

TRAINING REPORT
of
ONE MONTH INDUSTRIAL TRAINING
at
“Hoping Minds”
on
“WEB DEVELOPMENT”

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD
OF THE DEGREE OF

BACHELOR OF TECHNOLOGY
(Computer Science and Engineering)



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA
(An Autonomous College Under UGC ACT)

CERTIFICATE OF COMPLETION



Ref No: CGFP-8411-2025

Date: 12/08/2025

Certificate of Completion

This is to certify that Mr. **Navneet Singh** student of B.Tech (CSE), Rollno:- 2202621, Guru Nanak Dev Engineering College, Ludhiana has successfully completed industrial training in web development (Java Script) from 26th June 2025 to 8th August 2025. During the internship he is trained under the guidance of Mr. Manjit Singh. His overall performance during the training is Excellent.

We recommend **Navneet Singh** for his outstanding performance and the skills he has developed during this period. We believe these experiences will significantly contribute to his future endeavors. We extend our best wishes for **Navneet Singh** continued success and professional growth.



GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

CANDIDATE'S DECLARATION

I **Navneet Singh** hereby declare that I have undertaken one month training at **Hoping Minds** during a period from 26/06/2025 to 08/08/2025 in partial fulfillment of requirements for the award of degree of B.Tech (Computer Science and Engineering) at GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA. The work which is being presented in the training report submitted to Department of Computer Science and Engineering at GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA is an authentic record of training work.

Signature of the Student

The one month industrial training Viva–Voce Examination of _____ has been held on _____ and accepted.

Signature of Internal Examiner

Signature of External Examiner

ABSTRACT

E-Commerce stands for electronic commerce and caters to trading in goods and services through the electronic medium such as internet, mobile or any other computer network. It involves the use of Information and Communication Technology (ICT) and Electronic Funds Transfer (EFT) in making commerce between consumers and organizations, organization and organization or consumer and consumer. With the growing use of internet worldwide, Electronic Data Interchange (EDI) has also increased in humungous amounts and so has flourished e-commerce with the prolific virtual internet bazaar inside the digital world which is rightly termed as e-malls. We now have access to almost every knick-knack of our daily lives at competitive prices on the internet. No matter one is educated or illiterate, an urbane or a countryman, in India or in U.K; all you need is an internet connection and a green bank account. With e-commerce then, you can buy almost anything you wish for without actually touching the product physically and inquiring the salesman n number of times before placing the final order. Here is a beautiful picture depicting how has human life evolved to adapt to the digital world and hence trading over the internet. As seen, from pizza and potted plant to pair of shoes, we have everything on sale on the internet available in tempting offers.

ACKNOWLEDGEMENT

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About The Company

Hoping Minds

Hoping Minds is a global consulting and training company that specializes in helping organizations and individuals achieve their full potential. We are committed to providing high-quality services to our clients, and we believe that the key to success is a combination of knowledge, skills, and attitude.

Our company offers a wide range of services that include training, coaching, consulting, and mentoring. We work with businesses, non-profit organizations, and individuals to help them develop the skills and knowledge needed to succeed in today's competitive environment.

At Hoping Minds, we are committed to providing our clients with the best possible experience. Our team of experienced consultants and trainers has a wealth of knowledge and expertise in a variety of fields, including leadership, communication, change management, and project management.

We pride ourselves on our ability to provide customized solutions that meet the unique needs of each of our clients. Whether you're looking for a one-time training program or ongoing consulting services, we can help you achieve your goals.

At Hoping Minds, we believe that success is not just about achieving results; it's about creating a positive and sustainable impact on the world. We are committed to using our skills and expertise to help our clients create a better future for themselves and their communities.

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1. PROJECT UNDERTAKEN

The project entitled “Online Shopping Website” enables customer to buy women clothing from anywhere through online. This website advertises some of the products for shopping.

To buy products, customer has to create an account. Those who do not have an account, they can only view the available product. They can't buy it. Once the customer has created account, not only he can view the products, he can also add the product to the cart and also he can place an order to buy those products. Then a bill is generated for that particular customer. After the confirmation, the customer has to enter his credit card details to buy those products.

1.1 COMPLETE OBJECTIVE

Electronic Commerce is process of doing business through computer networks. A person sitting on his chair in front of a computer can access all the facilities of the Internet to buy or sell the products.

Unlike traditional commerce that is carried out physically with effort of a person to go & get products, ecommerce has made it easier for human to reduce physical work and to save time. E-Commerce which was started in early 1990's has taken a great leap in the world of computers, but the fact that has hindered the growth of e-commerce is security. Security is the challenge facing e-commerce today & there is still a lot of advancement made in the field of security.

The main advantage of e-commerce over traditional commerce is the user can browse online shops, compare prices and order merchandise sitting at home on their PC.

For increasing the use of e-commerce in developing countries the B2B e-commerce is implemented for improving access to global markets for firms in developing countries. For a developing country advancement in the field of e-commerce is essential. The research strategy shows the importance of the e-commerce in developing countries for business applications

1.2 NEED TO CHOOSE THE PROJECT

The internet has become a major tool that has fuelled the development of global business. This has enabled people to carry out business transactions remotely. With internet access all this is possible. This explains the reason why most businesses nowadays treat ecommerce website development seriously.

Web based platforms can be used to carry out trading activities. Ecommerce website development is concerned with developing such platforms. Web developers who are well acquainted with web

design are required to develop such sites. Such developers must be sufficiently knowledgeable on how to create secure web browsing platforms.

There are a number of considerations one should make when creating an online based business execution platform. Such a platform should add value in the way a business carries out its business dealings. The establishment and maintenance of such platforms needs to be affordable. Businesses whose main customers reside close to the business may find no use in carrying out their operations in this way.

This way of executing trade activities may be useful for organizations that serve customers who are distributed all over the world. The internet acts as an affordable link between customers and organizations whose goods and services they need. This lowers the costs incurred by customers and businesses in actualizing business transactions. With one well connected store, such organizations are in a position to serve a large number of customers.

1.3 INDUSTRY APPLICATION

E-commerce is a way for manufacturers to experiment with new products without risking a significant investment. Instead of setting up brick-and-mortar stores, or keeping inventory on hand, you can start offering this new product on your new store:

- **Direct access to customers.** Besides having higher profit margins, you will interact with customers, letting you learn from them and fine-tune products.
- **More prospects.** A larger arena yields more sales possibilities, although you have to be cognizant of your existing distributors. Potential problems can often be sidestepped by offering your products to a different market, so you're not competing with your current network.
- **Opportunities to innovate.** Finding customers outside your existing relationships also frees you from the specs you have to adhere to now. If you have an idea for a better product, you can act on it, allowing for **product analysis** and iteration over time based on what your customers want.
- **Scalability.** An effective application of e commerce in manufacturing will enable your organization to grow and scale easily to meet market demand and customer needs by opening new sales channels and continuously reaching new market segments.
- **Improved efficiencies.** Through **integration to the enterprise resource planning (ERP) and other back-end business systems**, ecommerce provides marked efficiencies

for manufacturers. Customers are able to order online whenever and wherever suits them, customer service can focus on actual customer service functions – such as transparent freight shipping costs and timely shipping – rather than simply being order takers, and the need to rekey data in independent systems is eliminated, thereby eliminating the possibility of errors and improving shipping processes and increasing order throughput.

- **Improved brand awareness.** Just as ecommerce can help manufacturers and industrial distributors find new customers, so can it help improve brand awareness in the market place. Developing pages that can be indexed by search engine crawlers is the fastest way to improve your site's search engine optimization and improve the likelihood that your target audience will know who you are.
- **Analytics.** The application of e commerce in manufacturing provides the perfect platform for an organization to launch a comprehensive analytics campaign. Through ecommerce, manufacturers and distributors can measure and evaluate marketing campaigns, sales effectiveness, product mix, inventory turns, customer sales effectiveness, and customer engagement like never before. When combined with a freight shipping application in the shopping cart which is bolted onto a **transportation management system**, you truly can **use data to make better and better business decisions that impact the bottom line.**

2. INTRODUCTION TO ASSIGNED JOB

- A shopper lands on the website. The website shows categories and products that are loaded in the eCommerce website database.
- A customer can add items to their cart and create an account. Again, all information is saved in the database, even if temporarily.
- Once in checkout the website should now be secure showing a lock symbol and using an SSL certificate.
- During checkout the website may use third-party software to get shipping rates
- When you enter your credit card number the information is passed to a payment gateway such as PayPal or Authorize.net
- Your order is now completed. The eCommerce website should not have your payment information in their database. All sensitive information is stored with the payment processor.

eCommerce websites are built differently, but they all use the same basic functions. The ability to accept credit cards is clearly a defining factor. Most times the credit does not actually process through your website, for security reasons, but processes through a payment gateway. A payment gateway is a company that works with the credit card companies to be sure that all credit card transactions are processed securely and credit card numbers are not stored by small businesses. You must have an account with a payment gateway (we'll show you how to do this) to accept credit card on your website. Although your transactions will process through a gateway, the viewer will never know or be directed away from your website. Your website will be guarded with 128-bit encryption using an SSL certificate, making fraud nearly impossible. When a purchase is made the money will be transferred directly into your businesses' bank account. When an order is placed, the customer's purchase and payment information will come into your administration section. You will login with your desired username and password to view this information. Through the admin section you will also be able to add new products, update products, and maintain your whole website.

3. FEASIBILITY STUDY

A feasibility analysis involves a detailed assessment of the need, value and practicality of a proposed enterprise, such as systems development. Feasibility analysis will help you make informed and transparent decisions at crucial points during the developmental process to determine whether it is operationally, economically and technically realistic to produce with a particular course of action.

3.1 COST EFFECTIVENESS

The cost encompasses both designing and installing the system. It includes user training, updating the data base & documenting. System Performance criteria are evaluated against the cost of each system to determine which system is likely to be the most cost effective and also meets the performance requirements. Cost are most easily determined when the receipts if the systems are tangible and measurable. An additional factor to consider is the cost of the study design and requirements.

