ONLINE SHOPPING WEBSITE

A

PROJECT REPORT

Submitted by

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BONAFIDE CERTIFICATE

Certified that this project report "**ONLINE SHOPPING WEBSITE**" is the bonafide work of "**LAKSHAY CHOUDHARY (19BCS2711)**" who carried out the project work under my supervision.

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INTERNAL EXAMINER   **EXTERNAL EXAMINER**

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ABSTRACT

This project is a web-based online shopping website for an existing shop. The project objective is to deliver the online shopping application into android platform. This project is an attempt to provide the advantages of online shopping to customers of a real shop. It helps buying the products in the shop anywhere through internet by using an android device. Thus, the customer will get the service of online shopping and home delivery from his favorite shop. This system can be implemented to any shop in the locality or to multinational branded shops having retail outlet chains. If shops are providing an online portal where their customers can enjoy easy shopping from anywhere, the shops won't be losing any more customers to the trending online shops such as flip cart or eBay. Online shopping is a form of electronic commerce which allows consumers to directly buy goods of services from a seller over the Internet using a web a mobile app. Consumers find a product of interest by visiting the website of the retailer directly or by searching among alternative vendors using a shopping search engine, which displays the same product's availability and pricing at different e-retailers. As of 2020, customers can shop online using a E-commerce could be a boom within the modern business, Ecommerce means electronic commerce. E-commerce involves buying and selling of products and services, or the transmitting of funds or data, over an system, predominantly the net, E-commerce could be a paradigm shift influencing both marketers and also the customers. Rather, e-commerce is quite just differently to spice up the prevailing business practices. It's leading to a whole change in the traditional way of doing business. This significant change in business model is witnessing an amazing growth round the globe and India isn\'t an exception. A large internet penetration has added to growth of E-commerce and more particularly start-ups are increasingly using this selection as a differentiating business model. Moreover, E-Commerce has significant influences on the environment. Although the model is very employed in current business scenario but the choice has not been explored at its fullest. The present research an analyses had been undertaken to explain the condition of E-Commerce websites, analyze the trends of E-Commerce. The online shopping system does not settle with a credit supplier of the customer until the item selected by the customer is picked from inventory but before it is delivered. Therefore, the customer can go online and make changes to the order. In addition, available service windows are presented to the customer as a function of customer selected order and service types and further, the order picking is assigned in accordance with a picker's preference. When ordering goods, many shopping systems provide a virtual shopping cart for holding items selected for purchase. Successive items selected for purchase are placed

ABBREVIATIONS

E-commerce   Electronic commerce

E-retailer   Electronic retaile

E-customer   Electronic customer

B2C   Business to Customer

IT Information Technology

FUD   Fears, Uncertainty and Doubt

LIST OF SYMBOLS

TP Number of people with item in their cart.

TN Number of people with no shopping item

FP People having issue with their report.

FN People have no shopping history.

CHAPTER 1

INTRODUCTION

Online Shopping is a very popular project in web development. It is mostly used as a business model to earn capital. Famous ecommerce websites are amazon, flip-kart, etc. Let us develop Online Shopping System in Django. This project deals with developing a Virtual Website Online Shopping Website**.** It provides the user with a list of the various products available for purchase in the store All the users can view various products, if they wish to buy any then they have to register and then login to add that product inside their cart. The users or customers can also read the reviews about a product posted by other users before buying it. The users can add how many products he/she wants to their shopping cart. Then the users are able to set the quantity of each added product inside the cart. Finally, while checkout the users can give their address and the mode of payment and place the respective order. Then the admin can see the customer details with his/her order details and the address where the order should be delivered. An online shop evokes the physical analogy of buying products or services at a regular "bricks-and-mortar" retailer or shopping center; the process is called business-to-consumer (B2C) online shopping. When an online store is set up to enable businesses to buy from another businesses, the process is called business-to-business (B2B) online shopping. A typical online store enables the customer to browse the firm's range of products and services, view photos or images of the products, along with information about the product specifications, features and prices. It provides the user with a list of the various products available for purchase in the store. For the convenience of online shopping, a shopping cart is provided to the user. After the selection of the goods, it is sent for the order confirmation process. The system is implemented using Python's web framework Django. To develop an e-commerce website, it is necessary to study and understand many technologies. It will display products, customers can select catalogs and select products, and can remove products from their cart specifying the quantity of each item. Selected items will be collected in a cart. At checkout, the item on the card will be presented as an order. Customers can pay for the items in the cart to complete an order. This project has great future scope.

1.1   Identification of Client and Need

The objective of the project is to make an application in android platform to purchase items in an existing shop. In order to build such an application complete web support, need to be provided. A complete and efficient web application which can provide the online shopping experience is the basic objective of the project. The web application can be implemented in the form of an android application with web view. Builder fly's ecommerce store can help you automate most of your services and save time updating the status of your sold goods, creating invoices, and more. A customized ecommerce platform not only helps you to sell your goods but offers better services to your audiences like fast delivery, quick check-outs, better product information, and more. Builder fly will help you update your efficiency through chat support, deliver goods faster to your clients, and create a robust online presence. An ecommerce store in Builder fly will help you target an audience that is genuinely interested in buying your products. But how will you know that? You can learn different parameters like age, gender, income, and more by analyzing your audience

1.2   Relevant contemporary issues

The central concept of the application is to allow the customer to shop virtually using the Internet and allow customers to buy the items and articles of their desire from the store. The information pertaining to the products are stores on an RDBMS at the server side (store). The Server process the customers and the items are shipped to the address submitted by them. The application was designed into two modules first is for the customers who wish to buy the articles. Second is for the storekeepers who maintains and updates the information pertaining to the articles and those of the customers. The end user of this product is a departmental store where the application is hosted on the web and the administrator maintains the database. The application which is deployed at the customer database, the details of the items are brought forward from the database for the customer view based on the selection through the menu and the database of all the products are updated at the end of each transaction.

1.3   Problem Identification

The central concept of the application is to allow the customer to shop virtually using the Internet and allow customers to buy the items and articles of their desire from the store. The information pertaining to the products are stores on an RDBMS at the server side (store). The Server process the customers and the items are shipped to the address submitted by them. The application was designed into two modules first is for the customers who wish to buy the articles. Second is for the storekeepers who maintains and updates the information pertaining to the articles and those of the customers. The end user of this product is a departmental store where the application is hosted on the web and the administrator maintains the database. The application which is deployed at the customer database, the details of the items are brought forward from the database for the customer view based on the selection through the menu and the database of all the products are updated at the end of each transaction. Data entry into the application can be done through various screens designed for various levels of users. Once the authorized personnel feed the relevant data into the system, several reports could be generated as per the security.

1.4   Task Identification

This system can be implemented to any shop in the locality or to multinational branded shops having retail outlet chains. The system recommends a facility to accept the orders 24*7 and a home delivery system which can make customers happy. If shops are providing an online portal where their customers can enjoy easy shopping from anywhere, the shops won't be losing any more customers to the trending online shops such as flip kart or eBay. Since the application is available in the Smartphone it is easily accessible and always available. Anyone can view Online Shopping portal and available products, but every user must login by his/her Username and password in order to purchase or order products. Unregistered members can register by navigating to registration page. Only Admin will have access to modify roles, by default developer can only be an 'Admin'. Once user register site, his default role will be 'User' Worldwide E-commerce Sales continue to grow at double digit rates year on year. If you too have set out on that route and decided to start an online store, then Congratulations!

But as more and more Click-Only businesses mushroom its necessary to get the prerequisites sorted out before jumping onto the E-commerce bandwagon. Especially, if you are in it for the first time certain key aspects can get easily overlooked causing one to scramble halfway during the project.

1.5   Problem Statement

There are a lot of websites on internet whereby it offers a variety of product and services for consumer can find and buy through online such as shoe, apparel, sun glasses and more Moreover, the online also provides some of the services which is paying bill online, booking a transport ticket and more. In this research, we are looking the problem addressed in this research which is the view of online shopping by consumer. However, there are several reason hinder in the consumer are involved in online shopping because some of the consumer are not willing to take part in online purchased due to the valid reason because there are worried about the quality of the product in online are not durable, moreover, there are not confiden In addition, in this study also understand the influences of the social factors toward to purchase intention of consumers in online shopping and also study the attitude of the consumers purchase intention in online shopping. Another problem faced in online shopping is issues with delivery and logistics. Products are often lost or damaged while in transit, and order tracking systems are unable to accurately locate the product. People choose the same-day. one-day or two-day delivery, paying extra money to get their product delivered. Before digging deeper into a problem statement, let's look at an example of a problem statement: "We don't have an effective, flexible and versatile customer relationship management or CRM system. We need to upgrade our CRM efforts to improve brand recall." In college, we submit test reports, projects and assignments that start with either an abstract or an introductory paragraph that explains the contents. These are the problem statement examples in education. It could be the basis for a master's thesis that addresses the problem and explains the method used to

For essays and reports, the problem statement can be longer than a problem statement in a profess

There have been several problems with transitioning to a fully online study model in the wake of the COVID-19 pandemic. The report aims to describe the advantages and disadvantages of this transition, with interviews and case studies. The study has interviews from eleven K-12 teachers in charge of different courses and subjects. Their experience of teaching online classes, with cohorts of different sizes, reveals that online learning is challenging, but advantageous in the long run.

The problem statement can be a few paragraphs long. You can add any setbacks you faced and how you overcame them during your research. In education, it's important to set the context like you would for a layperson.

CHAPTER - 2

LITERATURE SURVEY

System analysis is a problem-solving activity that requires intensive communication between the system users and system developers. System analysis or study is an important phase of any system development process. The system is viewed as a whole, the inputs are identified and the system is subjected to close study to identify the problem areas. The solutions are given as a proposal. The proposal is reviewed on user request and suitable changes are made. This loop ends as soon as the user is satisfied with the proposal.

2.1 Timeline of the reported problem

2.1.1 The History of Online Shopping

For many, it can be hard to remember the days when online shopping wasn't an option. Yet, despite its prevalence now, online shopping is a relatively new phenomenon . This graphic, presented by Logic outlines the brief history of online shopping and how it has evolved over the last few decades. We'll also touch on how companies can get ahead in this rapidly evolving space and what it takes to remain competitive in today's market.

2.1.2 Timeline: From the Late 70s to Present Day

According to Big Commerce, the first inklings of online shopping began in England, back in the late 1970s.

2.1.3 The Early Days

In 1979, the English inventor Michael Aldrich invented a system that allowed consumers to connect with businesses electronically. He did this by connecting a consumer's TV to a retailer's computer via a telephone line. His invention was one of the first communication tools that allowed for interactive, mass communication—but it was costly, and it didn't make sense financially for most businesses until the Internet became more widespread.

2.1.4 Bulletin Boards

By 1982, the world's first eCommerce company launched. The Boston Computer Exchange (BCE) was an online marketplace for people to buy and sell used computers. The launch of BCE predates the advent of the World Wide Web, and because of this, the company operated on a dial up bulletin board system.

2.1.5 The Big Dogs Begin to Emerge

By the mid-90s, the Internet had become an established hub for global communication and connection. In 1995, the most popular web browser at the time, Netscape, had around 10 million users worldwide. That same year, Jeff Bezos launched Amazon, which at the time functioned as an online book marketplace. The company saw early signs of success—within 30 days of launching, it was shipping internationally to 45 different countries.
A few years later, an online payment system called Confinity—now known as PayPal—was born.

2.1.6 Monetization Goes Mainstream

When the Internet's novelty started to wear off around the early 2000s, monetization methods and platforms started to become more sophisticated. In 2000, Google introduced Google AdWords as an online advertising tool for businesses to promote their products. This ushered in the era of pay-per-click advertising. Five years later, Amazon introduced its Prime membership package, which offered members perks like free rapid shipping and exclusive discounts. Prime users were (and still are) charged an annual membership fee.

2.1.7 That Escalated Quickly

By the 2010s, ecommerce rapidly started to pick up speed. In 2010, for the first time in online shopping history, U.S. online sales during Cyber Monday surpassed $1 billion**.** Around the same time, the launch of new digital payment tools helped add fuel to the fire. For instance, the launch of Apple Pay in 2014 made it easy for consumers to pay for products directly from their iPhones.

2.1.8 Present Day: The Future is Bright

Amidst the global pandemic, businesses were forced to close their brick-and-mortar stores, and lockdown restrictions drove consumers online. By May 2020, ecommerce sales had reached $82.5 billion, a **77%** rise year-over-year. And while the world has started to open up again, online shopping is expected to continue growing and expanding its market share—by 2023, online shopping is expected to make up 22% of total retail sales across the globe.

2.2 Proposed Solutions

This project aims to develop an online shopping for customers with the goal so that it is very easy to shop your loved things from a extensive number of online shopping sites available on the web. With the help of this you can carry out an online shopping from your home. Here is no compelling reason to go to the crowed stores or shopping centers during festival seasons. You simpy require a PC or a laptop and one important payment sending option to shop online.To get to this online shopping system all the customers will need to have a email and password to login and proceed your shopping . The login credentials for an online shopping system are under high security and

nobody will have the capacity to crack it easily. Upon successful login the customers can purchase a wide range of things such as mobiles, books, apparel, jewellery, infant care, gifts, tools, etc. can be dispatched using online shopping system. Not justthese, you can also purchase from outside nations by few clicks on your mouse. And of course you will get your requested ordered items at your door step. It is simple. You will pick your favourite items from variety of online shopping sites looking at cost and quality. No need to go physical shops with this you will have more time to spend with your family.It Just need a computer and a payment making options like net banking, credit card, debit card or paypal.Almost a wide range of things can be brought through online shopping system.You can purchase goods from foreign places from your bedroom and you will get your goods at your home.It is extremely secure. Customer service is accessible.

2.3 Bibliometric Analysis

Online Shopping is increasingly becoming popular across the globe. This is relatively a new area of research, which gained significant growth and attention in last decade. This study conducts a bibliometric analysis of the "Online Shopping" research area by collecting research papers and data from Web of Science (WOS) for the period of 2000 to 2014. A total of 772 papers with 7,313 citations from WOS were found. Based on these papers and citations, it evaluates the research performance of journals, authors, and papers related to "Online Shopping" research area on the three evaluation criteria of productivity, sustainability, and impact. It was found from the analyses that Journal of Business Research, Marketing Science, Information & Management, and Psychology & Marketing are the top journals from all the three evaluation criteria of productivity, sustainability, and impact. However, research publications on Online Shopping or e-Commerce are fragmented and depending on the content and author's preference, researches get published in various journals, sometimes related to Technology, Marketing, Operations, or Management area. Benbasat, Izak was the top author from productivity and sustainability perspective. He wrote 10 papers in 7 different years in the period 2000 to 2014. However, the highest cited paper had 995 citations, written by Gefen, D et al in 2003. There were 1,789 authors, who published their studies in 163 journals. Number of articles published each year is found to be increasing from year 2000 and the peak was in year 2011 when 115 articles were published. There is a downward trend in the number of articles published each year thereafter. In 2014, 68 articles were published. Productivity indicates number of papers published in a journal during a defined period or the number of papers published by an author in a defined period. As shown in Table 1, Journal of Business Research, Electronic Commerce Research and Applications, and Internet Research are the top 3 journals in terms of number of studies published during the period in this area, constituting around 15% of total 772 research papers. Sustainability indicates the number of years when any paper on Online Shopping research area was published during the selected period from year 2000 to 2014. As shown in Table 3, Journal of Business Research remains the top journal which contained the Online

Shopping related research paper for 14 years followed by Marketing Science, Information & Management and Journal of Retailing with 11 years each. Top journals from both the perspective of productivity and sustainability are Journal of Business Research. Marketing Science, Information & Management, Decision Support Systems, Electronic Commerce Research and Applications, Psychology & Marketing, and Online Information Review. These journals secured position both in the list of top 10 journals from productivity perspective and also in the list of top 11 journals from sustainability perspective. For creating the list of top sustainability journals, 11 journals were included so as to keep the uniformity in judgment in including all the journals with 9 years of publication. Journals which exist in the list of top 10 journals from productivity perspective, but not in top 11 journals from sustainability perspective are Internet Research, Journal of Electronic Commerce Research, and European Journal of Marketing. On the other hand, the journals which exist in the list of top 11 journals from sustainability perspective, but not in top 10 journals from productivity perspective are Journal of Retailing, Journal of Computer Information Systems, International Journal of Electronic Commerce, and Service Industries Journal. Table 4 shows the sustainability of authors. All the authors listed in Table 4, except Haubl, G published their research papers after year 2006. Haubl, G is the earliest researcher, who published his research papers but only till year 2003 citations. However, to arrive at any conclusion, further analysis may be needed in coming years to track how the impact of the research papers increases over the years. Also, the sensitivity analysis of the time on the research paper impact will help in segregating the effect of time on the research impact and enabling the forecast of the research impact over the time.

