC framework for taking care of installments. All estimations are performed physically which may not be exact consistently. Keeping up the record is actually a dreary assignment. Any client can utilize this current site to scan for any sort of items, select specific items from a wide scope of items.

why online business, particularly the business-to-business portion, is developing so rapidly is its critical effect on costs related with inventories, deals execution, acquisition, intangibles like banking, and appropriation costs. Uddin and Islam saw that the diverse projections of ICT in human life argue a wining case for institutional combination of ICT related segments in provincial help programs taken by Governments and NGOs. Chaffey managed methodology and uses of E-Business and E-Commerce in a sensible however vigorous way. He focused on that e-business and web based business is significant for the executive's suggestions as such a scaffold to connect driving edge examination and expert practice is required. From the previously mentioned writing survey, it is obvious that web based banking can go about as a reciprocal towards e-business.

With the assistance of e-business the nation can make open doors as this will support the two makers and clients. In any case, these hypothetical perceptions may not be practical in this nation. As such the investigation looks to assess whether the nation has appropriate framework for doing e-business? What are the statuses of e-business in our nation? Does online exchange truly fill in as a correlative to e-business in Bangladesh? Previously mentioned questions emerge which the examination plans to analyze.

This report is significant for additional scientists in their exploration. I'm almost certain that this report will increase the value of the current exploration. This report is set up in an organized manner and it is brimming with significant data. Online business in Bangladesh really expressed in the time of 1999 situated in USA with some non-inhabitant Bangladeshis.

This individual opened some Bangladeshi destinations concentrated on giving neighborhood news and some value-based things like sending blessing things to Bangladesh. www.munshigi.com is the principal ever Bangladeshi online business site.

There is many other ecommerce in Bangladesh and all over the world such daraz.com.bd, ajkerdeal.com amazon.com, Alibaba.com evaly.com.bd. Some of the ecommerce are discussing below.

2.2.1 Amazon Ecommerce

Amazon was started in 1994 as an online store for books. But very sooner, they expanded to all other trendy products like DVDs, electronics, etc. The rest is history. [10]

Amazon now has more than 750,000 employees. When it comes to traffic, they do have more 2.5 Billion unique visits per month. This is just the traffic of amazon.com, If we take the traffic of Amazon UK, Amazon Japan, Amazon India etc. the overall traffic to amazon will be multiple times of 2.5 Billion. The growth of amazon was really fast and they have acquired a lot of companies. [10]

To top it all off, this software is completely mobile-responsive so you and the participants of your eLearning program will be able to access your seminars and courses whenever they want wherever they may be. [10]

- 1. Overview of Amazon Ecommerce Benefits:** Amazon, the leading online retailer of garments, books, electronics and such other items, have created a highly scalable, user-friendly ecommerce website platform known as Amazon Web store. Amazon Web store uses Amazon.com's shopping cart and payment processing system to offer a rich business experience worldwide.
- 2. Instant migration, easy site conservation and great reliability:** if you have opened your online store in some other ecommerce platform and is now willing to shift to Amazon Web store, you must be happy to know migration is pretty fast.

You don't need any outside help to migrate to Web store. Besides, designers can easily choose the built-in website templates, styles and colors to develop an appealing product page. [10]

3. Key characteristics of Amazon Ecommerce:

- A. Brand Logo:** A catchy brand logo is a brand's business card for its customers. A good logo helps represent your brand to prospective customers, builds trust, and ensures customers identify your brand easily, often ensuring return buyers.
- B. Easy Navigation, Search Bar:** Your website design should be user-friendly. Shoppers must be able to locate the product they want to buy in minimum number of clicks. A good

website must have products listed in shopping categories, filters, and comparison capabilities etc.

- C. **Visuals and videos:** High resolution images are an absolute necessity when it comes to capturing the customer's attention. A good website should have products photos that can be zoomed along with crisp products videos.
- D. **Registration & Log in:** Allowing user to register on your website has several advantages for both you and your user. For one, users do not need to repeatedly enter all relevant details, speeding up the checkout process. On the other hand, as a seller have access to your user's contact information which you can use for promotional and marketing purposes.
- E. **Mobile-friendly website:** A considerable amount of purchases are made over mobiles these days. Having a mobile friendly version of your website is an absolute must. The website content must be adaptable to any mobile device and provide a user-friendly experience.
- F. **Trust marks/Customer reviews:** Customers often make a purchase decision based on user reviews or ratings on a product. Depending on their functionality, e-commerce sites can use plugins from the popular review platforms to add credibility to their products.
- G. **Special offers and wish lists:** E-commerce sites are using special offers as their standard marketing practices via email, social, text, etc. Also not using wish lists are equal to leaving revenue on the virtual desktop table. The customers should be able to bookmark items they want and will most likely buy in the future.
- H. **Social media accessibility:** In today's age, your brand's social media presence can be the single most important factor influencing brand value, customer engagement, and sales. You can thus have a Facebook page about your product, Instagram account advertising discounts, etc. for extended customer outreach. [11]

Overview of Amazon Ecommerce Features:

- A. Custom Branding
- B. Custom Fields
- C. Administrative Reporting
- D. Display Transcripts
- E. Mobile Access
- F. Automated Actions
- G. Notifications

2.2.2 Evaly Bangladesh Ecommerce:

Evaly started with an ambition to build an everything stores of Bangladesh. The company has a long way to go before it becomes the everything stores. However, it has made some significant headway. [11]

Within a year of launching, the company has become one of the leaders in the ecommerce industry in Bangladesh effectively putting a strong fight with Alibaba owned Daraz for dominance.

“Our ambition is to become the dominant player in Bangladesh,” says Mohammad Resell, Founder, and CEO of Evaly. “We are only a year-old company and in terms of numbers and growth, we are neck-to-neck with Daraz in almost every area.”

Over the past one year, Evaly has, to some extent, shaken up the entire ecommerce market in Dhaka. With an aggressive push for growth, extensive investment in brand building, and an ingenious operational strategy the company has become a leading local ecommerce player in Bangladesh. The company says it aims higher.

“The ecommerce market in Dhaka is ascending fast,” Mr. Rassel says, “and the future of ecommerce is going to be very different.” Mr. Russell says that Evaly is among the few local companies to have an extraordinary growth and is on pace with a formidable competitor like Daraz that has the backup from Alibaba. [11]

An Impressive Number:

From the beginning, Evaly has focused extensively on growing its number. e-commerce has suffered from dwindling numbers when it came to GMV in Dhaka for a while. Evaly says it has changed that equation. With a focus on high-value items such as motorbikes, AC, refrigerator, mobile phones, and other high-value products and a competitive incentive model for customers, Evaly has quickly been able to grow its number. The company is already a dominant player in high-value products – products that cost above BDT 10,000. “We are significantly ahead in selling high-value items from the market,” says Mr. Rassel. “In fact, we are ahead of Daraz in many verticals, he adds. The company says it has sold more motorbikes and other high-value products than any other players in the market including Daraz. Between September-October this year, Evaly had a net GMV of \$7.5M, which is higher than almost all ecommerce players in the market. The company says it plans to cross tk. 130 crore in sales in December. It has already put forward a series of lucrative campaigns. [12]

- A. **Brand Building** Over the past months, Evaly has invested heavily in building brand awareness across the country. The company has wider brand recognition among ecommerce players in Bangladesh. It is one of the few digital startups in Dhaka to put ads during a cricket match. Evaly was one of the regular advertisers during the recent T20 between Bangladesh and India that took place in India a few weeks ago. The company continues invest in building brand awareness through a myriad of ways.
- B. **Everything Store** Evaly started with an ambition to build an everything stores of Bangladesh. The company says it has made solid progress towards the goal. It has a growing number of sellers – all types of them, including brand sellers, big retailers, and small offline retailers. “We have offline retailers coming online for the first time using Evaly. Evaly has also been able to attract a significant number of small Facebook and online sellers who are now using Evaly as their online home,” says Mr. Rassel. The company says it has been building its web and app from the ground up because it wanted to build custom features that allow it to become the everything store. The company has also built a diverse platform where you can find every type of product. “On the product front, we have sold almost all types of products. We are only lagging in fashion items. Other than that, we are going for all the other items. We sold cars. We sold rod and cement, jewelry, grocery and everything in between,” says Mr. Rassel. “We have achieved about 40% of our initial goal regarding everything store. However, we are still far from creating one.”
- C. **Sustainability And Profitability** “We are a much more stable company today,” says Mr. Rassel. There have questions regarding how Evaly manages to provide consistent incentives to customers to shop on Evaly. The company says it has figured out a meaningful approach to doing it. “We have plans and strategies in place that we believe would allow us to deal with this challenge and be a profitable operation while offering the best price to our customers. I can’t disclose the details but we are working on things that you would come to see in the future.”
- D. **Service Quality** There are some complaints regarding Evaly service, particularly with lengthy delivery time it takes to deliver goods to customers. The company says it is aware of the matter and it regrets the limitation. However, it says Evaly has taken meaningful initiatives to address some of the challenges regarding customer experience in the past months. The customer service has improved over the past months and will continue to improve as it has been paying attention to the matter of late. Mr. Rassel says dealing with large items has many limitations which sometimes affect delivery time. However, he stresses that “all of our customers get their products delivered. We ensure that part religiously. At the same time, we are working hard to ensure that we improve our service quality and our customers get better experience shopping.” [13]

2.2.3 Chaldal Ecommerce Bangladesh

Chaldal.com is a Bangladeshi online grocery and food products provider, founded in 2013. It sells fresh fruits and vegetables, meat and dairy, groceries, and personal care and household items via its website and mobile apps. It is currently serving all of Dhaka City, except certain parts of Old Town.

Chaldal was founded by Waseem Alim (Founder and CEO), Zia Ashraf (Founder and COO), and Tejas Viswanath (Founder and CTO). Now they deliver 2200+ orders per day and serve almost 20000+ household across Dhaka city.

They was started their first journey with a bicycle now they have about 200+ motorcycle for ensure 1 hour delivery. Their first order was a pair of sunlight battery. They were collected that one from a departmental store and deliver to the customer. On 2013 when they start their journey they only deliver to Gulshan Banani area now they deliver all area of Dhaka city.

Key Features of Chaldal:

- A. One Hour Delivery:** They are doing only the one hour fastest delivery in Dhaka city.
- B. Fast And Smooth Website:** The website of this company is so much fast and smoothly.
- C. Easy To Use:** The usability of this site is so easy.
- D. Secure:** The website is secure customer information.
- E. Organized Category:** They have well organized category so that user can easily find their need.
- F. Quick Search:** They have a quick search in all products (like search, actual search and so on).
- G. Micro Warehouse:** To ensure 1-hour delivery, Chaldal maintains 9 different micro warehouses across Dhaka city. They have warehouses in Hajaribag, Banani, Rajarbag, Mirpur, Uttara, Dhalibari and Kallyanpur, Rampura and Jatrabari. All the products are stocked in those warehouses. The representatives prepare and maintain the stocks for delivery.

H. Payment System: They have secured payment system. People can use their debit or credit card, online banking, mobile banking and also customer can order for COD option.

I. Optimized Website: The website is well optimized for pc, laptop, tab or mobile screen.

J. Mobile App: They have very good and fast mobile apps for user. User can easily manage their order with this app so easily.

Recently they have started work on integrate artificial intelligence in their existing system. Now they are becoming one of very big e-commerce for people's daily need. They sell about 2 corers taka only the baby diaper per month. For that reason they launched **www.diaper.com.bd** for only selling different branded diaper.

2.3 Supporting Literature

An existing online learning system consists of many web tools, algorithms and models. There are many web tools for developing an online learning system such as PHP, ASP.Net, JAVA, jQuery, Java Script, IIS (Internet Information Services)/WAMP, XAMPP server, MySQL server etc. Some of the tools are describing below. [14]

2.3.1 Use Technology

1. HTML

HTML stands for Hyper Text Markup Language. HTML is the web's core language for creating documents and applications for everyone to use, anywhere. It is standardizing system for tagging text files to achieve font, color, graphic and hyperlink effects on World Wide Web pages. HTML elements form the building blocks of all websites. The markup tells the web browsers how to display web pages. Web browsers can read HTML files and render them into visible or audible web pages. Browsers do not display the HTML tags and scripts, but use them to interpret the content of the page. HTML describes the structure of websites. The extension of HTML file must be “.html”.

Basic form of HTML:

```
<!DOCTYPE html>

<html>

<head>

<title>This is a title</title>

</head>

<body>

<p>Hello world! </p>

</body>

</html>
```

Figure 2.1: HTML Tag

2. CSS

CSS stands for Cascading Style Sheet. CSS is a simple mechanism for adding style (e.g. fonts, colors, spacing etc.) to web documents. CSS defines how HTML elements are displayed. CSS is a cornerstone technology used by most websites to create visually engaging web pages, user interfaces for web application and user interfaces for many mobile applications. CSS is designed primarily to enable the separation of document content from document presentation, including elements such as the layout, colors and fonts. This separation can improve content accessibility, provide more flexibility. This separation of formatting and content makes it possible to present the same markup page in different styles for different rendering methods.

Importance of CSS

- I. Web pages loads easier and they use less bandwidth.
- II. CSS is compatible with every web browser.
- III. CSS makes content moveable.
- V. CSS saves a lot of works.
- VI. The CSS code allows web developers to take control of many aspects of website, such as fonts, colors, positioning and styling of data.

4. Asp.Net

ASP.NET Core is the open-source version of ASP.NET, that runs on macOS, Linux, and Windows. ASP.NET Core was first released in 2016 and is a re-design of earlier Windows-only versions of ASP.NET. [14]

5. Reasons to Use Asp.Net

ASP.NET Core is designed to allow runtime components, APIs, compilers and languages evolve quickly, while still providing a stable and supported platform to keep apps running.

Multiple versions of ASP.NET Core can exist side by side on the same server. Meaning one app can adopt the latest version, while other apps keep running on the version they were tested on.

ASP.NET Core provides various support lifecycle options to meet the needs of your app. You can choose a long-term support release, or run with the latest release if you commit to upgrade more often.

ASP.NET apps can be developed and run on Windows, Linux, macOS, and Docker. The Visual Studio family of products has tools for building .NET apps on any operating system. There are also command line tools and extensions for many popular editors.

The ASP.NET Core runtime that your app runs on can be deployed as part of your app, or installed centrally on your web server. ASP.NET Core is also perfectly suited for Docker containers. [14]

6. MSSql

MS SQL Server is a relational database management system (RDBMS) developed by Microsoft. This product is built for the basic function of storing retrieving data as required by other applications. It can be run either on the same computer or on another across a network. This tutorial explains some basic and advanced concepts of SQL Server such as how to create and

restore data, create login and backup, assign permissions, etc. Each topic is explained using examples for easy understanding. [15]

7. Reasons to Use MSSQL

- 1) Scalability and Flexibility
- 2) High Performance
- 3) High Availability
- 4) Web and Data Warehouse
- 5) Comprehensive Application Development
- 6) Very fast, reliable, and easy to use
- 7) Ideal for both small and large applications

The main reason Microsoft SQL Server is a favorite of developers and virtualization admins alike is its ease of use. Development and troubleshooting are typically the toughest aspects to perfect when thinking about getting a SQL project into production. MSSQL comes with excellent tools that will save you a lot of time in these areas – tools like SQL Server Profiler, SQL Server Management Studio, BI tools and Database Tuning Advisor.

Setting up almost everything, from installing on a VM to initial query writing and editing, is incredibly easy with MSSQL – especially in comparison to other SQL products. If there are problems in any stage of development, there is a plethora of online support and documentation in addition to live product support, whereas the support options for other SQL products are not nearly as robust. [16]

8. Web hosting

A web host, or web hosting service provider, is a business that provides the technologies and services needed for the website or webpage to be viewed in the Internet. Websites are hosted, or stored, on special computers called servers. If you do not have a domain, the hosting companies will help you purchase one.

8 Popular Types of Web Hosting Services:

- Shared Web Hosting. Warchi/E+/Getty Images.
- Reseller Web Hosting
- Cloud Based Web Hosting.
- Virtual Private Server (VPS)
- Dedicated Web Server
- Colocation Web Hosting.

Self Service Web Hosting.
Managed WordPress Hosting

9. JavaScript

JavaScript is a powerful and popular language for programming on the web. JavaScript also known as ECMAScript, is a dynamic programming language. It is most commonly used as part of web browsers, whose implementations allow client-side scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed. JavaScript can be placed in the <body> and the <head> sections of an HTML page. In HTML, JavaScript code must be inserted between <script> and </script> tags.

10. Importance of JavaScript

- I. All browsers have JavaScript interpreters built in. No other languages have this tremendous advantage.
- II. It's free and easy to set up.
- III. It's easy to debug.
- IV. It has more powerful and free frameworks and libraries.

11. JQuery

JQuery is a fast, small, and feature-rich JavaScript library. It makes things like HTML document traversal and manipulation, event handling, animation, and Ajax much simpler with an easy-to-use API works across multitude browsers. With a combination of versatility and extensibility, jQuery has changed the way that millions people write JavaScript. [17]

JQuery includes the following features:

- I. Events
- II. Effects and Animations
- III. AJAX
- IV. JSON parsing etc.

12. Importance of jQuery

There are lots of other JavaScript frameworks out there, but jQuery seems to be the most popular, and also the most extendable. Many of the biggest companies on the Web use jQuery, such as Google, Microsoft, IBM, and Netflix. [11]

JQuery is more important because:

- 1) JQuery is a lightweight library.
- 2) JQuery supports cross browser.
- 3) Easy Dom traversing.
- 4) JQuery elements display even when JavaScript is disabled.
- 5) JQuery makes animated applications just like Flash.
- 6) JQuery pages load faster.
- 7) JQuery can be SEO friendly.

13. Internet Information Services (IIS)

IIS is a set of Internet based services for Windows machines. Originally supplied as part of the Option Pack for Windows NT, they were subsequently integrated with Windows 2000 and Windows Server 2003) [25]. The current (Windows 8) version is IIS 8.0 and includes servers for FTP (a software standard for transferring computer files between machines with widely different operating systems), SMTP (Simple Mail Transfer Protocol, is the de facto standard for email transmission across the Internet) and HTTP/HTTPS (is the secure version of HTTP, the communication protocol of the World Wide Web) Stands for "Internet Information Services." IIS is a web server software package designed for Windows Server. It is used for hosting websites and other content on the Web. Microsoft's Internet Information Services provides a graphical user interface (GUI) for managing websites and the associated users. It provides a visual means of creating, configuring, and publishing sites on the web. The IIS Manager tool allows web administrators to modify website options, such as default pages, error pages, logging settings, security settings, and performance optimizations

IIS can serve both standard HTML webpages and dynamic webpages, such as ASP.NET applications and PHP pages. When a visitor accesses a page on a static website, IIS simply sends the HTML and associated images to the user's browser. When a page on a dynamic website is accessed, IIS runs any applications and processes any scripts contained in the page, then sends the resulting data to the user's browser. [16]

2.3.2 Used Diagram

An entity-relationship diagram (ERD), also known as an entity-relationship model, is a graphical representation of an information system that depicts the relationships among people, objects, places, concepts, or events within that system. An ERD is a data modeling technique that can help define business processes and be used as the foundation for a relational database. Entity-relationship diagrams provide a visual starting point for database design that can also be used to help determine information system requirements throughout an organization.

After a relational database is rolled out, an ERD still serve referral point, should any debugging or business process re-engineering be needed later. However, while an ERD can be useful for organizing data that can be represented by a relational structure, it can't sufficiently represent semi-structured or unstructured data. It's also unlikely to be helpful on its own in integrating data into pre-existing information system.

2.3.2.1 General Overview of ERD

An entity relationship diagram consists of several components. Components those are frequently used to represent an e-r diagram are

- I. Entity
- II. Weak entity
- III. Attribute
- V. Derived attribute
- VI. Relationship

A. Entity

An entity can be a person, place, event, or object that is relevant to a given system. For example, a school system may include students, teachers, major courses, subjects, fees, and other items. Entities are represented in ER diagrams by a rectangle and named using singular nouns. It is represented by rectangle. [17]

B. Weak entity

A weak entity is an entity that depends on the existence of another entity. In more technical terms it can defined as an entity that cannot be identified by its own attributes. It uses a foreign key combined with its attributed to form the primary key. Entity like order item good example for this. The order item will be meaningless without an order so it depends on the existence of order. It is represented by double rectangle.

C. Attribute

An attribute is a property, trait, or characteristic of an entity, relationship, or another attribute. It is represented by an ellipse.

D. Multi valued attribute

If an attribute can have more than one value it is called a multi valued attribute. It is important to note that this is different to an attribute having its own attributes. For example, a teacher entity can have multiple subject values. It is represented by a double ellipse.