3.2 OPERATIONAL FEASIBILITY

A proposed system is beneficial only if it can be turned into an information system that will meet the operational requirements of an organization. A system often fails if it does not fit within existing operations and if users resist the change. Important issues a systems developer must look into are:

- Will the new system be used if implemented in an organization?
- Are there any major barriers to implementation or is proposed system accepted without destructive resistance?

3.3 INFORMATION SOURCES

To find out the information about our project is called Information gathering. It is an art and science. The approach and manner in which the information is gathered required person with sensitivity, common sense and knowledge of what and when to gather and what channels to use to secure the information. The methodology and tools for information gathering required training and the experience that the analyst is expected to have. This means that information gathering is neither easy nor routine. Much preparation, experience and training is required. The phases for information gathering while system analysis are:

- Familiarity with the present system through the available information such as procedure manuals, documents and their flow, interviews with staff and on side observation.
- Definition of the decision-making is associated with managing the system. Conducting interviews clarifies the decision point and how decisions are made in user area.
- Once decision points are defined, a series of interviews conducted define the information requirements of user. The information is analyzed and document.

3.4 TIME FEASIBILITY

As you study above what is meant by feasibility study, the time feasibility is the sub point of it. It mean the study of time period, which is required for the system. Using this time feasibility analyst will design a proper life cycle of the system. In this life cycle it is mentioned that at which time she system will be ready to use, This time feasibility will be at the initial stage of system. The CBA time period should match the system life cycle.

The system life cycle ends when the system is terminated or is replaced by a system that has significant differences in processing, operational capabilities, resource requirement, or system outputs. Significant differences is a very subject term and some organization may feel a 10% change is significant, while others may be that the change must be over 30% to be significant.

3.5 SOFTWARE AND HARDWARE AVAILABILITY

When you design a system at that stage there are some requirements for the systems. There are two types of requirements-Software and Hardware requirements. In a database project, a database software is required for storing the data and hardware such as sensors and raspberry pi boards which help in the collection of data are required.

4. REQUIREMENT ANALYSIS

4.1 HARDWARE REQUIREMENTS

This section describes the hardware components and software requirements needed for effective and efficient running of the system.

4.2 SOFTWARE REQUIREMENTS

HARDWARE

- Processor
- Disk space
- Display

MINIMUM SYSTEM REQUIREMENTS:

- 2.4 GHz Processor Speed
- 500 GB (Including 20 gb for database management)
- 800 x 600 colors (1024 x 768 High color recommended)

SOFTWARE

- Operating System
- Technologies
- IDE
- Web Technologies
- Database
- Web Browsers

MINIMUM SYSTEM REQUIREMENT:

- Windows/Linux
- Nodejs/Reactjs/Express.js/MongoDB
- VS code
- HTML, CSS, JavaScript, React.js
- MongoDB
- Google Chrome 43+, Firefox 53+

5. MODULAR DESCRIPTION OF THE JOB

To describe the working of each module, it is necessary to define the tools & technologies used during the project. The description will help to describe each and every module of the project.

5.1 INTRODUCTION TO TOOLS AND TECHNOLOGIES :

Front-End: Web Pages using ReactJS, HTML ,JavaScript

Back-End: MYSQL

5.2 FRONT END:

- **HTML** –It is used to generate web page . HTML, an initialism of Hypertext Markup Language, is the predominant markup language for web pages. It provides a means to describe the structure of text-based information in a document — by denoting certain text as headings, paragraphs, lists, and so on.
- **JAVASCRIPT** – It is used for checking User information before sending to server. JavaScript is a scripting language most often used for client-side web development. It is a dynamic, weakly typed, prototype-based language with first-class functions. Currently, "JavaScript" is an implementation of the ECMA Script standard.
- **REACTJS** - It is a library for building compos able user interfaces. It encourages the creation of reusable UI components, which present data that changes over time. Lots of people use React as the V in MVC. React abstracts away the DOM from you, offering a simpler programming model and better performance. React can also render on the server using Node, and it can power native apps using React Native. React implements one-way reactive data flow, which reduces the boilerplate and is easier to reason about than traditional data binding.

React Advantages

- Uses virtual DOM which is a JavaScript object. This will improve apps performance, since JavaScript virtual DOM is faster than the regular DOM.
- Can be used on client and server side as well as with other frameworks.
- Component and data patterns improve readability, which helps to maintain larger apps.

React Limitations

- Covers only the view layer of the app, hence you still need to choose other technologies to get a complete tooling set for development.
- ReactJS is component based. We divide the complex UI into basic components. After developing the basic components we again add all these components to create a complex UI which is also called as complex component. React controls the data flow in the components with state and props. The data in states and props are used to render the Component with dynamic data.

Understanding ReactJS Props

- In ReactJS we use props to send data to components.
- In ReactJS every component is treated as a pure javascript function.
- In ReactJS props are equivalent to parameters of a pure javascript function.
- Props are immutable. Because these are developed in the concept of pure functions. In pure functions we cannot change the data of parameters. So, also cannot change the data of a prop in ReactJS.

Understanding ReactJS State

- State is like a data store to the ReactJS component. It is mostly used to update the component when user performed some action like clicking button, typing some text, pressing some key, etc.
- React.Component is the base class for all class based ReactJS components. Whenever a class inherits the class React.Component its constructor will automatically assign attribute state to the class with initial value is set to null. we can change it by overriding the method constructor.
- In many cases we need to update the state. To do that we have to use the method setState and directly assigning like `this.state = {'key': 'value'}` is strictly prohibited.

Let's try to use state concept in our component by changing a little code in above ReactJS component that we have created

Types of ReactJS Components

In ReactJS we have two different types of components:

- **Stateless ReactJS Component:** All function based components can be considered as stateless ReactJS components. Stateless ReactJS Components are pure javascript functions so, we don't need to have state.
- **Stateful ReactJS Component:** All class based components can be considered as stateful ReactJS components. Stateful ReactJS Components inherits the class React.Component so, state gets inherited.

5.3 Backend:



Figure 5.1 Node.JS

NODEJS:-

Node.js is a runtime for JavaScript that runs on the server. Node.js is open source, cross platform and since its introduction in 2009 node.js runs the V8 JavaScript engine, the core of google chrome, outside of the browser. Node.js is an open source, cross-platform runtime environment for developing server-side and networking applications.

Node.js applications are written in JavaScript, and can be run within the Node.js runtime on OS X, Microsoft Windows, and Linux. Node.js also provides a rich library of various JavaScript modules which simplifies the development of web applications using Node.js to a great extent. Node.js applications are written in JavaScript and can be run on a wide variety of operating systems. Node.js is based on an event-driven architecture and a non-blocking Input/output API that is designed to optimize an application's throughput and scalability for real-time web applications.

Node.js there is finally a way for web applications to have a real-time, two-way connections, where both the client and server can initiate communication, allowing them to exchange data freely.

Features: -

- Asynchronous and Event Driven
- Very Fast
- Single Threaded but Highly Scalable
- No Buffering
- License
- Very Simple
- Handling of concurrency

5.4 HTML

HTML stands for **Hypertext Markup Language**, and it is the most widely used language to write Web Pages.

- **Hypertext** refers to the way in which Web pages (HTML documents) are linked together. Thus, the link available on a webpage is called Hypertext.
- As its name suggests, HTML is a **Markup Language** which means you use HTML to simply "mark-up" a text document with tags that tell a Web browser how to structure it to display.
- Originally, HTML was developed with the intent of defining the structure of documents like headings, paragraphs, lists, and so forth to facilitate the sharing of scientific information between researchers.
- Now, HTML is being widely used to format web pages with the help of different tags available in HTML language.
- In our Project, HTML was used to design a front end page which was used to navigate among the various tables and graphs which were created using GraphLab library for the collected data.

5.5 CSS

Cascading Style Sheets, fondly referred to as CSS, is a simple design language intended to simplify the process of making web pages presentable.

CSS handles the look and feel part of a web page. Using CSS, you can control the color of the text, the style of fonts, the spacing between paragraphs, how columns are sized and laid out, what background images or colors are used, layout designs, variations in display for different devices and screen sizes as well as a variety of other effects.

CSS is easy to learn and understand but it provides powerful control over the presentation of an HTML document. Most commonly, CSS is combined with the markup languages HTML or XHTML. In our Project, CSS was used to beautify the front end page.

5.6 JAVASCRIPT

JavaScript is a dynamic computer programming language. It is lightweight and most commonly used as a part of web pages, whose implementations allow client-side script to interact with the user and make dynamic pages. It is an interpreted programming language with object-oriented capabilities.

JavaScript was first known as **LiveScript**, but Netscape changed its name to JavaScript, possibly because of the excitement being generated by Java. JavaScript made its first appearance in Netscape 2.0 in 1995 with the name **LiveScript**. The general-purpose core of the language has been embedded in Netscape, Internet Explorer, and other web browsers.

In our setup, main function of javascript was to determine the current location at which the project is being ran.

5.7 BOOTSTRAP

Bootstrap is a free front-end framework for faster and easier web development. Bootstrap **includes HTML and CSS based design templates** for typography, forms, buttons, tables, navigation, modals, image carousels and many other, as well as optional JavaScript plugins. Bootstrap also gives you the ability to easily create responsive designs. Responsive web design is about creating web sites which automatically adjust themselves to look good on all devices, from small phones to large desktops.

Bootstrap 4 is the newest version of Bootstrap; with new components, faster stylesheet and more responsiveness.

Bootstrap 4 supports the latest, stable releases of all major browsers and platforms. However, Internet Explorer 9 and down is not supported.

