

DESIGN AND IMPLEMENTATION OF E-COMMERCE SITE FOR ONELINE SHOPPING

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This Report Presented in Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science Computer Science and Engineering

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APPROVAL

This Project titled “Using cryptography to secure E-order”, submitted by Rita Rani Roy ID No: 143-15-158 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents.

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I hereby declare that, this project has been done by us under the supervision of Md. **Mahfujur Rahman, Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

Online means to easy way for everyone from anywhere for any product. In our daily busy life, it too hard and difficult to maintain our time. Sometime we forget to buy fruits or may be its urgent for next day office meeting and came home early, then we remember that there is no oil from which we can cook. Or on other way, suppose you bought fresh fish from the market but after buying a lot of things you forget to take that fish home. It is so embracing. So it's tough maintain all this kind of problems from one place. E-COMMERCE is a site which can help people to main all those problems, this site will help people to save their valuable time, cost, money everything and make their life so easy and beautiful. In this online system, a user can create an account or without any account a user can use this system. Buy a lot of things, free home delivery and more. Our proposed system is "Online E-COMMERCE site". This system is used for online marketing and the system will have automated checking of ordered items and free delivery to the user address. It is a good source of interaction between the user and shopkeepers. This project helps the users to make their life easy, save their valuable time and money. With the proper use, the user like general people and the businessman both will be profited. After implementation of all functions, the system is tasted in different platform and it performs successfully as a prototype.

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CHAPTER 1

INTRODUCTION

1.1 About the Project

An E-Commerce site is mainly based on online system or an online web based application for E-Com business. Smartest people and smart use of our valuable time is mainly E-Commerce site where customers and sellers get together and take advantages or services. This is mainly Smart living with E-Com which is an automated site where you can get any product with home delivery that saves time and makes life easy. Reduce the cost with discounts for huge products and reduce working procedure with online system. Any organization can use online E-Com system from anywhere. Buy a product easily with just selecting that item and placing an order with user's location. When the delivery is done, just keep an eye, check that item and pay your bills.

1.2 The Problem Statement

In a developing country, online system helps a lot, but we are developed and need to grow a lot with online systems. Busy and smart life going to be easier. Cost and work both will be reduced with online system which will save our precious time. In a busy life, lack of time, it's not possible to get all works done but in an easy life it is possible to get all the works done by home also saving money and time. It's flexible to choose and do works now a days, all the needs are in online. If anyone need vegetables and still in the office, then it's tough to buy and cook but he/she can order online to maintain office and cook in time.

In our online E-Com website, creating an account is not mandatory but for more user-friendly user need to create an account, then selecting an item, finding your items, add them in the cart, select the quantity of them, place your order with your address and contact number, your ordered items will be next to your door.

1.3 The Purpose

Maintain all work done at same time means time consuming, reduce working procedure, keep reminding choice and discounts with next offers is the main purpose of e-commerce online site. For customer satisfaction, we offer discounts, reduce cost when ordered many items at a time, home delivery and the main part is, shopping with family keeps you fresh but shopping while in the office is not easy. So, it is now possible to shop from office and refreshment with family saving more time.

1.4 Scope

- Smart people with online system
- Save time from any place
- Get all the products people need
- Satisfied customer with best products

1.5 Benefits of the Project

- i. No need to go physically in the market place for each time a product need. Maintain home delivery consume time.
- ii. Employee requirement will increase.
- iii. Every people will be benefited from this online system.
- iv. Consuming time means save time for extra purpose.
- v. Make a good relationship between customer and shopkeeper.
- vi. Get all your products from home or office or from anyplace, just go the E-Commerce site ad place order.
- vii. As online system, it will be for 24/7.