E. Derived attribute

Derived attributes are the attributes that do not exist in the physical database, but their values are derived from other attributes present in the database. For example, average salary in a department should not be saved directly in the database, instead it can be derived. [18]

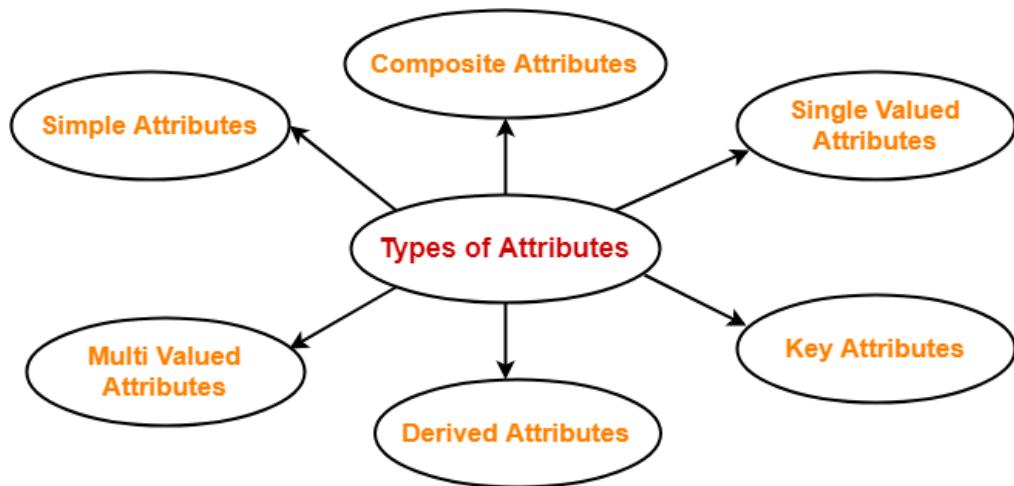


Figure 2.2: Derived Attribute

F. Relationship

A relationship is the affiliation that portrays the communication between elements. Cardinality, in the setting of ERD, is the quantity of occasions of one element that can, or should, be related with each example of another element. When all is said in done, there might be balanced, one-to-many, or many-to-numerous connections.

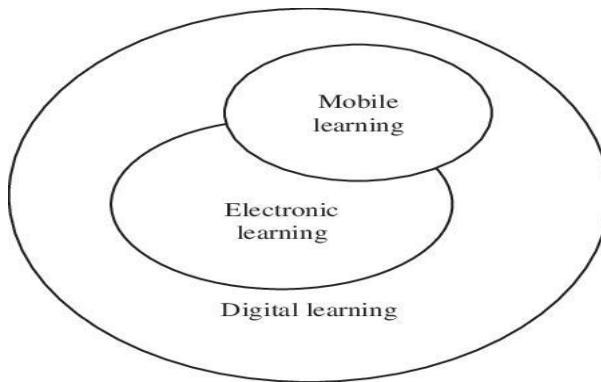


Figure 2.3: many-to-numerous connections.

G. Mapping Cardinality of ERD

Cardinality refers to the number of entity objects on each side of the relationship. In e-r diagram there are four types of mapping cardinalities. For example: a customer can order products one after another.

- i. One-to-One
- ii. One-to-Many or Many-to-One (dependent on the direction)
- iii. Many-to-One
- iv. Many-to-Many

i. One to One

A one-to-one relationship is the simplest relationship between two beans. One entity bean relates only to one other entity bean. For example: a customer can be kept only in one word/cell at a time.

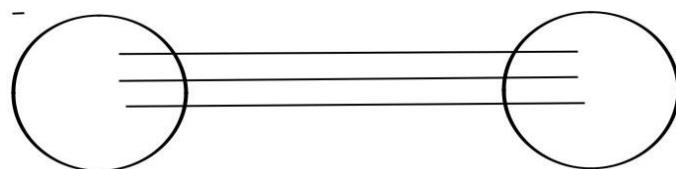


Figure 2.4: one to one

ii. One-to-many

In a one-to-many relationship, one object can reference several instances of another.

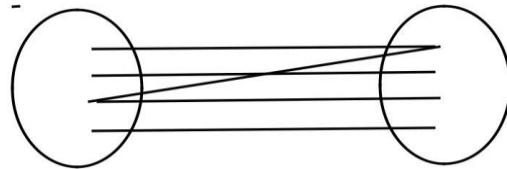


Figure 2.5: one to many

iii. Many-to-one

In a many-to-one relationship, many objects can reference one instance of another.

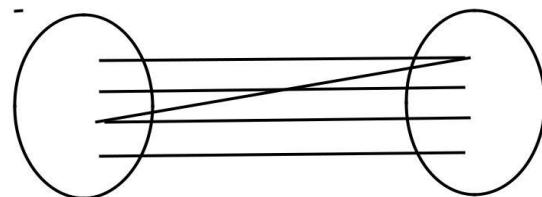


Figure 2.6: Many to One

iv. Many-to-many

A many-to-many relationship is complex. In a many-to-many relationship, many objects can reference many objects. This cardinality is the most difficult to manage.

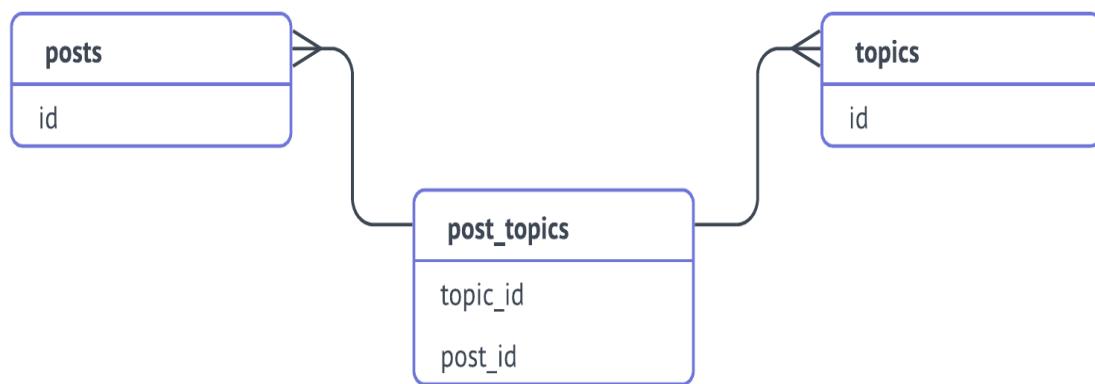


Figure 2.7: Many to One

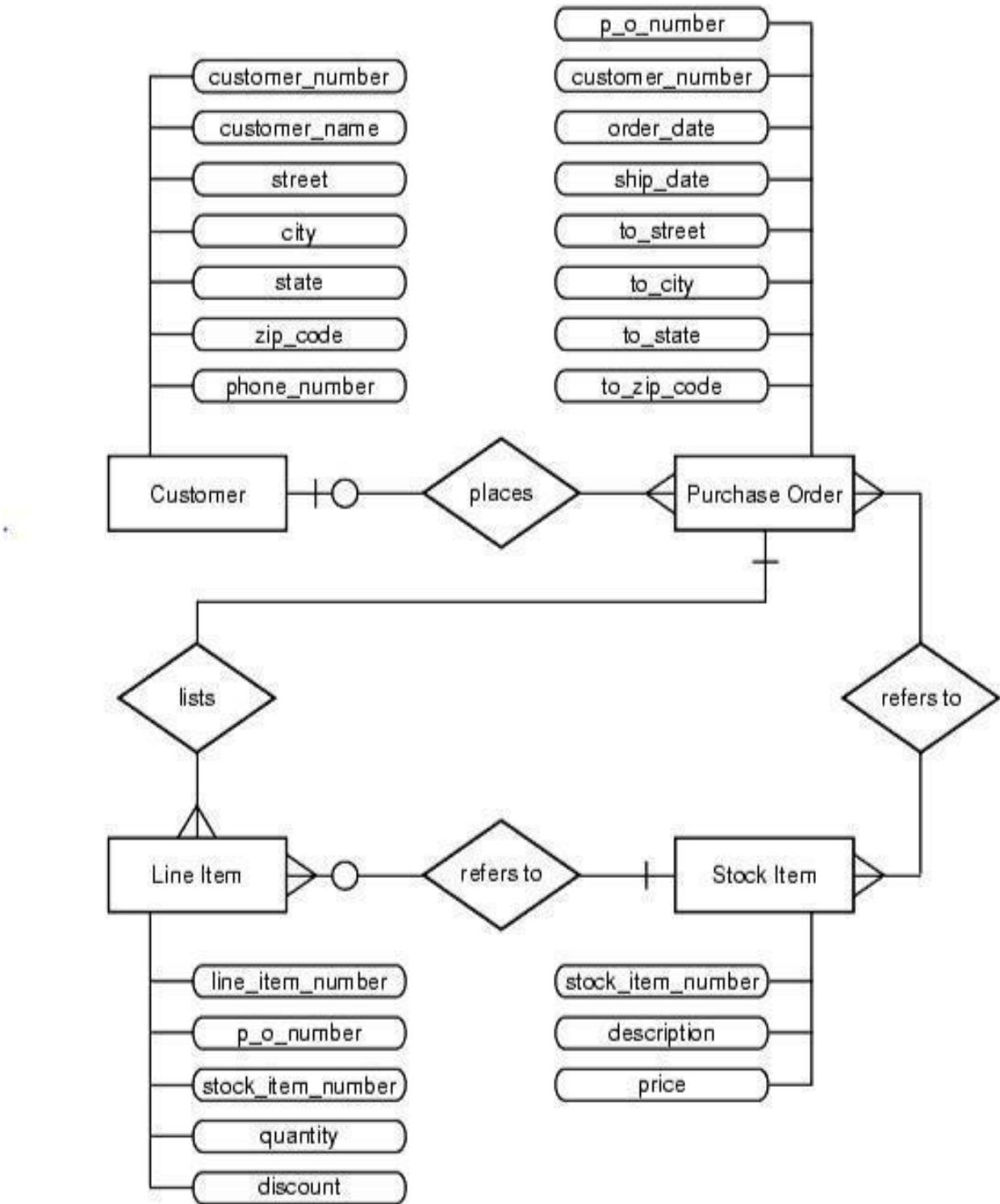


Figure 2. 8: ER Diagram for purchase order application

A Customer has a one-to-numerous relationship with a Purchase Order in light of the fact that a client can put in numerous requests, however a provided buy request can be put by just a single client. The relationship is discretionary on the grounds that zero clients may put in a given request (it may be set by somebody not recently characterized as a client). [19]

A Purchase Order has a many-to-numerous relationship with a Stock Item on the grounds that a buy request can allude to many stock things, and a stock thing can be alluded to by many buy orders. Be that as it may, you don't realize which buy orders allude to which stock things.

In this way, we present the idea of a Line Item. A Purchase Order has a one-to-numerous relationship with a Line Item in light of the fact that a buy request can list many details, yet a given detail can be recorded by just one buy request.

A Line item has a many-to-one relationship with a Stock item because a line item can refer to only one stock item, but a given stock item can be referred to by many line items. The relationship is optional because zero line items might refer to a given stock item. [19]

A. Data Flow Diagram (DFD)

A Data Flow Diagram (DFD) is a structured analysis and design tool that can be used for flow charting. A DFD is a network that describes the flow of data and the processes that change or transform the data throughout a system. This network is constructed by using a set of symbols that do not imply any physical implementation. It has the purpose of clarifying system requirements and identifying major transformations. So it is the starting point of the design phase that functionally decomposes the requirements specifications down to the lowest level of detail. DFD can be considered to an abstraction of the logic of an information-oriented or a process-oriented system flow-chart. For these reasons DFD's are often referred to as logical data flow diagrams.

DFD graphically representing the functions, or processes, which capture, manipulate, store, and distribute data between a system and its environment and between components of a system

The visual representation makes it a good communication tool between User and System designer. Structure of DFD allows starting from a broad overview and expand it to a hierarchy of detailed diagrams. DFD has often been used due to some reasons such as logical information flow of the system, determination of physical system construction requirements, simplicity of notation, establishment of manual and automated system requirements. [20]

B. Components of DFD

DFDs only involve four symbols. They are:

- i. Process
- ii. Data Object
- iii. Data Store
- iv. External entity

i. Process

Transform of incoming data flow(s) to outgoing flow(s).



Data Flow

Movement of data in the system.

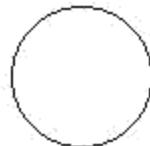
i. Data Store

Data repositories for data that are not moving. It may be as simple as a buffer or a queue or as sophisticated as a relational database.



ii. External Entity

Sources of destinations outside the specified system boundary.



Example

0-level data flow diagram:

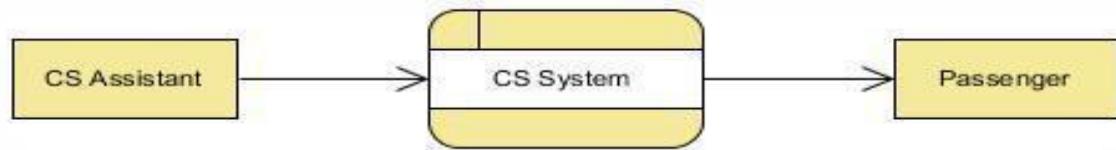


Figure 2. 9: 0-level DFD for Customer Service System

The figure above shows a context Data Flow Diagram that is drawn for a railway company's Customer Service System. It contains a process (shape) that represents the system to model, in this case, the "CS System". It also shows the participants who will interact with the system, called the external entities. In this example, CS Assistant and Passenger are the two entities who will interact with the system. In between the process and the external entities, there are data flow that indicate the existence of information exchange between the entities and the system. [21]

Level-1 data flow diagram:

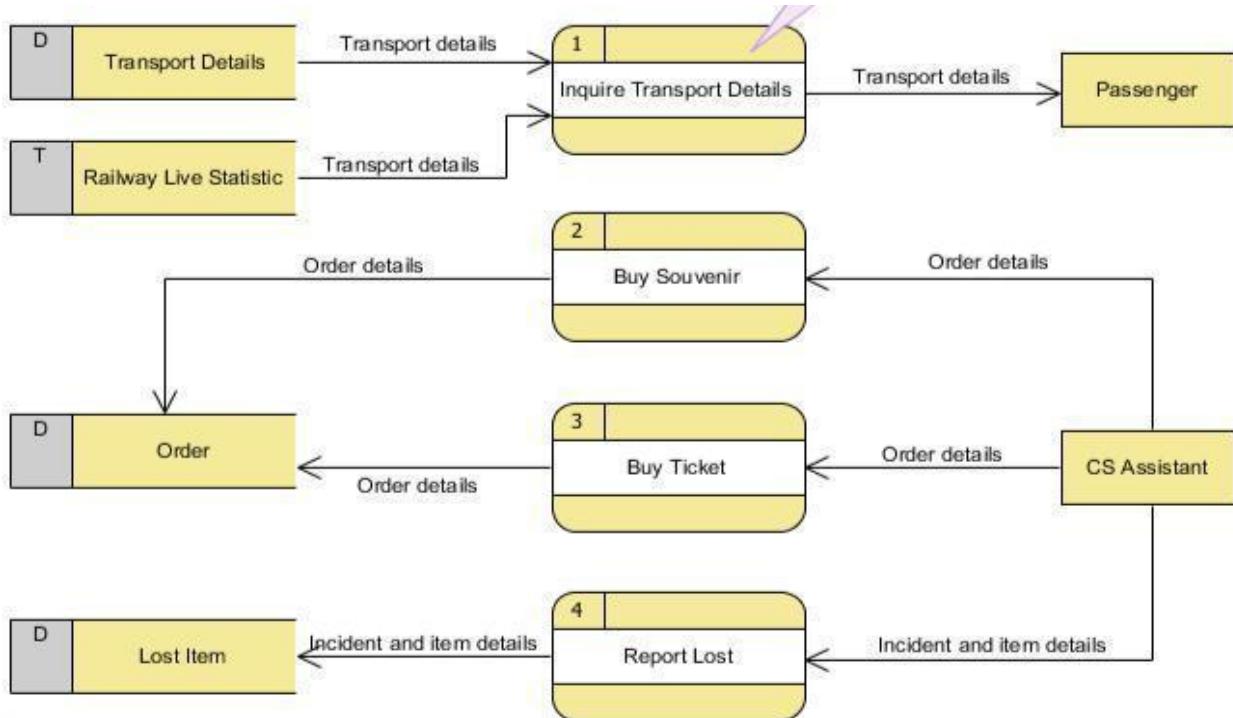


Figure 2. 10: Level-1 DFD for Customer Service System

The figure above shows the level 1 DFD, which is the decomposition of the CS System process shown in the context DFD. Read through the diagram and then we will introduce some of the key concepts based on this diagram. The CS System Data Flow Diagram example contains four processes, two external entities and four data stores. Although there are no design guidelines that governs the positioning of shapes in a Data Flow Diagram, we tend to put the processes in the middle and data stores and external entities on the sides to make it easier to comprehend. Based on the diagram, we know that a Passenger can receive Transport details from the Inquiry Transport Details process, and the details are provided by the data stores Transport Details and Railway Live Statistic. While data stored in Transport Details are persistent data (indicated by the label "D"), data stored in Railway Live Statistic are transient data that are held for a short time (indicated by the label "T"). A callout shape is used to list out the kind of details that can be inquired by passenger. CS Assistant can initiate the Buy Souvenir process, which will result in having the Order details stored in the Order data store. Although customer is the real person who buy souvenir, it is the CS Assistant who accesses the system for storing the order details. Therefore, we make the data flow from CS Assistant to the Buy Souvenir process.

CS Assistant can also initiate the Buy Ticket process by providing Order details and the details will be stored again in the Order data store. Data Flow Diagram is a high level diagram that is drawn with a high degree of abstraction. The data store Order which is drawn here does not necessarily imply a real order database or order table in a database. The way how order details are stored physically is to be decided later on when implementing the system.

Finally, CS Assistant can initiate the Report Lost process by providing the Incident and item details and the information will be stored in the Lost Item database. [22]

ii. Use Case Diagram

A utilization case graph is a dynamic or conduct chart in UML. Use case outlines model the usefulness of a framework utilizing on-screen characters and use cases. Use cases are a lot of activities, administrations, and capacities that the framework needs to perform. In this unique circumstance, a "framework" is something being created or worked, for example, a site. The "on-screen characters" are individuals or elements working under characterized jobs inside the framework.

Use case outlines are significant for envisioning the practical necessities of a framework that will convert into plan decisions and advancement needs. They likewise help recognize any interior or outer components that may impact the framework and ought to be mulled over. They give a decent elevated level of examination from outside the framework. Use case charts determine how the framework interfaces with entertainers without agonizing over the subtleties of how that usefulness is executed.

iii. Basic Use Case Diagram Symbols and Notations

System Draw your system's boundaries using a rectangle that contains use cases. Place actors outside the system's boundaries.



Figure 2.11: System

1. Use Case

Draw use cases using ovals. Label the ovals with verbs that represent the system's functions.

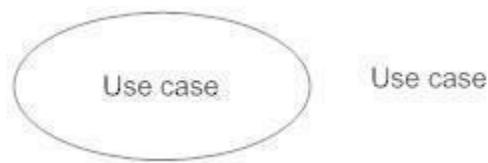


Figure 2.12: Use Case

2. Actors

Actors are the users of a system. When one system is the actor of another system, label the actor system with the actor stereotype.

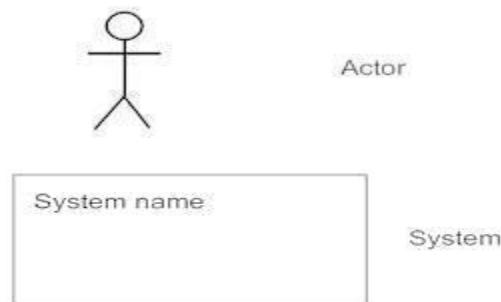


Figure 2.13: Actors

3. Relationships

Illustrate relationships between an actor and a use case with a simple line. For relationships among use cases, use arrows labeled either "uses" or "extends." A "uses" relationship indicates that one use case is needed by another in order to perform a task. An "extends" relationship indicates alternative options under a certain use case.

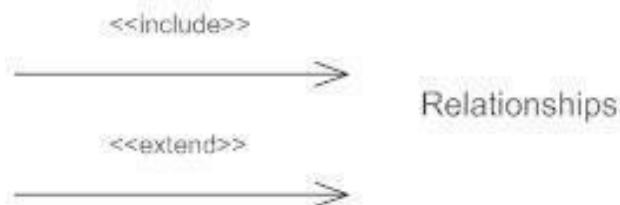


Figure 2.14: Relationship

2.3.2.2 Relational Database (RDB)

A relational database (RDB) is a collective set of multiple data sets organized by tables, records and columns. RDBs establish a well-defined relationship between database tables. Tables communicate and share information, which facilitates data search ability, organization and

reporting. RDBs use Structured Query Language (SQL), which is a standard user application that provides an easy programming interface for database interaction. RDB is derived from the mathematical function concept of mapping data sets and was developed by Edgar F. Codd

. RDBs organize data in different ways. Each table is known as a relation, which contains one or more data category columns. Each table record (or row) contains a unique data instance defined for a corresponding column category. One or more data or record characteristics relate to one or many records to form functional dependencies. These are classified as one to one, one to many, many to one and many to many. [23]

At its simplest, a database is an electronic store of data, for example a company's sales records. In a file based system, each sale would have its own file, where the recording clerk would have to enter every piece of required information. That might include sales order number, items ordered and quantities, customer name with billing and shipping address, contact name and phone number, plus various other details. Obviously, entering all of these details for every order in full would be both time consuming, and open to human error, such as spelling mistakes. It would also mean if a detail, like a customer phone number changed, it would have to be changed in multiple places. Relational databases are designed to make data entry and management simpler, quicker and less prone to data corruption by storing information so that each piece of data is stored only once, and

referenced by other pieces of data when needed. This is achieved by creating relations between data sets, hence the term relational database.