2.4 Proposed solutions by different researchers

The purpose of this thesis is to get a better understanding of nowadays e-commerce by finding out those problems and difficulties that Swedish customers face when they go shopping online. Additionally, several discussions are given to provide some inspirations for businessmen and researchers to find out a solution to solve those problems in order to create a better performance of future e-commerce. According to Chaffey & Smith (2013), e-commerce is such a broad conception that it contains different online business activities in different level. But in the thesis, the study is especially and only focused on the online buying process of e-customers in B2C business. Moreover, this thesis is only focused on finding and analyzing the most common and serious problems, for other problems that few people have are mentioned in this thesis but not emphasized. Because from economic point of view, to maximize the profit of e-commerce, it is the majority group of customers should be mostly considered but not the minority. In this thesis, the products segmentation and customer segmentation are not implied. However, the issues of buying different products might be slightly different between buying different types of products. Additionally, different consumers that have different habits of buying may face different issues individually. As it was mentioned above, this thesis only emphasizes on the most common issues that most of online

buyers are facing. Due to the limitation of snowball sampling technique, the respondents may not be completely random and totally Swedish; additionally, it might contain some community bias because the first respondents might have impact on the sample (Atkinson & Flint, 2004). According to Chaffey & Smith (2013, p. 14), e-commerce refers to sell online or being able to transact online. The term e-commerce there describes business activities such as e-tailing which refers to selling directly to customers online. Using online bank facility to make any kind of payment on internet is another aspect e-commerce. And buying a product online refers to e-commerce. According to Rayport & Jaworski (2001), the definition of e-commerce refers to exchanges which are made by using technology. The exchanges consist of trading of products and values. Chaffey & Smith (2013) made further explanation that a broader definition of e-commerce includes various management and administrative activities that are required for selling online. Rayport & Jaworski (2001) acknowledged that e-commerce also describes all the activities undertaken within an organisation to facilitate exchange using technology. Therefore, the definition of e-commerce can be described as conducting commercial activities using technology such as internet. Porter (2001) has mentioned internet technology is technological invention that allows people to interact with each other globally. This technology is expected to influence the conventional concept of commerce and create new industries within commerce. Gay (2007) argued the implications of internet technology as Internet is an important tool for business. He mentioned that internet allows faster communication, and varied way of communication and presenting information such as it takes less time to send out information via internet. Internet allows using different media such as photograph, audio or video to represent information

2.5 Summary linking literature review with the project

Online shopping is growing tremendously across the world particularly in developed nations. Online shopping involves no travel, easy accessibility, convenience and time saving. It has been observed that the amount of buyers purchasing online are rising and quantity of their purchase is also rapidly increasing. India's E-commerce profits is likely to jump from US$ 39 billion in 2017 to US$ 120 billion in 2020, growing at an annual rate of 51 per cent, the highest in the world. However, increasing internet penetration has helped to expand the potential consumer number. The digital transformation in India is expected to increase 829 million by 2021 from 444.96 in 2017. India's internet economy is expected to double from US$125 billion as of April 2017 to US$ 250 billion by 2020, majorly backed by e-commerce. During 2018, electronics is currently the biggest contributor to online retail sales in India with a share of 48 per cent, followed closely by apparel at 29 per cent. Buyers are using the Internet not only to buy goods and services but also to gain knowledge about potential purchase. Customers are now able to use internet for variety of purposes such as research, communication, online banking and also shopping. With this Internet usage it has

become new method for online business and communication. With this advantages Internet has become new method of communication and conducting business conveniently. The impression of online website has become important factor, marketers has to find ways to satisfy buyers with impressive websites. Recent report by Morgan Stanley projected that by the year 2020, India will have almost 320 million online shoppers. That's 6.4 times more than the estimated 50 million shoppers we had back in 2015.

2.6 Problem Definition, Goals and Objectives

It is essential to understand buyer's perception while shopping online. Consumers perceive higher level of risk while shopping online. Mitchell(1999),perceive risk is influential factor for explaining buyer behaviour because buyers are like to avoid loss to get maximum purchase .This makes important for managers to understand consumer's perceived risk. Higher the risk of an individual towards an online channel, the lesser is his/her chance of using it for their purchase decisions (Im,Kim & Han 2008). Different types of perceived risk studied are Monetory (Financial), product performance risk, convenience/time risk & delivery risk (Priyank Sinha 2014) .

2.6.1 A. Monetary Risk (sweency et al 1999)

In case of online shopping there are chances to misuse of credit/debit card information, so buyers are afraid of loss of money. Many customers think that credit/debit card information is wrongly use over the Internet hence it is major avoiding factor for online shopping (Forsyther & shi 2003)

2.6.2 B. Product Risk

It is dominating in online shopping because consumer cannot touch the product physically. This makes fear regarding colour, size or quality of product .It changes with product category. Buying standardised products like computer, books, other electronic gadgets assumed to be less risky than to buy experiential products such as apparels, fashion accessories (Bhatnagar et al 2000)

2.6.3 C. Convenience Risk

Forsythe et al (2003) risk related to loss of time in purchasing product/service. Consumers who are not aware to use of internet find it difficult to browse shopping sites and to get required product. Delay in download of images/videos, confuse websites lengthy transition process are some issues for perceived convenience risk.

2.6.3 D. Delivery Risk

Wrong delivery, late delivery are some important concerns and complaints of Indian online buyers (saroja 2010). In online scenario buyers finds it difficult to locate seller address which will solve their complaints regarding product delivery. The shopper perception changes with the kind of products they required to purchase. Nelson (1974) suggested search and experience goods are two product types. For the Search goods, essential parameters of products/services are evaluated before

CHAPTER- 3
DESIGN FLOW/PROCESS

System design is the solution for the creation of a new system. This phase focuses on the detailed implementation of the feasible system. It emphasis on translating design. Specifications to performance specification. System design has two phases of development During logical design phase the analyst describes inputs (sources), output s(destinations), databases (data sores) and procedures (data flows) all in a format that meets the user requirements. The analyst also specifies the needs of the user at a level that virtually determines the information flow in and out of the system and the data resources. Here the logical design is done through data flow diagrams and database design. The physical design is followed by physical design or coding. Physical design produces the working system by defining the design specifications, which specify exactly what the candidate system must do. The programmers write the necessary programs that accept input from the user, perform necessary processing on accepted data and produce the required report on a hard copy or display it on the screen. The input design involves determining the inputs, validating the data, minimizing the data entry and provides a multi-user facility. Inaccurate inputs are the most common cause of errors in data processing. Errors entered by the data entry operators can be controlled by input design. The user-originated inputs are converted to a computer based format in the input design. Computer output is the most important and direct source of information to the user. Output design is a very important phase since the output needs to be in an efficient manner. Efficient and intelligible output design improves the system relationship with the user and helps in decision making. Allowing the user to view the sample screen is important because the user is the ultimate judge of the quality of output. The output module of this system is the selected notifications.

3.1 EVALUATION & SELECTION OF SPECIFICATIONS/ FEATURES

The working of the system starts with the collection of data and selecting the important attributes. Then the required data is pre-processed into the required format. The data is then divided into two parts training and testing data. The algorithms are applied and the model is trained using the training data. The accuracy of the system is obtained by testing the system using the testing data.

This system is implemented using the following modules:

parts training and testing data. The algorithms are applied and the model is trained using the

training data. The accuracy of the system is obtained by testing the system using the testing data. This system is implemented using the following modules.

1.) Collection of Dataset

2.) Selection of attributes

3.) Data Pre-Processing

4.) Balancing of Data

3.2 STUDY OF THE SYSTEM

3.2.1 MODULES:

The system after careful analysis has been identified to be presented with the following modules and roles.

The modules involved are:

1.) Administrator

2.) Moderators

3.) Users

3.2.2 ADMINISTRATOR:

The administrator is the super user of this application. Only admin have access into this admin page. Admin may be the owner of the shop. The administrator has all the information about all the users and about all products.
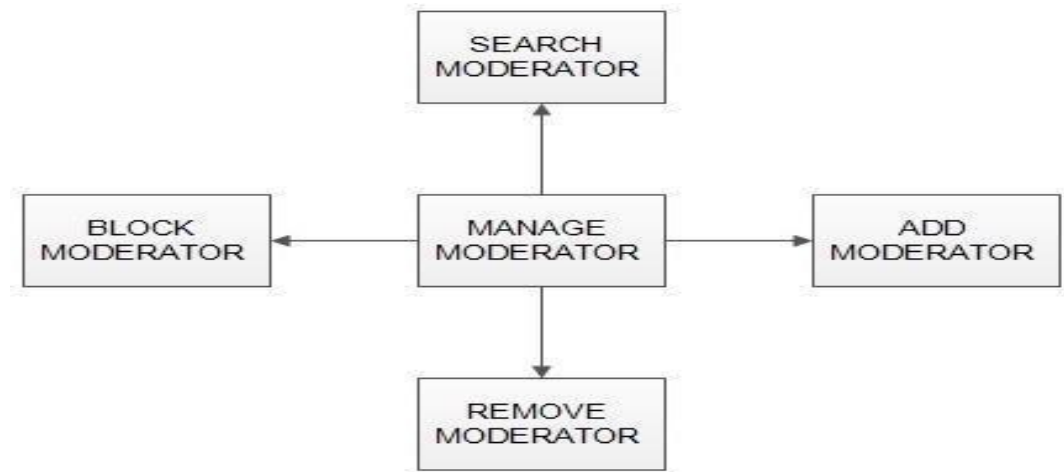
This module is divided into different sub-modules.

1.) Manage Moderators

2.) Manage Products

3.) Manage Users

4.) Manage Orders
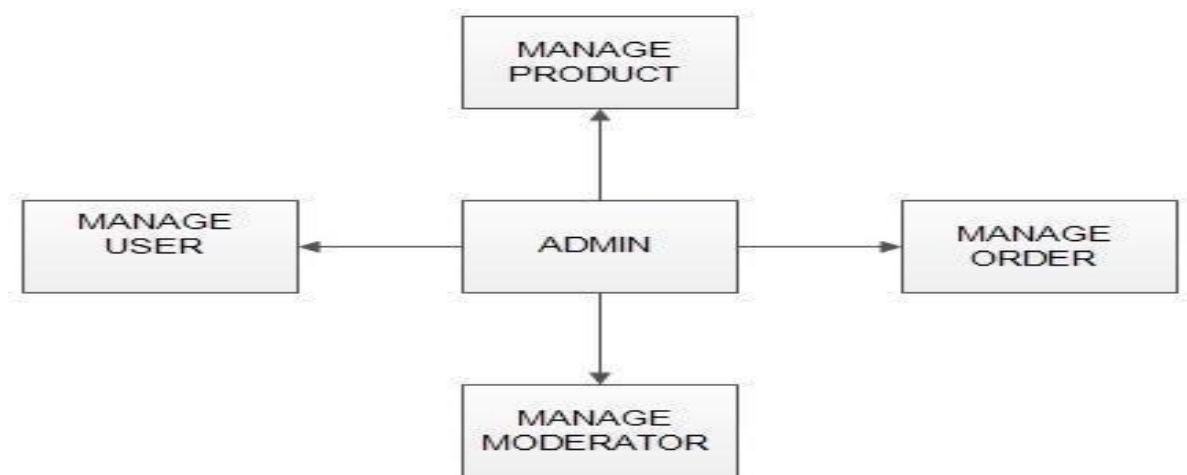
Fig 3.1: Admin module

3.2.3 MANAGE MODERATOR:

Fig 3.2: Manage Moderator

3.2.3.1 Add Moderator:

Only admin is having the privilege to add a moderator. A moderator can be considered as a staff who manages the orders or owner of a group of products.

3.2.3.2 Block moderator:

Admin can restrict a moderator from managing the orders by blocking them. Admin can unblock a blocked user if needed.

3.2.3.3 Remove Moderator:

Admin has privilege to delete a moderator who was added.

3.2.3.4 Search moderator:

All existing moderators can be viewed by the administrator as a list. If there is number of moderators and admin need to find one of them, the admin can search for a moderator by name. The conceptual model the authors developed is novel in the sense not many studies are available in India to empirically examine the moderating relationships of trust and product in consumer behavior

3.2.4 MANAGE PRODUCTS
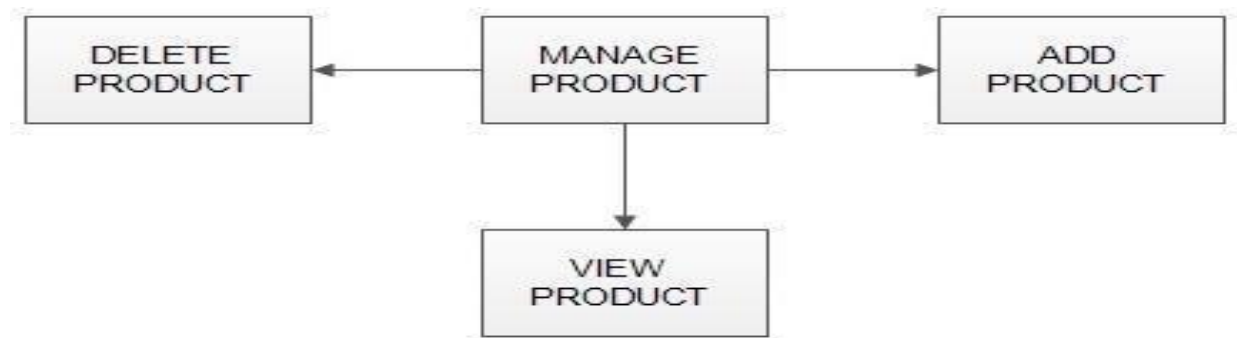
Fig 3.3: Manage Products

3.2.4.1 Add Products:

The shopping cart project contains different kind of products. The products can be classified into different categories by name. Admin can add new products into the existing system with all its details including an image.
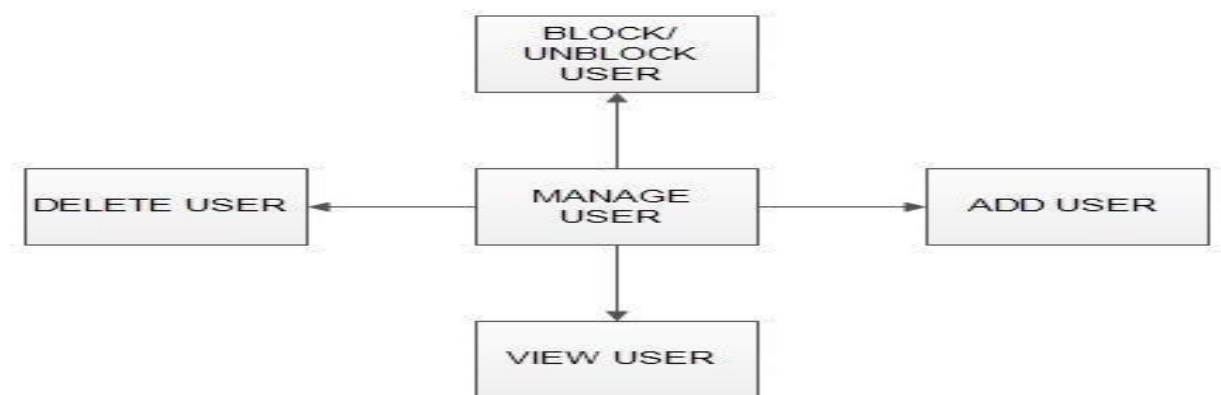
3.2.4.2 Delete Products:

Administrator can delete the products based on the stock of that particular product.

3.2.4.3 Search products:

Admin will have a list view of all the existing products. He can also search for a particular product by name.

3.2.5 MANAGE USER

Fig: 3.5 manage user

3.2.5.1 View Users:

The admin will have a list view of all the users registered in the system. Admin can view all the details of each user in the list except password.

3.2.5.2 Add Users:

Admin has privileges to add a user directly by providing the details.

3.2.5.3 Delete &Block Users:

Administrator has a right to delete or block a user. The default status of a new user registered is set as blocked. The admin must accept the new user by unblocking him.

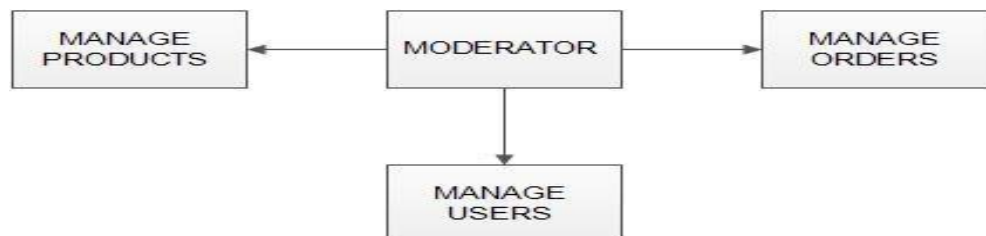### 3.2.6 MANAGE ORDERS

Fig 3.6: Manage Orders

3.2.6.1 View Users:

Administrator can view the Orders which is generated by the users. He can verify the details of the purchase.

3.2.6.2 Delete order

Admin can delete order from the orders list when the product is taken for delivery.

### 3.2.7 MODERATOR

Fig 3.7: Moderator

A moderator is considered as a staff who can manage orders for the time being. As a future update moderator may give facility to add and manage his own products. Moderators can reduce the work load of admin. Now moderator has all the privilege an admin having except managing other moderators. He can add products and users. He can also check the orders and edit his profile.

Manage products

Manage users

Manage orders

3.2.8 USERS
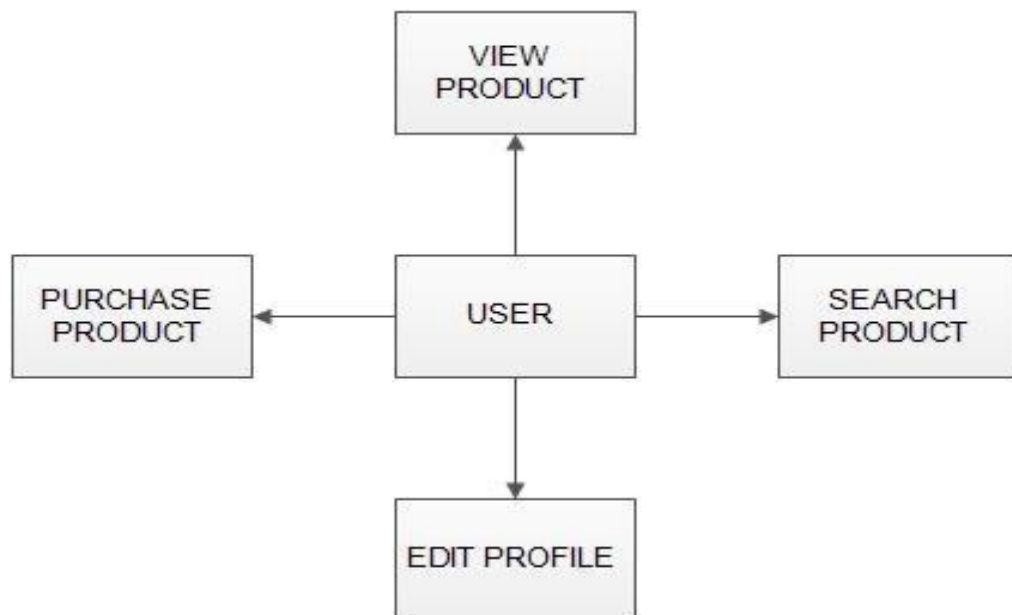
fig 3.8: User

3.2.8.1 Registration:

A new user will have to register in the system by providing essential details in order to view the products in the system. The admin must accept a new user by unblocking him.