1.6 Outline the Project

Pictorial presentation the project in a simple way with a figure that describes the whole project, contents and more. The project report contains of 6 chapter. Outline of all the chapters with a brief summery is discussed below through demographic representation:

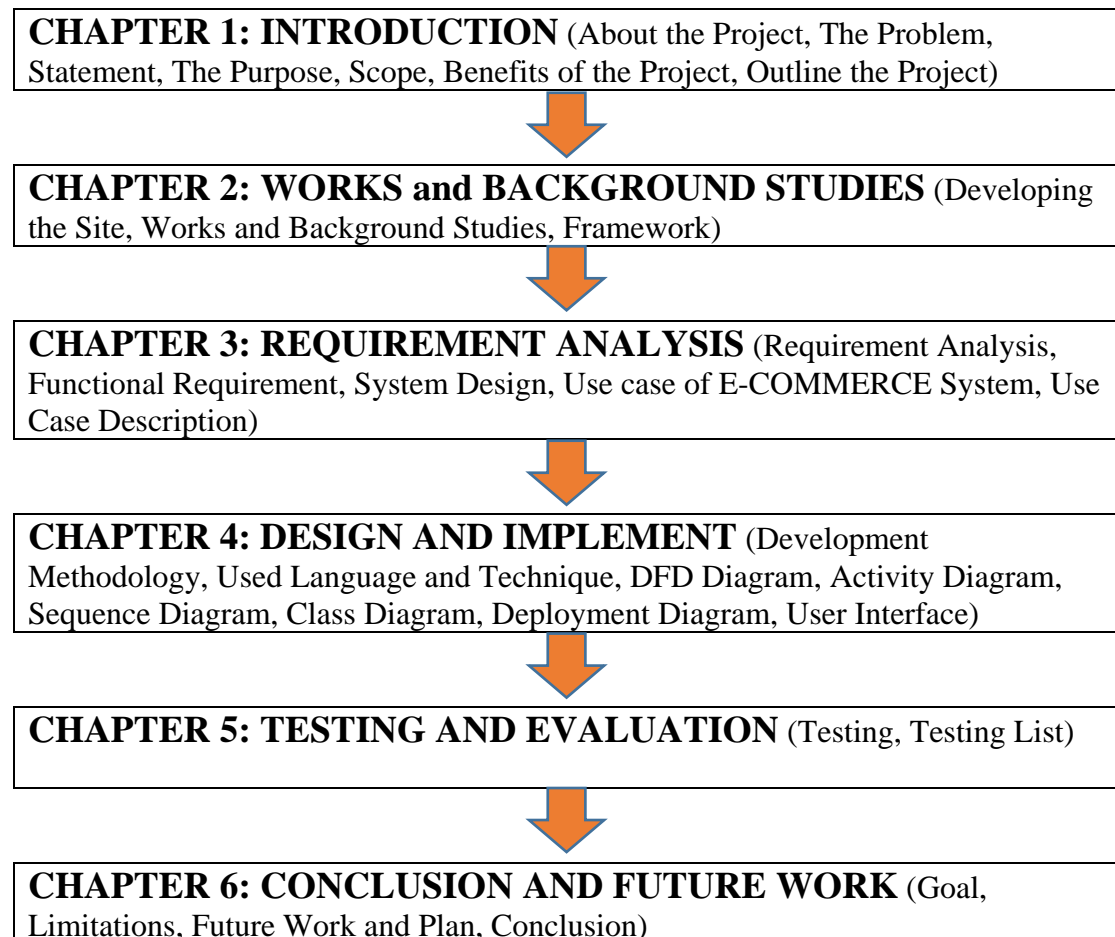


Figure 1.6.1: Outline the project

CHAPTER 2

WORKS and BACKGROUND STUDIES

2.1 Developing the Site

In the online marketplace, there are lot of online marketers who just came out, created a Facebook page that he have some products, customers get into that page, find their beautiful pictures, order that item and do not get original product as seen in that picture of that page. That's why, there is a lacking in the system, which we found and solved those problems. In our website, customers will get the original product we have shown in our site. This will make the relationship best between customers and sellers.

2.2 Works and Background Studies

2.2.1 daraz.com

Daraz is a very well-known website where people can find their every need like bag, sunglass, pants, belts, dress, iPhone, Electric item, non-electric item etc. There is a condition that they save users data. Category selection is one of the options they have. Website shows high quality pictures and description, but review from the user says negative view.