To see how some of the key principles of relational databases work, let's take our example order records through the process of database development. [23]

I. Tables, Rows and Columns

The basic unit of a relational database is a table, also referred to as a relation or base relax. Within a table, each column represents an attribute, and each row an entry. So for example, us order records might consist of columns labeled “Order Number, Customer Name, Customer Contact, Contact Phone Number, Order Date, Delivery Date, Shipping Address, Billing Address, Item Ordered, Quantity, Price,” and so on. Each row in this table would then represent an order. Details might be entered in a table, much like a spread sheet, and the resulting flat file database would contain the output for all the files, and all of their details. Although this might prevent a lot of user errors by constraining the data input, each piece of information might appear multiple times. For example, if an order contains multiple items, the whole line might be duplicated except for the item ordered columns. Clearly, this is not an efficient use of storage space, and updating data, though quicker than searching multiple files, would still be time consuming. [24]

iii. Keys and Primary Keys

Having separated all these types of information, we need a way to identify records within each table in order to reference them in other tables. Since the main reason for maintaining smaller tables is to ensure integrity of the data and avoid duplication, we also need to specify which column within a table must be unique. We do this by assigning a column within a table as a “key.” With some tables, such as orders, there are “natural keys,” like order numbers, which have to be unique for the system to work anyway. For other tables, such as contacts, these natural keys do not exist. We may have multiple contacts with the same name, so we can't use them as a key. Instead, we assign a computer generated “primary key,” that creates an artificial, unique column in the table and assigns each row an incrementally increasing number. [24]

iv. Relationships

Now that we have a way to identify the entries in a table, we can pull the information from the table by simply referencing that column in another table. This is done by “joining” tables, and creating resulting relationships, which may be one to one, meaning each unique entry in one table must also be unique in the other, one to many, where an entry must be unique in one table but may be duplicated in the other, or many to many, where entries need not be unique in either table. [25]

2.4 Analysis of Existing System

1. Analytics

What data do you want the ecommerce to give you on your courses and learners? Just simple number of logins, completion reports and assessment grades, or more advanced analytics.

2. Scalability

Scalability is key when deciding on your e-commerce platform. Your ecommerce website needs to be able to change and grow in order to meet demand. Since the database is a central part of your ecommerce platform, its own ability to scale will impact how well your ecommerce site is able to expand.

3. Flexibility

All sites hope to grow, but sometimes this growth happens so quickly and unexpectedly that online merchants have to scramble to scale up their capacity. When you work with a provider that offers scalable hosting for ecommerce, you can multiply your capabilities at a moment's notice and within a predictable cost structure.

2.5 Conclusions

There are plenty of options available for selling online, and that can make choosing your platform a challenge. Rather than guessing, or making a selection based on name alone, you should aim to use the criteria we've highlighted here to narrow down and ultimately select the right solution for you. [25]

CHAPTER - 3

PROPOSED MODEL

3.1 Introduction

Our project “**Click To Buy**” is an online shopping, which provides the online shopping available for everyone. Any type of the shop will be available for the customer, and it can be easily purchased faster after day by day we will customize our system. Shop online application concentrates more on user friendly interfaces and promotes users to purchase faster and easier. There is a facility available to do online purchase. Our online learning system have registration facility. The registration process is faster and easier compared to many other existing applications.

In the user interface of shop online there will be accomplished with options to find new products available and most purchased and customer satisfied products. People can avail this facility and buy the product faster. All products in the website will be highlighted with the image of the product. By click on the image it will take you directly to the buy page, from where customers can purchase easily.

3.1.1 Customization and Branding

Organizations can put their own branding on white label CTP. This feature is important to many organizations, particularly those engaging in e-Commerce. [27]

3.2 Feasibility Study

The objective of feasibility study is to determine whether or not the proposed system is feasible. A feasibility study is a preliminary investigation of a proposed system to decide whether the system can run smoothly with the organization, will the organization realize the benefits that are expected and to decide will the organization go for it.

Feasibility is defined as the practical extent to which a project can be performed successfully. To evaluate feasibility, a feasibility study is performed, which determines whether the solution considered to accomplish the requirements is practical and workable in the software. Information such as resource availability, cost estimation for software development, benefits of the software to the organization after it is developed and cost to be incurred on its maintenance are considered during the feasibility study. The objective of the feasibility study is to establish the reasons for developing the software that is acceptable to users, adaptable to change and conformable to established standards. Various other objectives of feasibility study are listed below. [28]

- i. To analyze whether the software will meet organizational requirements.
- ii. To determine whether the software can be implemented using the current technology and within the specified budget and schedule. To determine whether the software can be integrated with other existing software.

3.2.1 Three Types of Feasibility Study

- 1. Technical Feasibility.
- 2. Operational Feasibility.
- 3. Economic Feasibility.

3.2.2 Technical feasibility

In this, one needs to test whether the framework can be created utilizing existing innovation or not. It is clear that vital equipment and programming are accessible for improvement and usage of proposed framework. We obtained the specialized information on working in dialects, and afterward just we have begun structuring our undertaking. The framework is self-explanting and needn't bother with any whole advanced preparing. A framework has been worked by focusing on the graphical UI ideas, the application can likewise be dealt with effectively with a beginner employment. The general time that a client needs to get prepared is under 15 minutes. [29]

- I. Analyzes the technical skills and capabilities of the software development team members.
- III. Determines whether the relevant technology is stable and established.
- JJJ. Ascertains that the technology chosen for software development has a large number of users so that they can be consulted when problems arise or improvements are required.
- V. It Mentions Computer with new configuration requirements of proposed system.
- VI. It mentions new software requirements of the proposed system.

3.2.3 Economical Feasibility

Economic feasibility is a measure of the cost-effectiveness of a project or solution. As a part of this, the costs and benefits associated with the proposed system are compared and the project is economically feasible only if tangible and intangible benefits outweigh the cost. [30]

- I. Cost incurred on software development to produce long-term gains for an organization.
- II. Cost required to conduct full software investigation (such as requirements elicitation and requirements analysis).
- III. Cost of hardware, software, development team, and training.
- IV. Cost involves in purchase or rental of equipment.
- V. Cost of phones & mobile communication equipment.

- VI. Cost of salaries of employee.
- VII. Cost of maintenance of equipment.

3.2.4 Operational Feasibility

Operational feasibility means how much the system is user interactive. In this project, the management will know the details of each project where he may be presented and the data will be maintained as decentralized and if any inquires for that particular contract can be known as per their requirements and necessities. Operational feasibility also performs following tasks. Determines whether the problems anticipated in user requirements are of high priority. Determines whether the solution suggested by the software development team is acceptable. Analyzes whether users will adapt to a new software. Determines whether the organization is satisfied by the alternative solutions proposed by the software development team. It finds if any job reconstruction is required or not. Watches the feelings of the customers as well as user. System should provide right & accurate information to user or customer at right place as well at right time. [30]

3.3 Requirement Analysis

With that information in hand, an initial list of the desired functional and non-functional requirements can be put into the Product Backlog in the form of user stories. Every sprint these requirements may change, reason why in this section are described only the final requirements that are part of the current Product Backlog of the project.

3.3.1 Non-Functional Requirements

Simply said, a non-functional requirement is a specification that describes the system's operation capabilities and constraints that enhance its functionality. These may be speed, security, reliability, etc. We've already covered different types of software requirements, but this time we'll focus on non-functional ones, and how to approach and document them. If you've ever dealt with non-functional requirements, you may know that different sources and guides use different terminology. For instance, the ISO/IEC 25000 standards framework defines non-functional requirements as system quality and software quality requirements. BABOK, one of the main knowledge sources for business analysts, suggests the term non-functional requirements (NFR), which is currently the most common definition. Nevertheless, these designations consider the same type of matter – the requirements that describe operational qualities rather than a behavior of the product.

The list of them also varies depending on the source. And, frankly, it may differ for different products. For instance, if you intend to collect any user data and your website operates in the EU,

you must meet GDPR compliance rules. In some cases, this may not be relevant to you. Or you may have additional compliance requirements if you process payments. [31]

In this article, we'll cover only the most common types that should make it to your checklist. However, there may be hundreds of them. Usually, such sources as BABOK list non-functional requirements in an isolated manner. We grouped some of them since the approaches to documenting these requirements overlap and some can't be estimated without the other ones:

- A. Performance and Scalability:** How fast does the system return results? How much will this performance change with higher workloads?
- B. Portability and Compatibility:** Which hardware, operating systems, browsers, and their versions does the software run on? Does it conflict with other applications and processes within these environments?
- C. Reliability, Availability, Maintainability:** How often does the system experience critical failures? and how much time is it available to users against downtimes?
- D. Security:** How are the system and its data protected against attacks?
- E. Localization:** Does the system match local specifics?
- F. Usability:** How easy is it for a customer to use the system?
- G. Performance:** defines how fast a software system or its particular piece responds to certain users' actions under certain workload. In most cases, this metric explains how much a user must wait before the target operation happens (the page renders, a transaction is processed, etc.) given the overall number of users at the moment. But it's not always like that. Performance requirements may describe background processes invisible to users, e.g. backup. But let's focus on user-centric performance.
- H. Scalability:** assesses the highest workloads under which the system will still meet the performance requirements.
- I. Usability:** Usability defines how difficult it will be for a user to learn and operate the system. Usability can be assessed from different points.

J. Efficiency of Use: the average time it takes to accomplish a user's goals, how many tasks a user can complete without any help, the number of transactions completed without errors, etc.

K. Intuitiveness: how simple it is to understand the interface, buttons, headings, etc.

L. Low Perceived Workload: how many attempts are needed by users to accomplish a particular task.

3.3.2 Functional Requirements

Functional requirements are product features or functions that developers must implement to enable users to accomplish their tasks. So, it's important to make them clear both for the development team and the stakeholders. Generally, functional requirements describe system behavior under specific conditions. For instance:

A search feature allows a user to hunt among various invoices if they want to credit an issued invoice.

Here's another simple example: As a guest, I want a sofa that I can sleep on overnight. Requirements are usually written in text, especially for Agile-driven projects. However, they may also be visuals.

Now our system consists of many functional requirements. Our first functional requirement is admin login system. Admin can handle the all system. Admin can add product and category of the product. Moreover, admin can add the brand name and also can confirm the customer order. Admin has the ability to analysis and inquiry the sales and product report. Apart from admin can check the availability of the product. In our system there are many functional requirements are existing for the customer. Customer can see the details of the product and also can see the available product. Customer can add the product to cart for order. Moreover, Customer can choose his product by price filtering and course filtering. Another functional requirement is checkout option. Customer must fill up the checkout form to order any product by giving all the details of him. Apart from if any customer wants to contact with us then he or she can contact with us very easily by filling up the contact us form. That's all about the [31]

Mobile Friendly:

Users must be able to access the CTP system and its features via a mobile friendly browser based interface or a mobile application.

3.4 System Design

Framework configuration is the answer for the formation of another framework. This stage centers around the point by point execution of the practical framework. It accentuation on interpreting plan. Determinations to execution detail. Framework configuration has two periods of advancement. They are consistent plan and physical structure.

During consistent plan stage the expert depicts inputs (sources), yields (goals), databases (information stores) and methods (information streams) all in a configuration that meets the client necessities. The examiner additionally indicates the necessities of the client at a level that practically decides the data stream all through the framework and the information assets. Here the consistent plan is done through information stream outlines and database structure. The physical plan is trailed by physical structure or coding. Physical plan delivers the working framework by characterizing the structure determinations which indicate precisely what the competitor framework must do. The developers compose the vital projects that acknowledge contribution from the client perform important handling on acknowledged information and produce the necessary report on a printed copy or show it on the screen. [31]

3.4.1 Waterfall Methodology

Waterfall is the most popular version of the systems development life cycle (SDLC) for software engineering and IT projects. It proceeds through a sequential, single direction process that flows like a waterfall. [32]

3.4.1.1 The Phases of Waterfall Methodology

The Waterfall methodology is broken into seven stages, and each stage is completely dependent on the previous ones. This process can be planned using a Gantt chart, which is a linear bar chart that shows the start and end dates for each task.



Figure 3.1 Waterfall Methodology

Before a team can advance to the next step, the previous stage must be completed, reviewed, and approved. This method originated in industries where change is too costly or time consuming to run into, so the Waterfall methodology gives tight structure to these projects to ensure the most efficiency.

The seven stages of Waterfall include:

1. **Conception:** This stage starts with an idea and a baseline assessment of the project, its cost analysis, and its benefits.
2. **Initiation:** Once the idea is created, the project team is hired and objectives, scope, purpose, and deliverables are defined.
3. **Requirement Gathering and Analysis:** A feasibility analysis is conducted for the project and documented in the requirement specification document.
4. **Design:** Design specifications are created, studied, and evaluated in an effort to understand what the final product should look like, along with the actions needed to get there.
5. **Implementation/Coding:** The coding of the software actually begins. All previous planning is put into action during this phase.
6. **Testing:** After the coding is completed, testing is performed to ensure that there are no errors before the software is delivered to the customer. An optional user acceptance test (UAT) can also be performed, where users try the software before distributing it to the greater public.
7. **Maintenance:** This phase relies on the customers to report on any additional issues that may have been encountered in the real world. The development team works to solve and modify the software based on this feedback.

Usually developers use a waterfall method when developing e-learning. The most used one is the ADDIE model, where development has five phases: analysis, design, development, implementation and evaluation. The SMCS has been implementing an open source e-learning system based on international standard since 2009. [32]

3.4.2 Data Flow Diagram (DFD)

A Data Flow Diagram (DFD) is a structured analysis and design tool that can be used for flowcharting. A DFD is a network that describes the flow of data and the processes that change or transform the data throughout a system. This network is constructed by using a set of symbols that do not imply any physical implementation. It has the purpose of clarifying system requirements

and identifying major transformations. So it is the starting point of the design phase that functionally decomposes the requirements specifications down to the lowest level of detail. DFD can be considered to an abstraction of the logic of an information-oriented or a process-oriented system flow-chart. For these reasons DFD's are often referred to as logical data flow diagrams. [33]

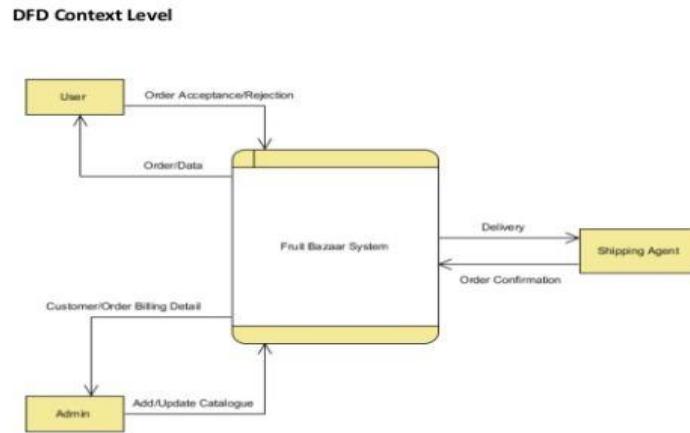


Figure 3.2 DFD context Level

Here, DFDs only involve four symbols. They are:

- i. Process
- ii. Data Object
- iii. Data Store
- iv. External entity

3.4.3 Entity relationship diagram (E-R diagram)

An entity-relationship (ER) diagram is a specialized graphic that illustrates the relationships between entities in a database. ER diagrams often use symbols to represent three different types of information. Boxes are commonly used to represent entities. Diamonds are normally used to represent relationships and ovals are used to represent attributes. [34]

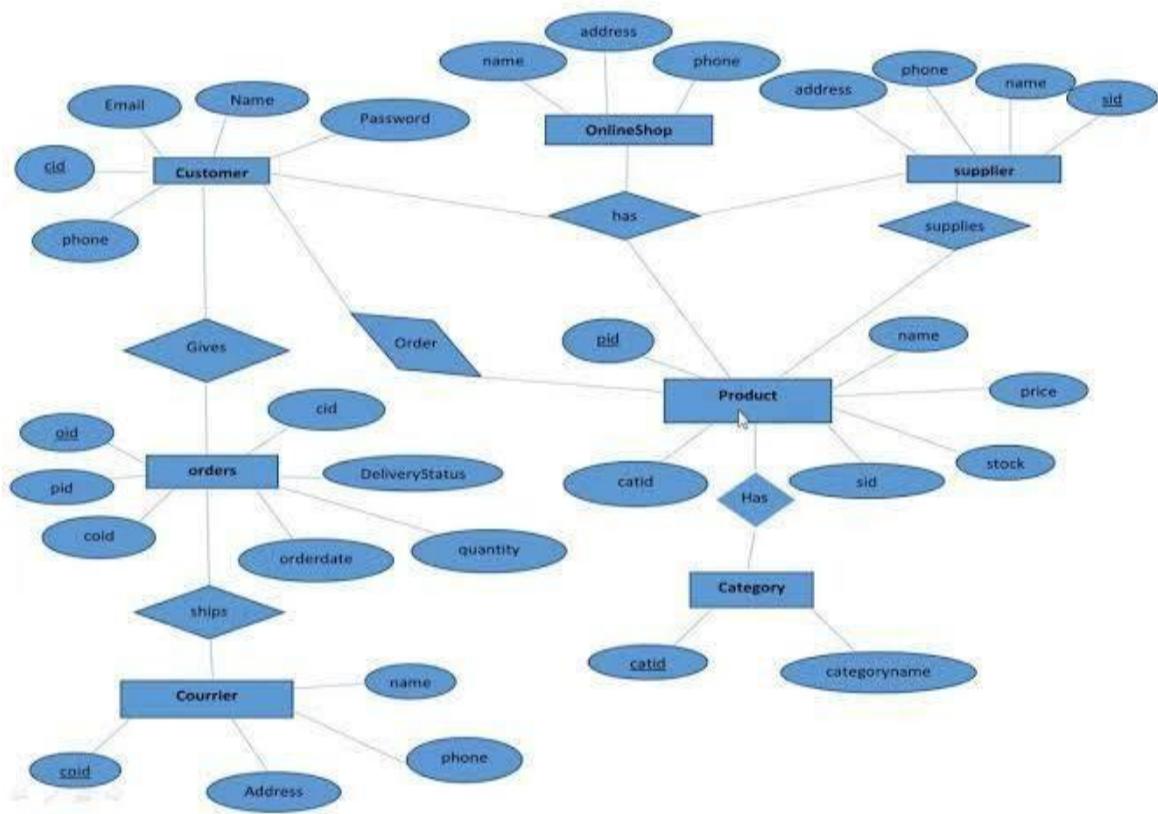


Figure 3.3 E R Diagram

Here,

- Rectangles represent entity sets.
- Diamonds represent relationship sets.
- Lines link attributes to entity sets and entity sets to relationship sets.
- Ellipses represent attributes.
- Underline indicates primary key attributes

3.4.4 Use Case Diagram

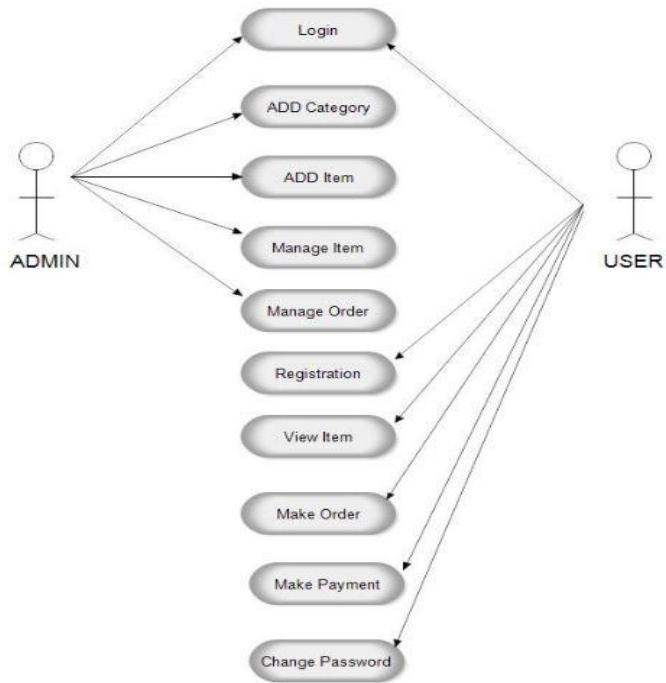


Figure 3.4: Use Case Diagram

3.5 Front End

The front end part, involving pages which clients can see, is made by utilizing layouts so it can facilitate structure and stacking forms. This part, in the appearance, the principle menu is steady, therefore it is anything but difficult to utilize. Considered as the most oftentimes get to when contrasting and different pieces of the site, front end pages need to utilize format, and thus, sparing transmission capacity and number of database gets to. For database activity issue, targeting limiting number of gets to, it needs only four questions to show all subtleties. Those inquiries comprise of jointed SQL explanations, which ask simply fundamental data from the database. This part is comprising of HTML, CSS, JavaScript, JQuery and so forth.