3.2.8.2 Login:

A user must login with his user's name and password to the system after registration. The login form gives access to your website or web application and therefore to your data. This form fulfills a fundamental task of security; but many times it is omitted to evaluate if the procedures of user name (user), keys (passwords)

3.2.8.3 View Products:

User can view the list of products based on their names after successful login. A detailed description of a particular product with product name, products details, product image, price can be viewed by users.

3.2.8.4 Search Product:

Users can search for a particular product in the list by name.

3.2.8.5 Add to cart:

The user can add the desired product into his cart by clicking add to cart option on the product. He can view his cart by clicking on the cart button. All products added by cart can be viewed in the cart. User can remove an item from the cart by clicking remove

3.2.8.6 Submit Cart:

After confirming the items in the cart the user can submit the cart by providing a delivery address. On successful submitting the cart will become empty.

3.2.8.6.1 History:

In the history the user will have a view of pending orders.

3.2.8.6 Edit Profile:

The user can view and edit the profile.

3.3 DESIGN CONSTRAINTS

System design is the solution for the creation of a new system. This phase focuses on the detailed implementation of the feasible system. It emphasis on translating design. Specifications to performance specification. System design has two phases of development

    1.) Logical design

    2.) Physical design

During logical design phase the analyst describes inputs (sources), output s(destinations), databases (data sores) and procedures (data flows) all in a format that meets the user requirements. The analyst also specifies the needs of the user at a level that virtually determines the information flow in and out of the system and the data resources. Here the logical design is done through data flow diagrams and database design. The physical design is followed by physical design or coding. Physical design produces the working system by defining the design specifications, which specify exactly what the candidate system must do. The programmers write the necessary programs that accept input from the user, perform necessary processing on accepted data and produce the required report on a hard copy or display it on the screen.

3.3 INPUT AND OUTPUT DESIGN

3.3.1 INPUT DESIGN:

Input design is the link that ties the information system into the world of its users. The input design involves determining the inputs, validating the data, minimizing the data entry and provides a multi-user facility. Inaccurate inputs are the most common cause of errors in data processing. Errors entered by the data entry operators can be controlled by input design. The user-originated inputs are converted to a computer-based format in the input design. Input data are collected and organized into groups of similar data. Once identified, the appropriate input media are selected for processing. All the input data are validated and if any data violates any conditions, the user is warned by a message. If the data satisfies all the conditions, it is transferred to the appropriate tables in the database. In this project the student details are to be entered at the time of registration. A page is designed for this purpose which is user friendly and easy to use. The design is done such that users get appropriate messages when exceptions occur.

3.3.2 OUTPUT DESIGN:

Computer output is the most important and direct source of information to the user. Output design is a very important phase since the output needs to be in an efficient manner. Efficient and intelligible output design improves the system relationship with the user and helps in decision making. Allowing the user to view the sample screen is important because the user is the ultimate judge of the quality of output. The output module of this system is the selected notifications.

3.3.3 ANALYSIS AND FEATURE FINALIZATION SUBJECT TO CONSTRAINTS:

In machine learning, classification refers to a predictive modeling problem where a class label is predicted for a given example of input data.

3.3.4 SUPERVISED LEARNING:

Supervised learning is the type of machine learning in which machines are trained using well "labelled" training data, and based on that data, machines predict the output. The labelled data means some input data is already tagged with the correct output.

In supervised learning, the training data provided to the machines work as the supervisor that teaches the machines to predict the output correctly. It applies the same concept as a student learns in the supervision of the teacher. Supervised learning is a process of providing input data as well as correct output data to the machine learning model. The aim of a supervised learning algorithm is to find a mapping function to map the input variable(x) with the output variable(y).

To solve a given problem of supervised learning, one has to perform the following steps: Determine the type of training examples. Before doing anything else, the user should decide what kind of data is to be used as a training set. In the case of handwriting analysis, for example, this might be a

single handwritten character, an entire handwritten word, an entire sentence of handwriting or perhaps a full paragraph of handwriting. Gather a training set. The training set needs to be epresentative of the real-world use of the function. Thus, a set of input objects is gathered and corresponding outputs are also gathered, either from human experts or from measurements. Determine the input feature representation of the learned function. The accuracy of the learned function depends strongly on how the input object is represented. Typically, the input object is transformed into a feature vector, which contains a number of features that are descriptive of the object. The number of features should not be too large, because of the curse of dimensionality; but should contain enough information to accurately predict the output. Determine the structure of the learned function and corresponding learning algorithm. For example, the engineer may choose to use support-vector machines or decision trees. Complete the design. Run the learning algorithm on the gathered training set. Some supervised learning algorithms require the user to determine certain control parameters. These parameters may be adjusted by optimizing performance on a subset (called a validation set) of the training set, or via cross-validation. Evaluate the accuracy of the learned function. After parameter adjustment and learning, the performance of the resulting function should be measured on a test set that is separate from the training set.

3.3.5 CLASSIFICATION ALGORITHM:

A classification algorithm aims to sort inputs into a given number of categories or classes, based on the labeled data it was trained on. Classification algorithms can be used for binary classifications such as filtering email into spam or non-spam and categorizing customer feedback as positive or negative. Feature recognition, such as recognizing handwritten letters and numbers or classifying drugs into many different categories, is another classification problem solved by supervised

3.3.6 REGRESSION MODEL:

Regression tasks are different, as they expect the model to produce a numerical relationship between the input and output data. Examples of regression models include predicting real estate prices based on zip code, or predicting click rates in online ads in relation to time of day, or determining how much customers would be willing to pay for a certain product based on their age.

Algorithms commonly used in supervised learning programs include the following:

linear regression logistic regression neural networks

linear discriminant analysis decision trees

similarity learning Bayesian logic

support vector machines (SVMs) random forests

When choosing a supervised learning algorithm, there are a few things that should be considered.

The first is the bias and variance that exist within the algorithm, as there is a fine line between being flexible enough and too flexible. Another is the complexity of the model or function that the system is trying to learn. As noted, the heterogeneity, accuracy, redundancy and linearity of the data should also be analyzed before choosing an algorithm. To solve a given problem of supervised learning, one has to perform the following steps: Determine the type of training examples. Before doing anything else, the user should decide what kind of data is to be used as a training set. In the case of handwriting analysis, for example, this might be a single handwritten character, an entire handwritten word, an entire sentence of handwriting or perhaps a full paragraph of handwriting. Gather a training set. The training set needs to be representative of the real-world use of the function. Thus, a set of input objects is gathered and corresponding outputs are also gathered, either from human experts or from measurements. Determine the input feature representation of the learned function. The accuracy of the learned function depends strongly on how the input object is represented. Typically, the input object is transformed into a feature vector, which contains a number of features that are descriptive of the object. The number of features should not be too large, because of the curse of dimensionality; but should contain enough information to accurately predict the output. Determine the structure of the learned function and corresponding learning algorithm. For example, the engineer may choose to use support-vector machines or decision trees. Complete the design. Run the learning algorithm on the gathered training set. Some supervised learning algorithms require the user to determine certain control parameters. These parameters may be adjusted by optimizing performance on a subset (called a validation set) of the training set, or via cross-validation. Evaluate the accuracy of the learned function. After parameter adjustment and learning, the performance of the resulting function should be measured on a test set that is separate A first issue is the tradeoff between bias and variance.[3] Imagine that we have available several different, but equally good, training data sets. A learning algorithm is biased for a particular input x if, when trained on each of these data sets, it is systematically incorrect when predicting the correct output for x. A learning algorithm has high variance for a particular input x if it predicts different output values when trained on different training sets. The prediction error of a learned classifier is related to the sum of the bias and the variance of the learning algorithm.[4] Generally, there is a tradeoff A learning algorithm with low bias must be "flexible" so that it can fit the data well. But if the learning algorithm is too flexible, it will fit each training data set differently, and hence have high variance. A key aspect of many supervised learning methods is that they are able to adjust this tradeoff between bias and variance (either automatically or by providing a bias/variance parameter that the user can adjust). A learning algorithm with low bias must be "flexible" so that it can fit the data well. But if the learning algorithm is too flexible, it will fit each training data set differently, and hence have high variance

3.3.6.1 Function complexity and amount of training data:

The second issue is the amount of training data available relative to the complexity of the "true" function (classifier or regression function). If the true function is simple, then an "inflexible" learning algorithm with high bias and low variance will be able to learn it from a small amount of data. But if the true function is highly complex (e.g., because it involves complex interactions among many different input features and behaves differently in different parts of the input space), then the function will only be able to learn from a very large amount of training data and using a "flexible" learning algorithm with low bias and high variance. There is a clear demarcation between the input and the desired output.

3.3.6.2 Dimensionality of the input space:

A third issue is the dimensionality of the input space. If the input feature vectors have very high dimension, the learning problem can be difficult even if the true function only depends on a small number of those features. This is because the many "extra" dimensions can confuse the learning algorithm and cause it to have high variance. Hence, high input dimensional typically requires tuning the classifier to have low variance and high bias. In practice, if the engineer can manually remove irrelevant features from the input data, this is likely to improve the accuracy of the learned function. In addition, there are many algorithms for feature selection that seek to identify the relevant features and discard the irrelevant ones. This is an instance of the more general strategy of dimensionality reduction, which seeks to map the input data into a lower- dimensional space prior to running the supervised learning algorithm.

3.3.6.3 Noise in the output values:

A fourth issue is the degree of noise in the desired output values (the supervisory target variables). If the desired output values are often incorrect (because of human error or sensor errors), then the learning algorithm should not attempt to find a function that exactly matches

the training examples. Attempting to fit the data too carefully leads to overfitting. You can overfit even when there are no measurement errors (stochastic noise) if the function you are trying to learn is too complex for your learning model. In such a situation, the part of the target function that cannot be modeled "corrupts" your training data - this phenomenon has been called deterministic noise. When either type of noise is present, it is better to go with a higher bias, lower variance estimator. For instance, high performance linear regulators achieve the required low output noise and fast transient response, but tend to dissipate more power than a switching topology, resulting in thermal issues. Switching regulators, on the other hand, are generally more efficient and run cooler than linear regulators, but generate significantly more output noise and cannot respond as quickly to

3.3.6.4 UNSUPERVISED LEARNING:

Unsupervised learning cannot be directly applied to a regression or classification problem because unlike supervised learning, we have the input data but no corresponding output data. The goal of unsupervised learning is to find the underlying structure of dataset, group that data according to similarities, and represent that dataset in a compressed format.

Unsupervised learning is helpful for finding useful insights from the data.

Unsupervised learning is much like how a human learns to think by their own experiences,

Unsupervised learning works on unlabeled and uncategorized data which make unsupervised learning more important. In real-world, we do not always have input data with the corresponding output so to solve such cases, we need unsupervised learning.

3.3.6.5 BENEFITS AND LIMITATIONS:

Supervised learning models have some advantages over the unsupervised approach, but they also have limitations. Supervised learning systems are more likely to make judgments that humans can relate to, for example, because humans have provided the basis for decisions. However, in the case of a retrieval-based method, supervised learning systems have trouble dealing with new information. If a system with categories for cars and trucks is presented with a bicycle, for example, it would have to be incorrectly lumped in one category or the other. If the AI system was generative (that is, unsupervised), however, it may not know what the bicycle is, but it would be able Supervised learning also typically requires large amounts of correctly labeled data to reach acceptable performance levels, and such data may not always be available. Unsupervised learning does not suffer from this problem and can work with unlabeled data as well. Another amazing thing about online shopping is the diversity and variation. You can literally choose from hundreds of similar products from different vendors. Even a single product is usually available in so many colors, designs, and sizes. Moreover, you can buy customized items as per your likeness. For example, you can have a coffee cup with your favorite picture printed on it. You can choose customized designs for your home's interior, get a custom printed t-shirt, and whatnot. You may not know this, but a well-trained salesperson can trick you into buying something you don't need or want. But, shopping online means no one is watching you, and you can visit an online store, and nobody knows. What's more, many e-retailers provide the cash-on-delivery option. That means, if you are not happy with the delivered product, you can return it.Here is another perk of online shopping – detailed product descriptions. High-quality sellers like Alibaba, Amazon, etc., add every single detail, including features, benefits, and even customer reviews about products. You can know everything about any product and make a more informed decision. On-site shopping doesn't give you much time or choice to make price comparisons. However, when you shop online, you can easily compare the prices and features of the same product from different vendors.

3.3.6.6 SEMI-SUPERVISED LEARNING

In cases where supervised learning is needed but there is a lack of quality data, semi- supervised learning may be the appropriate learning method. This learning model resides between supervised learning and unsupervised; it accepts data that is partially labeled -- i.e., the majority of the data lacks labels. Semi-supervised learning determines the correlations between the data points -- just like unsupervised learning -- and then uses the labeled data to mark those data points. Finally, the entire model is trained based on the newly applied labels. In cases where supervised learning is needed but there is a lack of quality data, semi- supervised learning may be the appropriate learning method. This learning model resides between supervised learning and unsupervised; it accepts data that is partially labeled -- i.e., most of the data lacks labels. Semi-supervised learning In cases where supervised learning is needed but there is a lack of quality data, semi- supervised learning may be the appropriate learning method. This learning model resides between supervised learning and unsupervised; it accepts data that is partially labeled -- i.e., the majority of the data lacks labels. Semi-supervised learning determines the correlations between the data points -- just like unsupervised learning -- and then uses the labeled data to mark those data points. Finally, the entire model is trained based on the newly applied labels. Semi-supervised learning has proven to yield accurate results and is applicable to many real- world problems where the small amount of labeled data would prevent supervised learning algorithms from functioning properly. As a rule of thumb, a data set with at least 25% labeled data is suitable for semi-supervised learning. Facial recognition, for instance, is ideal for semi-supervised learning; the vast number of images of different people is clustered by similarity and then made sense of with a labeled picture giving identity to the clustered photos. Although dimensionality reduction, anomaly detection, and clustering are the main and the most popular unsupervised learning tasks, there are others. Since the definition is blurry, any algorithm that deals with an unlabeled dataset can be considered solving some unsupervised learning task (for example calculating the mean or applying Student's t-test). However, researchers often identify two other tasks among others: Density Estimation and Association Rule Learning In this article, I tried to describe all the main unsupervised learning tasks and algorithms and give you a big picture of unsupervised learning. I hope that these descriptions and recommendations will help you and motivate you to learn more and go deeper into machine learning. In cases where supervised learning is needed but there is a lack of quality data, semi- supervised learning may be the appropriate learning method. This learning model resides between supervised learning and unsupervised; it accepts data that is partially labeled -- i.e., the majority of the data lacks labels. Semi-supervised learning determines the correlations between the data points -- just like unsupervised learning -- and then uses the labeled data to mark those data points. Finally, the entire model is trained based on the newly applied labels.

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Semi-supervised learning has proven to yield accurate results and is applicable to many real- world problems where the small amount of labeled data would prevent supervised learning algorithms from functioning properly. As a rule of thumb, a data set with at least 25% labeled data is suitable for semi-supervised learning. Facial recognition, for instance, is ideal for semi-supervised learning; the vast number of images of different people is clustered by similarity and then made sense of with a labeled picture giving identity to the clustered photos.

Three of the most popular unsupervised learning tasks are:

1.) **Dimensionality Reduction**— the task of reducing the number of input features in a dataset,

2.) **Anomaly Detection**— the task of detecting instances that are very different from the norm, and

3.) **Clustering** — the task of grouping similar instances into clusters.

Each of these three tasks and the algorithms for solving them will be discussed in more detail later in the corresponding sections. However, note that the Other Unsupervised Learning Tasks section lists other less popular tasks that can also be attributed to unsupervised learning.

- Dimensionality Reduction

- The following algorithms are mentioned for dimensionality reduction:

- Principal Component Analysis;

- Manifold Learning — LLE, Isomax, t-SNE; Autoencoders and others.

- Manifold Learning — LLE, Isomax, t-SNE; Autoencoders and others.

- Anomaly Detection

- The following algorithms are mentioned for anomaly detection:

- Isolation Forest;

- Local Outlier Factor;

3.4 OTHER UNSUPERVISED LEARNING TASKS

Although dimensionality reduction, anomaly detection, and clustering are the main and the most popular unsupervised learning tasks, there are others. Since the definition is blurry, any algorithm that deals with an unlabeled dataset can be considered solving some unsupervised learning task (for example calculating the mean or applying Student's t-test). However, researchers often identify two other tasks among others: Density Estimation and Association Rule Learning.

3.4.1 DENSITY ESTIMATION

I have already briefly mentioned density estimation in the anomaly detection section. Density Estimation is the task of estimating the density of the distribution of data points. More formally, it estimates the probability density function (PDF) of the random process that is generated by the given dataset. This task historically came from statistics, when it was necessary to estimate the PDF of some random variable and can be solved using statistical approaches in the modern era, it is used mostly for data analysis and as an auxiliary tool for anomaly detection — data points located in regions of low density are more likely to be anomalies or outliers. Now it is usually solved with density-based clustering algorithms such as DBSCAN or Mean Shift, and using Expectation-Maximization algorithm into Gaussian Mixture Models.