Advantages of Bootstrap:

- **Easy to use:** Anybody with just basic knowledge of HTML and CSS can start using Bootstrap
- **Responsive features:** Bootstrap's responsive CSS adjusts to phones, tablets, and desktops
- **Mobile-first approach:** In Bootstrap, mobile-first styles are part of the core framework
- **Browser compatibility:** Bootstrap 4 is compatible with all modern browsers (Chrome, Firefox, Internet Explorer 10+, Safari, and Opera)

5.8 DATABASE

MongoDB

MongoDB, a leading NoSQL database, redefines data management in modern applications with its document-oriented architecture. It diverges from the tabular structures of relational databases, employing a flexible, and schema-less approach that stores data in JSON-like documents. This schema flexibility enables developers to store and manage unstructured or semi-structured data seamlessly. MongoDB's architecture revolves around collections of documents, where each document can have its own unique structure.

This database system boasts high scalability, allowing for distributed architectures and horizontal scaling across clusters. It excels in handling large volumes of data, making it a preferred choice for applications requiring flexibility in data modeling and real-time analytics. MongoDB's rich query language and indexing capabilities facilitate efficient data retrieval and manipulation. With its versatility, scalability, and capability to handle complex data models, MongoDB has emerged as a cornerstone in modern application development, playing a pivotal role in the MERN stack's backend infrastructure.

6. DETAILED ANALYSIS OF INDIVIDUAL MODULE

6.1 ADMINISTRATION

In this module the Administrator has the privileges to add all the products, add customers. He can also delete or change the product specifications

User Account

- AccountID
- Username
- Password

Functionality:

- Association User Account with personal Details.

Alerts:

- All fields are mandatory
- Select user role
- Select role id
- Select role name
- Select Age
- Select Gender

UserRole

- Role ID
- Role Name

Functionality:

- Association user role with user Account

Alerts:

- Select Role Id
- Select role name

Product

- Description
- Category

7. DESIGN

7.1 DATA FLOW DIAGRAM (DFD)

A data flow diagram is graphical tool used to describe and analyze movement of data through a system. These are the central tool and the basis from which the other components are developed. The transformation of data from input to output, through processed, may be described logically and independently of physical components associated with the system. These are known as the logical data flow diagrams.

The physical data flow diagrams show the actual implements and movement of data between people, departments and workstations. A full description of a system actually consists of a set of data flow diagrams. Using two familiar notations Yourdon, Gane and Sarson notation develops the data flow diagrams. Each component in a DFD is labeled with a descriptive name. Process is further identified with a number that will be used for identification purpose.

The development of DFD'S is done in several levels. Each process in lower level diagrams can be broken down into a more detailed DFD in the next level. The lop-level diagram is often called context diagram. It consists a single process bit, which plays vital role in studying the current system. The process in the context level diagram is exploded into other process at the first level DFD.

The idea behind the explosion of a process into more process is that understanding at one level of detail is exploded into greater detail at the next level. This is done until further explosion is necessary and an adequate amount of detail is described for analyst to understand the process. Larry Constantine first developed the DFD as a way of expressing system requirements in a graphical from, this lead to the modular design.

A DFD is also known as a “bubble Chart” has the purpose of clarifying system requirements and identifying major transformations that will become programs in system design. So it is the starting point of the design to the lowest level of detail. A DFD consists of a series of bubbles joined by data flows in the system.

DFD Symbols

In the DFD, there are four symbols:

1. A square defines a source(originator) or destination of system data
2. An arrow identifies data flow. It is the pipeline through which the information flows

3. A circle or a bubble represents a process that transforms incoming data flow into outgoing data flows.
4. An open rectangle is a data store, data at rest or a temporary repository of data

Constructing a DFD

Several rules of thumb are used in drawing DFD'S

1. Process should be named and numbered for an easy reference. Each name should be representative of the process.
2. The direction of flow is from top to bottom and from left to right. Data traditionally flow from source to the destination although they may flow back to the source. One way to indicate this is to draw long flow line back to a source. An alternative way is to repeat the source symbol as a destination. Since it is used more than once in the DFD it is marked with a short diagonal.
3. When a process is exploded into lower level details, they are numbered.
4. The names of data stores and destinations are written in capital letters. Process and dataflow names have the first letter of each word capitalized

A DFD typically shows the minimum contents of data store. Each data store should contain all the data elements that flow in and out.

Questionnaires should contain all the data elements that flow in and out. Missing interfaces redundancies and like is then accounted for often through interviews.

Silent Features of DFDs

1. The DFD shows flow of data, not of control loops and decision are controlled considerations do not appear on a DFD.
2. The DFD does not indicate the time factor involved in any process whether the dataflow take place daily, weekly, monthly or yearly.
3. The sequence of events is not brought out on the DFD.

Types of Data Flow Diagrams:-

1. Current Physical
2. Current Logical
3. New Logical
4. New Physical

1) Current Physical:

In Current Physical DFD process label include the name of people or their positions or the names of computer systems that might provide some of the overall system -processing label includes an identification of the technology used to process the data. Similarly data flows and data stores are often labels with the names of the actual physical media on which data are stored such as file folders, computer files, business forms or computer tapes.

1. Current Logical:

The physical aspects at the system are removed as much as possible so that the current system is reduced to its essence to the data and the processors that transform them regardless of actual physical form.

2. New Logical:

This is exactly like a current logical model if the user were completely happy with he user were completely happy with the functionality of the current system but had problems with how it was implemented typically through the new logical model will differ from current logical model while having additional functions, absolute function removal and inefficient flows recognized.

3. New Physical:

The new physical represents only the physical implementation of the new system.

Rules Governing DFDs

Process:

- No process can have only outputs.
- No process can have only inputs. If an object has only inputs than it must be a sink.
- A process has a verb phrase label.

Data Store:

- Data cannot move directly from one data store to another data store, a process must move data.
- Data cannot move directly from an outside source to a data store, a process, which receives, must move data from the source and place the data into data store.

- A data store has a noun phrase label.

Source or sink:

The origin and /or destination of data.

- Data cannot move directly from a source to sink it must be moved by a process
- A source and /or sink has a noun phrase label.

Data Flow:

- A Data Flow has only one direction of flow between symbols. It may flow in both directions between a process and a data store to show a read before an update. The latter is usually indicated however by two separate arrows since these happen at different times.
- A join in DFD means that exactly the same data comes from any of two or more different processes, data store or sink to a common location.
- A data flow cannot go directly back to the same process it leads. There must be at least one other process that handles the data flow, produce some other data flow, returns the original data into the beginning process.
- A Data flow to a data store means update (delete or change).
- A data Flow from a data store means retrieve or use.

7.2 CONTEXT DIAGRAM

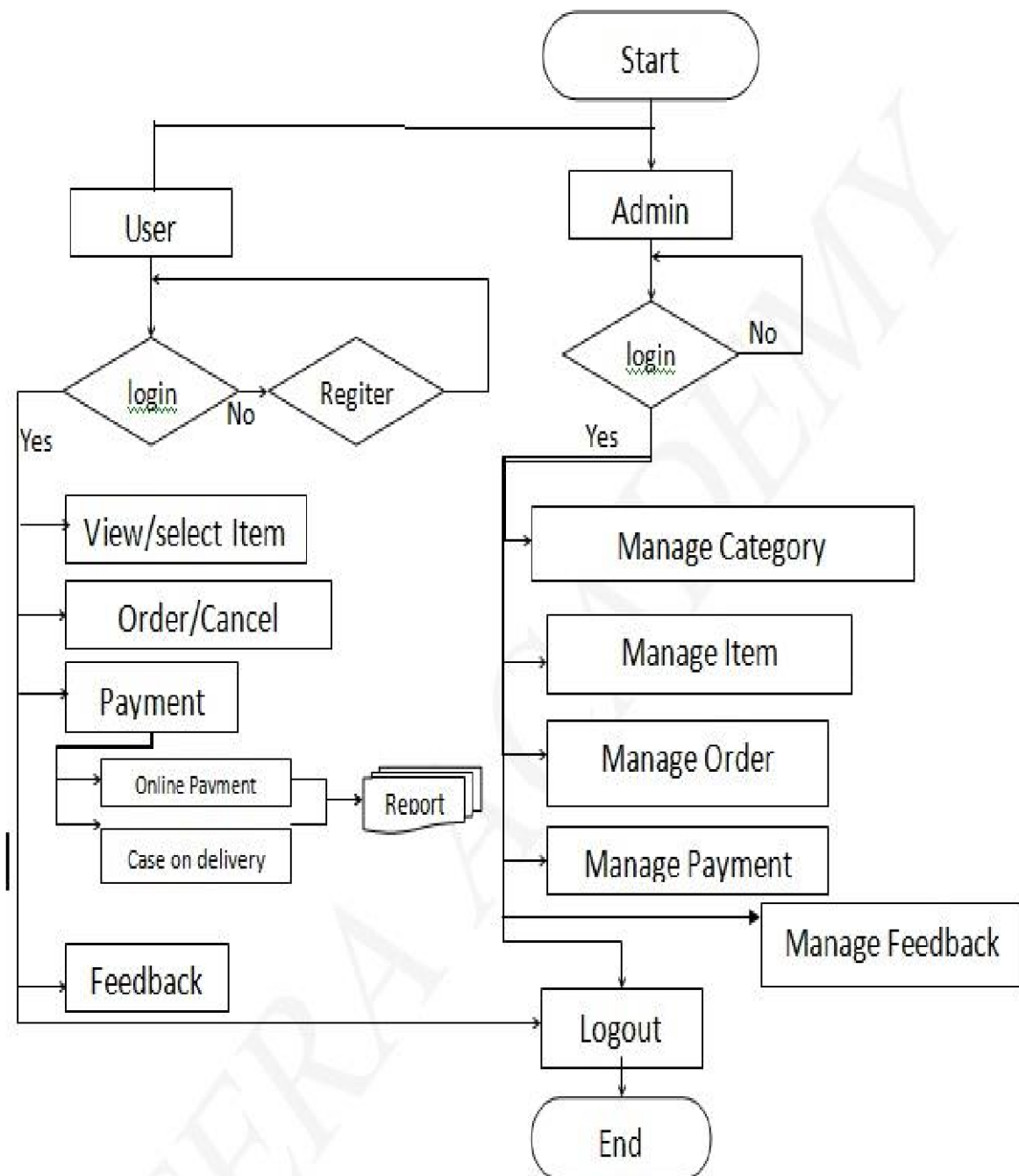


Figure 7.1 Context Diagram

7.3 SEQUENCE DIAGRAMS

Sequence Diagrams Represent the objects participating the interaction horizontally and time vertically.