In front end we have created and planned many capacity modules, for example, administrator login structure, value extend module, brand separating module, checkout structure, add to truck structure and so on by utilizing html, css, java content, jQuery, bootstrap and so forth. We have additionally structured numerous pages for indicating our gadgets item by their class. We have structured our undertaking from a format. Our undertaking has a similar style everything being equal. A similar sort of client tasks is inside a solitary interface to finish. Clicking dream can without much of a

stretch acknowledge item, buy, requests, inquiry and different capacities. It is straightforward, and to utilize. On the off chance that clients or clients need to purchase products in our framework, at that point the person in question needs to put the web address of our framework. In the wake of putting address clients can see the landing page of our venture. Landing page is the beginning page of our task. On the off chance that anybody goes into our task from the outset he can see the landing page. In landing page clients can see the entirety of our items, items value, items classification and so forth. He can question the most recent items and limited time things and peruse data. We have built up all the items data independently. In addition, we have grown more pages for this undertaking. All the pages can be seen from landing page. Steps of landing page configuration are including the site logo region, include a route menu bar, on the left include item grouping, add to truck page, get in touch with us page and so forth. [35]

1. All details of Admin Login Form

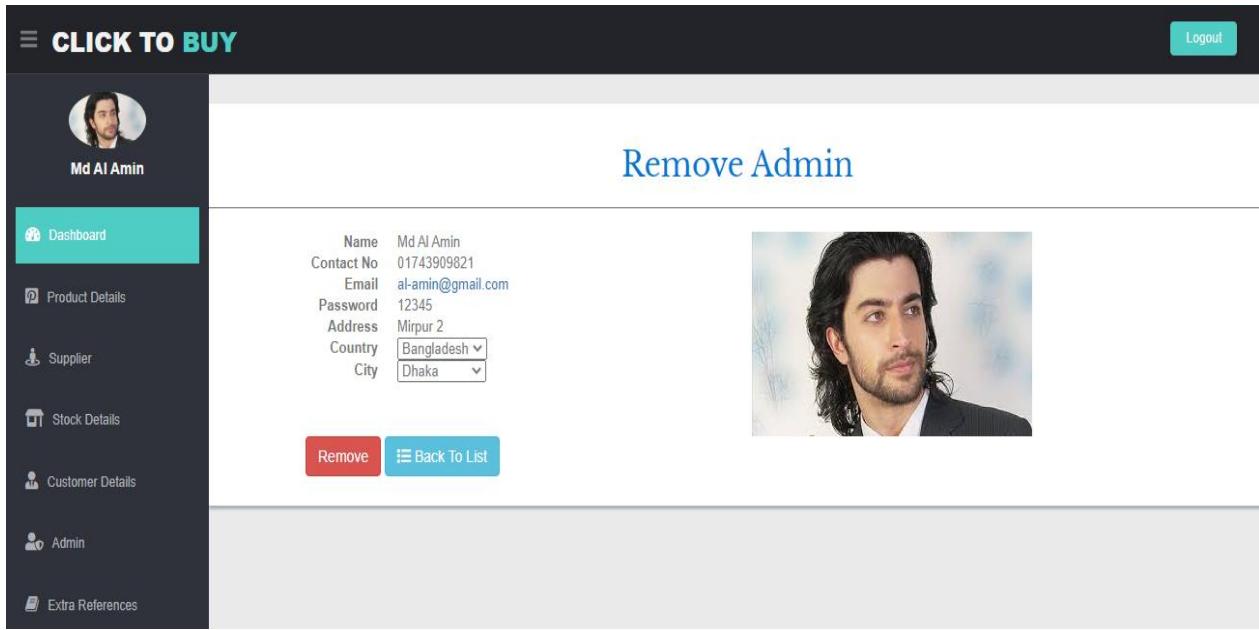
The following form is the site admin login form after entering the site. From here the admin can change many fundamentals functions of the website. The admin can change both the information of himself or the site victors billing and shipping policy. This is the admin panel form of our site. The admin can change the password, email, contact from here.

A screenshot of an admin login form. At the top, there is a decorative header featuring a laptop keyboard with the word "SIGN IN" overlaid in white capital letters, set against a background of a desk with a plant and a coffee cup. Below this, the main form area has a light gray background. It contains two input fields: one for "Email" with the placeholder "Enter your email address" and another for "Password" with the placeholder "Enter password". Below these fields are two green rounded rectangular buttons: a larger one labeled "Login" and a smaller one labeled "Back To Home".

Email

Password

Figure 3.5: Admin Login Form



This is admin login form. In this form admin can login by giving his id and password. This id and password can be stored in database to access the admin panel. After the successfully logged in admin can manage the admin panel. Admin can add, update, delete and remove all the products

2. User From

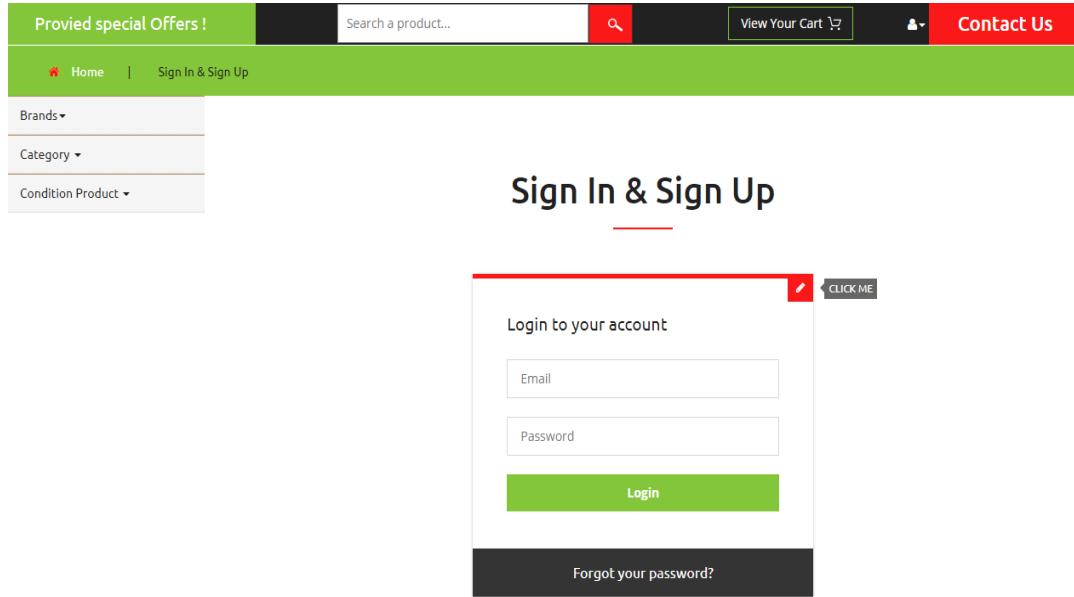


Figure 3.6: User From

The screenshot shows a web application interface. At the top, there is a black header bar with a search input field containing "Search a product...", a magnifying glass icon, a "View Your Cart" button with a shopping cart icon, and a user profile icon. Below the header, a red-bordered modal window titled "Create an account" is displayed. The modal contains fields for Name, Phone, Email Address, Gender (a dropdown menu with "Select Gender" placeholder), Password, Confirm Password, Country (a dropdown menu with "Select Country" placeholder), City (a dropdown menu with "Select City" placeholder), and a file upload field labeled "Choose File" with "No file chosen". There is also a text area for "Your address here". A green "Register" button is at the bottom of the modal. In the top right corner of the modal, there is a close button ("X") and a "CLICK ME" button with a left arrow.

Create an account

Name

Phone

Email Address

-- Select Gender --

Password

Confirm Password

-- Select Country --

-- Select City --

Choose File No file chosen

Your address here

Register

Here this is a report. Admin can see the all the confirmed product order list, quantity, category and brand. Admin can see the status of the sales whether it is delivered or not. In this report admin can analysis daily, weekly or monthly product sells report by this sells report.

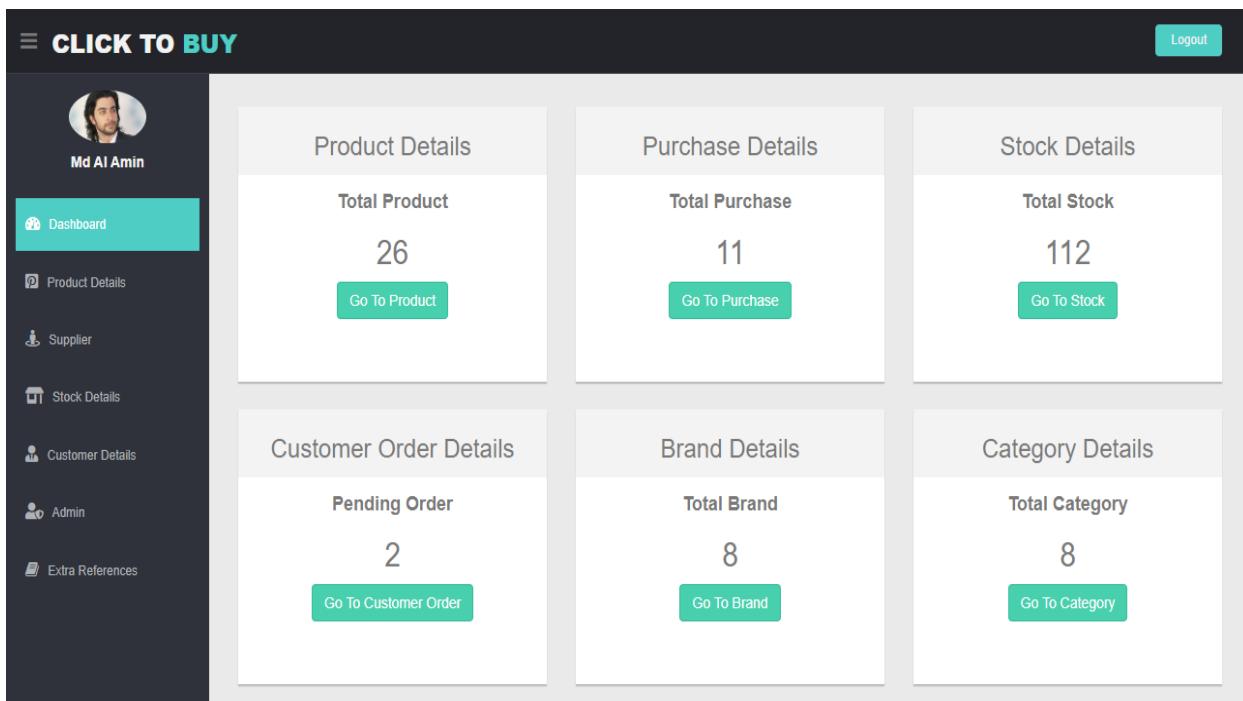
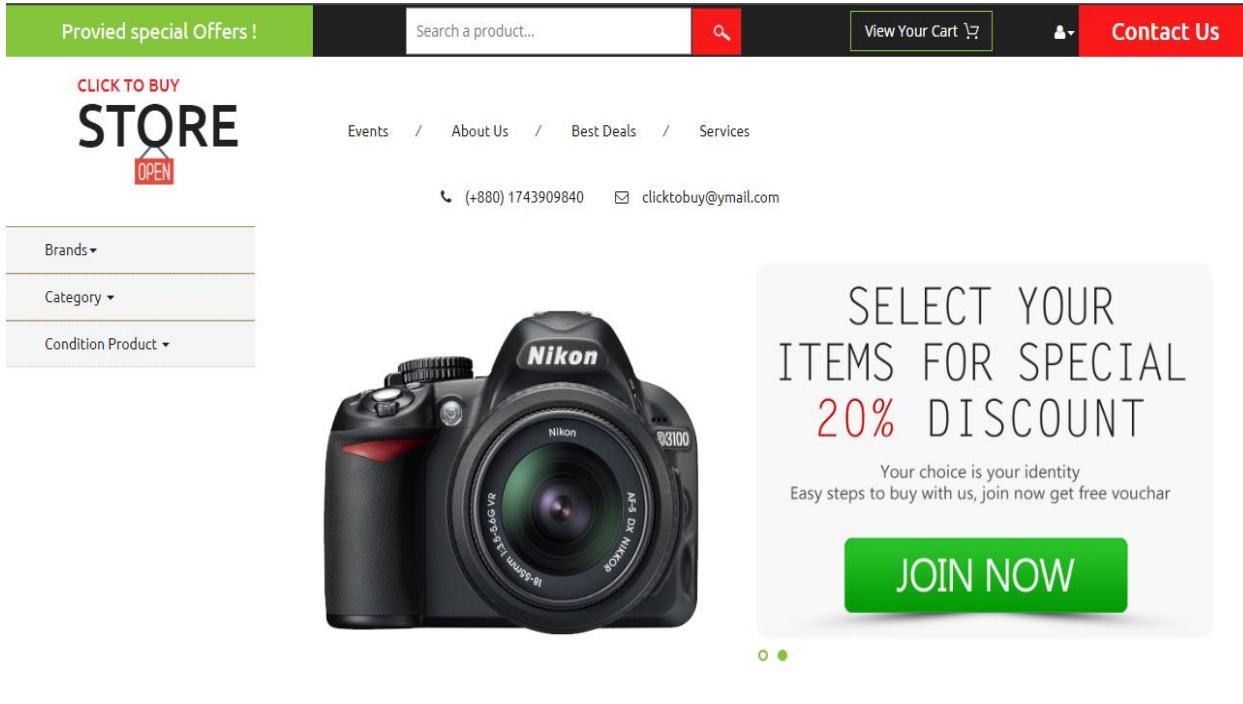


Figure 3.7: Dashboard

3. User Home Page



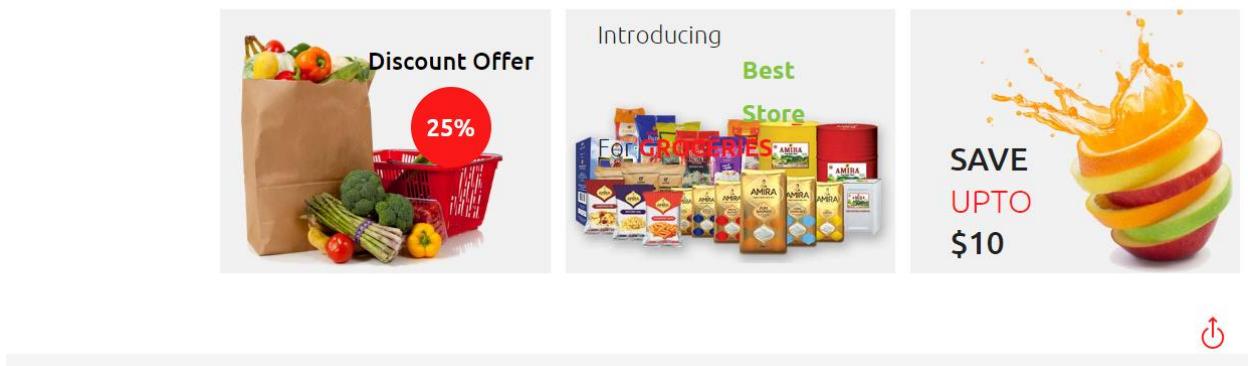


Figure 3.8: User Home Page

4. Brand Product

A screenshot of a web page titled "Brand New Product". The top navigation bar includes links for "Home" and "Brand New". On the left, there are dropdown menus for "Brands", "Category", and "Condition Product". The main content area displays four product cards: 1. Nokia XpressMusic 5130c (red phone) - Price: 4000 BDT, Add to Cart button. 2. Nokia N73 (two phones shown) - Price: 5000 BDT, Add to Cart button. 3. Sony Xperia Z (black smartphone) - Price: 7000 BDT, Add to Cart button. 4. A4Tech Wireless Mouse (black mouse) - Price: 400 BDT, Add to Cart button. Each card includes a small image of the product and its name and price.

Figure 3.9: Brand Product

Here, this is brand report. Admin can add brand name in this report and admin see it as a brand list. Here admin can add, delete and update the brand list. In this report admin has also the filtering option. [36]

5. Product Details.

Basic Info	Activity	Price	Picture	Action
Name : A4Tech Keyboard Category : Computer Brand : A4Tech	Stock : 6 Condition : Brand New Status : Available Link : NA Details : NA	Pu. Price : 300 Re. Price : 400 Off. Price : 0		Add Photo Photos Update Remove
Name : A4Tech Wireless Mouse Category : Computer Brand : A4Tech	Stock : 8 Condition : Brand New Status : Available Link : NA Details : NA	Pu. Price : 300 Re. Price : 400 Off. Price : 0		Add Photo Photos Update Remove
Name : ACER K202HQL Category : TV Brand : Sony	Stock : 4 Condition : Brand New Status : Available Link : NA Details : 19.5 inch HD LED TV	Pu. Price : 15000 Re. Price : 20000 Off. Price : 17000		Add Photo Photos Update Remove

Figure 3.10: Product Details

In this report admin can see all the products list which are added by the admin. Apart from in this report admin also can see the stock availability status and admin can edit the added product. Here admin can add, delete and update the product list.

6. Brand New Product

The screenshot shows a web interface for managing products. At the top, there's a green header bar with a home icon and the text "Home" and "Brand New". Below the header, there are three dropdown menus: "Brands", "Category", and "Condition Product". The main title "Brand New Product" is centered above four product cards. Each card displays a product image, its name, price, and an "ADD TO CART" button.

Product	Price	Action
Nokia XpressMusic 5130c	4000 BDT	ADD TO CART
Nokia N73	5000 BDT	ADD TO CART
Sony Xperia Z	7000 BDT	ADD TO CART
A4Tech Wireless Mouse	400 BDT	ADD TO CART

<https://localhost:44313/Home/GetProductInfoByProductId/1>

Figure 3.11: Brand Product

Here, this is brand report. Admin can add brand name in this report and admin see it as a brand list. Here admin can add, delete and update the brand list. In this report admin has also the filtering option.

7. User Profile

The screenshot shows a user profile interface for a website named "CLICK TO BUY STORE". At the top, there's a navigation bar with links for "Events", "About Us", "Best Deals", and "Services". Below the navigation is a contact section with a phone number (+880) 1743909840 and an email address clicktobuy@ymail.com. The main content area has a green header bar with "Home" and "Dashboard" links. On the left, there's a sidebar with dropdown menus for "Brands", "Category", and "Condition Product". The main content area features three blue buttons labeled "My Profile", "Invoice Management", and "Logout". At the bottom, there's a footer section with four categories: "INFORMATION", "POLICY INFO", "WHAT IN STORES", and "TWITTER POSTS". Each category lists links such as "Events", "FAQ", "Pet Food", and "Privacy Policy". The "TWITTER POSTS" section shows a single post from 1 day ago with the text "Non numquam http://sd.ds/13jklf# eius modi".

INFORMATION	POLICY INFO	WHAT IN STORES	TWITTER POSTS
> Events	> FAQ	> Pet Food	> 01 day ago Non numquam http://sd.ds/13jklf# eius modi
> About Us	> Privacy Policy	> Frozen Snacks	

Figure 3.12: User Profile

This is a category report where admin can add category of the product. Here admin can add, delete and remove the category of the product and can see the list of the category by this category report.

8. Customer Order

The screenshot shows a web-based application interface titled "CLICK TO BUY". At the top right is a "Logout" button. On the left, a sidebar menu includes "Md Al Amin" (profile picture), "Dashboard" (selected), "Product Details", "Supplier", "Stock Details", "Customer Details", "Admin", and "Extra References". The main content area is titled "Customer Order Details". It features a table with columns: "Basic Info", "Date Time", and "Action". The table contains two entries:

Basic Info	Date Time	Action
Order Number : 10002 Customer Name : Customer 1	Date: 13/06/2020 Status: Pending	Order Details
Order Number : 10003 Customer Name : Customer 1	Date: 13/06/2020 Status: Pending	Order Details
Basic Info	Date Time	Action

Below the table, it says "Showing 1 to 2 of 2 entries". At the bottom right are "Previous" and "Next" buttons, with "1" in the center.

Figure 3.13: Customer Order

This is orders report. After ordering a product by customer then admin can see the ordered product. Admin has the option to deliver the unpaid products then the product will be added into delivered orders after the completion of the payment then admin confirm the paid order then the product will be added to the paid orders and at last the product will be processed for the delivery to the customer.

3.6 Back End

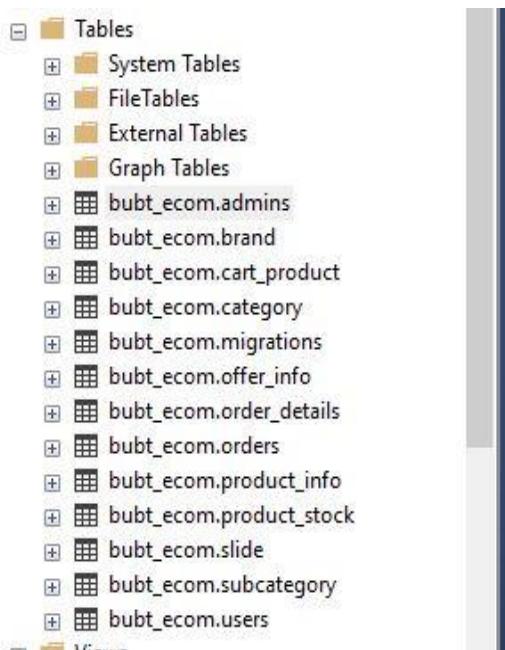
This part provides facility for each store owner to edit and modify information in his own store. Providing validation check for member and site identification, the back end system can securely protect users' proprietary information. In addition, all page views employ session variables to deter manually defined variables by users. Applying user friendly approach, and focusing on web programming inexperience, the user can effortlessly manage his back end information. Inside the back end, users can control and view all store information. Besides that, using content management design, the back end part encompasses with these modules: product management, shop information management, web board management, shopping cart management, member management, promotion management, banner management, plaza management, poll management, currency management and article management.

We have developed product management option for an admin so that he can add, delete and update product information. Admin can also add, delete and update the product category. Apart from admin can add, delete and update the brand name of our site. We have developed order management for the administration. Order management enables administrators to easily see all the order information, change the orders and delete the order. We have implemented customer management so that admin can see all the information of a customer. Moreover, back end part consists of report management. Admin can see the sales report and product report so that admin can know about how much products are sold and also know about the quantity of the product.