3.4.2 ASSOCIATION RULE LEARNING

Association Rule Learning (also called Association Rules or simply Association) is another unsupervised learning task. It is most often used in business analysis to maximize profits. It aims to detect unobvious relationships between variables in a dataset, so also can be considered as a data analysis tool. There are many complex algorithms to solve it, but the most popular are:

3.4.3 APRIORI

Eclat (Equivalence Class Transformation) — based on depth-first search; and FP-Growth— designed to detect frequently occurring patterns in the data. A common example of such a task is product placement. For example, knowing that people often buy onions together with potatoes in supermarkets, it makes sense to place them side by side to increase sales. Therefore, associative rules are used in promotional pricing, marketing, continuous production, etc. This task historically came from statistics, when it was necessary to estimate the PDF of some random variable and can be solved using statistical approaches in the modern era, it is used mostly for data analysis and as an auxiliary tool for anomaly detection — data points located in regions of low density are more likely to be anomalies or outliers.

3.4.4 CONCLUSIONS

In this article, I tried to describe all the main unsupervised learning tasks and algorithms and give you a big picture of unsupervised learning. I hope that these descriptions and recommendations will help you and motivate you to learn more and go deeper into machine learning.

3.4.5 REINFORCEMENT LEARNING

Reinforcement learning is an area of Machine Learning. It is about taking suitable action to maximize reward in a particular situation. It is employed by various software and machines to find the best possible behavior or path it should take in a specific situation. Reinforcement learning differs from supervised learning in a way that in supervised learning the training data has the answer key with it so the model is trained with the correct answer itself whereas in reinforcement learning, there is no answer but the reinforcement agent decides what to do to perform the given task. In the absence of a training dataset, it is bound to learn from its

3.5 DESIGN FLOW
3.5.1 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

3.5.2 SYSTEM TOOLS

The various system tools that have been used in developing both the front end and the back end of the project are being discussed in this chapter.

3.5.3 FRONT END

JSP, HTML, CSS, JAVA SCRIPT, ANDROID are utilized to implement the frontend.

3.5.3.1 JAVA SERVER PAGES (JSP)

Different pages in the applications are designed using jsp. A Java Server Pages component is a type of Java servlet that is designed to fulfil the role of a user interface for a Java web application. Web developers write JSPs as text files that combine HTML or XHTML code, XML elements, and embedded JSP actions and commands. Using JSP, one can collect input from users through web page.

3.5.3.2 HTML (Hyper Text Markup Language)

HTML is a syntax used to format a text document on the web.

3.5.3.3 CSS (CASCADING STYLE SHEETS)

CSS is a style sheet language used for describing the look and formatting of a document written in a markup language.

3.5.3.4 JAVA SCRIPT

JS is a dynamic computer programming language. It is most 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. Java Script is used to create popup windows displaying different alerts in the system like "User registered successfully"," Product added to cart" etc.

3.5.3.5 ANDROID

The application is delivered to customer through an android application. So android platform is used to develop the user application.

3.5.3.6 BACK END

The back end is implemented using MySQL which is used to design the databases.

3.5.3.7 MySQL

MySQL is the world's second most widely used open-source relational database management system (RDBMS). The SQL phrase stands for Structured Query Language. An application software called Navicert was used to design the tables in MySQL.

3.6 TOOLS AND TECHNOLOGIES:

These are the necessary tools and materials needed to build the website both the front- end and the back-end. These include software and open-source materials.

3.6.1 HTML/HTML5

HTML means Hypertext Markup Language. This language is used in creating web pages. This language also supports other languages such CSS, PHP, JAVASCRIPT, etc. in creating interactive and responsive pages on the pages. HTML5 is just an updated version of the HTML. It supports new features, new attributes, new HTML elements, full CSS3 support, video and audio, 2D/3D graphics that help users and also help web developers to create new features easily on the website. The structure of HTML5 is shown in figure.
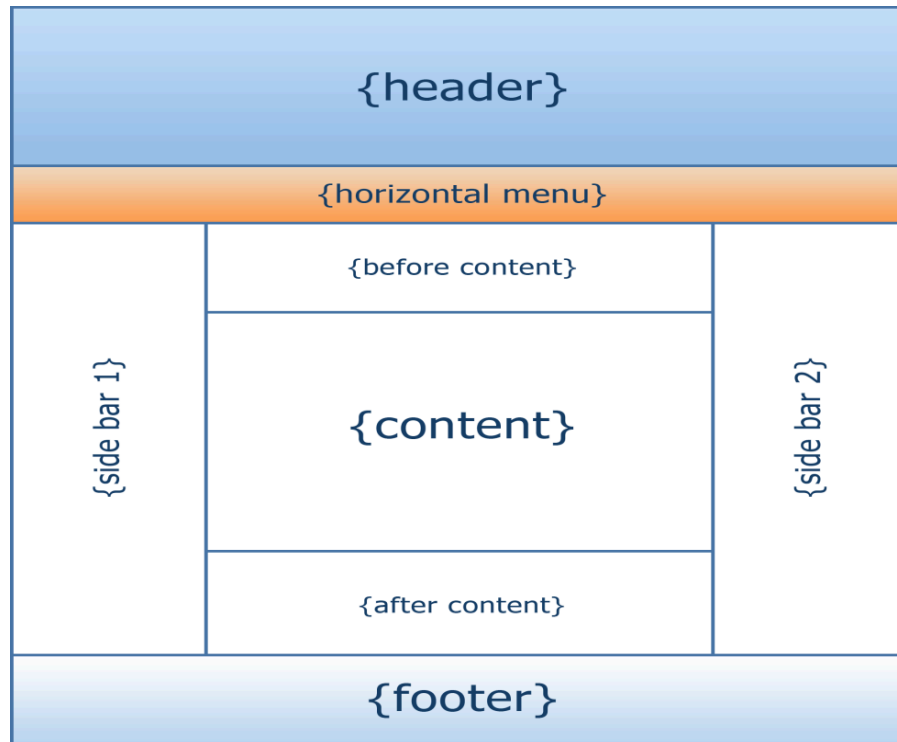
Fig 3.9 HTML/HTML5

3.6.2 PHP

PHP is a server-side scripting language that is used to develop Static websites or Dy- name websites or Web applications. It is designed for web development to implement dynamic web pages and can be embedded into HTML for it to be displayed. Figure 2 demonstrates how the web server operates.

3.6.3 CSS

CSS is simply referred to as Cascading Style Sheets.CSS is used to define styles for web pages, including the design, layout, and variations in the display for different de- vices and screen sizes./3/

The general structure of CSS Basic syntax:

selector {property: value}

HTML tag you want to modify

the property you want to change

The value you want the property to take

3.6.4 JAVASCRIPT

JavaScript is a high-level language which could be used independently or inculcated into the webpage. It can be used to, handle requests and responses and also add dynamic be- Havier and also store information on a website.

3.6.5 MySQL

MySQL is a free source database system, and it enables the cost-effective delivery of reliable and a high-performance and scalable Web-based and embedded database appli- cations. It is a relational database system(RDBMS). It is a high performing program and scalable to meet the demands of users and data. MySQL is written in C and C++, so it is compatible with most of the operating systems available around the world.
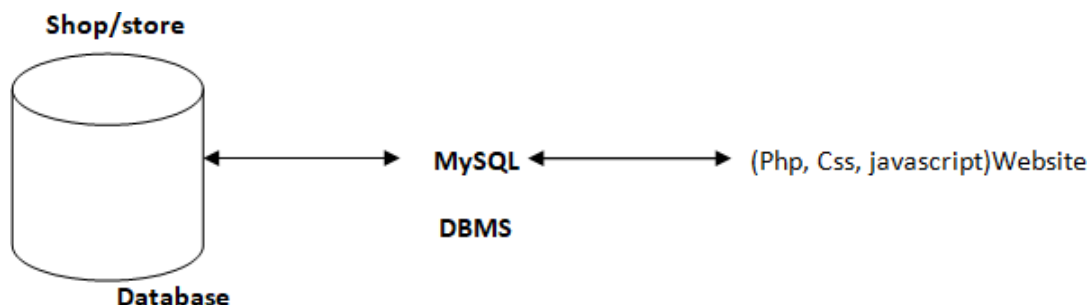
Fig 3.10: A diagram showing the concept of MySQL

3.6.6 UML

(Unified module language) UML. It is used for constructing and documenting a system or a project. This is widely used by people such as engineers to make module structures of what they want to build.

3.6.7 XAMPP

XAMPP is an integrated development surrounding, which incorporates Apache HTTP Server, MySQL Database, and PHP, Mercury, PERL or Python on a home Windows- based computer. Apache is a free web server. MySQL is an open source database.

XAMPP is used in collaboration with, PHP, MySQL and, Windows 8 operating sys- tem.

3.6.8 BRACKET (EDITOR)

Brackets is a free-source editor written in HTML, CSS, and JavaScript. It is created via Adobe structures, certified underneath the MIT License, and is presently maintained on GitHub. Brackets are compatible with Mac, Windows, and Linux operating system.

3.6.9 PHPMYADMIN

PhpMyAdmin is a free and open-source MySQL management program application writ- ten in PHP and was first launched in 1998 under the GNU preferred Public License. It is cross-platform help for the essential working structures and helps management of more than one servers. It supports most MySQL capabilities and has an intuitive net interface. It additionally has supports developing PDF graphics of data- base layout, importing information from CSV and SQL formats as well as exporting records to various codecs such as SQL, XML, PDF and, CSV./9/

3.7 APPLICATION AND DESCRIPTION

3.7.1 Overview of the Various Parts

This project has several parts to it, but the most essential are three listed in Table 1.

- **Table 1: The overview of the three major parts of the shop**

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

3.7.2 Administrators Detailed Attribute

1.) Admin register

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

2.) Admin login

The admin logs in and can view, add products, manage customers.

3.) Admin Edit

The admin can make changes to the shop such as delete customers, add a customer or, upload new products.

4.) Manage Customer

The administrator has the authority to delete or add a customer.

3.7.3 Customer Detailed Attribute

1.) sign up

This refers to registering as a customer. The registered member has a lot of privileges associated with the shop when one becomes a customer.

2.) Login

After the user has registered, the user becomes a customer, and he or she can log in with their personal information.

3.) View

The customer can see all the products in the catalog and able to look at the products and some features on the homepage.

4.) Edit

The customer can make changes to their data displayed on the customer page.

5.) Update Cart

This refers to putting or removing products from shopping cart.

Figure 5 is the use case diagram of the shop. One can see the essential attributes associ- ated with both Administrator and Customers/Users.
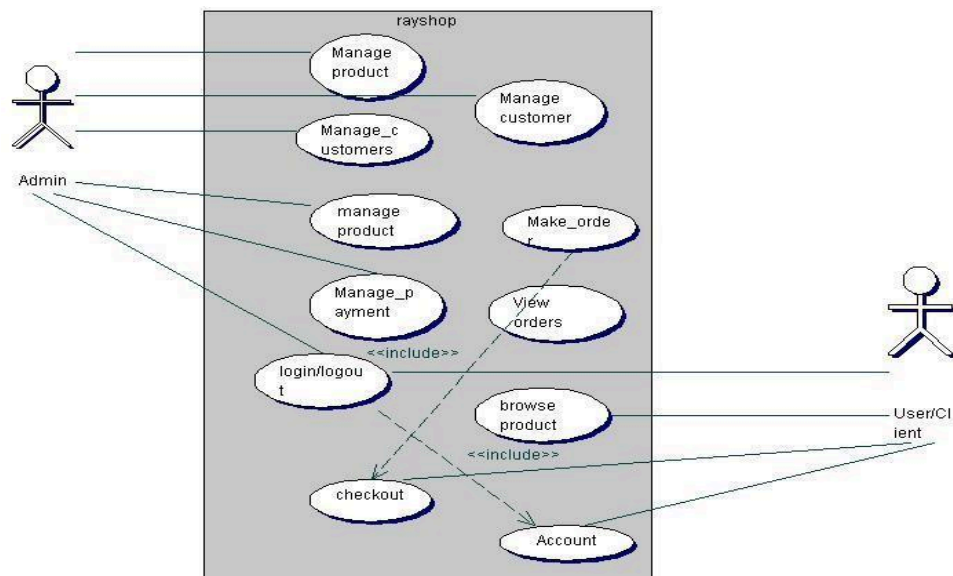
Fig3.11: Use case diagram of the shop

3.7.4 The Various Management Unit

The Administrators play the management role. They make sure everything in the shop runs smoothly. Table 2 lists the various management units.

- **Table 2: Administrators management table**

Product Management Unit
This is the Unit that is responsible for keeping records, product name, description, price, products image and many others.
Customer Management Unit
This Unit involves some activities such the control all of the registered members, view all the members.
Admin login Unit
The Administrator can log in to the management webpage and make use of the features on the website such as adding product,view customers.
Payment View Unit
This enables the administrator to view all the bills made via the customers.
Admin logout Unit
The administrator will be able to logged out with this function

Fig 3.12 Administrators management

- **User registration**

The Users will use their exclusive information to register. After filling the requirements are met

the data goes to the database (table "customers") and saves the in- formation of the User. The User then becomes a customer, and he or she is then directed to the login webpage of the shop.
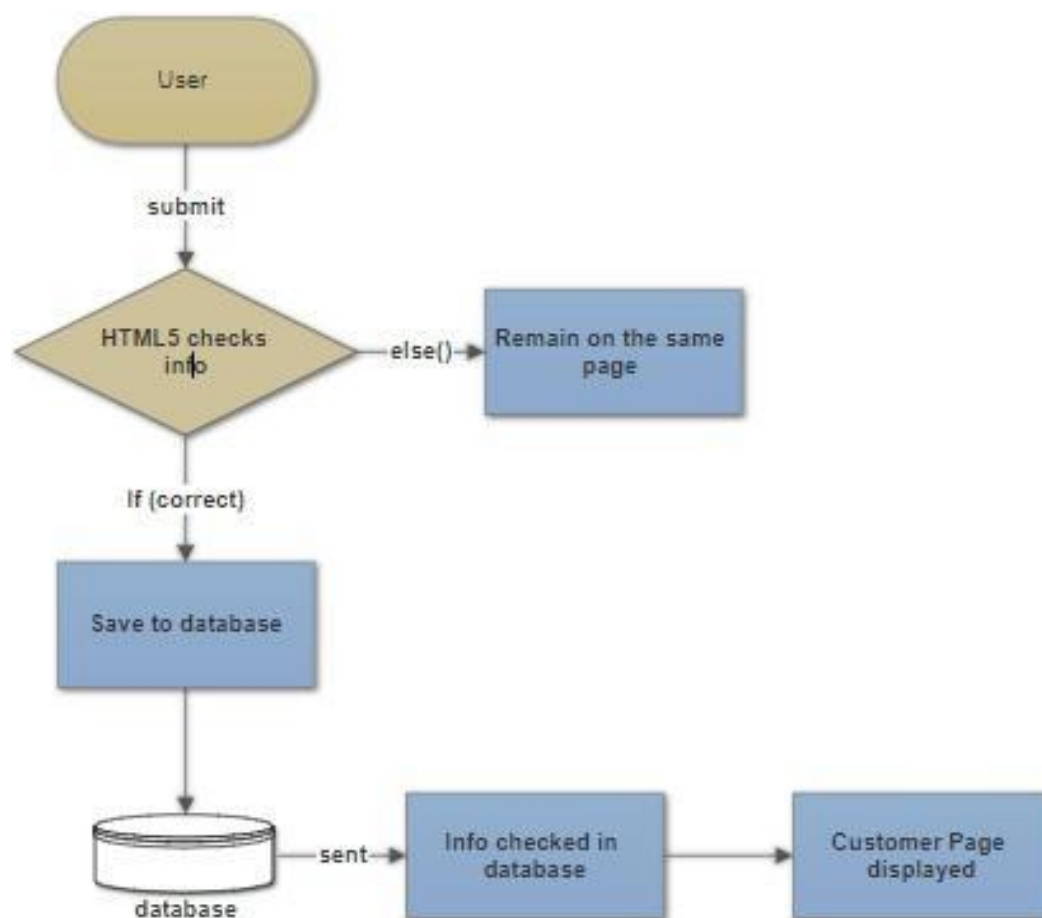
Figure 6 is the diagram that shows the flow of the User's registration.