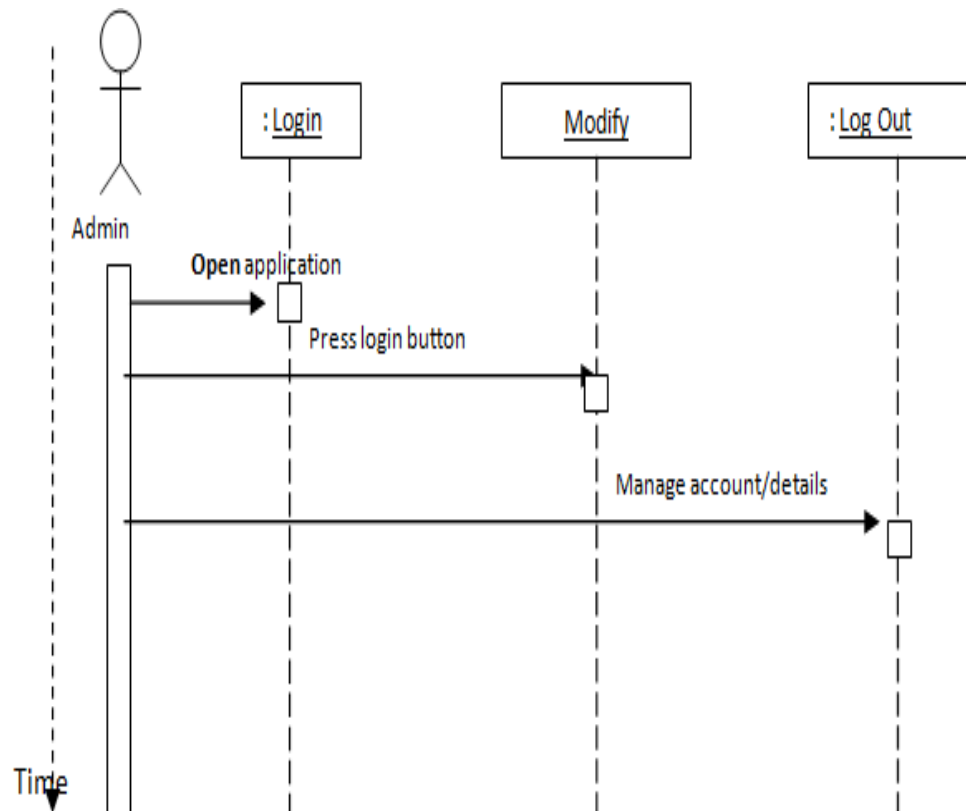


Figure 7.2 Admin Sequence Diagram

8. SCREENSHOTS

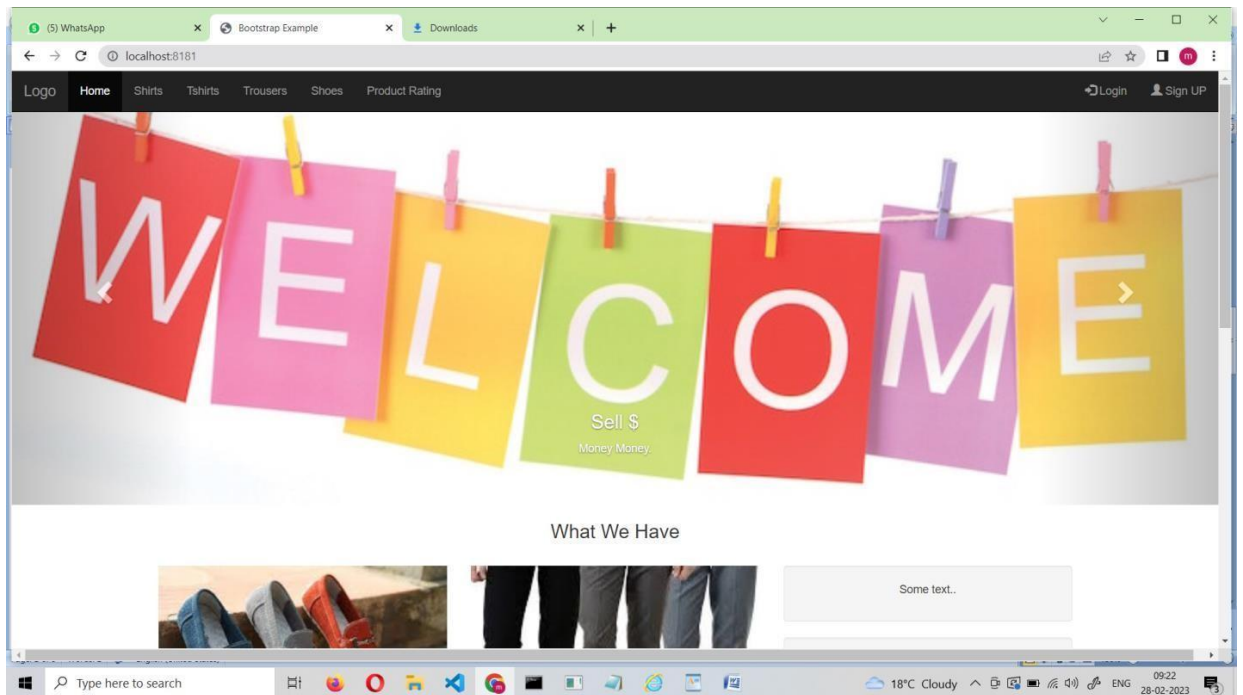


Figure 8.1 Home Page 1

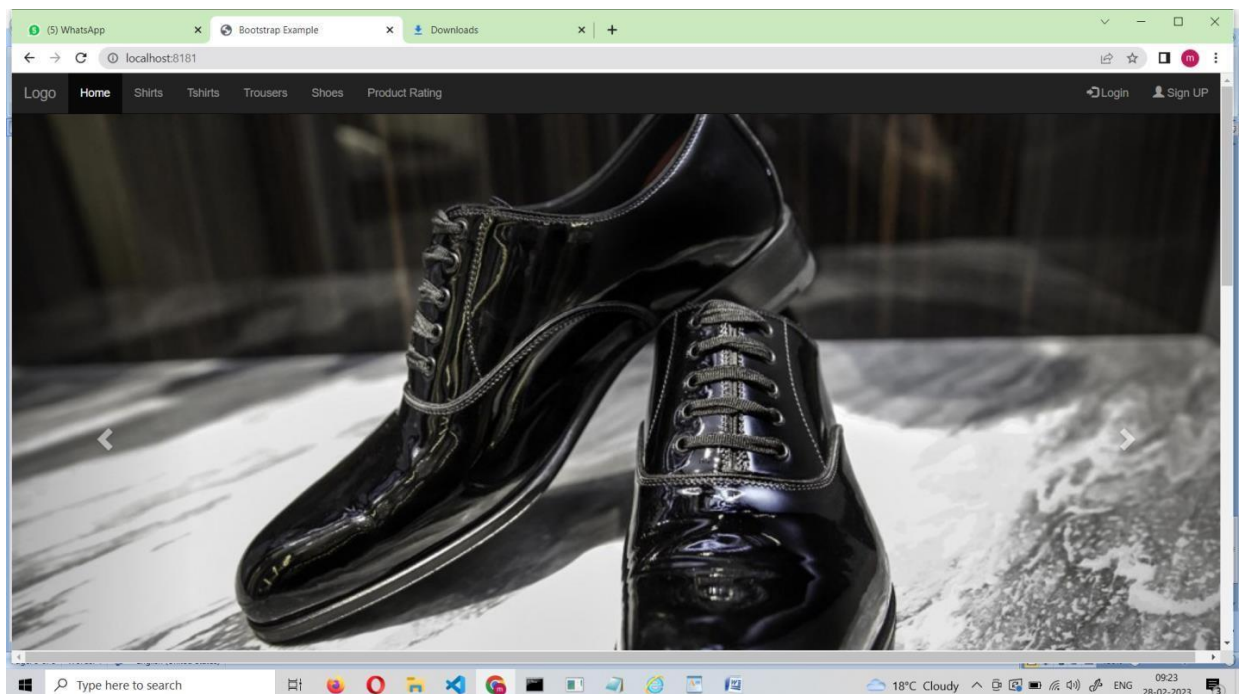


Figure 8.2 Home Page 2

Logo Home Login

Login

Username

Password

Login

Sign UP (New User?)