3.7 Database Design

Databases are the storehouses of data used in the software systems. The data is stored in tables inside the database. Several tables are created for the manipulation of the data for the system. Two essential settings for a database are primary key the field that is unique for all the record occurrences and foreign key the field used to set relation between tables. Normalization is a technique to avoid redundancy in the tables. [38]

A. Admin Login Table



In this table the fields are admin id, admin username and admin password. Admin can login by this database table. Here admin username and password can be stored in our database. Here, we need to input the user name and password in the database before login in our system. We can see

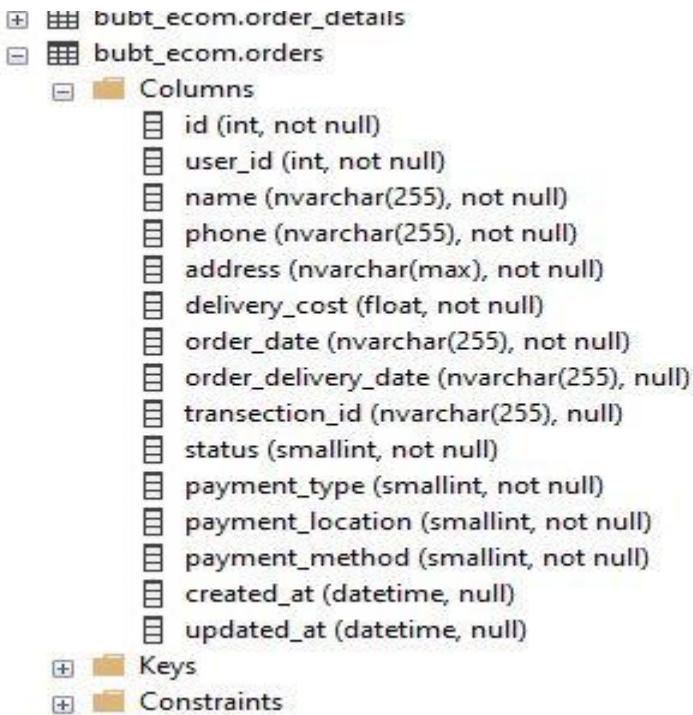
the user name and database from the database. Here, another attribute of this table is username. We need to store the username of admins. Then, next attribute is password and this is text type. We must store password in our database.

B. Product Table

bubt_ecom.product_info	
	Columns
PK	<code>id (PK, bigint, not null)</code>
	<code>category_id (nvarchar(100), null)</code>
	<code>subcategory_id (nvarchar(100), null)</code>
	<code>brand_id (nvarchar(100), null)</code>
	<code>product_name (nvarchar(200), not null)</code>
	<code>buy_price (float, not null)</code>
	<code>sell_price (float, not null)</code>
	<code>short_decription (nvarchar(max), not null)</code>
	<code>description (nvarchar(max), not null)</code>
	<code>image_one (nvarchar(120), not null)</code>
	<code>image_two (nvarchar(120), not null)</code>
	<code>image_three (nvarchar(120), not null)</code>
	<code>image_four (nvarchar(110), not null)</code>
	<code>manager_id (int, not null)</code>
	<code>created_at (datetime, null)</code>
	<code>updated_at (datetime, null)</code>
FK	<code>Keys</code>
FK	<code>Constraints</code>

This is items database table. Here database will be made for item id, item picture, item name, item depiction, item value, item classification, item brand and item amount. Here, item id is essential key and this property is number sort. We can distinguish any item by this id. Another trait of this table is imgurl and this is text type. Here, we can transfer picture. At that point by item characteristic we can give the items name and this trait is text type. By portrayal property of this table administrators can include depiction of our items. In value quality administrators must include our items cost. There are numerous class of our items. So by classification property administrator can choose the necessary class for our items. In classification property we have characterized numerous classes in our database. There are numerous classifications of item in our internet learning framework. So by characteristic administrators can choose classification name when administrators will transfer our items. Aside from, we have characterized numerous brands name in our database. Also, by qty characteristic administrators can include the types of our items on the hour of transferring and this property is whole number sort.

C. Order Table



Here this is item request table. For request an item client needs to top off the full subtleties of his data contains in this table. Here the database table fields are structure id, client name, client contact, client address, client email, thing name, item sum, item status, date requested, date conveyed. Here, request id is essential key. We can characterize any request by id. At that point next characteristic of this table is name and this trait is varchar type. Here, contains clients' name. Another characteristic of this table is contact and this trait is varchar type. Here, contain clients request contact data. In address characteristic here contains the location of clients and this quality is varchar type. In email field here contains the email of the clients and this quality is varchar type. In addition, in thing field administrators can see the things name and id and this field is text type. In sum field administrators can see the measure of the arranged item. In status trait administrators can see the whether the item is conveyed or not and the quality kind is varchar. Aside from, in date requested trait administrators can see the arranged date of the item and this property type is varchar. Finally, in date conveyed quality administrators can see the conveyed date of the item and this property type is varchar.

3.8 Conclusions

We have discussed in this chapter about the feasibility study of online ecommerce. Apart from the requirement analysis, system design and implementation are described in this chapter. In system design the entity relationship diagram and data flow diagram are described. Moreover, database design, forms design and report design are described in system design. Here, also described the screenshot of database table, form design and report design. In requirement analysis here discussed about the functional and nonfunctional requirement of our system. Moreover, in implementation here discussed how we implemented our system. That's all about the proposed system chapter of our project. [39]

CHAPTER – 4

EXPERIMENTAL RESULTS

4.1 Introduction

Testing is meant to find mistakes. Testing is the process of discovering every conceivable fault or weakness in a product of labor. It offers a way of testing the functions. It is the collection of parts, subassemblies, assemblies and/or finished products exercising software to ensure that the Software Program meets the requirements needs and standards for users.

This chapter explains mainly the qualitative approach to be used to provide the data for the analysis Issues recognized and significantly expanded understanding of consumer calculating in the Framework on what customers buy online, and why. Tentative, descriptive examinations can provide the varying viewpoints needed to obtain multiple online, offline approvals and switching behavior during the buying decision process. This typically relates to sampling, surveying and using inferential statistics to analyze the population reactions. The study focuses on predicting the influencing factors that affect this Instance, what and why customers purchase online or offline, why they turn from one a way to a different one. The data collected during the interviews in detail were used to identify specific consumer behavior issues related to only online and offline transactions system and channel switching during the transaction from one channel to another selection method. The breadth of the interviews and the focus groups ensure a successful means of diffusion and emergence of theoretical concepts enhancing ultimate research design. And are used in this research to understand better what and why customers are using the Internet to browse, and precisely why they usually prefer one platform over another. Underneath define how this qualitative research phase is addressed and classify which of the growing operation supports research goals for both the interviews in depth. Testing the e-commerce program isn't as easy as it would seem. Quality Assurance and monitoring program is a most of the development of e-commerce courses, since even the smallest bugs can have a large amount of relationships. QA E-commerce testing may not be the favorite task of the engineers, but at the end of the day, this is something that is most important and that will allow them to build a decent commodity. You can however do a lot of checking your e-commerce QA method simpler and quicker by following any of those helpful tips. Mentioned below are a few tips for making the e-commerce QA testing process a success:

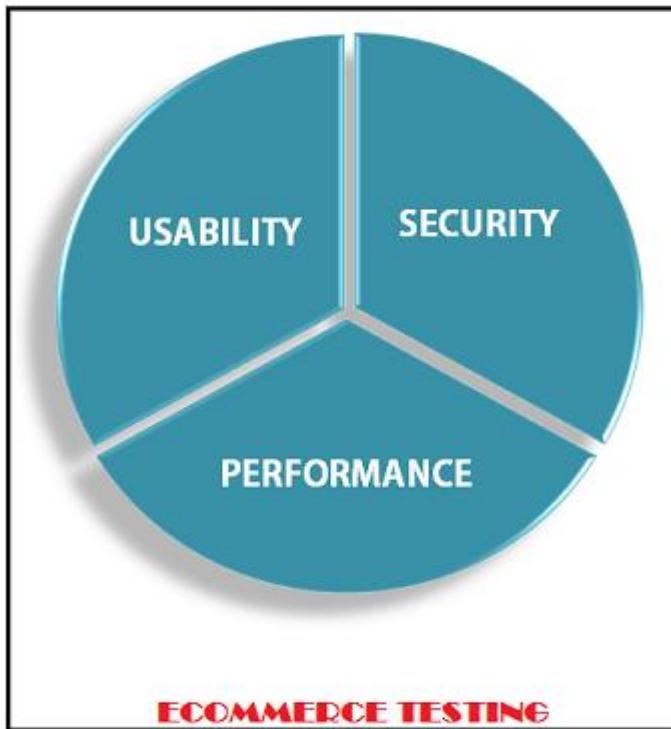


Figure 4.1: Ecommerce Testing

4.1.1 Ecommerce Testing

Ecommerce testing is defined as testing of an e-commerce (online shopping) application. It helps in the prevention of errors and adds value to the product by ensuring conformity to client requirements. [39]

The objective of testing is to ensure

- Software reliability
- Software quality
- System Assurance
- Optimum performance and capacity utilization

Types of Testing for E-commerce System

A common type of testing included into e commerce system is

Sr.#	Type of Testing	Testing Process
1	Browser compatibility	<ul style="list-style-type: none">• Lack of support for early browsers• Browser specific extensions• Browser testing should cover the main platforms. (Linux, Windows, Mac etc.)
2	Page display	<ul style="list-style-type: none">• Incorrect display of pages• Runtime error messages• Poor page download time• Dead hyperlink, plugin dependency, font sizing, etc.
3	Session Management	<ul style="list-style-type: none">• Session Expiration• Session storage
4	Usability	<ul style="list-style-type: none">• Non-intuitive design• Poor site navigation• Catalog navigation• Lack of help-support
5	Content Analysis	<ul style="list-style-type: none">• Misleading, offensive and litigious content• Royalty free images and copyright infringement• Personalization functionality• Availability 24/7
6	Availability	<ul style="list-style-type: none">• Denial of service attacks• Unacceptable levels of unavailability
7	Back-up and Recovery	<ul style="list-style-type: none">• Failure or fall over recovery• Backup failure• Fault tolerance
8	Transactions	<ul style="list-style-type: none">• Transaction Integrity• Throughput• Auditing

9	Shopping processing purchasing	<ul style="list-style-type: none"> • Shopping cart functionality • Order processing • Payment processing • Order tracking
10	Internationalization	<ul style="list-style-type: none"> • Language support • Language display • Cultural sensitivity • Regional Accounting
11	Operational business procedures	<ul style="list-style-type: none"> • How well e-procedure copes • Observe for bottlenecks
12	System Integration	<ul style="list-style-type: none"> • Data Interface format • Interface frequency and activation • Updates • Interface volume capacity • Integrated performance
13	Performance	<ul style="list-style-type: none"> • Performance bottlenecks • Load handling • Scalability analysis
14	Login and Security	<ul style="list-style-type: none"> • Login capability • Penetration and access control • Insecure information transmission • Web attacks • Computer viruses • Digital signatures

Table 4.1: Software Testing Table

4.1.2 Compatibility Testing

- A. It is a type of non-functional testing.
- B. Compatibility testing is a type of **software testing** used to ensure compatibility of the system/application/website built with various other objects such as other web browsers, hardware platforms, users (in case if it's very specific type of requirement, such as a user who speaks and can read only a particular language), operating systems etc. This type of testing helps find out how well a system performs in a particular environment that includes hardware, network, operating system and other software etc.
- C. It is basically the testing of the application or the product built with the computing environment.
- D. It tests whether the application or the software product built is compatible with the hardware, operating system, database or other system software or not.

4.1.3 Page Display Testing

Once you've set up your site so that Web browsers can view your documents, test it. Make sure:

- i. each page can be opened by your browser
- ii. your text displays properly in particular, headings, paragraphs, formatting, line breaks, and tables
- iii. each image is placed appropriately and shows up
- iv. informational flags appear as intended
- v. any audio or video files work
- vi. any animations work

4.1.4 Session Management Testing

A solid understanding of session management is a critical skill for assessing web applications. These principles are the basis for many other test cases related to privilege escalation and access control. Because of this, we recommend all new testers dedicate time to ensure they are proficient in these fundamentals. In this article we have some key goals here to learn and review the following:

- Identify and confirm session tokens.
- Understand the session management framework.
- Avoid pitfalls of assumption and false positives.

4.1.5 Usability Testing

Usability testing is a must. When it comes to app testing, performance testing is not enough. Usability testing is important, and it goes beyond the generic functionality testing. It is an amalgamation of both testing's for functionality and User Experience. In order to make an app successful, usability testing has to be up to the mark! For this, it is mandatory to develop a proper test strategy in order to deeply examine each and every function. Compatibility testing can never be ignored. When testing an app, it is a must to test its compatibility factors. You have to make sure that the application works perfectly with each and every device and browser it is supposed to work with. Therefore, compatibility testing may seem like a long process, but it has to be followed aptly to make a successful application. Though eLearning testing and application testing may seem similar, there are many differences between the two. The main difference is the approach. Therefore, make sure you follow the right approach for both of these QA testing's, as a one-size-fits-all approach would not work here.

114 What is SCORM? SCORM stands for “Sharable Content Object Reference Model” is a standard that was developed for eLearning products. In its core, SCORM allows interoperability among eLearning products. Especially, SCORM determines how various Learning Management Systems (LMS) communicate within them. The latest variant of SCORM will be SCORM 2004, which incorporates the Run-Time Environment, the Content Aggregation Model and the Sequencing and Navigation particular. SCORM 1.2 is a past adaptation that is regularly still utilized. One of the best things about it is that it is pretty easy to test and diagnose problems in SCORM powered applications. It is very much essential that the e-learning isn't fully SCORM compliant to access the LMS MIS Report. Version SCORM 1.2 is widely used and is the standard supported by most Learning Management Systems today. The another compliance which is very much necessary is AICC. LMS / e-Learning vendors, as well as testers, should be well aware of both SCROM and AICC. AICC stands for Aviation Industry CBT Committee and primarily uses the HTTP AICC Communication Protocol (HACP) to facilitate communication between the course content and the learning management system (LMS). AICC standards apply to the development, delivery, and evaluation of training courses that are delivered via technology. AICC stands for the Aviation Industry CBT [Computer-Based Training] Committee (AICC), which is an international association of technology-based training professionals that develops training guidelines for the aviation industry. The another compliance which is very much necessary is AICC. LMS / e-Learning vendors, as well as testers, should be well aware of both SCROM and AICC (Aviation Industry CBT Committee). AICC principally utilizes the HTTP AICC Communication Protocol (HACP) to encourage correspondence between the course content and LMS. [42]

4.1.6 Content Analysis Testing

Content Analysis Content analysis is a “technique for making inferences by systematically and objectively identifying specific characteristics of messages” (Holsti, 1968, p. 601). These

messages (frequently referred to as texts in the content analysis literature) may consist of verbal material, such as speeches, letters, tweets, diaries or blogs; news reports; visual material such as advertising illustrations and graffiti; and audio-visual material such as television shows, films, or computer games. Once researchers have determined the characteristics of a set of messages, they can investigate the extent to which those characteristics are related to each other or to characteristics of the message sender, the message recipient, or the medium by which the message was sent. For example, Lau and Russell (1980) examined the relationship between the outcomes of professional sporting events (win or lose) and the reasons the athletes and coaches from the teams involved gave for their performances (something about themselves, such as ability, or something about the situation, such as poor officiating). Lau and Russell's study illustrates an important characteristic of content analysis: Because content analysis data consist of naturally-occurring messages, it is high on naturalism and so avoids the problems of artificiality found in laboratory research. It was for this reason that Lau and Russell chose to use content analysis in their study: A large amount of laboratory research had examined the ways in which people explain important personally-relevant outcomes, but those outcomes had been experimentally manipulated and so were somewhat artificial; Lau and Russell wanted to see if the laboratory results could be replicated in a naturalistic context. In this section we provide an overview of the process of content analysis and look at an example of the use of the technique; for more detailed discussions, see the suggested readings at the end of this chapter. [42]

The data for content analyses can be examined using either quantitative or qualitative techniques (Krippendorff, 2004); because we focus on qualitative analysis in our discussion of interview research, we focus on quantitative analysis here. A research project that employs content analysis proceeds in much the same way as any other research project: developing the research hypothesis, deciding on a measurement strategy (called a coding scheme in content analysis), collecting data, and analyzing the data. Here we provide an overview of those processes as applied to content analysis, discuss reliability and validity in the context of content analysis, and conclude with an example of research that used content analysis. [43]

4.1.7 Acceptance testing

Acceptance testing determines if a course meets the requirements originally set out in specification phase. Here, you need to test how actual users might interact with the course. For example, test against the workflow that a group of people might embark on. Acceptance testing ensures the course works in the real world and has the integrity to support a valid learning experience. Here are some examples of things you might build into your acceptance testing plan:

First impressions: Is it clear what the user is being asked to do?

Navigation: Is the layout intuitive? Could users find what they needed?

Functionality: Did users experience technical issues?

Engagement analytics.

Too much eLearning is released and then forgotten. Engagement analytics can provide insights to help you understand how your course is performing. For example, integration with Google Analytics lets you track valuable information about how people use your course and how you can improve it. Take a look at this screenshot to see what I mean: Here are some metrics you should assess from Google Analytics: How long is someone spending on a page? Spending a long time on pages could indicate the page is hard to understand. Are some pages more popular than others? Do learners want to focus more on a specific topic?

How long does your course take to complete? Does the 10-minute course really take 30 minutes? Where are people accessing the course? Mobile or desktop? Office or home? This data help you tweak and improve the learning experience. You may also use data to visualize correlations and identify interesting trends. For example, you might find that the time of day affects the pass rate. You can use this information to suggest the ideal time for people to work on the course. Top ways for E-Learning Quality Assurance (QA) Testing.

Get Someone with a Fresh Set of Eyes to Review Your Course When you've been working on a project for a while, it's often difficult to spot typos, spelling mistakes, and other small errors. Whenever possible, find someone who is not directly involved with the project to review your course—for example, a co-worker, a manager, a trusted friend, or even a parent. However, be careful not to share any confidential information with someone who has not signed a confidentiality waiver.

Include a Set Number of Review Cycles in Your Project Plan Depending on the project and the number of stakeholders involved, you might have more or fewer review cycles. This is something you should determine at the beginning of the project, as more review cycles leads to more production time, which should be factored into your project plan. In addition to setting a fixed number of review cycles, set a timeline for each review cycle so you're not sitting around waiting for feedback instead of moving the project forward.³ **Specify the Kind of Feedback You're Looking for in Each Review Cycle.**

At each stage of the creation process, you're focused on different aspects of your course. As the course designer, you know that, but your course reviewers might not. Make sure to give them guidelines about the type of feedback you're looking for in each review cycle. Say, for instance, your team is reviewing a storyboard. Feedback should be about content, not graphic design. And when they're reviewing a prototype, their feedback should be about functionality and design. If you don't make it clear what type of feedback you're looking for at each phase, the review process might end up being a real time-suck. For example, if your reviewers don't understand they need to nail down the content in the first phase of development, they might keep giving you content-related feedback throughout the course creation process. If you have to keep going back and editing the content in the later stages of development, it could delay the course delivery date.

Keeping track of all the feedback received during review cycles used to be a huge challenge. I remember having to put together gigantic spreadsheets to try and keep tabs on it all. What a headache! Thankfully, now there's review 360. Review 360 takes the pain out of the review process because it allows stakeholders to leave their comments in context: right next to the slide! Not to mention that the comments are preserved even when you upload a new version of the course, so you don't have to worry about losing track of them. Just send them a link and they can add their feedback. Easy-peasy! Click [here](#) to learn more about why we love Review 360 (and why you will too). Obviously, these suggestions are only the tip of the iceberg. [43]

Software testing types that are a must for business e-learning. A few years ago, London's Bloomberg terminal crashed due to a software glitch, wreaking havoc in the financial market and postponing a £3 billion debt sale. While it seems odd that a software fault with consequences that terrible could go unnoticed nowadays, the fact is no software is impermeable to bugs. Because of that, a thorough software testing, in-house or with the help of QA outsourcing services is needed to spot any problems before deployment. Despite being less glamorous and exciting than other phases, the testing phase of any software project is arguably the most important one because it's during this stage that potential obstacles to the software's smooth functioning (internal or external) are identified and eliminated. As the financial fiasco showed, not dedicating enough time and care to quality assurance in general means throwing a wrench into one's own business and achieving the worst possible outcome: letting the software fail during its use. When e-learning is involved, failing means harming training or even leaking sensitive data. The inevitable loss in productivity looks especially annoying considering the \$1000+ training cost per employee. While software testing is an ample field with a plethora of types to be considered, some are more relevant depending on what the software's purpose is. Regarding e-learning, for example, the Moodle must be able to function smoothly, support many different learners at the same time, while being impenetrable and reliable.