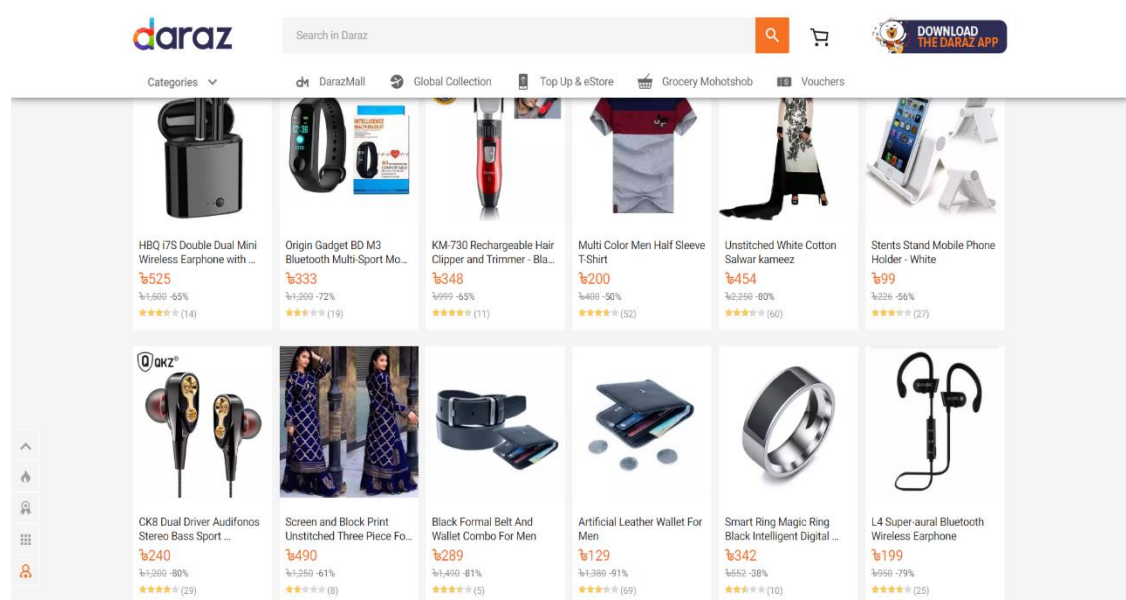


Figure 2.2.1.1: Home page of daraz.com

2.3 Framework

A framework of concepts which is a methodical tool with contexts and several variations. A conceptual framework is used to make theoretical differences. Conceptual framework captures the real thing. It is easy to remember and apply anywhere. The whole study about the website is presented as follows:

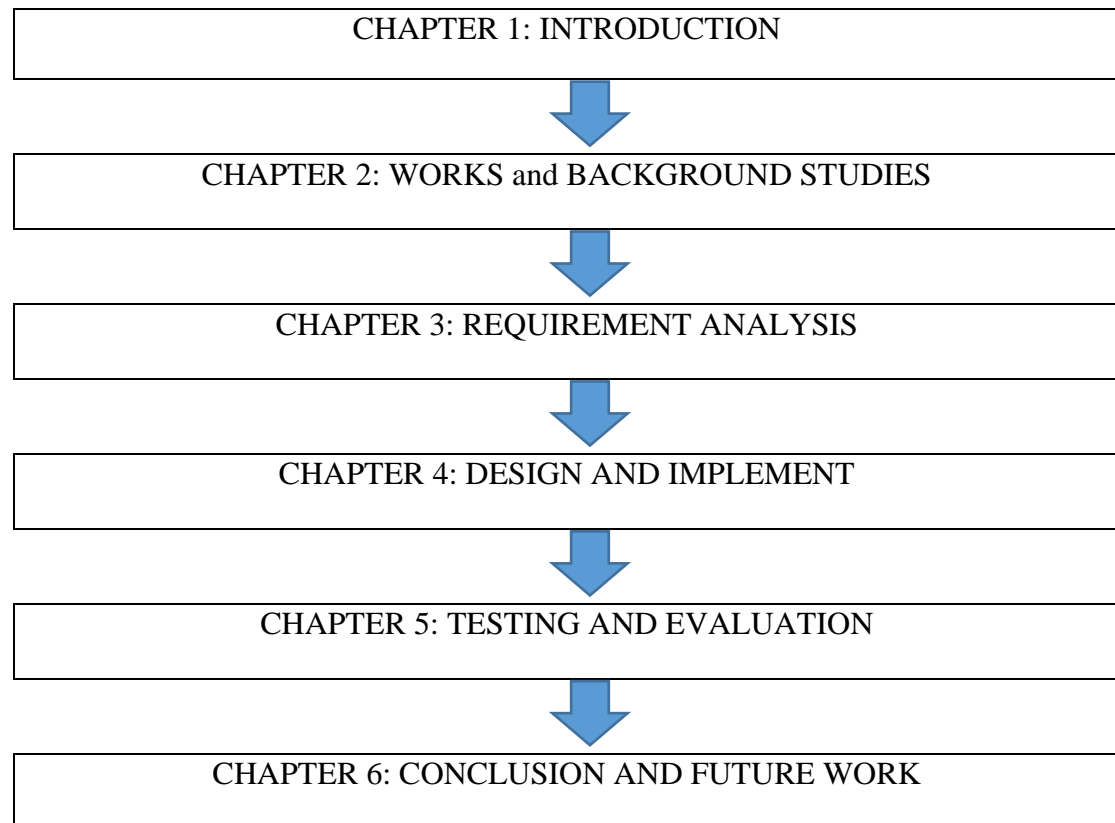


Figure 2.3.1: Conceptual Framework of the Study

CHAPTER 3

REQUIREMENT ANALYSIS

3.1 Requirement Analysis

Requirement analysis is the important thing to develop any project. The details requirement analysis should be documented with every step, the analysis should be computable with positive test result. The requirements may be architectural or structural or functional and non-functional. Without any requirement the project will not run better. The project should cover up with minimum requirements of both software and hardware.

Requirement analysis has two phases:

- i. Primary Research: Requirement collection from different sources and survey.
- ii. Secondary Research: Comparing with other existing software.

3.2 Functional Requirement

- Registration page where registered user can log in
- Selected items will automatically added into a cart
- Total items, quantity and price will be shown
- User Authentication Management
- Security of both clients and users

3.3 System Design

With system design we can determine the architecture, module of a project to satisfy the requirements of user.

System design helps users to choose hardware and software requirements for a specific project.