Figure 3.13: User registration diagram

● **Customer login**

The customer will use his particular data e-mail and password to log into the shop. After submitting the form, the html5 checks if all the fields have been filled correctly. If the condition is not met the customer remains on the same page but if the fields are correctly filled the customer login information is sent to the database to check if the data entered into the areas are same as the ones used to register to the database. If it is correct, 16 the customer is redirected to his homepage, and he can successfully pick products and check out if they are done shopping o use the above you will typically use the HTTP using Indy engine for internet and localhost option in Scan website | Crawler engine | Default path type and handler, but if that fails you can also try the HTTP using Windows API Winant option and login with the embedded browser first
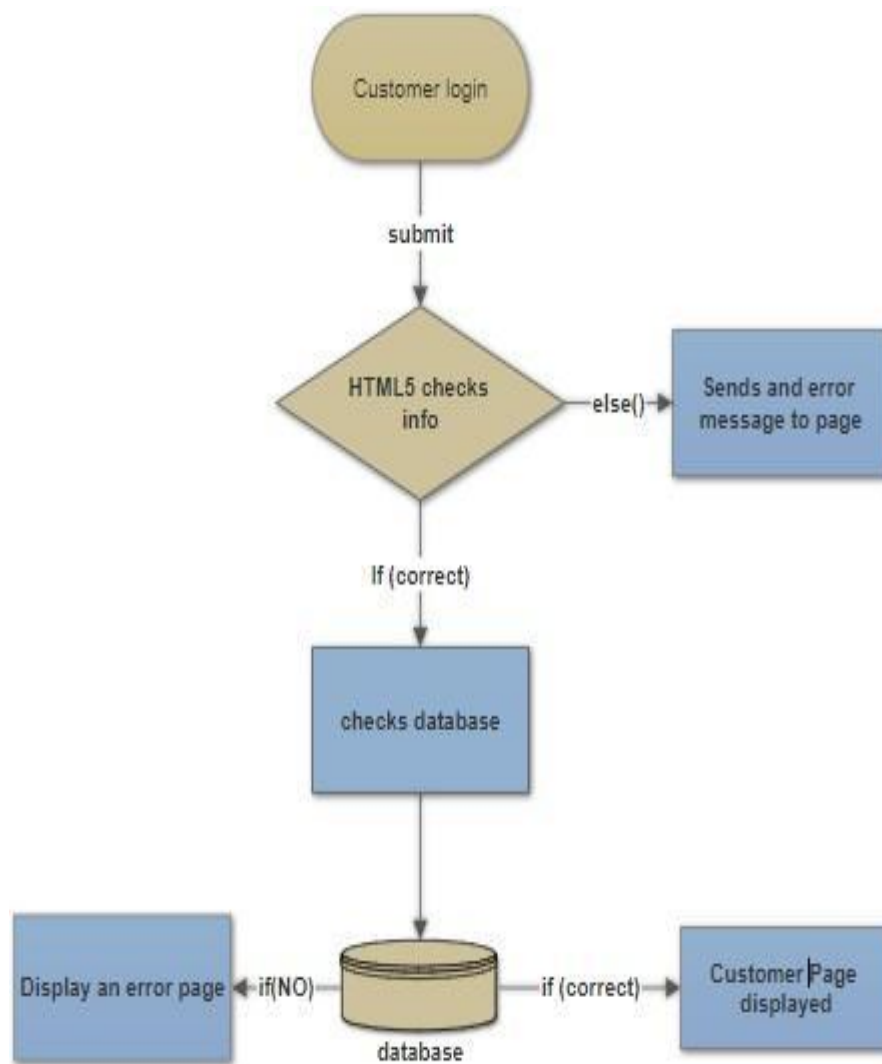
Figure 3

**Fig 3.14: Customer login function**

● **Administrator Registration**

The Administrator will use his particular data such as name, e-mail, and password. After submitting the form, the html5 checks to see if all the fields entered by the admin is correct. If the filed are not correctly filed, or conditions are not met the admin remains on the same page but if all requirements are met admin's information goes to the database and saves the data in the "*Admins*" in the database. After that, the admin is- traitor is directed to the admin webpage to log
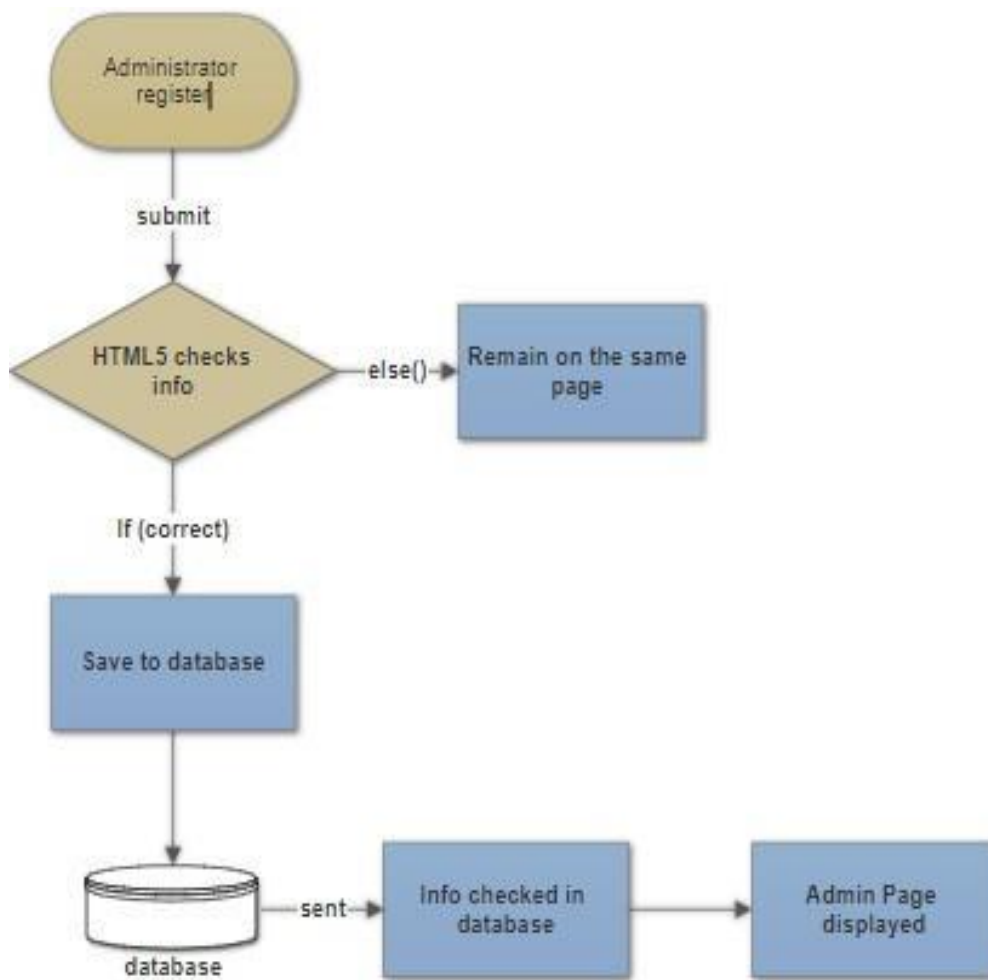
Fig 3.15: Administration registration diagram

● **Administrator Login**

When the admin logs into the Administrators webpage the html5 checks to see if condi- tions are met when logging in. If all the information provided are correct, the data is sent to the database to check if the data corresponds to the information used to register. If it matches to the information provided by the Administrator, a page opens, and the admin can have access to the administrator's webpage if not the administrator is restrict- ed from having access to management webpage. The Figure 9 shows the administrator log in diagram.
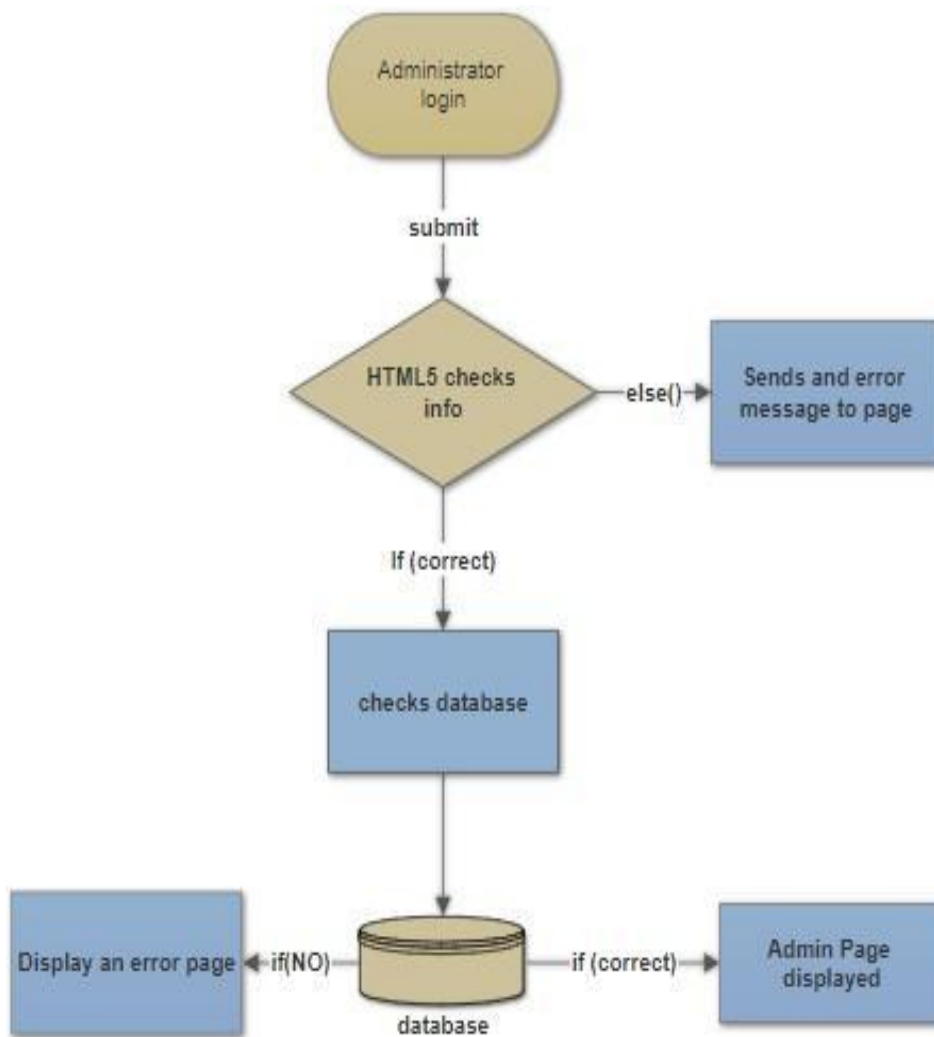
Fig 3.16: Administrator Login diagram

3.8 MVC UNIT OF SHOPPING CART

The parts of the MVC software structure perform the following:

View – shows the interface that the person sees (usually, a webpage). The view additives provide records to the user and moves to the Controller for manipulating data.
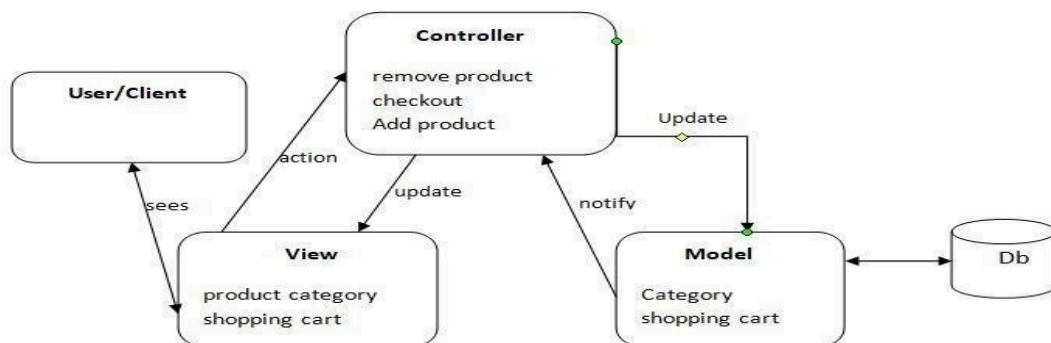
Fig 3.8mvc cart for online shop

36

Back-end Mod

This includes Units such as products, brand, category, orders and, customer management modules. Figure shows the diagram of the back-end module.
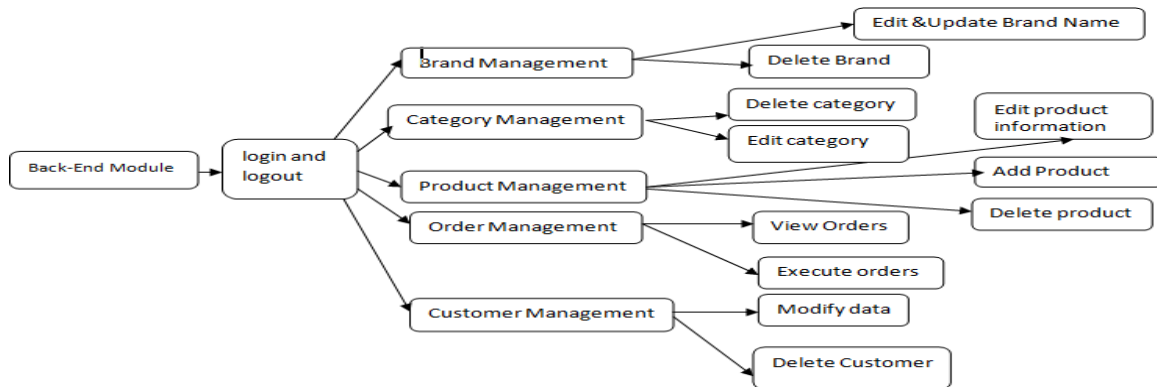
Fig3.18: Back-end system management diagram.

The back-end module/Unit is used to manage the backend of the shop. This is only available to the administrators. They can manipulate the shop to suit the conditions they have set for the shop. They also make sure that customers have a good experience when visiting the shop by updating products, deleting products, executing orders to ware- houses, and managing customers

3.9 DESIGN SELECTION:

3.9.1 DATABASE

MySQL database is used to save software data for this project. MySQL is relational da- tabase management, and it is free of charge. All of the information is kept in a select- edtable, and every table has particular range columns and rows. It has eight tables named as admins, brands, cart, categories, customers, orders, payments and products. For each table, we need to mark at the least one area as a primary key. The primary key is usually specified in a particular table. The table "admins" is created to store all the Admin' information. It consists of eight distinctive fields referred to as columns to shop admin id, first name, last name, email, and password. The email and the password are essential because they are needed for one to login into the shop. "*admin_id*" is the primary KEY. Many columns of one table may be described as primary KEY. Each column has a name, a datatype and different non- obligatory attributes. Figure 13 only displays different brands of products, brand identi- ty and also the descriptions of the multiple brands.
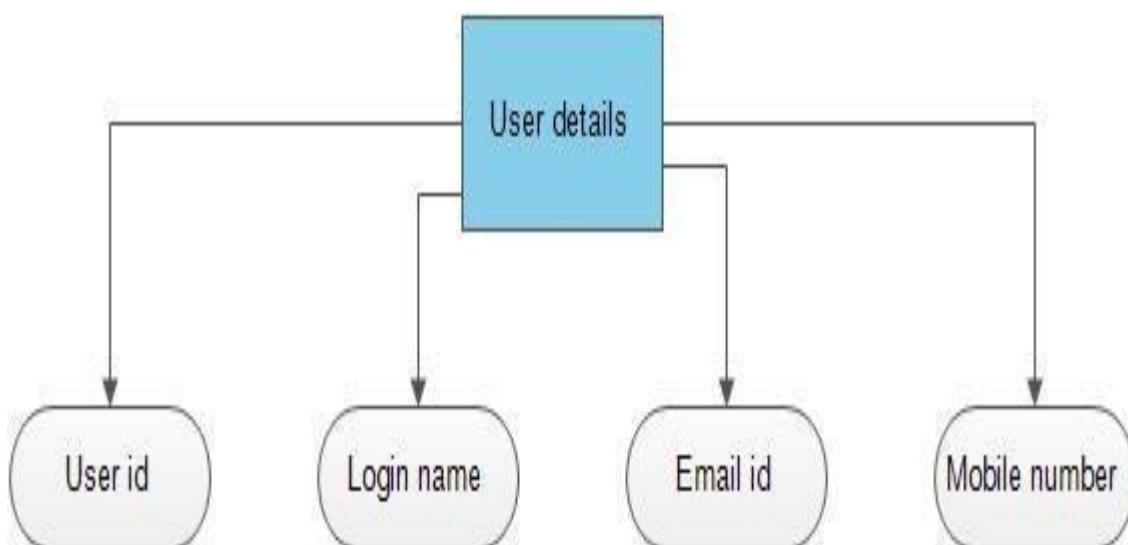
3.9.2 Implementation plan/methodology