4.1.8 Performance Testing

As the name indicates, it serves to assess whether or not the application lives up to what is expected of it, which is carried out through different approaches. Load testing, for instance, is the name given to measuring, among others, the system's throughput, that is, how many transactions it can handle at the same time. By loading it with queries, it is possible to observe its response and how it performs. Considering businesses require and encourage its employees to engage with the application for training purposes, the software must accommodate such users simultaneously without delayed response times and crashes. Nearly 90% of businesses suffer from downtime every month, with roughly 60% of them becoming unable to access crucial systems for at least 1.6 hours every week. While it's troubling enough to calculate revenue loss, and unexpected training platform suspension is unfortunately added to make the situation even more damaging. Stress testing shows how the application reacts to being put under challenging conditions such as more users than it is expected to handle. The idea is finding out how many simultaneous users can be

logged in under optimal conditions and then what happens when that capacity is exceeded. Does it become sluggish and unstable to the point where frustrated users are left with no choice but log out without being able to study? The consequences of not planning ahead can cause user disengagement and loss in productivity as well, which can cause learners to regard the platform as thoroughly unreliable and burdensome. [42]

4.1.9 Scalability Testing

Scaling a business entails enough challenges. The last thing any business needs is to struggle with a no-longer-functional LMS that requires expensive maintenance. The purpose of testing scalability—which can be conflated with testing performance—is finding out what prevents optimal operation once the limit of simultaneous users is exceeded (assuming we found that through performance testing) and remove it. While load testing helps find the limit, scalability helps increase it by spotting bottlenecks, or where/why data is processed more slowly. Then comes removing these bottlenecks so that the limit can be increased and the application can handle more users and larger amounts of data. Easily scalable means adapted to growth.

4.1.10 Accessibility Testing

At a time when diversity is acknowledged as a necessity for businesses, the concept of accessibility becomes increasingly prevalent. It's in every party's interests to invest in that area, so the top software testing companies are increasingly including accessibility testing in their offering. In the US, a special policy requires businesses to make their applications usable by employees with disabilities. This means more than simply adding wheelchair ramps, but ensuring every stage of the business's routine is more accessible to employees with different disabilities; something as crucial as their training couldn't be an exception. While it may be hard to predict which disabilities to cover and how to bring that about, some of the most common ones, such as vision impairment, can be approached in effective ways. Some questions that point to potential obstacles might help. Is any activity or stage in the learning process entirely dependent on color-coding? Can users navigate by using either the keyboard or mouse only? Are tabs and information logically arranged? Does the non-text content contain text that aids comprehension? Is the page's response time-indicated? Bringing accessibility to training is a challenging but necessary endeavor. A key factor to consider is that because disabilities vary substantially and it can be hard to predict how such employees might struggle with the platform, businesses need to be open to further testing and improvement.

Adhoc testing Despite the fancy Latin name, this one is the least formal type of testing, as it involves unplanned testing to find bugs and undesirable reactions that would not be found through other testing types. In fact, laypeople can help in this one precisely because of its uninformed nature. The purpose of this unstructured type of testing is to answer the question: “what happens if I do this?” What happens when users refresh the page during a certain stage of activity, say after

a popup message appears? And what if learners enter misspelled words or invalid characters in a text box? In short, it is about finding hidden “gems” that can cause the platform to crash or behave undesirably.

security testing as is the case all over the internet, malevolent individuals target any domain with sensitive information. When you add that with the possible flaws and weak security measures that make it prone to unintentional failures, it is easy to see how an unreliable system can compromise the business's entire LMS and damage the brand in the aftermath. Penetration testing and vulnerability scanning are standard practices to detect potential ways to break into the system. This can be especially relevant when data indicates an astounding 90% of applications show security-related vulnerabilities, such as failures in encryption and access.

Acceptance testing The last stage of testing measures whether the application is worth the buy from the users' perspective. Pre-release versions of software are usually made available with the word “beta” on it. Field testing, as it's also called, allows testers to try it and be sure it's ready for use. Does it perform smoothly? Can many different employees log in at the same time and still use the platform? Real feedback is crucial to identify all the possible bugs that might have crept in the software. That way they can be dealt with before they will make their way into the business's routine and hinder productivity. Final thoughts as beneficial as an e-learning application can be, it will only reach its real potential if proper testing is conducted. Otherwise, it might be an extra obstacle for the business. Due to their very nature and goals, e-learning platforms must be reliable above-average reliable. While that is challenging to deliver, it's most definitely worth the budget allocation and bringing the software as close as it can be to ideal before it's deployed. [42]

4.2 Security Testing

Security testing of any system is about searching for all the possible loopholes and weaknesses of the system which might result in a breach in the security. For Example, it can be a loss of information, revenue, or the reputation of the organization. The main focus of this testing is to keep your software away from any threats or vulnerabilities so that your system does not get exploited. It will help you to detect such problems and solving them.

Moving on towards the types of security testing Types of security testing There are 7 types of security testing in software testing. These are as follows: Vulnerability scanning: automated software scans a system against identified vulnerability. Security scanning: This scanning can be performed for both Manual and Automated scanning. It identifies the network and system weaknesses. After that, it provides the solution as well. Penetration testing: An analysis of a system to check for the potential vulnerabilities, if there is an external hacking attempt. Risk assessment: The analysis of security risks observed in the organization is done here. Risks are classified as Low, Medium and High. It helps to provide measures in order to reduce the risks. Security auditing: It's a kind of internal inspection of applications and Operating systems for checking the

security flaws. Posture assessment: This combines security scanning, ethical hacking and risk assessments to represent overall security of the organization. Ethical hacking: The hackers attempt hacking in order to expose the flaws in the security system of the organization. After understanding the types of security testing, let us understand how security testing is performed. Secure eLearning: Overcoming The Biggest Online Training Security Challenges Online security is more important than ever, and for a good reason. According to a 2017 study, modern enterprises face a 25% chance of experiencing a security breach, with the total cost of handling one averaging \$3.63 million dollars. In this article, we'll have a look at the most important online training security challenges, and go through the LMS features that you need to deliver your enterprise training securely.

4.2.1 Account Breaches

Protecting access to user accounts is one of the biggest online training security challenges businesses face. The power of modern hardware makes it easy for hackers to break thousands of passwords per second (especially if they were stored naively). In fact, there are billions of stolen account credentials available online, with more added every day. The threat is real for every business. Even some of the largest services, like LinkedIn and Yahoo, have been hacked, and user data have been compromised. You can protect your online training portal from account breaches in three ways:

In practice, this means that your CTP is only accessible from your company's own network. This creates some big restrictions, but provides the ultimate protection from internet attackers. If you take this route, you'll need an LMS that allows self-hosting, so that you can run it from your local data center. Choose an CTP with Complete Authentication Features Protecting an internet-accessible training portal from breaches is difficult, but not impossible. Choose an CTP that comes with these security features: Password policies (expiration, minimum length, etc.) Account lockout after repeated failed login attempts (to prevent "password guessing") Two-factor authentication (this improves account security by using the user's smartphone or email account as an additional "password") Choose an CTP That Works with Your Existing Single Sign-On Scheme If you can log in to different services at your company with the same username and password, then your organization uses a Single Sign-On system. Your CTP should be able to support that. In practice, this means you want to look for an CTP that supports industry-standard SSO authentication methods like LDAP, Active Directory, and SAML 2.0. An SSO-compatible CTP gives your administrators total control over your company's employee accounts and allows them to easily enforce company-wide security policies Performance testing- a top priority in E-commerce Just delay about 250 milliseconds of a page load time, is what keeps your customer going to your competitor. Retail giant Walmart overhauled their site speed noticed an increase of 2% in visitor's conversion rate and revenue by 1%.

Performance of your site depends on these factors

1. Throughput
 - i. Request per second
 - ii. Transactions per minute
 - iii. Executions per click
2. Response Time
 - i. Duration of a task.
 - ii. Seconds per click.
 - iii. Page Load.
 - iv. DNS Lookup.
 - v. Length of time between click and seeing page.

Useful Tools for Mapping E-commerce Site

1. Usability Hub: Usability Hub's user testing platform and research panel help you improve the UX of your apps and websites. Get feedback from real people.
2. HotJar: It shows the most clicked and unclicked zones of sites by visitors
3. FiveSecondTest: This tool ensures that your message is communicated as effectively as possible, in just five seconds it tells what a person recalls about your website design.
4. Feng-GUI: It simulates the human vision during the first five seconds and predicts what a real human would most likely look at
5. Optimizely: It enables you to test track, clicks, conversions or anything else that matters to e-commerce business

4.3 Result Analysis

We have analyzed our system in this chapter. Through evaluating the performance of the different Document forms such as course sales survey, company document, list of all items, course list Class Item. We also learned from studying that all the modules function out. An Admin can successfully handle our system by logging in. Any of the papers describe themselves as then follows.

4.3.1 Sales report

The screenshot shows a user interface for managing customer orders. At the top, there's a dark header with the text "CLICK TO BUY" and a "Logout" button. On the left, a sidebar menu lists "Dashboard", "Product Details", "Supplier", "Stock Details", "Customer Details", "Admin", and "Extra References". The main content area is titled "Customer Order Details". It features a table with columns for "Basic Info", "Date Time", and "Action". Two entries are listed:

Basic Info	Date Time	Action
Order Number : 10002 Customer Name : Customer 1	Date: 13/06/2020 Status: Pending	Order Details
Order Number : 10003 Customer Name : Customer 1	Date: 13/06/2020 Status: Pending	Order Details

Below the table, it says "Showing 1 to 2 of 2 entries" and has navigation buttons for "Previous", "1", and "Next".

Figure 4.2: Sales Report

This is the sales report of our project. Here we can see the all the sold courses. The button “completed” here indicates that the ordered product has delivered to the client and the button “processing” here indicates that this order still not reached to the user means that it has some delay for any issue the admin has faced out.

4.3.2 Products Report

This is another report of our online learning system. This report is called product report. There, we can see that how much products are ordered by the customer and also can see the Quantity of the ordered product. If admin wants, then he can search here to find out the required data or products. Moreover, here also exists date picker to find out required data on the basis of selecting date.

CLICK TO BUY		Logout																				
 Md Al Amin																						
 Dashboard																						
 Product Details																						
 Supplier																						
 Stock Details																						
 Customer Details																						
 Admin																						
 Extra References																						
+ Create Product																						
<div style="display: flex; justify-content: space-between;"> Show 10 entries Search: <input type="text"/> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Basic Info</th> <th>Activity</th> <th>Price</th> <th>Picture</th> <th>Action</th> </tr> </thead> <tbody> <tr> <td>Name : A4Tech Keyboard Category : Computer Brand : A4Tech</td> <td>Stock : 6 Condition : Brand New Status : Available Link : NA Details : NA</td> <td>Pu. Price : 300 Re. Price : 400 Off. Price : 0</td> <td></td> <td>  Add Photo  Photos  Update  Remove </td> </tr> <tr> <td>Name : A4Tech Wireless Mouse Category : Computer Brand : A4Tech</td> <td>Stock : 8 Condition : Brand New Status : Available Link : NA Details : NA</td> <td>Pu. Price : 300 Re. Price : 400 Off. Price : 0</td> <td></td> <td>  Add Photo  Photos  Update  Remove </td> </tr> <tr> <td>Name : ACER K202HQL Category : TV Brand : Sony</td> <td>Stock : 4 Condition : Brand New Status : Available Link : NA Details : 19.5 inch HD LED TV</td> <td>Pu. Price : 15000 Re. Price : 20000 Off. Price : 17000</td> <td></td> <td>  Add Photo  Photos  Update  Remove </td> </tr> </tbody> </table>		Basic Info	Activity	Price	Picture	Action	Name : A4Tech Keyboard Category : Computer Brand : A4Tech	Stock : 6 Condition : Brand New Status : Available Link : NA Details : NA	Pu. Price : 300 Re. Price : 400 Off. Price : 0		 Add Photo  Photos  Update  Remove	Name : A4Tech Wireless Mouse Category : Computer Brand : A4Tech	Stock : 8 Condition : Brand New Status : Available Link : NA Details : NA	Pu. Price : 300 Re. Price : 400 Off. Price : 0		 Add Photo  Photos  Update  Remove	Name : ACER K202HQL Category : TV Brand : Sony	Stock : 4 Condition : Brand New Status : Available Link : NA Details : 19.5 inch HD LED TV	Pu. Price : 15000 Re. Price : 20000 Off. Price : 17000		 Add Photo  Photos  Update  Remove	
Basic Info	Activity	Price	Picture	Action																		
Name : A4Tech Keyboard Category : Computer Brand : A4Tech	Stock : 6 Condition : Brand New Status : Available Link : NA Details : NA	Pu. Price : 300 Re. Price : 400 Off. Price : 0		 Add Photo  Photos  Update  Remove																		
Name : A4Tech Wireless Mouse Category : Computer Brand : A4Tech	Stock : 8 Condition : Brand New Status : Available Link : NA Details : NA	Pu. Price : 300 Re. Price : 400 Off. Price : 0		 Add Photo  Photos  Update  Remove																		
Name : ACER K202HQL Category : TV Brand : Sony	Stock : 4 Condition : Brand New Status : Available Link : NA Details : 19.5 inch HD LED TV	Pu. Price : 15000 Re. Price : 20000 Off. Price : 17000		 Add Photo  Photos  Update  Remove																		

Figure: 4.3: Product Details

4.3.3 Dashboard

CLICK TO BUY		Logout
 Md Al Amin		
 Dashboard		
 Product Details		
 Supplier		
 Stock Details		
 Customer Details		
 Admin		
 Extra References		
<div style="display: flex; justify-content: space-around;"> <div style="width: 33%;"> <p>Product Details</p> <p>Total Product 26</p> <p>Go To Product</p> </div> <div style="width: 33%;"> <p>Purchase Details</p> <p>Total Purchase 11</p> <p>Go To Purchase</p> </div> <div style="width: 33%;"> <p>Stock Details</p> <p>Total Stock 112</p> <p>Go To Stock</p> </div> </div>		
<div style="display: flex; justify-content: space-around;"> <div style="width: 33%;"> <p>Customer Order Details</p> <p>Pending Order 2</p> <p>Go To Customer Order</p> </div> <div style="width: 33%;"> <p>Brand Details</p> <p>Total Brand 8</p> <p>Go To Brand</p> </div> <div style="width: 33%;"> <p>Category Details</p> <p>Total Category 8</p> <p>Go To Category</p> </div> </div>		

Figure 4.4: Dashboard

4.3.4 Brand Details Report

Name	Origin and Description	Product List	Action
A4Tech	Origin: New Taipei, Taiwan. Description: NA	2	Update Remove
ABC Tr	Origin: DFR KI Description: NA	0	Update Remove
Apple	Origin: California Description: NA	0	Update Remove
Bajaj	Origin: Pune Description: NA	2	Update Remove
Kingston	Origin: United States Description: NA	0	Update Remove
Nokia	Origin: Finland Description: NA	10	Update Remove
Sony	Origin: Tokyo Description: NA	9	Update Remove
Yamaha	Origin: Japan Description: NA	3	Update Remove

Figure 4.5: Brand Details

4.3.5 Category Details Report

Name	Parent Name	Information	Action
Electronic		Status : Show Description : All type of electronic product is here.	Add Sub Category Update
TV	Electronic	Status : Show Description : All type of TV list is here.	Update Remove
Multimedia phone	Electronic	Status : Show Description : Na	Update Remove
Smart Phone	Electronic	Status : Show Description : NA	Update Remove
Computer	Electronic	Status : Show Description : All Type of computer is here.	Update Remove
Vehicle		Status : Show Description : All type of vehicle is here	Add Sub Category Update
Motor Cycle	Vehicle	Status : Show Description : All type of motor cycle item is here.	Update Remove
Name	Parent Name	Information	Action

Figure 4.6: Category list

This report shows short report of all of our Category Details Report. We can add new Category by clicking on +Add Parent Category.

4.3.6 Suppliers Details Report

The screenshot shows the 'Supplier Details' page within the 'CLICK TO BUY' application. The top navigation bar includes a user profile picture of Md Al Amin, a 'Logout' button, and a 'Logout' link. On the left, a sidebar menu lists 'Dashboard', 'Product Details', 'Supplier' (which is selected and highlighted in green), 'Stock Details', 'Customer Details', 'Admin', and 'Extra References'. The main content area has a title 'Supplier Details' and a green button '+ Create Supplier'. Below is a table showing supplier details:

Name	Contact	Address	Action
Md Saiful Islam	Contact : 01743909843 Email : saifulislam@gmail.com	Collage road, Majdee sadar, Noakhali.	Update Remove
Merajul	Contact : 01750830844 Email : dawnmerajul@gmail.com	Parbatipur, Dinajpur	Update Remove
Pritam Karmakar	Contact : 01718139766 Email : pritamkarmakar@gmail.com	Lakshimpur Sadar.	Update Remove

Below the table, it says 'Showing 1 to 3 of 3 entries' and has navigation buttons for 'Previous', '1', and 'Next'.

Figure 4.7 Supplier Details

This report shows short report of all of our Suppliers Details Report. We can add new Suppliers by clicking on +Create Supplier.

4.3.7 Unit Test

If app units are so small, why is testing them so important? Because each small piece of code depends on the other small pieces. Your web application is a bunch of small units working together; if you change one unit, something else can break as a consequence. Unit tests can automatically detect problematic parts of your code so you know where the problem is and what the correct behavior should be.

Different unit testing methods help to verify the behavior of small pieces of your application independently from other pieces of code. Let's see how it works. Typically, a unit test consists of three phases:

- Setting up the test for a particular piece of an application (called the system under test)
- Performing the actual testing (interacting with the system under test)
- Observing the resulting behavior and checking whether expectations were met

These three-unit test phases are abbreviated as AAA, which stands for arrange, act, and assert. If the resulting behavior is in line with expectations, the unit test passes — everything works correctly. Otherwise it fails, indicating a problem with the system under test.

Benefits Of Unit Testing:

Now that we know how different types of testing work, let's learn more about unit testing and how you can benefit from it. Many people believe that unit testing is a waste of time if they use automated tests. That's not true.

UI automation testing is about high-level tests. Usually, the actions that automated UI tests check are complex. So lots of small steps are taken before reaching the final state. And any of these steps can fail. The result of an automated test depends on the quality of smaller components, and it can be quite challenging to find a problematic component.

On the other hand, there are low-level unit tests. Their goal is to point out exactly which unit and which part of that unit doesn't work correctly. But how exactly can we benefit from unit tests?

4.3.8 White Box Testing

WHITE BOX TESTING is testing a software solution's internal structure, design, and coding. It is also known as Clear Box testing, Open Box testing, Structural testing, Transparent Box testing, Code-Based testing, and Glass Box testing. It is usually performed by developers.

In this type of testing, the code is visible to the tester. It focuses primarily on verifying the flow of inputs and outputs through the application, improving design and usability, strengthening security.

It is one of two parts of the **Box Testing** approach to software testing. Its counterpart, **Blackbox testing**, involves testing from an external or end-user type perspective. On the other hand, Whitebox testing is based on the inner workings of an application and revolves around internal testing.

The term "WhiteBox" was used because of the see-through box concept. The clear box or WhiteBox name symbolizes the ability to see through the software's outer shell (or "box") into its inner workings. Likewise, the "black box" in "Black Box Testing" symbolizes not being able to see the inner workings of the software so that only the end-user experience can be tested.

How Do You Perform White Box Testing?

To give you a simplified explanation of white box testing, we have divided it into **two basic steps**. This is what testers do when testing an application using the white box testing technique:

STEP 1) UNDERSTAND THE SOURCE CODE:

The first thing a tester will often do is learn and understand the source code of the application. Since white box testing involves the testing of the inner workings of an application, the tester must be very knowledgeable in the programming languages used in the applications they are testing. Also, the testing person must be highly aware of secure coding practices. Security is often one of the primary objectives of testing software. The tester should be able to find security issues and prevent attacks from hackers and naive users who might inject malicious code into the application either knowingly or unknowingly.

Step 2) CREATE TEST CASES AND EXECUTE:

The second basic step to white box testing involves testing the application's source code for proper flow and structure. One way is by writing more code to test the application's source code. The tester will develop little tests for each process or series of processes in the application. This method requires that the tester must have intimate knowledge of the code and is often done by the developer. Other methods include Manual Testing, trial, and error testing and the use of testing tools as we will explain further on in this article.

4.3.9 Test Scenario

A TEST SCENARIO is defined as any functionality that can be tested. It is also called Test Condition or Test Possibility. As a tester, you should put yourself in the end user's shoes and figure out the real-world scenarios and use cases of the Application Under Test.

Why Create Test Scenarios?

Test Scenarios are created for the following reasons,

- Creating Test Scenarios ensures complete Test Coverage
- Test Scenarios can be approved by various stakeholders like Business Analyst, Developers, Customers to ensure the Application Under Test is thoroughly tested. It ensures that the software is working for the most common use cases.
- They serve as a quick tool to determine the testing work effort and accordingly create a proposal for the client or organize the workforce.
- They help determine the most important end-to-end transactions or the real use of the software applications.
- For studying the end-to-end functioning of the program, Test Scenario is critical.

How to Write Test Scenarios?

As a tester, you can follow these five steps to create Test Scenarios-

- **Step 1:** Read the Requirement Documents like BRS, SRS, FRS, of the System Under Test (SUT). You could also refer use cases, books, manuals, etc. of the application to be tested.
- **Step 2:** For each requirement, figure out possible user's actions and objectives. Determine the technical aspects of the requirement. Ascertain possible scenarios of system abuse and evaluate users with hacker's mindset.
- **Step 3:** After reading the Requirements Document and doing your due Analysis, list out different test scenarios that verify each feature of the software.
- **Step 4:** Once you have listed all possible Test Scenarios, a Traceability Matrix is created to verify that each & every requirement has a corresponding Test Scenario
- **Step 5:** The scenarios created are reviewed by your supervisor. Later, they are also reviewed by other Stakeholders in the project.