Figure 8.3 Login Page

Logo Home Login

Signup

Username

Password

Mobile Number

Email

Gender

Address

Sign Up Reset Cancel

Figure 8.4 Sign Up Page

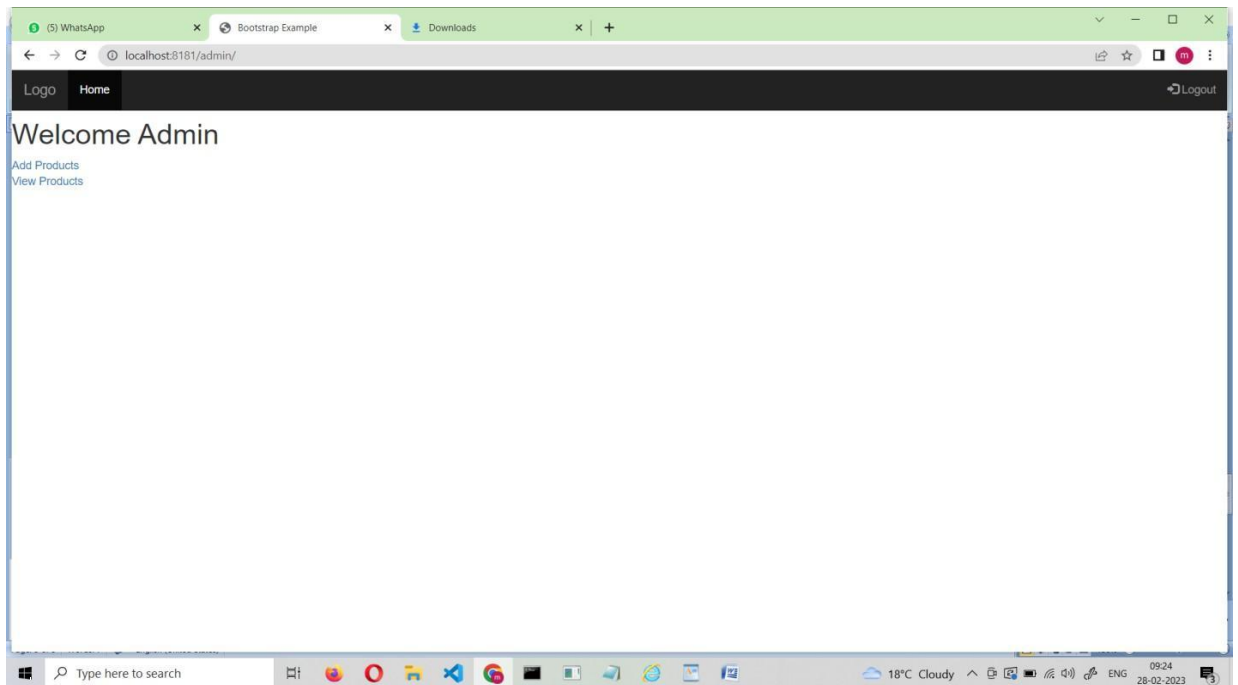


Figure 8.5 Admin Screen

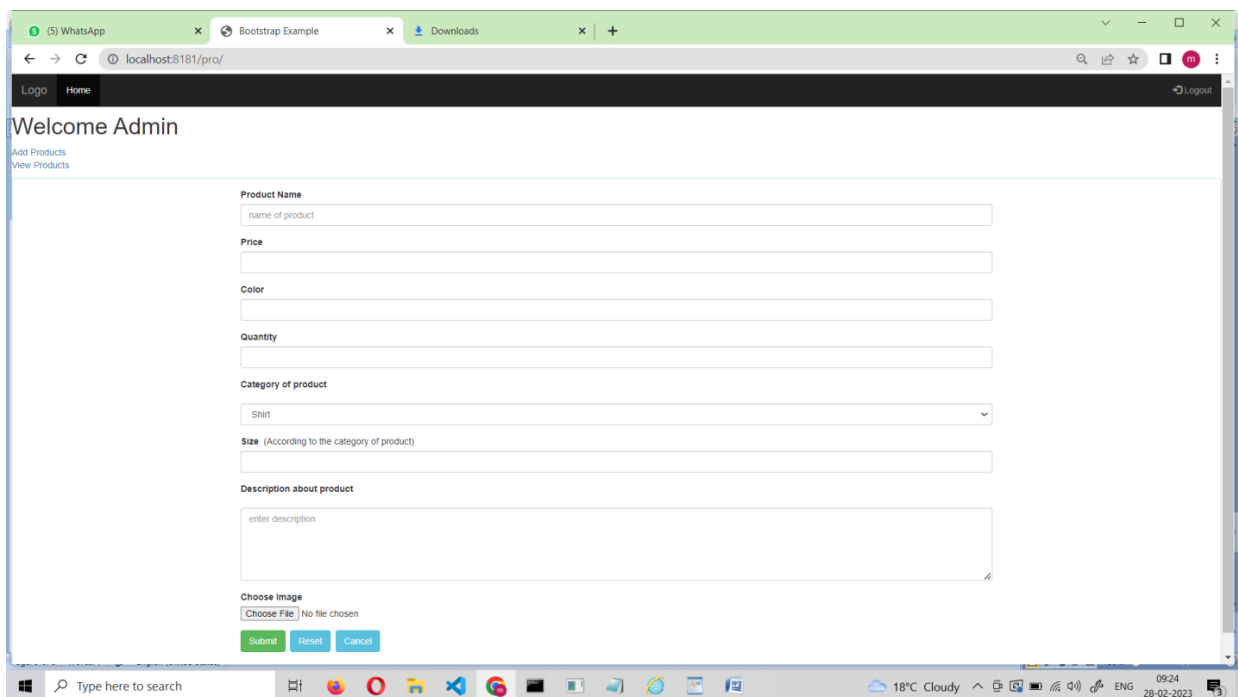


Figure 8.6 Admin Add Product

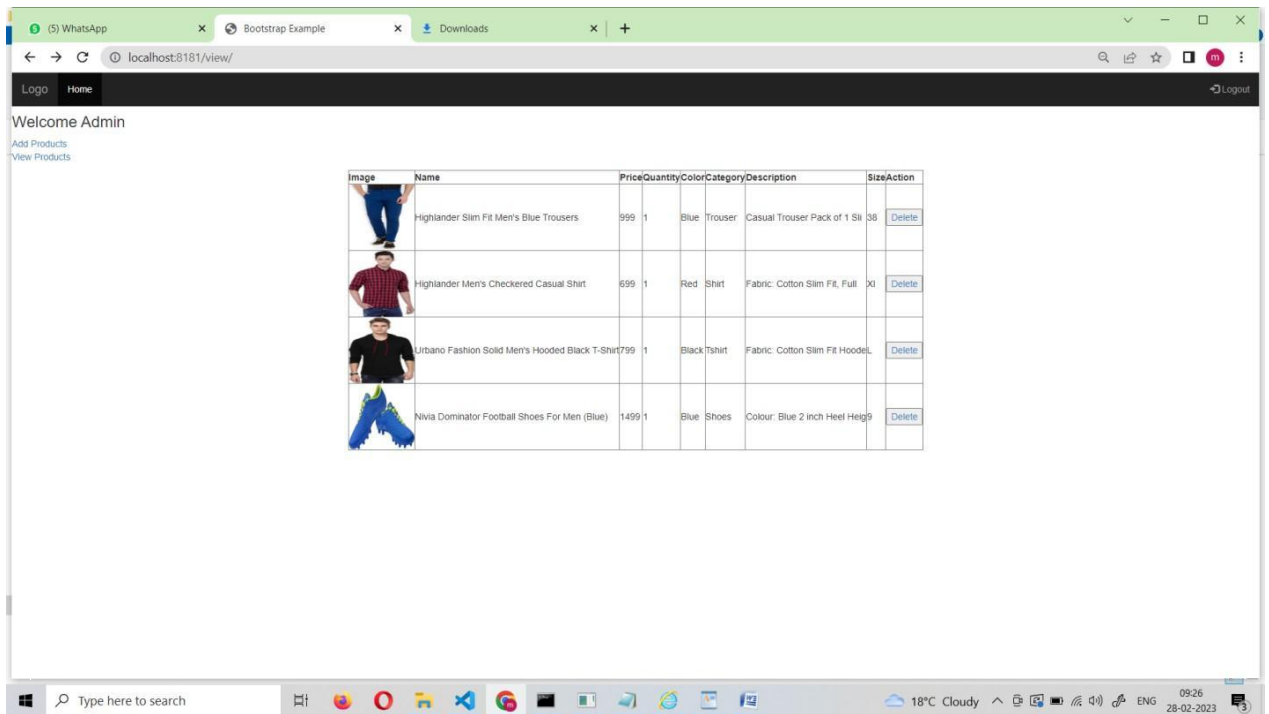


Figure 8.7 Customer Section

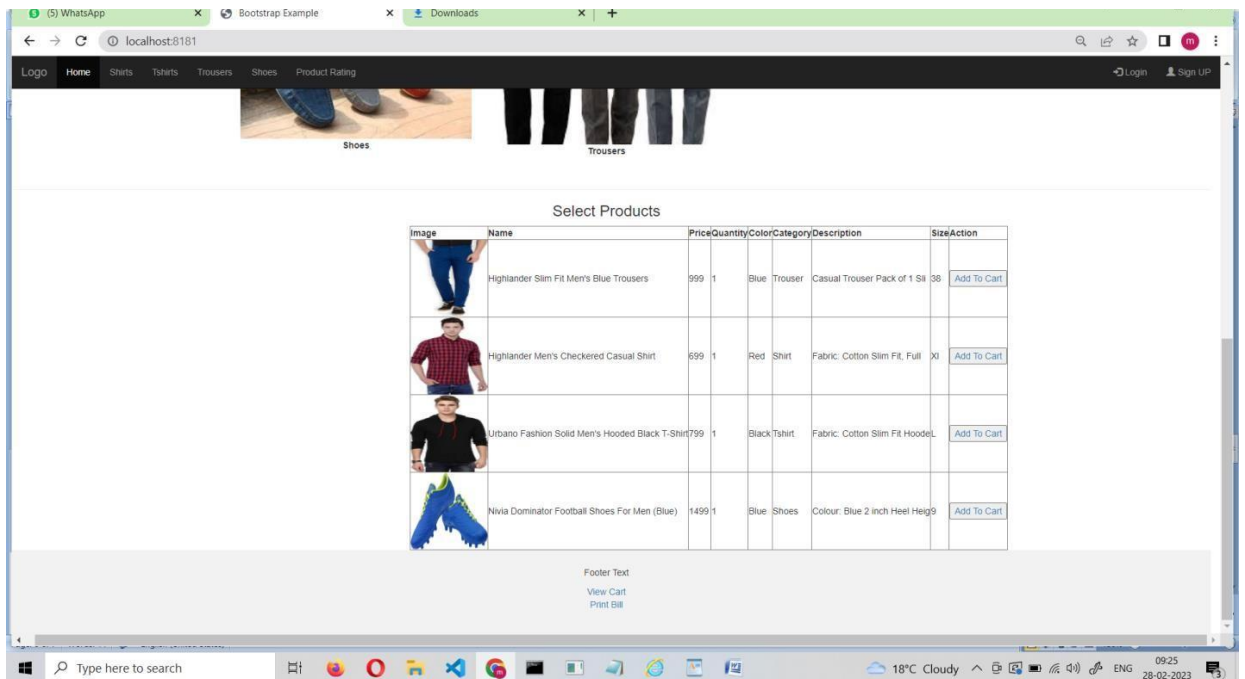


Figure 8.8 Admin View/Delete Products

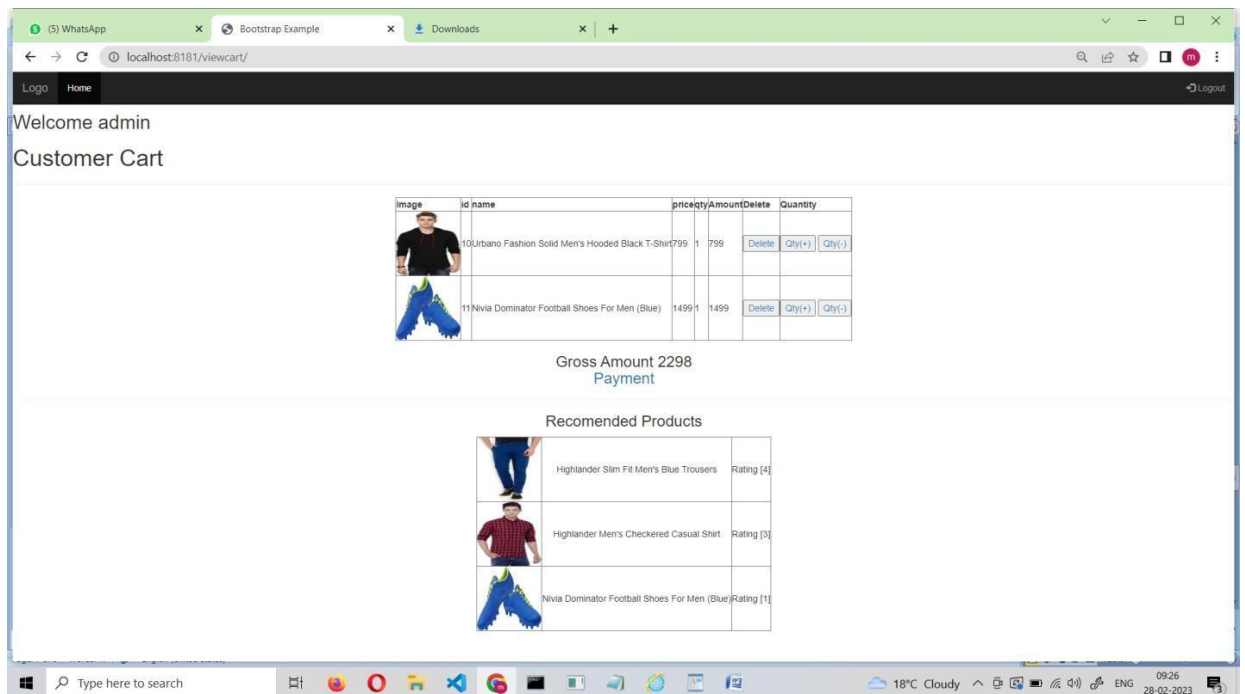


Figure 1 Customer Cart

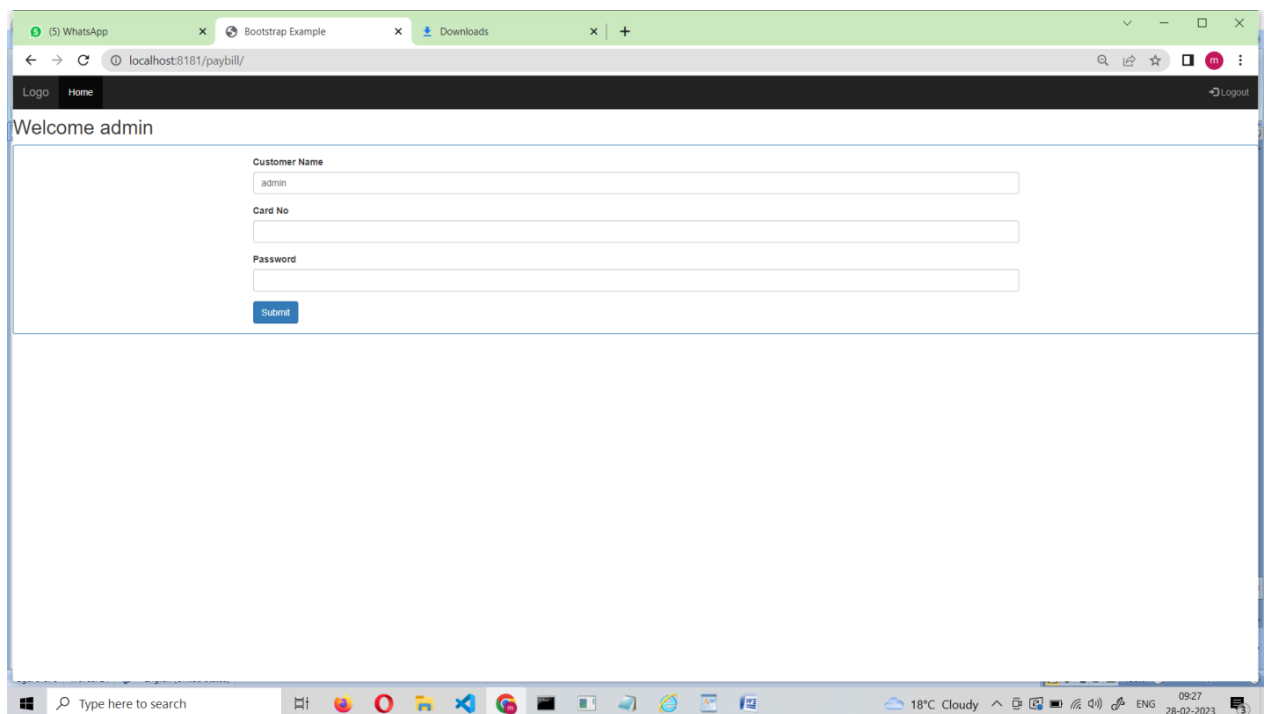


Figure 8.10 Payment Form

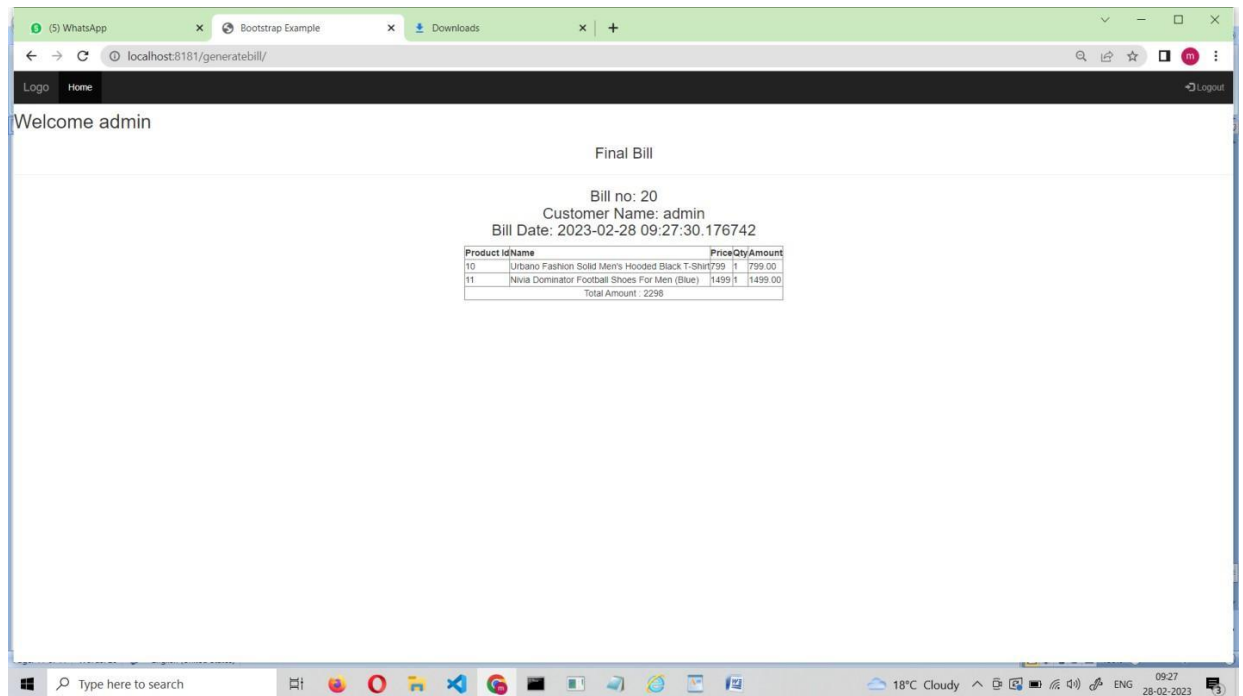


Figure 8.11 Print Bill

```
C:\Users\hp\Desktop\sadaka\HTML\index.html - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

base.html index.html about.html nav-bar.html urfs.py stocks.html views.py gallery.html centers.html contact.html index.html

346
347         <h3 class='reasons-title'>World Blood Donor Day: Few things to keep in mind before donating blood</h3>
348         <h5 class='reason-subtitle'>Blood is an important resource, both for planned treatments and urgent interventions.</h5>
349
350     </div>
351
352     <div class='on-hover hidden-xs'>
353
354
355     <p>Blood is vital for treating the wounded during emergencies of all kinds (natural disasters, accidents, armed conflicts, etc.) and has an essential, life-saving role in maternal and
356     <p>Blood donation is completely a safe process. In fact, one donation can help save the lives of up to three people.</p>
357
358     <p><strong>But despite there being no harmful or even profound effects of blood donation on the body, there are a few precautions you need to take before donating blood. These include
359
360     <p>1. Drinking extra water and fluids.</p>
361     <p>2. Avoiding caffeinated beverages.</p>
362     <p>3. Eating well to reduce the risk of reactions.</p>
363     <p>4. Eating foods rich in iron is advisable. </p>
364
365     </div>
366
367     </div>
368
369     </div>
370
371     </div>
372
373     </div>
374
375     </div>
376
377
378
379 </div> <!-- /.home-reasons -->
380
381
382
383
384

HyperText Markup Language file      length: 24564  lines: 636  Ln: 1  Col: 1  Sel: 0 | 0  Dos/Windows  UTF-8  INS
Search the web and Windows  [Taskbar icons]  16:21 25-03-2018
```