3.9.3 E-R DIAGRAMS
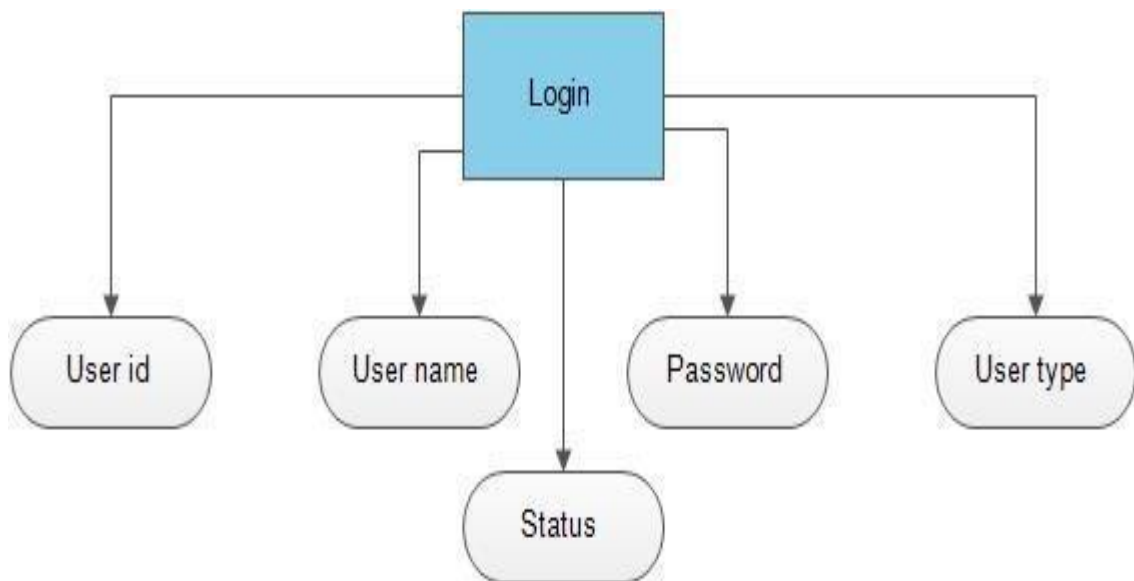
Fig 3.19: Login

3.9.4 E-R DIAGRAMS OF USER DETAILS
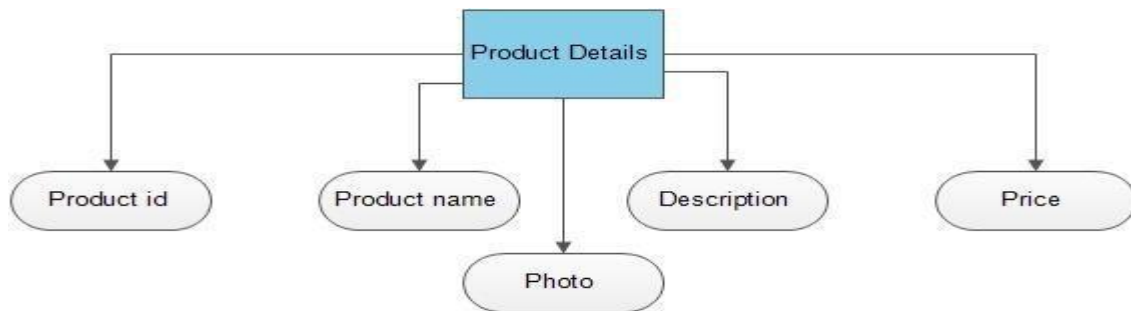

Fig3.20: User Details

3.9.5 PRODUCT DETAILS

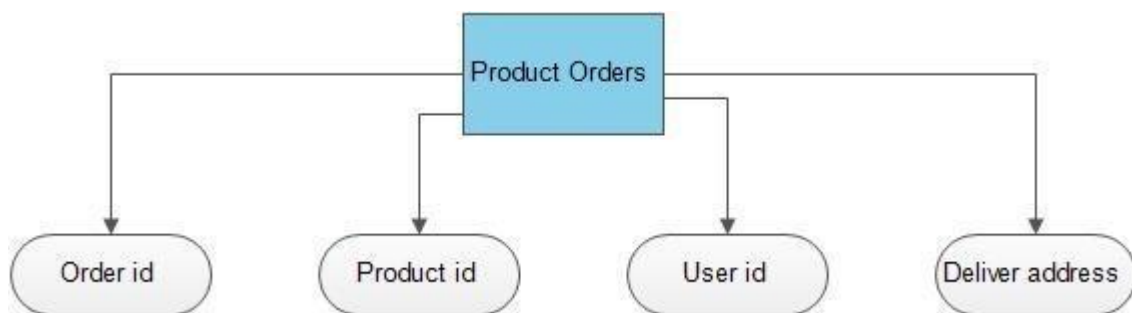**Fig 3.21 product details**

3.9.6 PRODUCT ORDERS

Fig 3.22 product orders
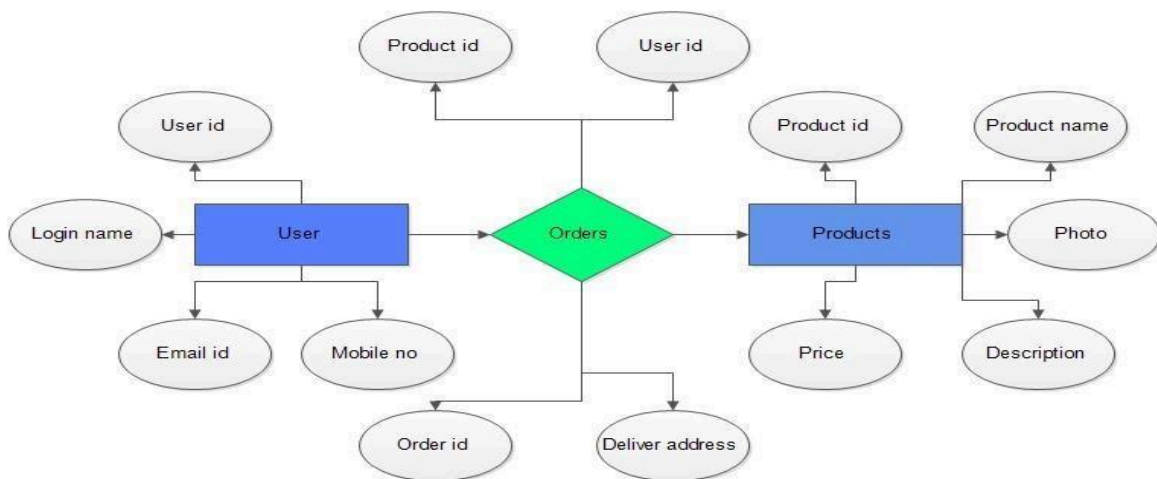
3.9.7 COMPLETE DIAGRAM

Fig 3.23 complete diagram

3.9.8 DATA FLOW DIAGRAM

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.

3.9.9 EXTERNAL ENTITY

An external entity is a source or destination of a data flow. Only those entities which originate or receive data are represented on a data flow diagram. The symbol used is a rectangular box.

3.9.10 PROCESS

A process shows a transformation or manipulation of data flow within the system. The symbol used is an oval shape.

3.10 DATAFLOW

The data flow shows the flow of information from a source to its destination. Data flow is represented by a line, with arrowheads showing the direction of flow. Information always flows to or from a process and may be written, verbal or electronic. Each data flow may be referenced by the processes or data stores at its head and tail, or by a description of its contents.

3.11 DATA STORE

A data store is a holding place for information within the system: It is represented by an open-ended narrow rectangle. Data stores may be long-term files such as sales ledgers, or may be short-term accumulations: for example, batches of documents that are waiting to be processed. Each data store should be given a reference followed by an arbitrary number. A database is a series of bytes that is managed by a database management system (DBMS). A file is a series of bytes that is managed by a file system. Thus, any database or file is a series of bytes that, once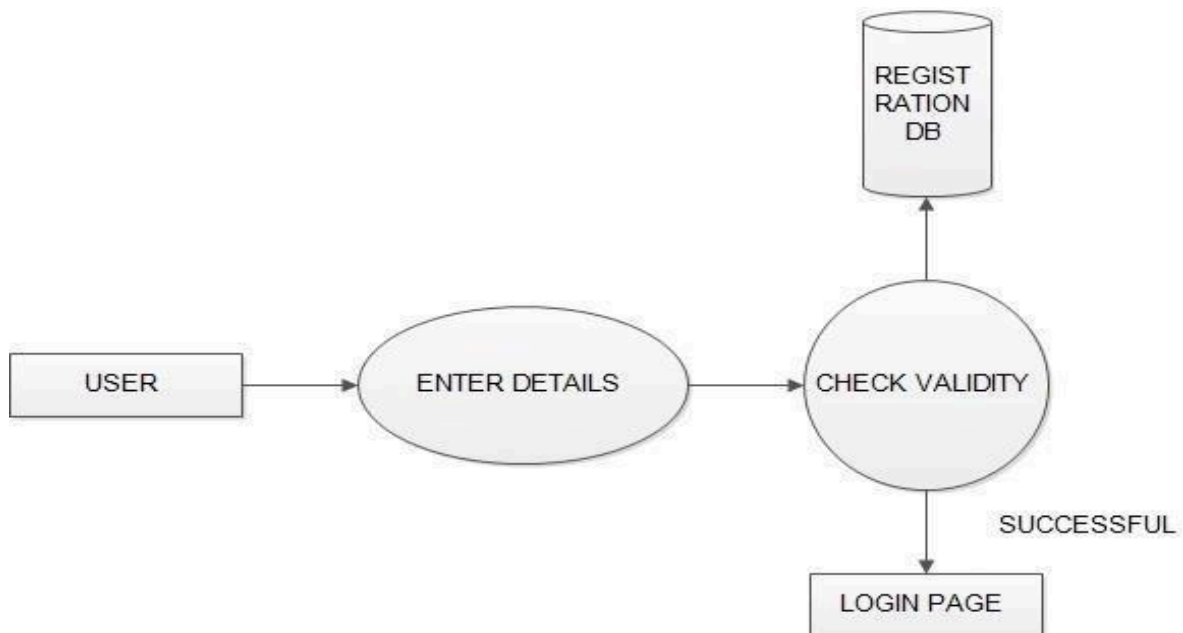 stored, is called a data store. MATLAB[2] and Cloud Storage systems like VMware,[3] Firefox OS[4] use datastore as a term for abstracting collections of data inside their respective applications.

3.12 LOGIN DFD
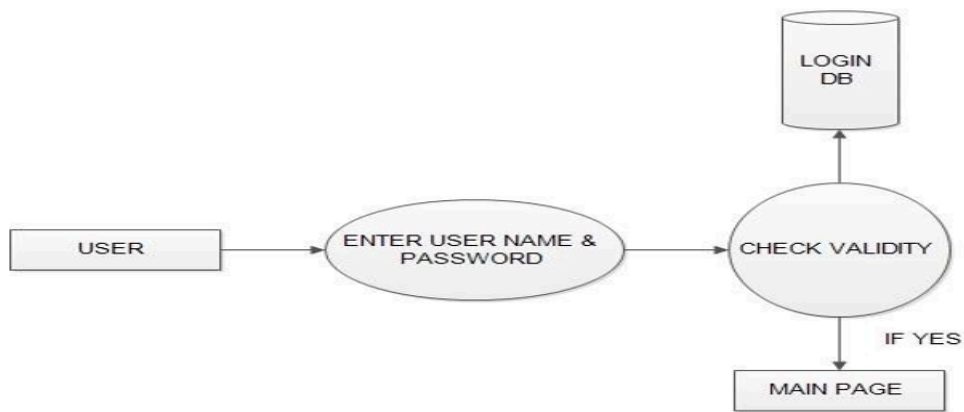
Fig 3.24 login DFD

3.13 REGISTRATION DFD

Fig3.13: Registration DFD

CHAPTER 4

RESULT ANALYSIS AND DISCUSSION

4.1   Implementation of design using Modern Engineering tools in analysis

Online shopping is the latest trend in purchasing goods. Technological advances have seen the rise of revenue in e-commerce market. This uptrend of online shopping has seen the growth of online malls such as Lazada, Shopee, and Alibaba which attract consumers including students to purchase goods via online without having to consider factors such as location or time since purchase can be made anywhere, at any time. A study has been conducted among Universiti Teknologi MARA (UiTM) students to seek their experience in determining the factors influencing their interests in online shopping. Data has been collected using online questionnaires from the students who attended the seminar on consumers' protection organised by the Department of Law, UiTM Negeri Sembilan Branch, Seremban Campus. Findings shown that interactivity of the websites, product, service quality and trust are the factors which influence the interest of students of UiTM to shop online. This study recommends that further test to be done to identify the types of products which attract the purchase from the students.
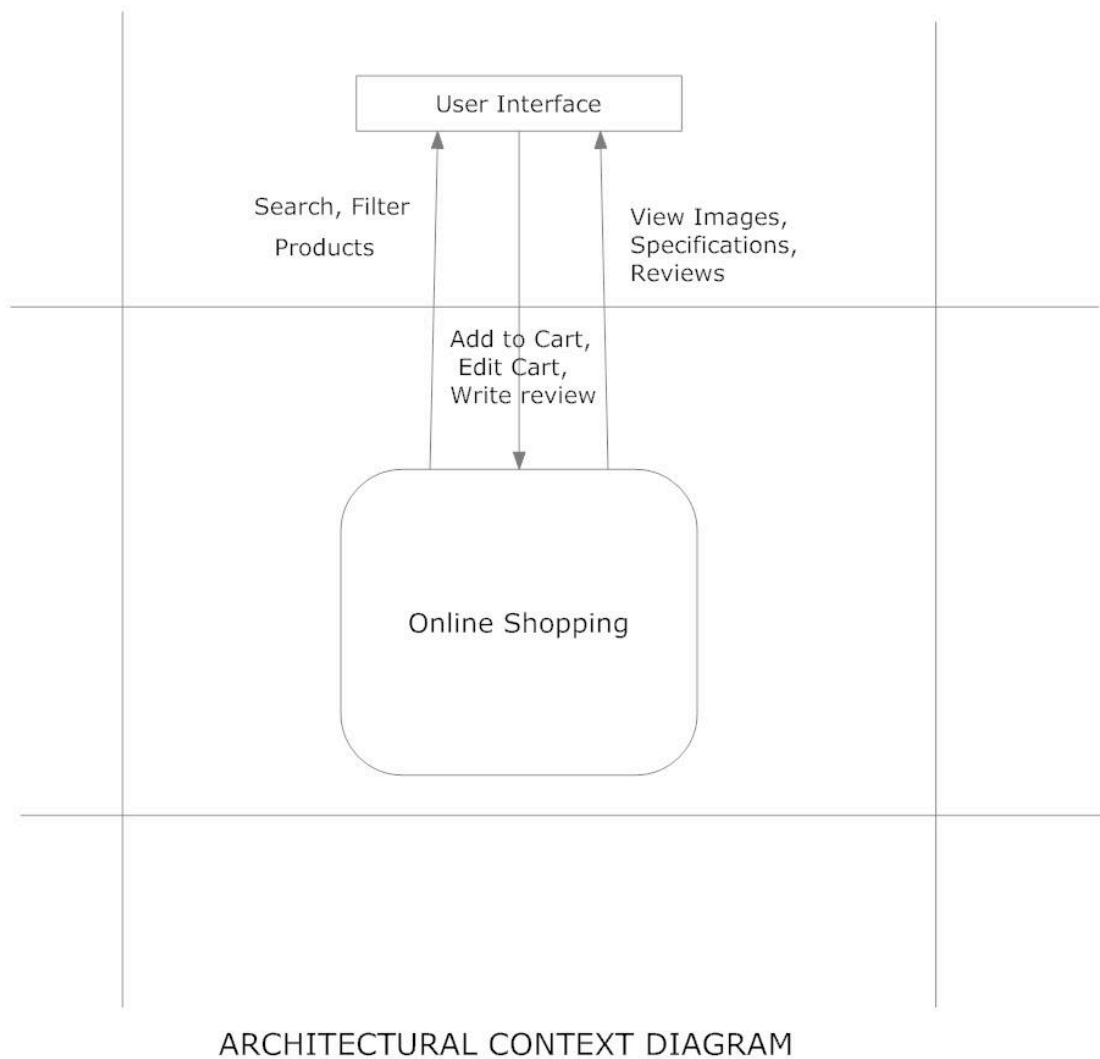
4.2 Design

Design Goals

•   The design of the web application involves the design of the forms for listing the products, search for products, display the complete specification for the product, and design a shopping cart that is easy to use.

•   Design of an interactive application that enables the user to filter the products based on different parameters.

•   Design of an application that has features like drag and drop etc.

•   Design of application that decreases data transfers between the client and the server.

Architectural Design

Architectural Context Diagram

```
                    ┌─────────────────────┐
                    │   User Interface    │
                    └─────────────────────┘
        Search, Filter              View Images,
          Products                  Specifications,
                                    Reviews

                    Add to Cart,
                    Edit Cart,
                    Write review

                    ┌─────────────────────┐
                    │                     │
                    │                     │
                    │   Online Shopping   │
                    │                     │
                    │                     │
                    └─────────────────────┘
```

ARCHITECTURAL CONTEXT DIAGRAM

Figure: Architectural Context Diagram

Description of Architectural Design

In this context diagram, the information provided to and received from the 'Online Shopping' is identified. The arrows represent the information received or generated by the application. The closed boxes represent the set of sources and sinks of information. In the system, we can observe that the user interacts with the application through a graphical user interface. The inputs to the system are the Search and Filter criteria provided by the user and a new review written by the user. Also, the output is in the form of Repeater and grid views which present the users with list of Products available. The users can view complete specification, view Images and reviews by other users.

4.3 Procedural/Modular Approach

Following are all the modules designed for the Online Shopping System.

Shop Products Module

This module starts when the user visits the home page or when a user searches for a product by entering a search term. This part of the application includes displaying all the products that are available or the products that match the search term entered by the user. The user can then filter these products based on various parameters like manufacturer, product type, operating system supported or a price range. The user browse through the products and each product would be displayed with an image and its features like operating system supported, number of user licenses and if it is a full version or an upgrade version. A user can add a product to the cart either by dragging the product and dropping it in the cart or by clicking a button. The user would be able to see the shopping cart summary.

Product Description Module

This module starts when a user visits the product description page. A user can view various images of the product of different sizes. The use can see an enlarged image in a popup window. The user can view the complete specification of the product like its features, operating system supported, system requirements etc. A user can also view the manufacturer information and also information about rebates, exchange policies etc. A user can also view the reviews of the product. A user can also write a review for the product.

Shopping Cart Module

This module starts when the user views the shopping cart. All the products that have been added to the shopping cart by the user are listed along with their price and the quantity. The total price of all the products added to cart is displayed. A user can edit the quantity of each product or remove the product from the shopping cart. A user can remove the product from the cart by clicking a button or by dragging the product and dropping it outside the cart. The total price changes accordingly when a user edits the quantity of a product or when a product is removed from the cart.

4.4 Testing

Why Software Testing is Needed Tool-bars work properly?

Are all menu function and pull down sub function properly listed? Is it possible to invoke each menu function using a logical assumption that if all parts of the system are correct, the goal will be successfully achieved? In adequate testing or non-testing will leads to errors that may appear few months later. Testing represents an interesting anomaly for the software engineer. During earlier software engineering activities, the engineer attempts to build software from an abstract concept to a tangible product. Now comes testing. The engineer creates a series of test cases that are intended to "demolish" the software that has been built. In fact, testing is the one step in the software process that could be viewed (psychologically, at least) as destructive rather than constructive. Testing requires that the developer discard preconceived notions of the "correctness" of software just developed and overcome a conflict of interest that occurs when errors are uncovered. If testing is conducted successfully (according to the objectives stated previously) it will uncover errors in the software. As a secondary benefit, testing demonstrates that software functions appear to be working according to specification, that behavioral and performance requirements appear to have been met. In addition, data collected as testing is conducted provide a good indication of software reliability and some indication of software quality as a whole. But testing cannot show the absence of errors and defects, it can show only that software errors and defects are present. It is important to keep this (rather gloomy) statement in mind as testing is being conducted.

Testing Strategy

There are types of testing that we implement. They are as follows:

While deciding on the focus of testing activities, study project priorities. For example, for an online system, pay more attention to response time. Spend more time on the features used frequently. Decide on the effort required for testing based on the usage of the system. If the system is to be used by a large number of users, evaluate the impact on users due to a system failure before deciding on the effort. This create two problems. Time delay between the cause and appearance of the problem. The effect of the system errors on files and records within the system. The purpose of the system testing is to consider all the likely variations to which it will be suggested and push the systems to limits. The testing process focuses on the logical intervals of the software ensuring that all statements have been tested and on functional interval is

conducting tests to uncover errors and ensure that defined input will produce actual results that

agree with the required results. Program level testing, modules level testing integrated and carried out. There are two major type of testing they are: 〕 White Box Testing. 〕 Black Box Testing.