4.3.10 Test Case

General Test Cases

1. Verify that user is able to navigate through all the products across different categories
2. Verify that all the links and banners are redirecting to correct product/category pages and none of the links are broken
3. Verify that the company logo is clearly visible
4. Verify that all the text – product, category name, price and product description are clearly visible
5. Verify that all the images – product and banner are clearly visible
6. Verify that category pages have relevant product listed specific to the category
7. Verify that correct count of total products is listed on the category pages
8. Search – Verify that on searching all the product satisfying the search criteria are visible on the search result page
9. Search – Verify the more relevant product for the search term are displayed on the top for a particular search term
10. Search – Verify that count of products is correctly displayed on the search result page for a particular search term
11. Filtering – Verify that filtering functionality correctly filters product based on the filter applied
12. Filtering – Verify that filtering works correctly on category pages
13. Filtering – Verify that filtering works correctly on the search result page
14. Filtering – Verify that correct count of total products is displayed after a filter is applied
15. Sorting – Verify that all the sort options work correctly – correctly sort the products based on the sort option chosen
16. Sorting – Verify that sorting works correctly on the category pages
17. Sorting – Verify that sorting works correctly on the search result page
18. Sorting – Verify that sorting works correctly on the pages containing filtered result, after applying filters
19. Sorting – Verify that product count remains intact irrespective of sorting option applied

Product Buy Flow – Test cases

1. Verify that on the product page, user can select the desired attribute of the product e.g. size, color etc.
2. Verify that user can add to cart one or more products
3. Verify that user can add products to wish list
4. Verify that user can buy products added to cart after signing in to the application (or as per the functionality of the website)

5. Verify that user can successfully buy more than one products that were added to his/her cart
6. Verify that user cannot add more than available inventory of the product
7. Verify that the limit to the number of products a user can buy is working correctly by displaying error message and preventing user from buying more than the limit
8. Verify that the delivery can be declined for the places where shipping is not available
9. Verify that Cash on Delivery option of payment is working fine
10. Verify that the different pre-paid methods of payments are working fine
11. Verify that product return functionality works fine

User(Buyer) Registration – Test cases

1. Verify that all the specified fields are present on the registration page
2. Verify that the required/mandatory fields are marked with * against the field
3. Verify that for better user interface dropdowns, radio buttons and checkboxes etc fields are displayed wherever possible instead of just textboxes
4. Verify the page has both submit and cancel/reset buttons at the end
5. Verify that clicking submit button after entering all the required fields, submits the data to the server
6. Verify that clicking cancel/reset button after entering all the required fields, cancels the submit request and resets all the fields
7. Verify that whenever possible validation should take place at client side
8. Verify that not filling the mandatory fields and clicking submit button will lead to validation error
9. Verify that not filling the optional fields and clicking submit button will still send data to server without any validation error
10. Check the upper limit of the textboxes
11. Check validation on date and email fields (only valid dates and valid email Ids should be allowed)
12. Check validation on numeric fields by entering alphabets and special characters
13. Verify that leading and trailing spaces are trimmed
14. Verify that entering blank spaces on mandatory fields lead to validation error
15. Verify that after making a request to the server and then sending the same request again with the same unique key will lead to server side validation error

Seller – Product creation Test cases

1. Verify that authenticated sellers get access to product creation panel specific to the authorized categories
2. Verify that product creation panel is working fine for single product creation
3. Verify that product creation panel is working fine for multiple product creation
4. Verify that maximum product creation limit for seller is working fine, limiting seller to create more than the desired number of products
5. Verify panel validation for checking mandatory fields
6. Verify that duplicate product creation is restricted through panel
7. Verify that seller can update information and price of existing products
8. Verify that product created by seller get visible on the website after certain period of time
9. Verify that updating made by seller get visible on the website after certain period of time

4.4 Applications

Ecommerce development and its applications is an unavoidable sector in the present day to day life. ecommerce improves its sales performance. Given below are the most common ecommerce applications.

A. Retail & Wholesale

Wholesaler-vs-retail there are numerous applications for retail as well as wholesale in the case of e-commerce. Here comes e-retailing or may be called as online retailing. This refers to the selling of goods and other services through electronic stores from business to consumers. These are designed and equipped using a shopping cart model and electronic catalog.

B. Marketing

Using web and e-commerce, data collection about the preferences, behavior, needs, and buying patterns are possible. The marketing activities like price fixing, product feature, and its enhancement, negotiation, and the relationship with the customer can be made using these.

C. Finance

Ecommerce is being used by the financial companies to a large extent. By the name finance, we know that there will be customers and transactions. The customers can check the balance in their savings account, as well as their loan account. There are features like transferring of money from and to their own accounts, paying off bills online and also e-banking. Online stock trading is also another feature of e-commerce.

D. Manufacturing

Commerce is included and used in the chain operations (supply) of a company. There are companies that form the electronic exchange. This is by providing buying and selling items together, trading market information and the information of runback office like inventory control. This is a way that speeds up the flow of finished goods and the raw materials among the business community members.

E. Auctions

Auction-e-commerce Commerce customer to customer is direct selling of goods among customers. It includes electronic auctions that involve bidding system. Bidding allows prospective buyers to bid an item. In Airline Company they give bidding opportunity for customers to quote the price for a seat on a specific route, date and time.

4.5 Conclusions

Experimental data in science and engineering is data produced by a measurement, test method, experimental design or quasi-experimental design. In clinical research any data produced are the result of a clinical trial. Controlled experiments can be performed when it is difficult to exactly control all the conditions in an experiment. In human experiments, researchers may give a subject (person) a stimulus that the subject responds to. The goal of the experiment is to measure the response to the stimulus by a test method. In this chapter we have discussed about the experimental results of our project. Here, we have analyzed the sales report and product report. Apart from, we have analyzed different types of chart in this chapter. Here we have drawn many types of chart from the data table of our system. Moreover, we can see the weekly sales report chart, daily sales report chart, monthly sales report chart and yearly sales report chart. We have also known about the sales report chart of the different types of chart. We can know about which category of the products are sold more than others category of the products. Here we have also analyzed that which categories products are sold more. We can know about the yearly sales report of our shop by this yearly sales report and also can know which category of the products is sold more than others. Moreover, we have discussed about the application, financial benefits and advantages of online shopping system. That's all about the experimental results. We have tried to show that our system can suits with all the experiments that are need to justify declaring a system reliable and efficient. [42]

CHAPTER – 5

USER MANUAL

5.1 Introduction

All computer program requires those hardware components or the rest to be used effectively Tech tools to be on your computer. Those preconditions are known as Device specifications (Computer) which are sometimes used as a guideline as opposed to an absolute Govern. Most software defines two set of requirements for the system: minimum and recommended. With ever higher demand for processing power. A greater demand for computing capacity and services in newer models of Software, with time system requirements tend to increase. That is what market experts think Trend plays a bigger part than technological in driving upgrades to existing computer systems Moves on.

5.2 System Requirements

5.2.1 Hardware Requirements

The most common set of requirements which any operating system or software defines Software is the power of physical machines also known as hardware. A bit of hardware the list of requirements is often accompanied by a Hardware Compatibility List (HCL), notably in Operating Systems event. An HCL lists the tests, compatibility and occasionally incompatibility Hardware devices for a given operating system or operating system Amending Program these sub-sections are Discuss the different Hardware requirements aspects.

5.2.1.1 Hardware Requirements for Server:

Processor: Intel dual Core, Core i3

Ram: 1 GB

Hard Disk: 80 GB

CPU Speed: 2.6 GHz

Monitor: EGA / SVGA (display), 800 × 600 24 bits True Color.

5.2.1.2 Hardware Requirements for Client:

Processor: Pentium 4, Intel dual Core, Core i3
Ram: Min 1GB
Hard Disk: 40 GB
CPU Speed: 2.6 GHz
Monitor: EGA / SVGA (display), 800 × 600 24 bits True Color.
Mobile Devices: All the mobile devices & Tabs

5.2.2 Software Requirements:

Software Requirements define requirements and pre-requirements for software resources that must be mounted on a machine to ensure an application functions optimally. These requirements or preconditions are generally not included in the installation of the software Package, and install separately before installing the software.

5.2.2.1 Software Requirements for Server:

Operating System: Windows 7/ XP/8/10
Front End: HTML, CSS, Java Script.
Front End Framework: Bootstrap 4
Server Side Script: Asp.Net
Database: MSSQL
Dependency Manager: Composer (If local server using)
For live server: Using Domain & Hosting package.

5.2.2.2 Software Requirements for Client:

Operating System: Windows 7/ XP/8/10
Browsers: Firefox, Opera Mini, Chrome (All the browsers)

5.3 Here is demo of User Interfaces

5.3.1 Home page

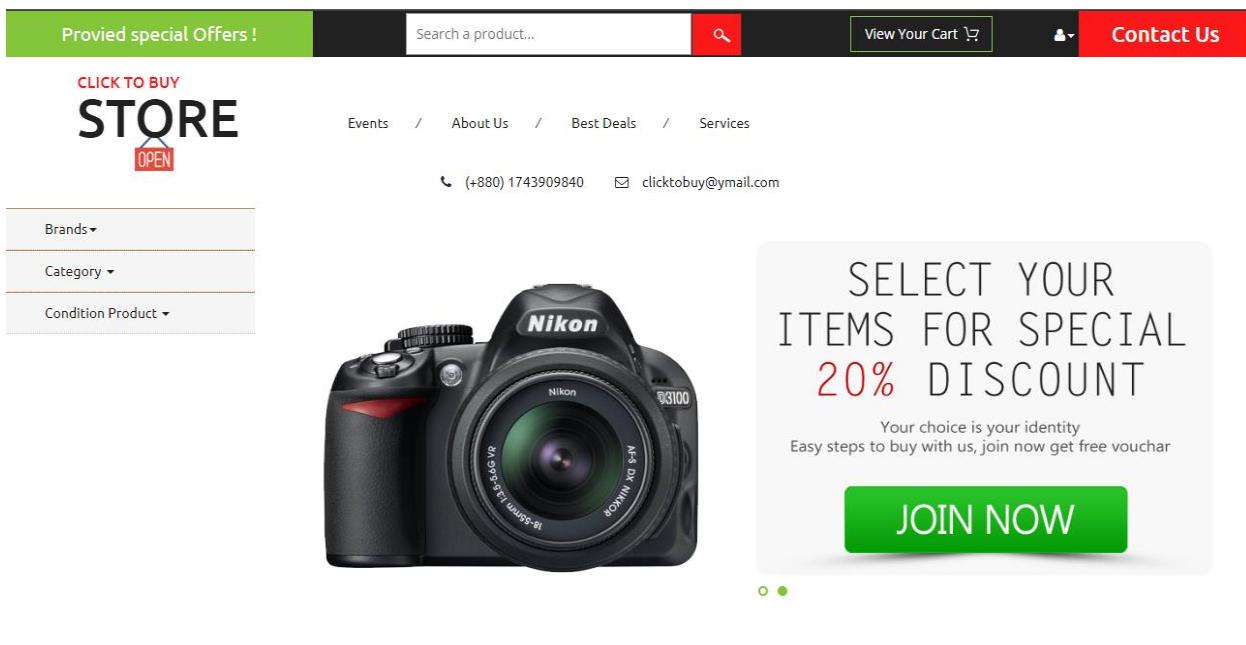


Figure 5.1: Home Page

This is the home page of our project. Students can see the all courses of our store in home page. From here students can select the product category by clicking category list, instructor name and price range by filtering. Students can select his required price and brand by price and brand filtering. Moreover, students can select the category of the product. In this page students can see the details of the product by clicking view details button. Navigation bar, Menu bar and search option are also existing in home page of our project.

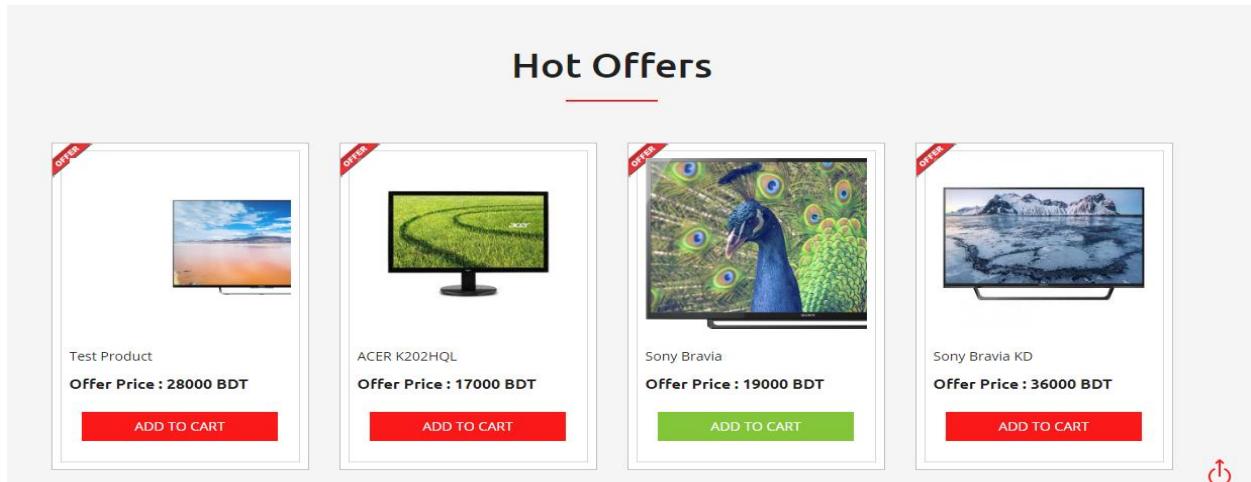




Figure 5.2: Hot Deals

Home
|
Search Product

Brands ▾
Category ▾
Condition Product ▾

Search Product List



Nokia XpressMusic 5130c
Price : 4000 BDT

[ADD TO CART](#)



Nokia N73
Price : 5000 BDT

[ADD TO CART](#)



Nokia 106
Price : 1500 BDT

[ADD TO CART](#)



Nokia 1
Price : 6000 BDT

[ADD TO CART](#)

Home | Motor Cycle

Brands ▾

Category ▾

Condition Product ▾

Motor Cycle Product



Pulsar 150cc
Price : 150000 BDT
[ADD TO CART](#)



Pulsar NS 160cc
Price : 200000 BDT
[ADD TO CART](#)



Yamaha Fascino 125cc
Price : 80000 BDT
[ADD TO CART](#)



Yamaha MT 15
Price : 250000 BDT
[ADD TO CART](#)

Figure 5.3: Search Product

Home | Brand New

Brands ▾

Category ▾

Condition Product ▾

Brand New Product



Nokia XpressMusic 5130c
Price : 4000 BDT
[ADD TO CART](#)



Nokia N73
Price : 5000 BDT
[ADD TO CART](#)



Sony Xperia Z
Price : 7000 BDT
[ADD TO CART](#)



A4Tech Wireless Mouse
Price : 400 BDT
[ADD TO CART](#)

<https://localhost:44313/Home/GetProductInfoByProductId/1>

Figure 5.4: Brand New Product

5.3.2 Contact Us Page

Home | Contact Us

Brands ▾

Category ▾

Condition Product ▾

Mail Us

ADDRESS
H# 880, ADARSHO ROAD,
MODDOH MONIPUR,
MIRPUR 2, DHAKA,
BANGLADESH

EMAIL
CLICKTOBUY@YMAIL.COM

CALL TO US
(+880) 1743909840

Name*

Telephone*

Email*

Subject*

Message...

SUBMIT **CLEAR**

5.3.3 Client Profile Page

Dashboard | Profile

Brands ▾

Category ▾

Condition Product ▾

Profile

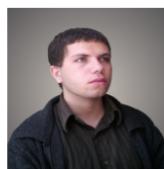
Customer 1 01754321234

customer1@gmail.com Male

12345 12345

Bangladesh Dhaka

No file chosen



Collage Road, Dhanmondi 32.

UPDATE

5.5 Client Profile

Invoice List			
Show <select>10</select> entries <input placeholder="Search:" type="text"/>			
Order Number	Date Of Order	Status	Details
10002	6/13/2020 12:00:00 AM	Pending	<button>Details</button>
10003	6/13/2020 12:00:00 AM	Pending	<button>Details</button>
Order Number	Date Of Order	Status	Details

Showing 1 to 2 of 2 entries Previous **1** Next

5.6 Client Invoice View

Click To Buy

H# 880, Adarsho Road,
Moddho Monipur,
Mirpur 2, Dhaka,
Bangladesh.
P: 01743909840

Delivery Address

H# 430, Collage Road, Sadar Lakshmpur.
Dhaka

Customer 1

customer1@gmail.com
P: 01754321234
Collage Road, Dhanmondi 32.
Dhaka
Bangladesh

ORDER NO : 10002
ORDER DATE : 13/6/2020

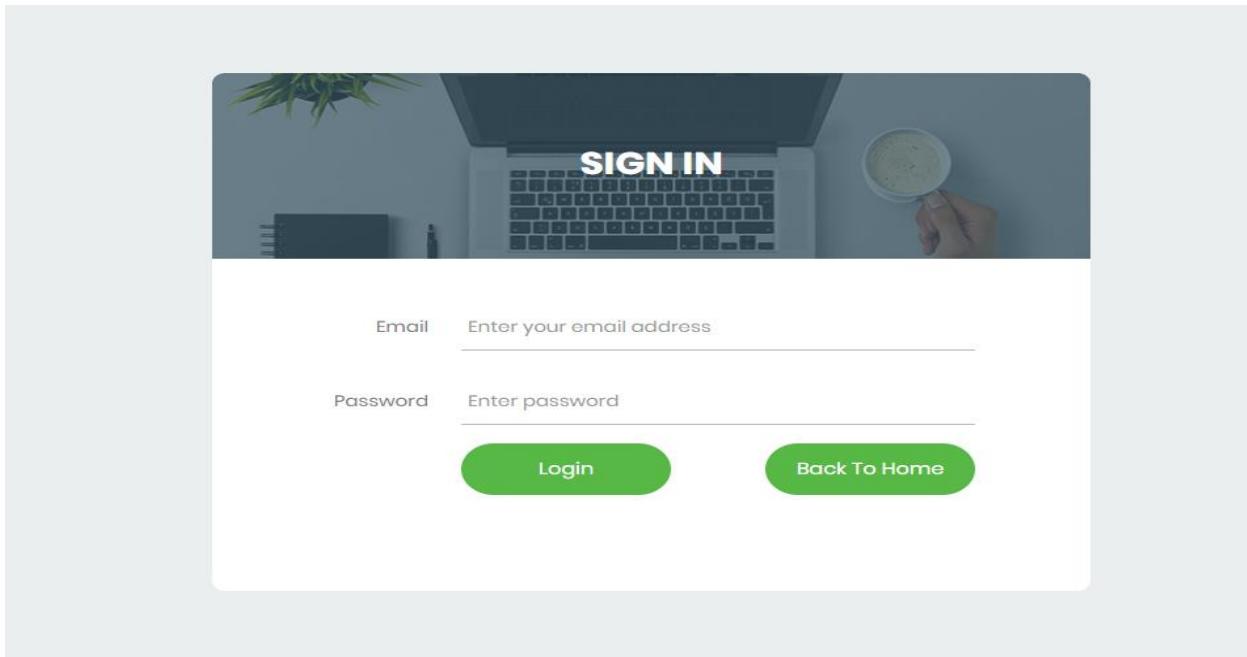
Product Name	Qty	UNIT PRICE	TOTAL
A4Tech Keyboard	3	400	1200
Nokia 106	2	1500	3000
		Subtotal	4200
		Shipping	50
			Total
			4250

Terms and Conditions

Thank you for your business. We do expect payment within 21 days, so please process this invoice within that time. There will be a 1.5% interest charge per month on late invoices.

5.3.4 Admin Login Page

This is our login page. Here our users will log in with their respective username and password. If forget the password the users can reset the password by clicking the “Lost your password” button.



5.3.5 Admin Dashboard Page

A screenshot of the admin dashboard. The top navigation bar includes a profile picture of "Md Al Amin" and a "Logout" button. On the left is a dark sidebar with a user icon and the text "CLICK TO BUY". The sidebar contains links: "Dashboard" (highlighted in teal), "Product Details", "Supplier", "Stock Details", "Customer Details", "Admin", and "Extra References". The main content area is divided into six cards arranged in a 2x3 grid. The top row contains three cards: "Product Details" (Total Product: 26, Go To Product), "Purchase Details" (Total Purchase: 11, Go To Purchase), and "Stock Details" (Total Stock: 112, Go To Stock). The bottom row contains three cards: "Customer Order Details" (Pending Order: 2, Go To Customer Order), "Brand Details" (Total Brand: 8, Go To Brand), and "Category Details" (Total Category: 8, Go To Category).

5.3.6 Admin Product Details Page

In this report admin can see the product list of the ordered product which products are not in stock. In this report there exists a date picker. If admin wants to see the one month or day to day product report he can see it here and also can view the ordered product by “view” button. The admin can also change the category of the product as well as redefine the price of the product. And also if not necessary the admin can also delete the product by clicking the button “Trash”.