Figure 8.12 CODE SNIPPET OF THE HOME PAGE

```
C:\Users\inp\Desktop\sadaka\HTML\index.html - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

base.html index.html about.html nav-bar.html urls.py stocks.html views.py gallery.html centers.html contact.html index.html

403 <div class="footer-col">
404
405 <h4 class="footer-title">About us <span class="title-nder"></span></h4>
406
407 <div class="footer-content">
408
409 <p><strong>My Blood Bank</strong> (MEB) provide you the access to any blood group required by the patients suffering from some disease or some accident
410 <p> We aim at maintaining all the information pertaining to blood donors, different blood groups available in each blood bank and help then manage in a
411
412 </div>
413
414 </div>
415
416 </div>
417
418 <div class="col-md-4">
419
420 <div class="footer-col">
421
422 <h4 class="footer-title">The stories which will inspire you <span class="title-nder"></span></h4>
423
424 <div class="footer-content">
425 <ul class="tweets list-unstyled">
426 <li class="tweet">Hi Friends! I Am Rameah and a B- Blood Donor. I Have Donated Blood Two Times First Time in an Accident Case In Igmc Shimla And 2nd
427 <li class="tweet">Hello, My Name Is Suresh Kumar. I Am Working As JBT At Sarkaghat, Mandi. I Am Regular And Volunteer Donor . I Have Donated Blood 5
428 <li class="tweet"> I Am An Educated Member Of Society And I Believe We All Should Donate Blood As Much We Can. So It Is My Request To All My Friends T
429 <li class="tweet"></li>
430
431 </ul>
432 </div>
433
434 </div>
435
436 </div>
437
438
439 <div class="col-md-4">
440
441 <div class="footer-col">
```

Hyper Text Markup Language file length: 24564 lines: 636 Ln:1 Col:1 Sel:0|0 Dos/Windows UTF-8 INS