White Box Testing

White box sometimes called "Glass box testing" is a test case design uses the control structure of the procedural design to drive test case. Using white box testing methods, the following tests were made on the system a) All independent paths within a module have been exercised once. In our system, ensuring that case was selected and executed checked all case structures. The bugs that were prevailing in some part of the code where fixed b) All logical decisions were checked for the truth and falsity of the values.

Black Box Testing

Black box testing focuses on the functional requirements of the software. This is black box testing enables the software engineering to derive a set of input conditions that will fully exercise all functional requirements for a program. Black box testing is not an alternative to white box testing rather it is complementary approach that is likely to uncover a different class of errors that white box methods.

4.5 SYSTEM CONFIGURATION

4.1.1 Hardware requirements:

Processer   :   Any Update Processer

Ram   :   Min 4GB

Hard Disk   :   Min 100GB

4.1.2 Software requirements:

Operating System   :Windows family

Technology   :Python3.7

IDE   :Jupiter notebook
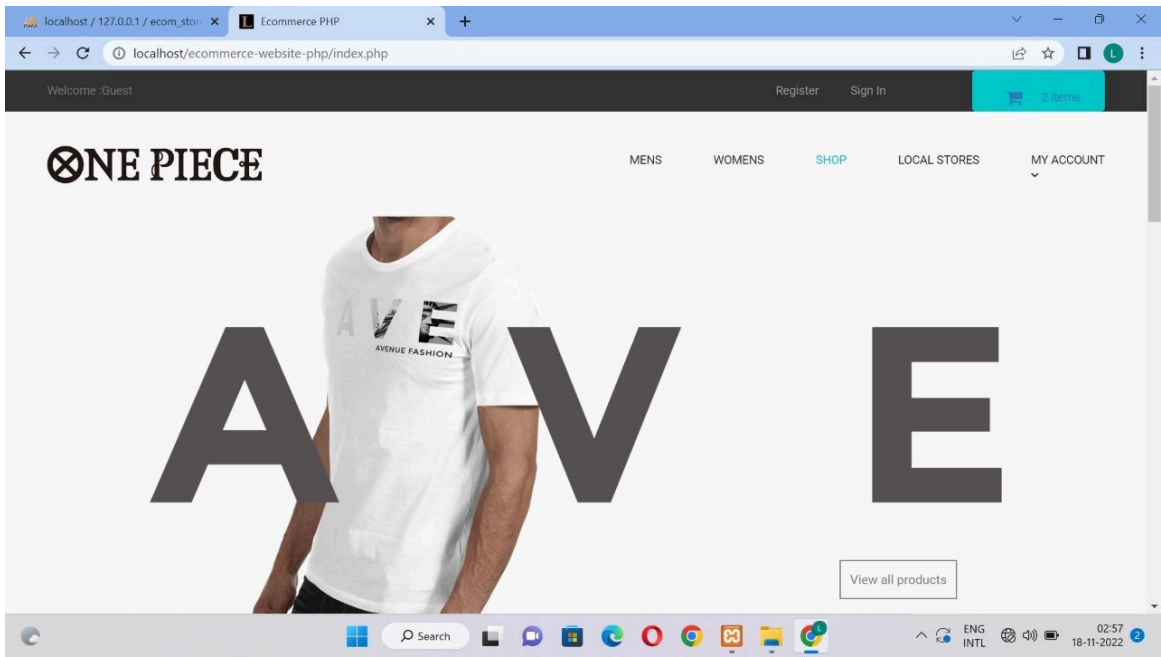
4.6 SOME SNAPSHOTS OF WEBSITE
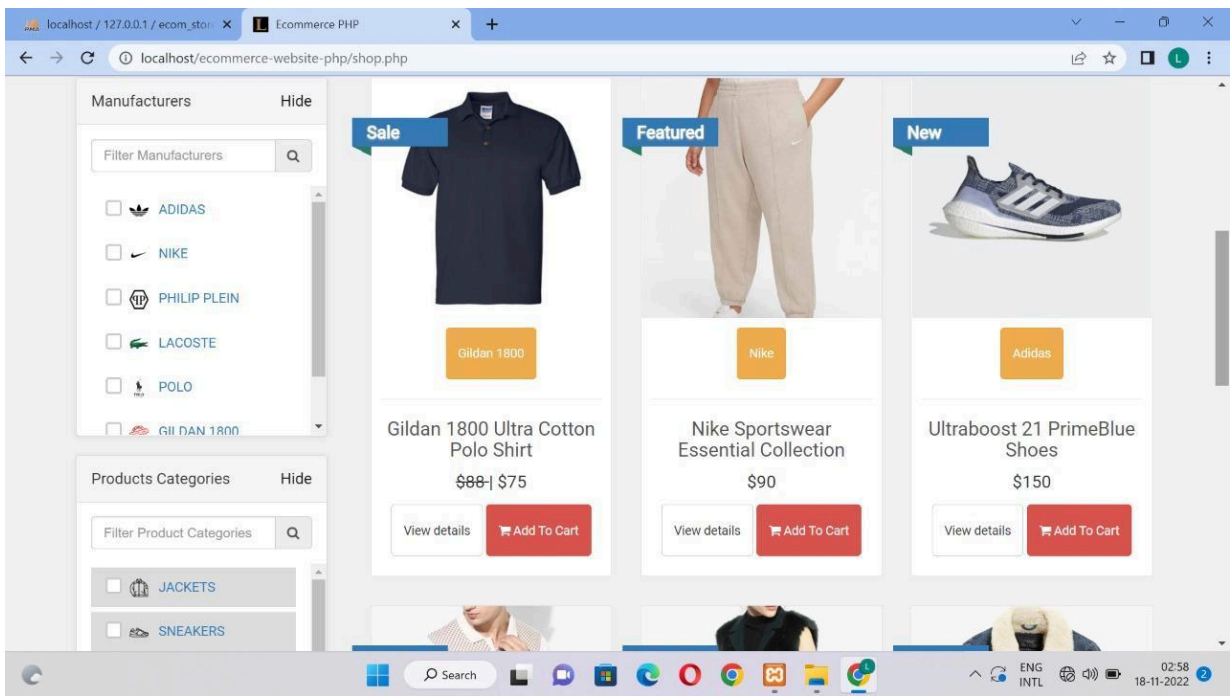

Fig 1 : Home Page
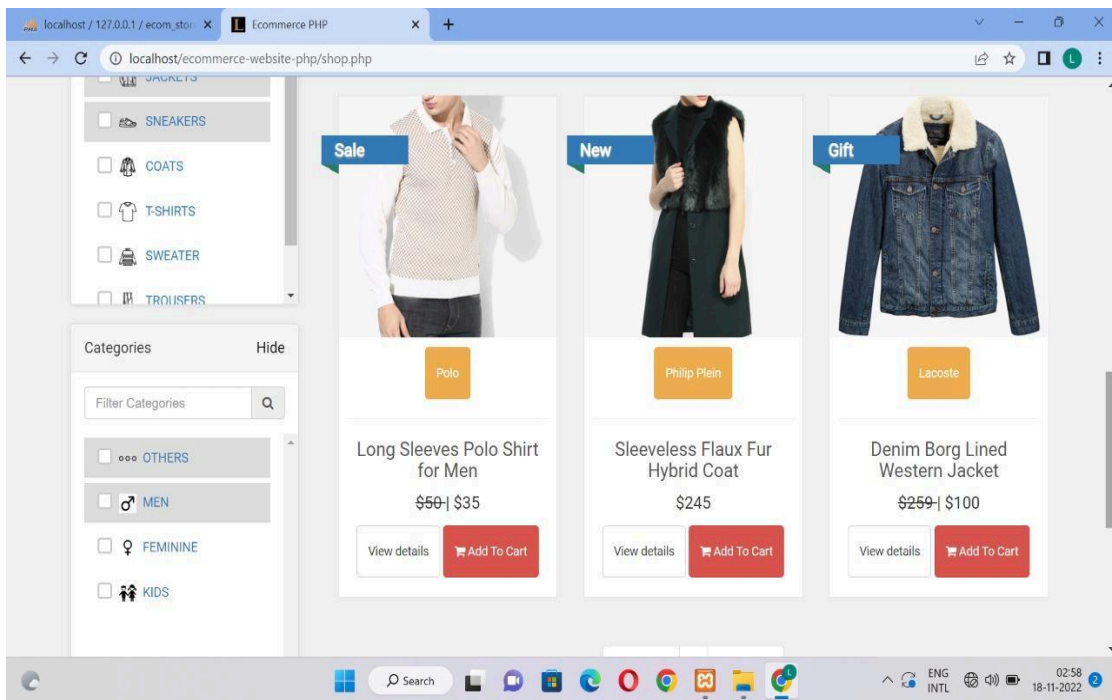

Fig.2.1: Featured Product
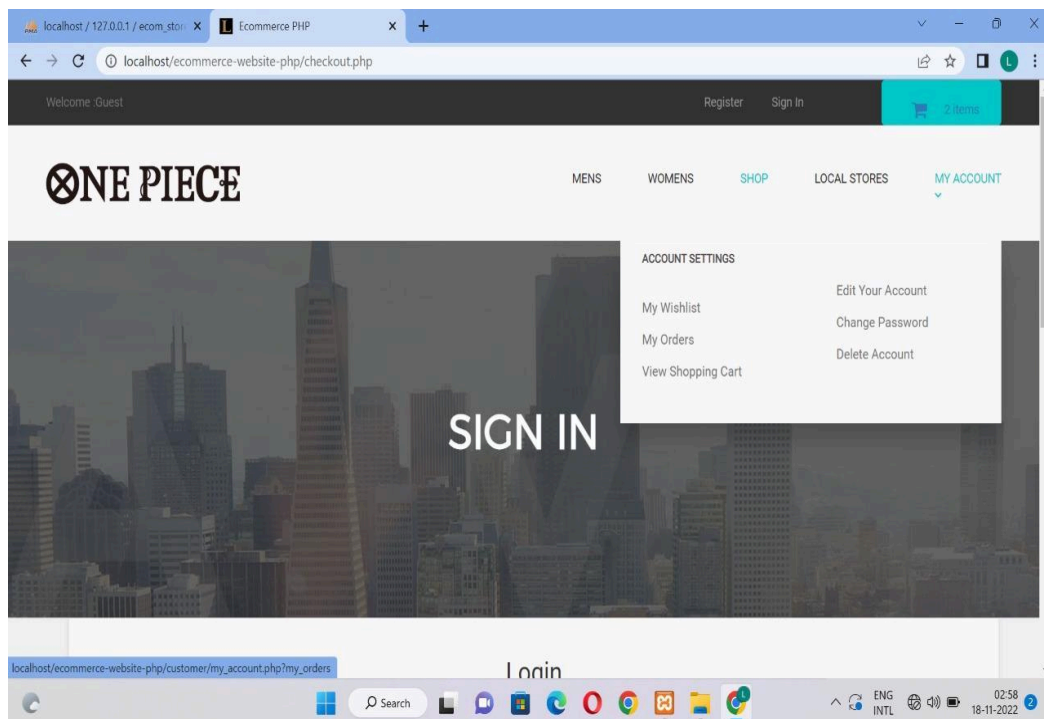
Fig ,2.2 : Featured Products
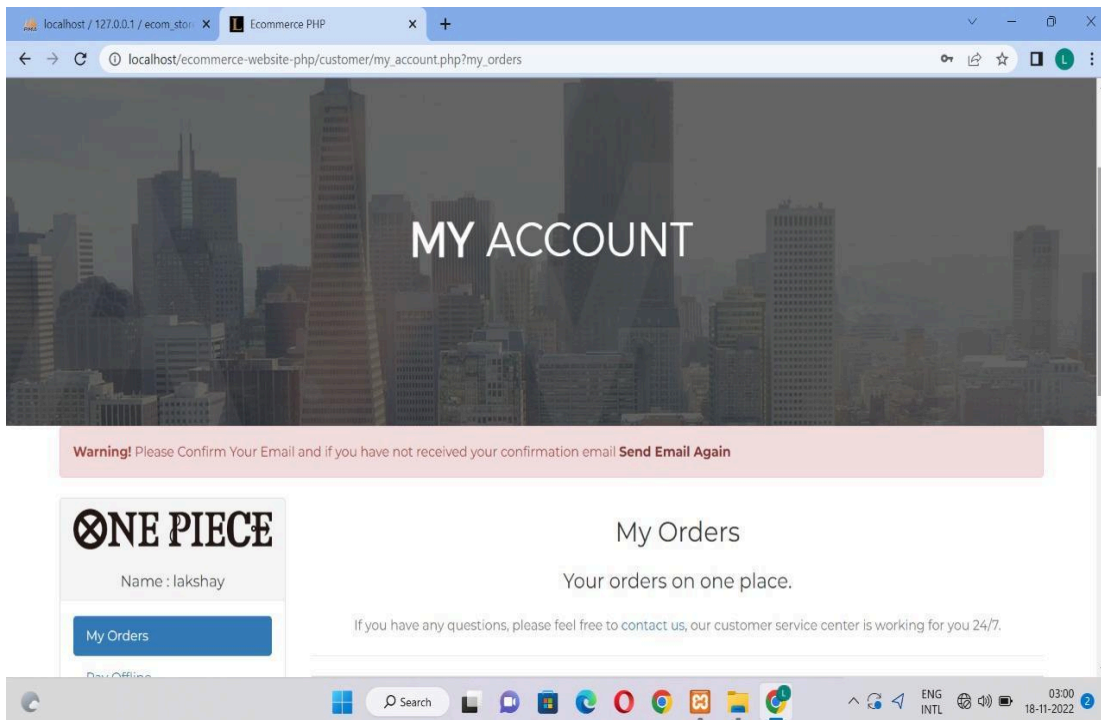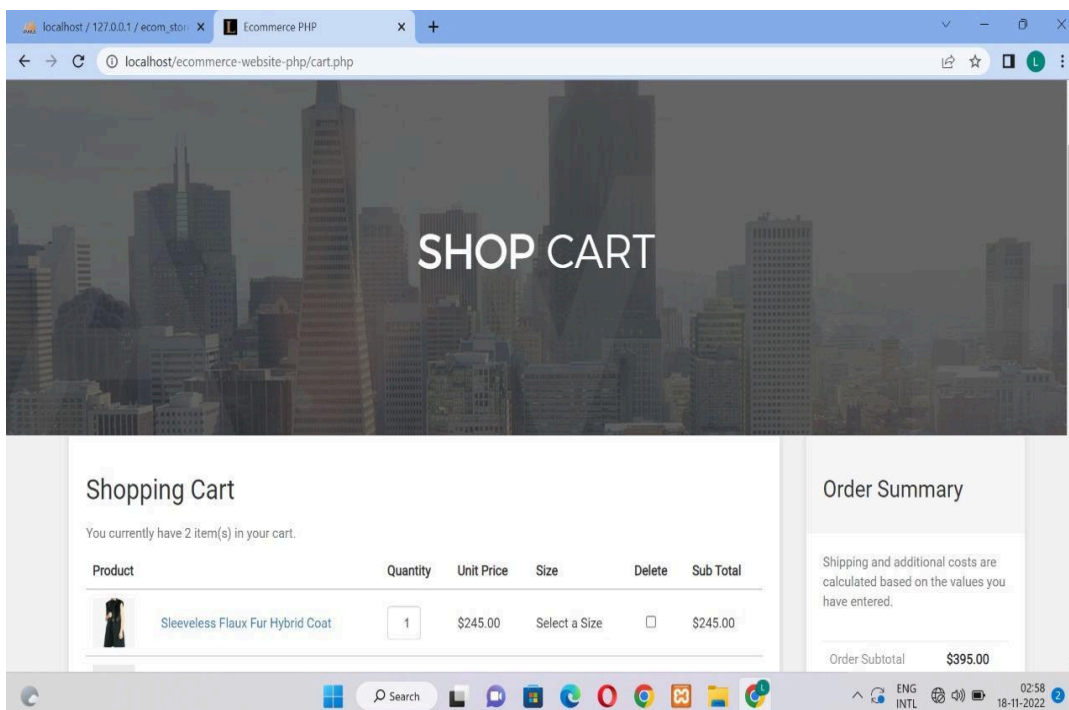