The screenshot shows the 'Product Details' page of a web application. At the top, there's a navigation bar with a profile picture of 'Md Al Amin' and a 'Logout' button. On the left, a sidebar menu includes 'CLICK TO BUY', 'Dashboard', 'Product Details' (selected), 'Supplier', 'Stock Details', 'Customer Details', 'Admin', and 'Extra References'. The main content area has a green header button '+ Create Product'. Below it is a table with columns: Basic Info, Activity, Price, Picture, and Action. The table lists three products:

Basic Info	Activity	Price	Picture	Action
Name : A4Tech Keyboard Category : Computer Brand : A4Tech	Stock : 6 Condition : Brand New Status : Available Link : NA Details : NA	Pu. Price : 300 Re. Price : 400 Off. Price : 0		Add Photo Photos Update Remove
Name : A4Tech Wireless Mouse Category : Computer Brand : A4Tech	Stock : 8 Condition : Brand New Status : Available Link : NA Details : NA	Pu. Price : 300 Re. Price : 400 Off. Price : 0		Add Photo Photos Update Remove
Name : ACER K202HQL Category : TV Brand : Sony	Stock : 4 Condition : Brand New Status : Available Link : NA Details : 19.5 inch HD LED TV	Pu. Price : 15000 Re. Price : 20000 Off. Price : 17000		Add Photo Photos Update Remove

Figure 5.7: Product Details

5.3.7 Admin Create Product Page

This page is managed by admin. Admin has to fill up product name, product category, brand name, and product quantity and product image by filling the add product form. Admin can search for any required product by filtering box.

CLICK TO BUY

Md Al Amin

Logout

Create Product

Name	<input type="text"/>	Brand	<input type="text"/> -- Select Brand --
Category	<input type="text"/> -- Select Category --	Status	<input type="text"/> -- Select Close Type --
Condition	<input type="text"/> -- Select Condition --	Offre Price	<input type="text"/>
Regular Price	<input type="text"/>	Link	<input type="text"/> Link here
Product Details	<input type="text"/> Type Details		

Create **Back To List**

CLICK TO BUY

Md Al Amin

Logout

Update Product

Name	<input type="text"/> A4Tech Keyboard	Brand	<input type="text"/> A4Tech
Category	<input type="text"/> Computer	Status	<input type="text"/> Available
Condition	<input type="text"/> Brand New	Offre Price	<input type="text"/> 0
Regular Price	<input type="text"/> 400	Link	<input type="text"/> NA
Product Details	<input type="text"/> NA		

Update **Back To List**

Figure 5.8: Update Product

5.3.8 Admin Brand Page

The screenshot shows the 'Brand Details' section of the admin interface. At the top right is a 'Logout' button. Below it is a green button labeled '+ Create Brand'. On the left, a sidebar menu includes 'Dashboard', 'Product Details', 'Supplier', 'Stock Details', 'Customer Details', 'Admin', and 'Extra References'. The main area displays a table with columns: Name, Origin and Description, Product List, and Action. The table contains data for various brands:

Name	Origin and Description	Product List	Action
A4Tech	Origin: New Taipei, Taiwan. Description: NA	2	Update Remove
ABC Tr	Origin: DFR KI Description: NA	0	Update Remove
Apple	Origin: California Description: NA	0	Update Remove
Bajaj	Origin: Pune Description: NA	2	Update Remove
Kingston	Origin: United States Description: NA	0	Update Remove
Nokia	Origin: Finland Description: NA	10	Update Remove
Sony	Origin: Tokyo Description: NA	9	Update Remove
Yamaha	Origin: Japan Description: NA	3	Update Remove

5.3.9 Admin Brand Create Page

The screenshot shows the 'Create Brand' page. At the top right is a 'Logout' button. The main area has a title 'Create Brand' and three input fields: 'Name' (with an empty input field), 'Origin' (with an empty input field), and 'Description' (with a text area containing 'Write Description'). At the bottom are two buttons: 'Create' and 'Back To List'.

5.3.10 Admin Brand Edit Page

The screenshot shows the 'Update Brand' page. On the left is a dark sidebar with a user profile picture and the name 'Md Al Amin'. Below the profile are several menu items: Dashboard (highlighted in teal), Product Details, Supplier, Stock Details, Customer Details, Admin, and Extra References. At the top right is a 'Logout' button. The main content area has a title 'Update Brand'. It contains three input fields: 'Name' (A4Tech), 'Origin' (New Taipei, Taiwan.), and 'Description' (NA). At the bottom are two buttons: 'Update' (teal) and 'Back To List' (light blue).

The screenshot shows the 'Remove Brand' page. The sidebar and top navigation are identical to the previous screenshot. The main content area displays the brand details: Name (A4Tech), Origin (New Taipei, Taiwan.), and Description (NA). Below these details are two buttons: 'Remove' (red) and 'Back To List' (light blue).

5.3.11 Admin Category Details Page

This is admin category page where admin can add category of the product. In this page admin can add category by fill up the category name field. Here admin can delete category by clicking remove logo and also can edit the category of the product. At last an admin can see the list of the category by this category page.

The screenshot shows the 'Category Details' page of a web application. The top navigation bar includes a logo, the text 'CLICK TO BUY', and a 'Logout' button. On the left, a sidebar menu lists 'Dashboard', 'Product Details', 'Supplier', 'Stock Details', 'Customer Details', 'Admin', and 'Extra References'. The main content area is titled 'Category Details' and features a green button labeled '+ Add Parent Category'. Below this is a table listing categories:

Name	Parent Name	Information	Action
Electronic		Status : Show Description : All type of electronic product is here.	<input checked="" type="button"/> Add Sub Category <input type="button"/> Update
TV	Electronic	Status : Show Description : All type of TV list is here.	<input type="button"/> Update <input type="button"/> Remove
Multimedia phone	Electronic	Status : Show Description : Na	<input type="button"/> Update <input type="button"/> Remove
Smart Phone	Electronic	Status : Show Description : NA	<input type="button"/> Update <input type="button"/> Remove
Computer	Electronic	Status : Show Description : All Type of computer is here.	<input type="button"/> Update <input type="button"/> Remove
Vehicle		Status : Show Description : All type of vehicle is here	<input checked="" type="button"/> Add Sub Category <input type="button"/> Update
Motor Cycle	Vehicle	Status : Show Description : All type of motor cycle item is here.	<input type="button"/> Update <input type="button"/> Remove
Name	Parent Name	Information	Action

Below the table, there is a pagination bar showing 'Page 1 of 2.', 'Showing items 1 through 2 of 3.', and page numbers '1' (highlighted), '2', and '>'.

5.3.12 Admin Category Add Page

The screenshot shows the 'Add Parent Category' form. At the top right is a 'Logout' button. On the left is a sidebar with a user profile picture of Md Al Amin and a list of navigation items: Dashboard (selected), Product Details, Supplier, Stock Details, Customer Details, Admin, and Extra References. The main area has a title 'Add Parent Category'. It contains fields for 'Name' (empty), 'Description' (placeholder 'Write Description'), and 'Status' (unchecked). At the bottom are 'Create' and 'Back To List' buttons.

Figure 5.9: Add Parents Category

5.3.13 Admin Sub Category Add Page

The screenshot shows the 'Add Sub Category' form. At the top right is a 'Logout' button. On the left is a sidebar with a user profile picture of Md Al Amin and a list of navigation items: Dashboard (selected), Product Details, Supplier, Stock Details, Customer Details, Admin, and Extra References. The main area has a title 'Add Sub Category'. It contains fields for 'Name' (value 'Electronic'), 'Sub Category' (empty), 'Description' (placeholder 'Write Description'), and 'Status' (checked). At the bottom are 'Create' and 'Back To List' buttons.

CLICK TO BUY

Logout

Md Al Amin

Dashboard

Product Details

Supplier

Stock Details

Customer Details

Admin

Extra References

Delete Category

Name	TV
Description	All type of TV list is here.
Category	Electronic

Delete **Back To List**

5.10 Delete Category

CLICK TO BUY

Logout

Md Al Amin

Dashboard

Product Details

Supplier

Stock Details

Customer Details

Admin

Extra References

Product Photo Details

Back To Product

Show	10	entries	
Photo	Status	Featured	Action
	Show	Featured	Update Remove
	Show	<input checked="" type="checkbox"/> Set Featured	Update Remove
Photo	Status	Featured	Action

Showing 1 to 2 of 2 entries

Previous **1** Next

5.3.14 Admin Supplier Page

The screenshot shows the 'Supplier Details' section of the admin dashboard. At the top, there is a green button labeled '+ Create Supplier'. Below it is a table with columns: Name, Contact, Address, and Action. The table contains three entries:

Name	Contact	Address	Action
Md Saiful Islam	Contact : 01743909843 Email : saifulislam@gmail.com	Collage road, Majdee sadar, Noakhali.	Update Remove
Merajul	Contact : 01750830844 Email : dawnmerajul@gmail.com	Parbatipur, Dinajpur	Update Remove
Pritam Karmakar	Contact : 01718139766 Email : pritamkarmakar@gmail.com	Lakshimpur Sadar.	Update Remove

At the bottom, there is a message 'Showing 1 to 3 of 3 entries' and a navigation bar with 'Previous', '1', and 'Next' buttons.

5.3.15 Admin Create Supplier Page

The screenshot shows the 'Create Supplier' page. It has four input fields: 'Name', 'Email', 'ContactNo', and 'Address'. Below the address field is a text area labeled 'Address Box'. At the bottom, there are two buttons: 'Create' and 'Back To List'.

Figure 5.11: Create Supplier

CLICK TO BUY

Md Al Amin

- Dashboard
- Product Details
- Supplier
- Stock Details
- Customer Details
- Admin
- Extra References

Update Supplier

Name	Md Saiful Islam
Email	saifulislam@gmail.com
ContactNo	01743909843
Address	Collage road, Majdee sadar, Noakhali.

[Update](#) [Back To List](#)

5.12 Update Supplier

CLICK TO BUY

Md Al Amin

- Dashboard
- Product Details
- Supplier
- Stock Details
- Customer Details
- Admin
- Extra References

Purchase Details

[+ Create Purchase](#)

Show 10 entries	Search:	
Purchase Info	Payment Info	Action
Purchase Number : 100001 Supplier Name : Pritam Karmakar Purchase Date : 3/12/2020 12:00:00 AM	Total Item : 2 Pay Amount : 7000 Due Amount : 0	Update Remove
Purchase Number : 100002 Supplier Name : Pritam Karmakar Purchase Date : 3/14/2020 12:00:00 AM	Total Item : 1 Pay Amount : 4500 Due Amount : 0	Update Remove
Purchase Number : 100003 Supplier Name : Md Saiful Islam Purchase Date : 6/4/2020 12:00:00 AM	Total Item : 2 Pay Amount : 18900 Due Amount : 0	Update Remove
Purchase Number : 100004 Supplier Name : Md Saiful Islam Purchase Date : 6/4/2020 12:00:00 AM	Total Item : 1 Pay Amount : 10000 Due Amount : 2000	Update Remove
Purchase Number : 100005 Supplier Name : Merajul Purchase Date : 6/5/2020 12:00:00 AM	Total Item : 2 Pay Amount : 13200 Due Amount : 0	Update Remove
Purchase Number : 100006 Supplier Name : Merajul Purchase Date : 6/5/2020 12:00:00 AM	Total Item : 2 Pay Amount : 8000 Due Amount : 1000	Update Remove

Figure 5.13: Purchase Details

5.3.16 Admin Stock Page

The screenshot shows the 'Stock Details' page of a web application. At the top, there is a dark header bar with the text 'CLICK TO BUY' and a 'Logout' button. On the left, a sidebar menu is visible with the user profile 'Md Al Amin'. The menu items include 'Dashboard', 'Product Details', 'Supplier', 'Stock Details' (which is the active page), 'Customer Details', 'Admin', and 'Extra References'. The main content area has a title 'Stock Details' and a green button '+ Create Stock'. Below this is a table with the following data:

Product	Quantity	Action
A4Tech Keyboard	6	<button>Update</button> <button>Remove</button>
A4Tech Wireless Mouse	3	<button>Update</button> <button>Remove</button>
A4Tech Wireless Mouse	3	<button>Update</button> <button>Remove</button>
A4Tech Wireless Mouse	2	<button>Update</button> <button>Remove</button>
ACER K202HQL	4	<button>Update</button> <button>Remove</button>
Nokia 1	3	<button>Update</button> <button>Remove</button>
Nokia 106	6	<button>Update</button> <button>Remove</button>
Nokia 106	3	<button>Update</button> <button>Remove</button>
Nokia 2.1	5	<button>Update</button> <button>Remove</button>
Nokia 220 4G	5	<button>Update</button> <button>Remove</button>
Product	Quantity	Action

Figure 5.14: Stock Details

5.3.17 Admin Customer Order Page

This is admin order page of our site. From here the ordered product of courses from the people are granted or rejected (if any issue). The admin can grant the order by clicking “completed” button. And if admin want the order can also be pending if having any issue from user. Sometimes it may be cause delay and can stay in the processing. This figure illustrates the ordered of the courses from the people and also shows the granted orders by admin showing the word completed.

The screenshot shows the 'Customer Order Details' section of the admin dashboard. On the left, there's a sidebar with a profile picture of 'Md Al Amin' and a navigation menu including 'Dashboard', 'Product Details', 'Supplier', 'Stock Details', 'Customer Details', 'Admin', and 'Extra References'. The main content area has a title 'Customer Order Details' and a table with two entries. The table columns are 'Basic Info', 'Date Time', and 'Action'. Each entry includes an 'Order Details' button. The first entry is for Order Number 10002, Customer Name Customer 1, with Date: 13/06/2020 and Status: Pending. The second entry is for Order Number 10003, Customer Name Customer 1, with Date: 13/06/2020 and Status: Pending. At the bottom, it says 'Showing 1 to 2 of 2 entries' and has 'Previous' and 'Next' buttons.

Basic Info	Date Time	Action
Order Number : 10002 Customer Name : Customer 1	Date: 13/06/2020 Status: Pending	Order Details
Order Number : 10003 Customer Name : Customer 1	Date: 13/06/2020 Status: Pending	Order Details
Basic Info	Date Time	Action

Figure 5.15: Order Details

5.3.18 Client Login Page

This is our login page. Here our users will log in with their respective username and password. If they forget the password the users can reset the password by clicking the “Lost your password” button.

5.4 Conclusions

In this chapter we have discussed about the system requirements. From there anyone can know about the hardware requirements and software requirements. Then we have putted the screenshot of our projects interface and described about the functionalities of our screen shorted pages. Apart from here we can know about the uses of our system. Our interface is very user interactive. So users can use it very easily and order any product without any hesitation. Out the hardware requirements and software requirements. Then we have putted the screenshot of our projects interface and described about the functionalities of our screen shorted pages.

CHAPTER – 6

CONCLUSION

6.1 Conclusion

E-commerce business has altered many traditional manner of transaction and brought revolutionary change in the economy. Citizens of Bangladesh are now enhancing their standard of living using internet. Suppliers can now get the order by online ordering system and consumers also save much of their time by doing online trade. Many of commercial activities of large corporations as well as super markets are using website to receive orders from consumers and sending particular goods to them. Last few years' statistics says that this sector has good growth rate. In order to make it sustainable both government and entrepreneurs needs to be more conscious and take proper steps. In this report current e-commerce platform business issues, challenges and their optimum solutions regarding Bangladesh has illustrated briefly. In order to gain customer satisfaction and trust ecommerce platform business should be more service orientated. E-commerce companies should ensure security and provide the best service to their customer otherwise this sector cannot grow more.

The Internet has become a big tool in modern business and thus online learning has gained traction Significance from the point of view not only of the entrepreneur but also of the learner. To the Entrepreneur, online learning platform creates new opportunities and opportunities for business Customer, this allows for comparative learning. With user-friendly shopping cart implementation logic, a good shopping cart in LMS architecture must be followed. The customer will be able to access the contents s of their cart and be able to delete or add items to their cart. The application for shopping carts described in this project contains a number of features designed to make visitors more comfortable. This project helps to understand how an interactive web page is created and how technology users implement it. We have challenges and issues around the broad spectrum over the process of the project. We've learnt the appropriate intricate work behind the dynamic website, how tricky data manipulation can sometimes occur but we've done it all.

The system has been designed successfully in response to the system analysis. The software removed all potential mistakes. Required testing techniques were used, and the device was checked using normal, abnormal and severe data. But doing this mission, as the future IT member of our global community, has been a strong boost to our faith.

Today website usage is becoming vital in all fields. We hope our online learning system- "Learn & Share "will meet all customers ' requirements. We have tried our best to develop nice looking, powerful, user friendly and secure website for personal or professional use. We believe it is useful to website for general people of all categories. We seek to satisfy all Requirements and apps required to offer other critical health care or emergency facilities online Webpage. [45]

This website is not entirely dynamic but can be extended. If the website needs to be extended, then the database needs to be little worked on. So, we have the demand to build the website which takes all the issues into consideration. Keeping all these things in mind we tried our best to create a stable, interactive, expandable and reusable website. There is still the opportunity to add additional features that are not mentioned here because the demand of human nature and technology is changing day by day and we will update our platform considering and analyzing the changing demand of our platform users and people after taking their views.

6.2 Limitation

Each system has limitations after it has first launched. As we've just developed our system, our system also has some limitations that we're going to work on in the future. While we have tried our hardest to make our system perfect and user friendly with the use of modern technology, due to time, there are some slight technical and design anomalies in our program Locking, build of prototype and cost constraints.

The limitations of our system are:

- i. Customized App Mailbox.
- ii. We haven't written all course definitions yet.
- iii. Our website is still not optimized to the full search engine.
- iv. Our website not have online payment system yet.
- v. Even we didn't promote the class in live instruction.
- vi. Remixing library and Document-Rearrange and order groups of your content to create custom eBooks
- vii. A mobile app which moves beyond web-only access allows learners to access training materials on mobile devices at any time.
- viii. Reporting of usage- used to measure training material engagement.
- ix. Carry on. We've also not introduced e-book shop APIs on our website.
- x. Nevertheless, after completing every course, our program does not have any qualification process, but we will add that quite recently.

6.3 Future Works

Our system is developed based on demand of user's satisfaction and facilities. In our system we have used the modern web technologies to make our system fast, convenient and efficient for all of the personnel mentioned. Due to time and cost constraint it was not possible to fulfill all requirements and functionalities those were planned. But in future these planned functionalities and more improvement will be possible to pursue.

The functionalities to be implemented are:

- I. Enrolling online mobile banking payment system.
- II. Include some other online payment method.
- III. Integrating some important APIs on our site.
- IV. Providing personalized inbox to the user.
- V. Launching our as a mobile app so that it can be more useful who do not use computer much.
- VI. We will provide a certification method recently after a student have completed course in our site. But in the near future we have a long term plan with our project Adapting to a Multi-Channel Learning Style 2019 will see Millennials becoming an ever-growing slice of the workforce “pie.” And, not only will we see a younger, yet much more tech-savvy group entering the job market, but the current workforce will continue to favor more immediate learning results. With that shift the landscape is rapidly changing how admins will curate content to better engage with learners. There will be a reluctance to commit to a 90-minute course or a “page-turner” case study in favor of learning objects that are “snack-sized.”

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APPENDICES

APPENDIX: INSTALLATION FOR SQL SERVER ON LINUX

SQL Server is supported on Red Hat Enterprise Linux (RHEL), SUSE Linux Enterprise Server (SLES), and Centos

Platform	Supported version(s)
Red Hat Enterprise Linux	7.3,7.6,8.0

SQL Server has the following system requirements for Linux:

Memory	2 GB
File System	XFS or EXT4 (other file systems, such as BTRFS , are unsupported)
Disk space	6 GB
Processor speed	2 GHz
Processor cores	2 cores
Processor type	x64-compatible only

Use NFS version 4.2 or higher. Older versions of NFS do not support required features, such as allocate and sparse file creation, common to modern file systems. Locate only the /var/opt/mssql directories on the NFS mount. Other files, such as the SQL Server system binaries, are not supported. Ensure that NFS clients use the 'no lock' option when mounting the remote share.

```
sudo alternatives --config python
```

```
# If not configured, install python2 and openssl10 using the following commands:
```

```
sudo yum install python2
sudo yum install compat-openssl10
```

```
# Configure python2 as the default interpreter using this command:
```

```
sudo alternatives --config python
```

1. Download the Microsoft SQL Server 2017 Red Hat repository configuration file:

```
#           sudo           curl           -o           /etc/yum.repos.d/mssql-server.repo
https://packages.microsoft.com/config/rhel/8/mssql-server-2017.repo
```

2. Run the following commands to install SQL Server:

```
#sudo yum install -y mssql-server
```

3. After the package installation finishes, run **mssql-conf setup** and follow the prompts to set the SA password and choose your edition.

```
#sudo /opt/mssql/bin/mssql-conf setup
```

4. Once the configuration is done, verify that the service is running:

```
#systemctl status mssql-server
```

5. To allow remote connections, open the SQL Server port on the firewall on RHEL. The default SQL Server port is TCP 1433. If you are using **FirewallD** for your firewall, you can use the following commands:

```
#sudo firewall-cmd --zone=public --add-port=1433/tcp --permanent
```

```
#sudo firewall-cmd --reload
```

6. For convenience, add /opt/mssql-tools/bin/ to your **PATH** environment variable. This enables you to run the tools without specifying the full path. Run the following commands to modify the **PATH** for both login sessions and interactive/non-login sessions:

```
# echo 'export PATH="$PATH:/opt/mssql-tools/bin"' >> ~/.bash_profile
```

```
# echo 'export PATH="$PATH:/opt/mssql-tools/bin"' >> ~/.bashrc
```

```
# source ~/.bashrc
```