Search the web and Windows

16:22 25-03-2018

Figure 8.13 CODE SNIPPET OF THE HOME PAGE

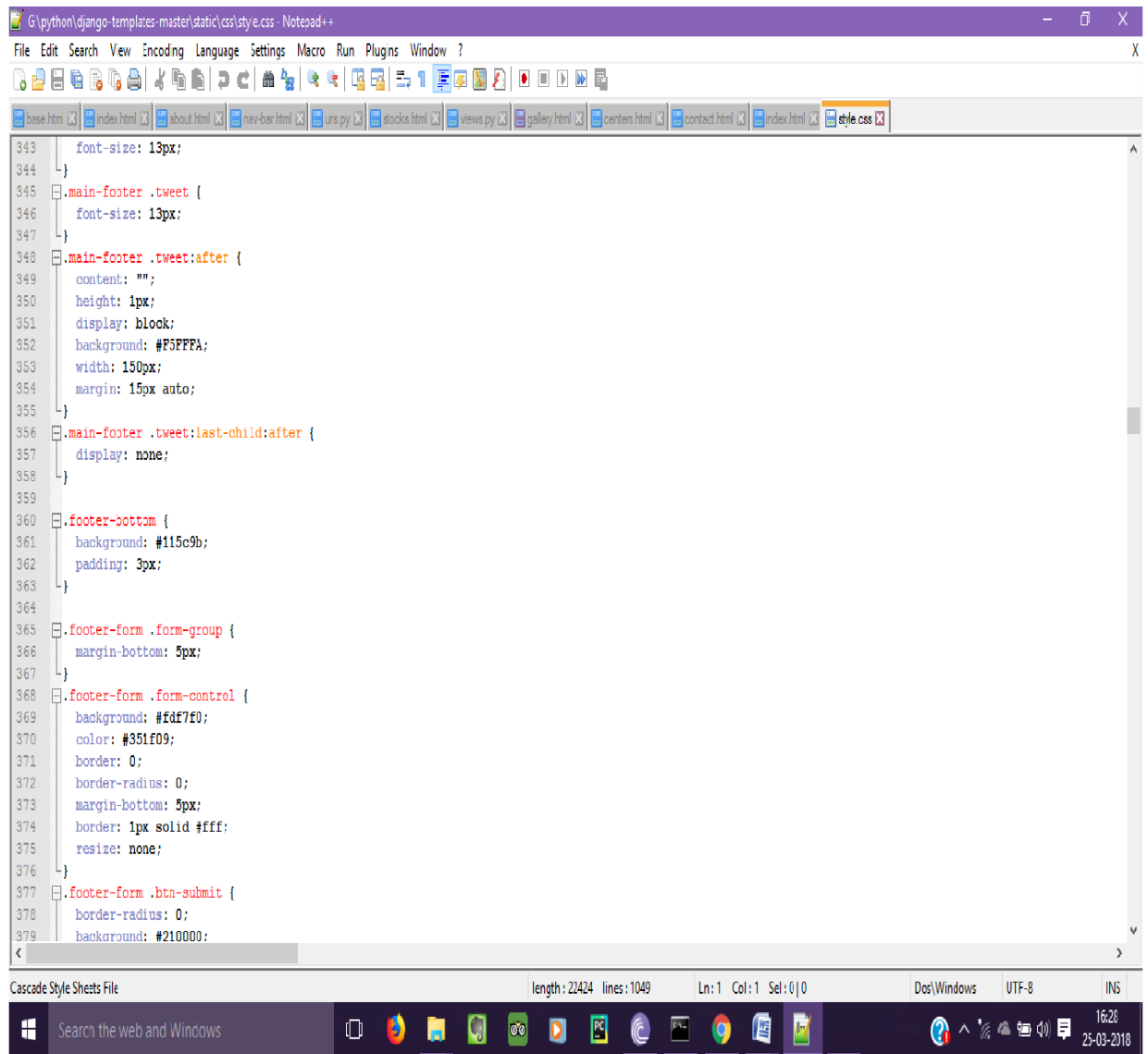


Figure 8.14 Style Sheets

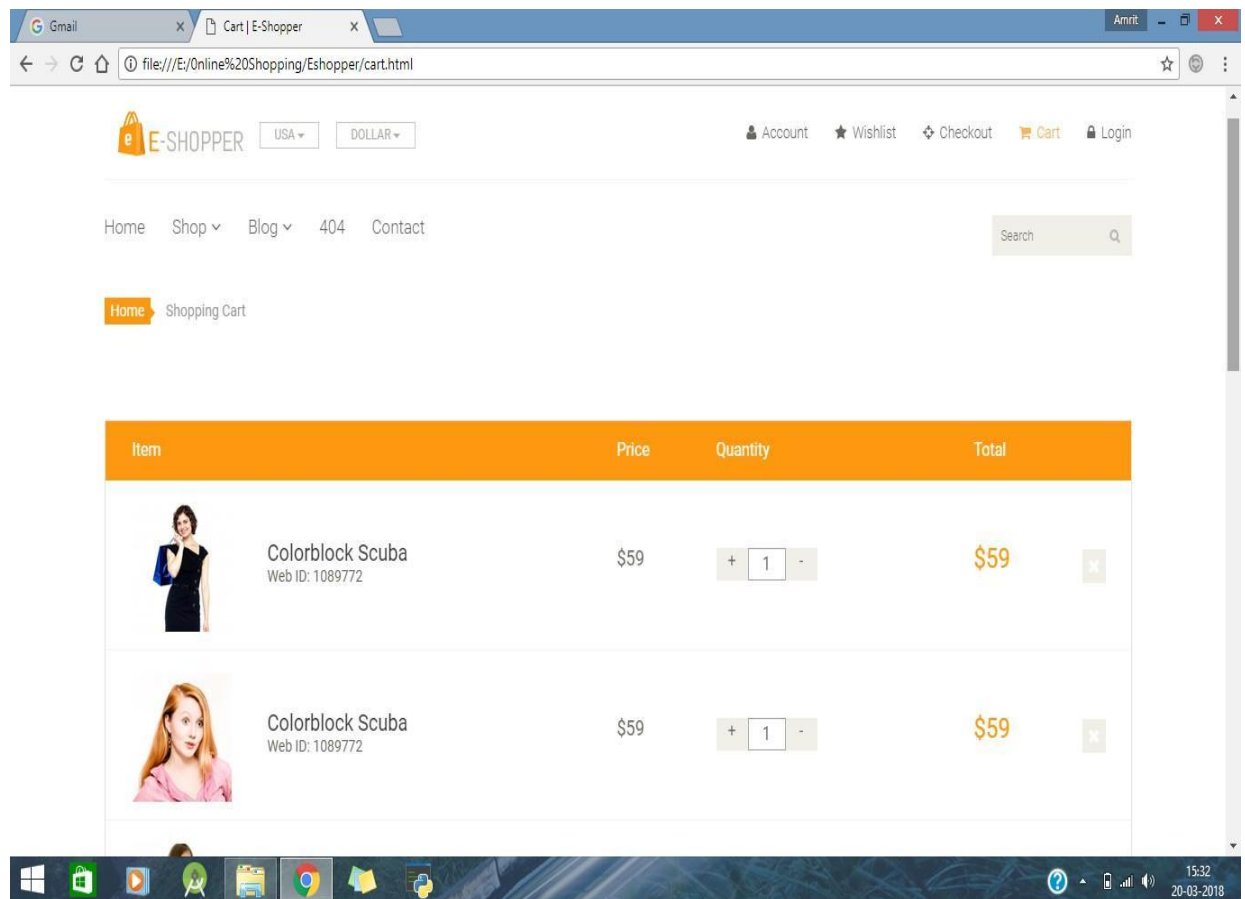


Figure 8.15 Add to Cart Page

```
"G:\python\django-templates-master\example\templates\gallery.html - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?

base.html index.html about.html navbar.html ufa.py stocks.html views.py gallery.html centers.html contact.html index.html

115 <div id="navbar" class="navbar-collapse collapse pull-right">
116
117 <ul class="nav navbar-nav">
118
119 <li><a href="{% url 'index' %}">HOME</a></li>
120 <li><a href="{% url 'about' %}">ABOUT</a></li>
121 <li class="has-child"><a href="#">DONATE</a>
122
123 <ul class="submenu">
124 <li class="submenu-item"><a href="{% url 'causes' %}">Register </a></li>
125 <li class="submenu-item"><a href="{% url 'centers' %}">Centers</a></li>
126 <li class="submenu-item"><a href="{% url 'stocks' %}">Stock </a></li>
127 <li class="submenu-item"><a href="causes-single.html">Request Blood </a></li>
128 </ul>
129 </li>
130 <li><a class="is-active" href="gallery.html">GALLERY</a></li>
131 <li><a href="{% url 'contact' %}">CONTACT</a></li>
132
133 </ul>
134
135 </div> <!-- /#navbar -->
136
137 </div> <!-- /.container -->
138
139 </div> <!-- /.navbar-main -->
140
141
142 </nav>
143
144 </header> <!-- /.main-header -->
145
146
147 <div class="page-heading text-center">
148 <div class="container zoomIn animated">
149
length: 16650 lines: 486 Ln: 462 Col: 19 Sel: 0 | 0 Dos\Windows UTF-8 INS
16:22 25-03-2018
```

Figure 8.16 Home Page

9. TESTING

Testing is the process of evaluating a system or its component(s) with the intent to find whether it satisfies the specified requirements or not. In simple words, testing is executing a system in order to identify any gaps, errors, or missing requirements in contrary to the actual requirements.

9.1 METHODS OF TESTING

There are different methods that can be used for software testing.

Black-Box Testing

The technique of testing without having any knowledge of the interior workings of the application is called black-box testing. The tester is oblivious to the system architecture and does not have access to the source code. Typically, while performing a black-box test, a tester will interact with the system's user interface by providing inputs and examining outputs without knowing how and where the inputs are worked upon.

The following lists the advantages and disadvantages of black-box testing:

Advantages

- Well suited and efficient for large code segments.
- Code access is not required.
- Clearly separates user's perspective from the developer's perspective through visibly defined roles.
- Large numbers of moderately skilled testers can test the application with no knowledge of implementation, programming language, or operating systems.

Disadvantages:

- Limited coverage, since only a selected number of test scenarios is actually performed.
- Inefficient testing, due to the fact that the tester only has limited knowledge about an application.
- Blind coverage, since the tester cannot target specific code segments or error-prone areas.
- The test cases are difficult to design.

White-Box Testing

White-box testing is the detailed investigation of internal logic and structure of the code. White-box testing is also called **glass testing** or **open-box testing**. In order to perform **white-box** testing on an application, a tester needs to know the internal workings of the code.

The tester needs to have a look inside the source code and find out which unit/chunk of the code is behaving inappropriately.

The following lists the advantages and disadvantages of white-box testing.

Advantages:

- As the tester has knowledge of the source code, it becomes very easy to find out which type of data can help in testing the application effectively.
- It helps in optimizing the code.
- Extra lines of code can be removed which can bring in hidden defects.
- Due to the tester's knowledge about the code, maximum coverage is attained during test scenario writing.

Disadvantages:

- Due to the fact that a skilled tester is needed to perform white-box testing, the costs are increased.
- Sometimes it is impossible to look into every nook and corner to find out hidden errors that may create problems, as many paths will go untested.
- It is difficult to maintain white-box testing, as it requires specialized tools like code analyzers and debugging tools.

9.2 LEVELS OF TESTING

There are different levels during the process of testing. Levels of testing include different methodologies that can be used while conducting software testing. The main levels of software testing are:

Unit Testing

This type of testing is performed by developers before the setup is handed over to the testing team to formally execute the test cases. Unit testing is performed by the respective developers on the individual units of source code assigned areas. The developers use test data that is different from the test data of the quality assurance team.

The goal of unit testing is to isolate each part of the program and show that individual parts are correct in terms of requirements and functionality.

Limitations of Unit Testing:

Testing cannot catch each and every bug in an application. It is impossible to evaluate every execution path in every software application. The same is the case with unit testing.

There is a limit to the number of scenarios and test data that a developer can use to verify a source code. After having exhausted all the options, there is no choice but to stop unit testing and merge the code segment with other units.

Integration Testing

Integration testing is defined as the testing of combined parts of an application to determine if they function correctly. Integration testing can be done in two ways: Bottom-up integration testing and Top-down integration testing.

Bottom-up integration: This testing begins with unit testing, followed by tests of progressively higher-level combinations of units called modules or builds.

Top-down integration: In this testing, the highest-level modules are tested first and progressively, lower-level modules are tested thereafter.

In a comprehensive software development environment, bottom-up testing is usually done first, followed by top-down testing. The process concludes with multiple tests of the complete application, preferably in scenarios designed to mimic actual situations.

10. CONCLUSION

In e-commerce we can see that these seven kinds of unique features in the function of the website. The seven unique features function is very important if no one function will make your site there are loopholes in the website, so an indispensable. The seven unique features were Ubiquity: available everywhere and all the time; Global Reach: users or customers can obtain total enterprise electronic commerce; Universal Standards: is shared by all countries around the world standard; Richness: complexity and message content; Interactivity: which allows for two-way communication between businesses and consumers, provide the quantity and quality of information in general; Information Density: to all market participants; Personalization: for marketing message to a specific person, by adjusting the news of interest, the name of a person and past purchases. E-commerce technology, allows customers to learn more and more consumers, more efficient use of the information. Online businesses can use this information to develop new information asymmetry, enhance their brand products, to charge higher prices, quality service and market segmentation of many groups, each of the different prices.

Using ReactJs, NodeJS and MongoDB we are making a website so that people can enjoy the various advantages that come with shopping online such as convenience, more variety, best deals, price comparisons, no crowd and so much more.

Shopping online doesn't only make everything easy but it also saves time. We have made a website that will help users not only browse and find something they like but also have various options from which they can decide to make their purchase.

10.1 BENEFITS:

- 1) **Convenience.** The convenience is the biggest perk. Where else can you comfortably shop at midnight while in your pajamas? There are no lines to wait in or shop assistants to wait on to help you with your purchases, and you can do your shopping in minutes. Online shops give us the opportunity to shop 24/7, and also reward us with a 'no pollution' shopping experience. There is no better place to buy informational products like e-books, which are available to you instantly, as soon as the payment goes through. Downloadable items purchased online eliminate the need for any kind of material goods at all, as well, which helps the environment!
- 2) **Better prices.** Cheap deals and better prices are available online, because products come to you direct from the manufacturer or seller without middleman being involved. Many online shops offer discount coupons and rebates as well. Apart from this, online shops are

only required to collect a sales tax if they have a physical location in our state, even if we buy from a store across the world.

- 3) **More variety.** The choices online are amazing. One can get several brands and products from different sellers all in one place. You can get in on the latest international trends without spending money on airfare. You can shop from retailers in other parts of the country, or even the world, all without being limited by geography.. Some online shops even provisions in place to accept orders for items out of stock and ship it when the stock becomes available. You also have the option of taking your business to another online store where the product is available.
- 4) **You can send gifts more easily.** Sending gifts to relatives and friends is easy, no matter where they are. Now, there is no need to make distance an excuse for not sending a gift on occasions like birthdays, weddings, anniversaries, Valentine's Day, Mother's Day, Father's Day, and so forth.
- 5) **Fewer expenses.** Many times, when we opt for conventional shopping, we tend to spend a lot more than planned. There are other outside expenses on things like eating out, transportation, and let's not forget impulse buys!
- 6) **Price comparisons.** Comparing and researching products and their prices is so much easier online. Also, we have the ability to share information and reviews with other shoppers who have firsthand experience with a product or retailer.
- 7) **No crowds.** If you are like me, you hate crowds when you're shopping. Especially during festivals or special events, they can be such a huge headache. Also, it tends to be more chaotic when there are more crowds out and this sometimes makes us feel rush or hurried.
- 8) **Less compulsive shopping.** Often times when we're out shopping, we end up buying things compulsively that we don't really need. All because shop keepers pressure us or use their selling skills to compel us to make these purchases. Sometimes, we even compromise on our choices because of the lack of choices in those shops.
- 9) **Buying old or unused items at lower prices.** The marketplace on the Internet makes it much easier for us to buy old or unused things at rock bottom prices. Also, if we want to buy antiques, there's no better place to find great ones.
- 10) **Discreet purchases are easier.** Some things are better done in the privacy of your home. Online shops are best for discreet purchases for things like adult toys, sexy lingerie, and so on. This enables me to purchase undergarments and lingerie without embarrassment or any paranoia that there are several people watching me.

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