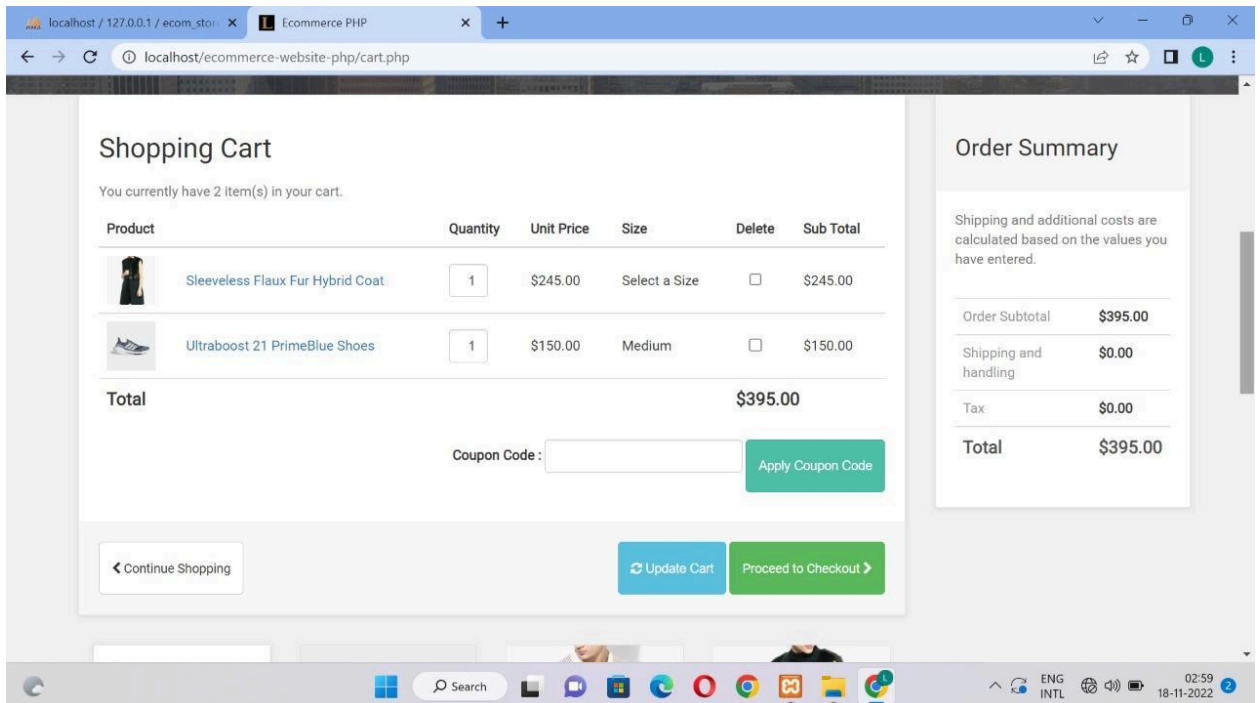Fig 3: Sign in page

Fig 4: Account Section
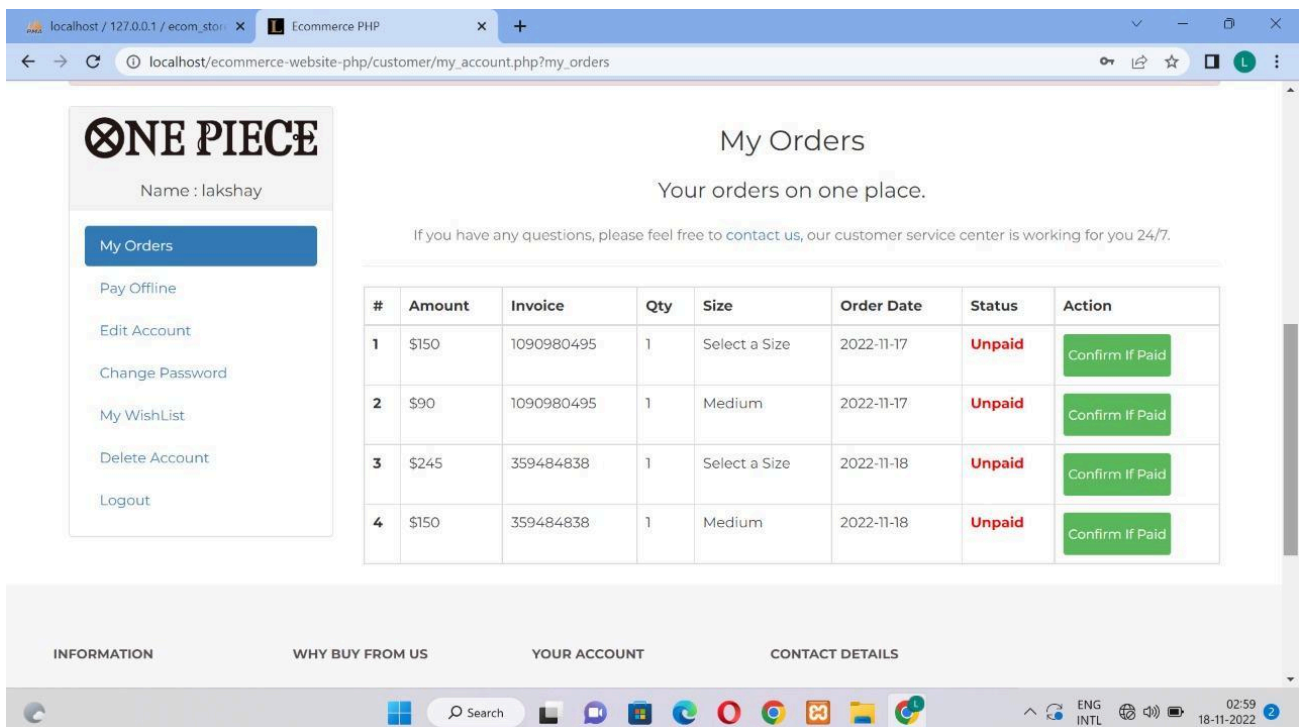
Fig 5.1: Shopping Cart
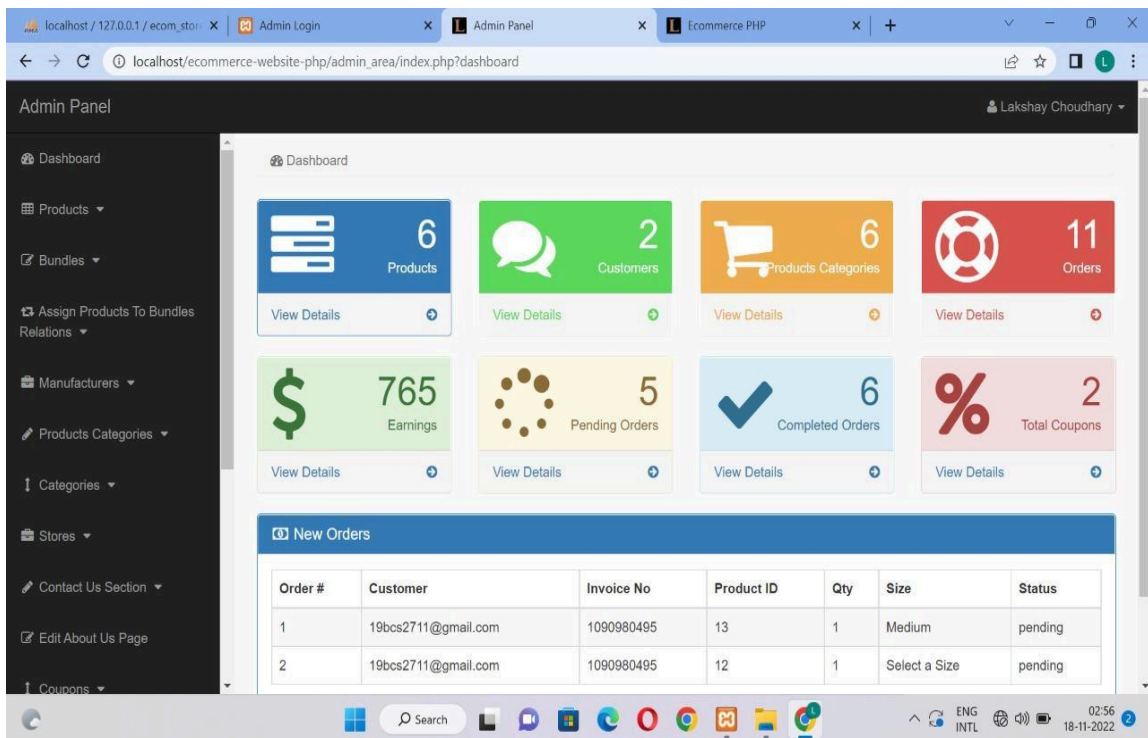

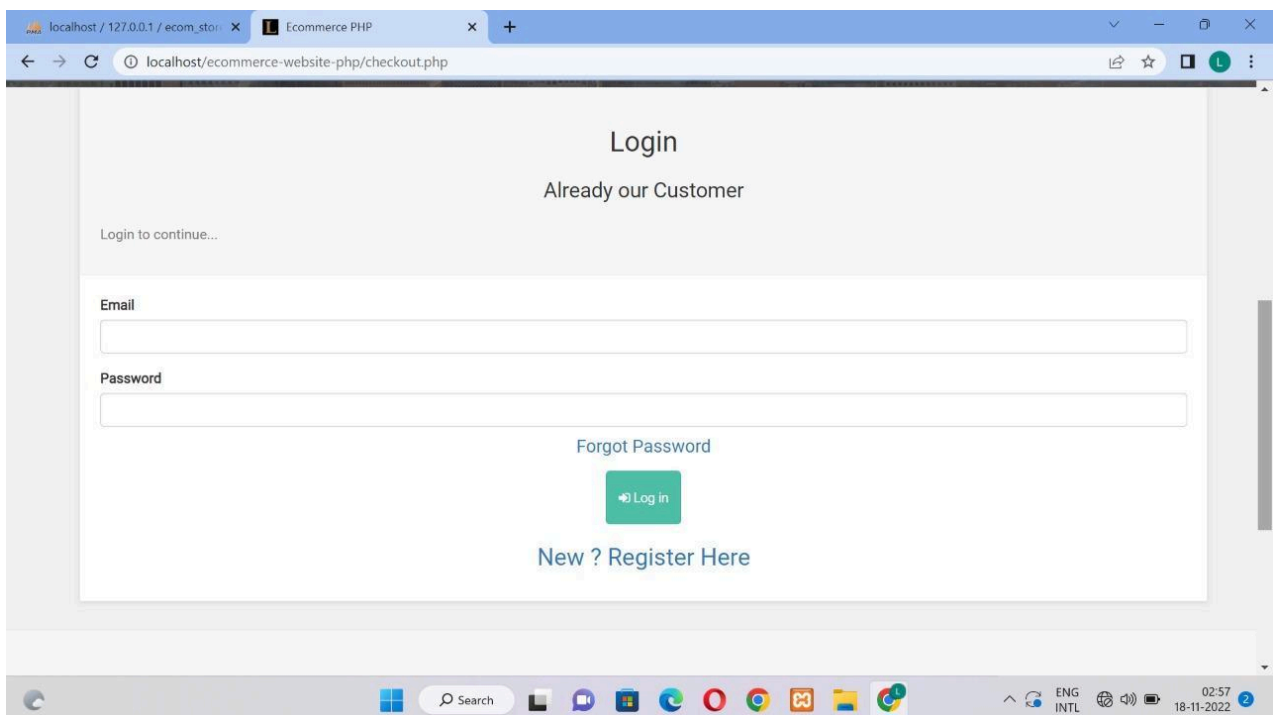Fig 5.2: Shopping Cart

Fig 6: My orders

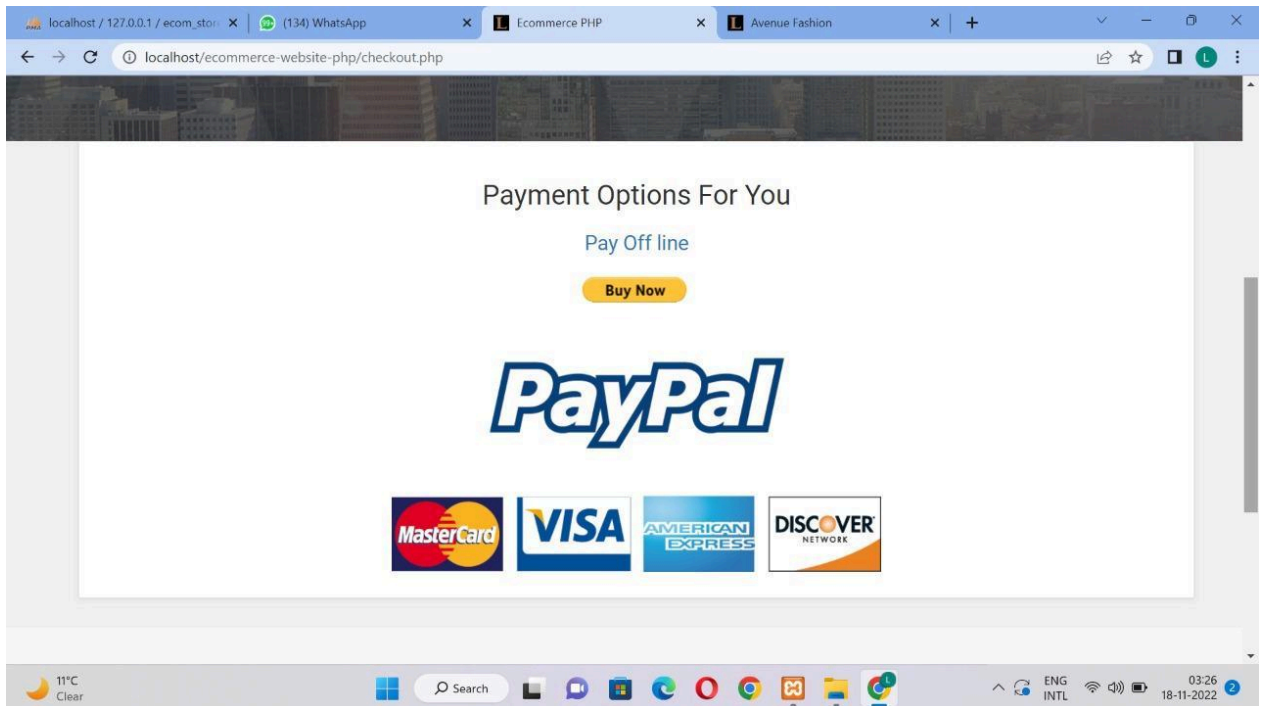Fig 7 : Admin Panel

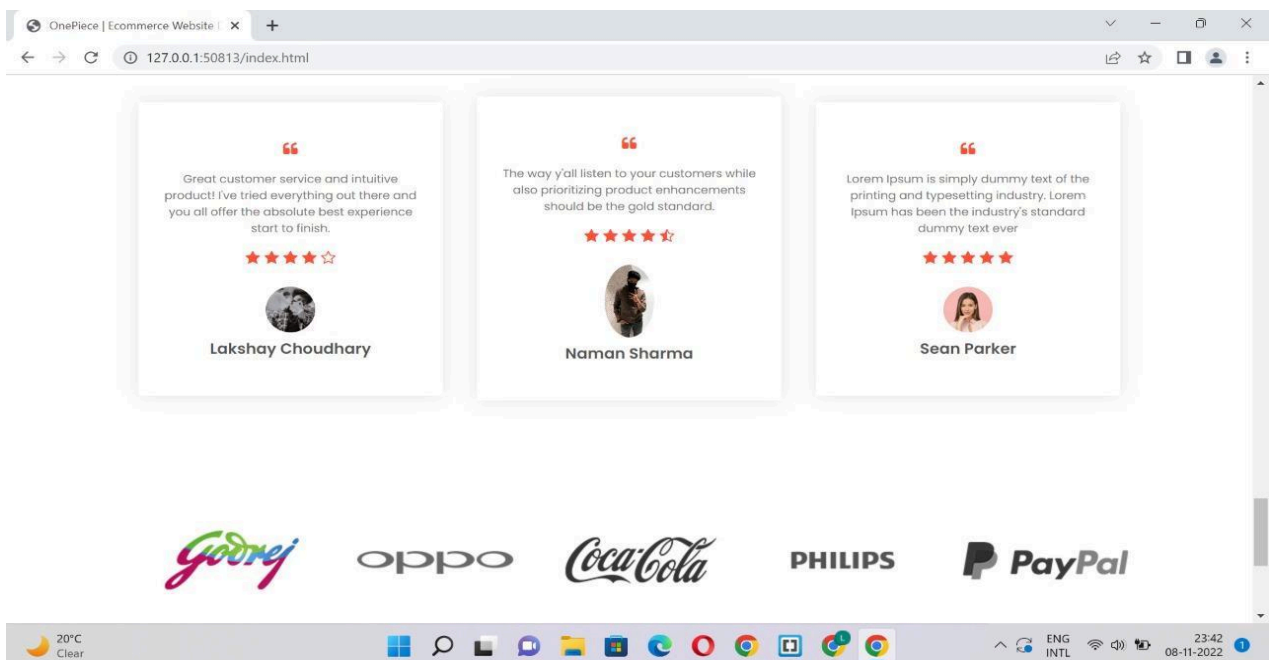Fig 9: Register Page

Fig 10: Payment details

Fig 11: Payment Options

Fig 12 : User Rating

CHAPTER 5

CONCLUSION AND FUTURE WORK

5.1 Conclusion

The project entitled Online shopping system was completed successfully.

The system has been developed with much care and free of errors and at the same time it is efficient and less time consuming. The purpose of this project was to develop a web application and an android application for purchasing items from a shop.

This project helped us in gaining valuable information and practical knowledge on several topics like designing web pages using html & css, usage of responsive templates, designing of android applications, and management of database using mysql . The entire system is secured. Also the project helped us understanding about the development phases of a project and software development life cycle. We learned how to test different features of a project.

This project has given us great satisfaction in having designed an application which can be implemented to any nearby shops or branded shops selling various kinds of products by simple modifications.

There is a scope for further development in our project to a great extend. A number of features can be added to this system in future like providing moderator more control over products so that each moderator can maintain their own products. Another feature we wished to implement was providing classes for customers so that different offers can be given to each class. System may keep track of history of purchases of each customer and provide suggestions based on their history. These features could have implemented unless the time did not limited us.

Results & Challenges

Results

The application can be used for any Ecommerce application. It is easy to use, since it uses the GUI provided in the user dialog. User friendly screens are provided. The application is easy to use and interactive making online shopping a recreational activity for users. It has been thoroughly tested and implemented.

Challenges

Compatibility with browsers like Mozilla Firefox, Internet explorer etc

Using a layered approach in developing the application which would make the application maintainable.

Learning new technologies like using JavaScript for drag and drop behavior and Ajax toolkit controls with little guidance.

The overall idea of doing this project is to get a real time experience. Learn new technologies.

Limitations

This application does not have a built in check out process. An external checkout package has to be integrated in to this application. Also users cannot save the shopping carts so that they can access later i.e. they cannot create wish lists which they can access later. This application does not have features by which user can set price ranges for products and receive alerts once the price reaches the particular range.

5.2 Scope for Future Work

The following things can be done in future.

The current system can be extended to allow the users to create accounts and save products in to wish list.

The users could subscribe for price alerts which would enable them to receive messages when price for products fall below a particular level.

The current system is confined only to the shopping cart process. It can be extended to have an easy to use check out process.

Users can have multiple shipping and billing information saved. During checkout they can use the drag and drop feature to select shipping and billing information.

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