3.4 Use case of E-COMMERCE System

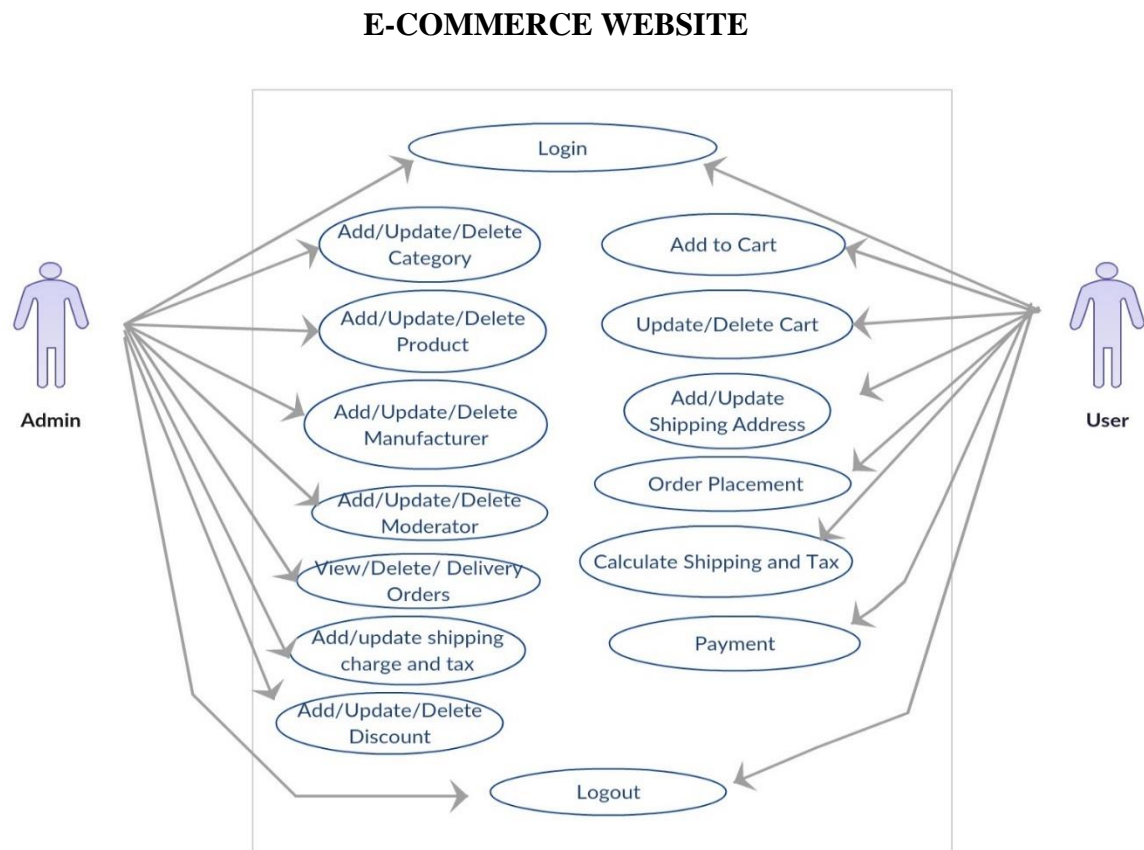


Figure 3.4.1: Use Case Diagram of E-Commerce Website

3.5 Use Case Description

Use case describes about the interface. Helps the users to understand about the system without any demo, it is like presentation of user interface details project.

List of use cases are:

- Registration
- Login
- Add/Update/Delete Category
- Cart for Items Quantity and Price Storage
- Order/Update Shipping Address
- Order Placement
- Calculate Shipping, Price and Tax
- Auto authorization
- Security Checkup
- Review

Registration Use Case

Use Case Name	User Registration
Primary Actor	End User
Description	Register for user experience
Precondition	User must fill required input fields
Post condition	Accept terms and conditions

Add/Update/Delete Category

Use Case Name	Add/Update/Delete Category
Primary Actor	Registered/Unregistered users
Description	Select product with quantity
Precondition	Selected items store in a cart
Post condition	Items should buy or discard

Cart for Items Quantity and Price Storage

Use Case Name	Cart, quantity and price
Primary Actor	End User
Description	Details about selected items
Precondition	Show details about products with quantity and price
Post condition	Either place order or cancel or edit quantity

Order/Update Shipping Address

Use Case Name	Order/Update Shipping Address
Primary Actor	End User
Description	User address, contact number etc.
Precondition	Need address and contact number
Post condition	Automatically order placement

Calculate Shipping, Price and Tax

Use Case Name	Shipping, price and tax
Primary Actor	Users
Description	System will add price on quantity, add tax and shipping price
Precondition	User must agree terms and conditions
Post condition	Order placement will deliver within few days depending on place and product

CHAPTER 4

DESIGN AND IMPLEMENT

4.1 Development Methodology

Development methodology is mainly maintain a plan, process where motivation is necessary to achieve the goal. Projects are always maintained to fill all requirements for specific goal. In the development of our application, we used agile method which suited us most.

The stages for our project development are given bellow -

- ✓ Initiation
- ✓ Planning and Design
- ✓ Execution and Construction
- ✓ Monitoring and Controlling System

4.2 Used Language and Technique

In the development of our project we used some tools and techniques are below -

Software Tools

1. Local Server
 - WAMPP (version 3.33)
2. Database Server
 - MySQL
3. IDE
 - PhpStorm

Languages

- Laravel as backend
- HTML5
- CSS3
- Bootstrap and JQuery (frontend framework)

4.3 DFD Diagram

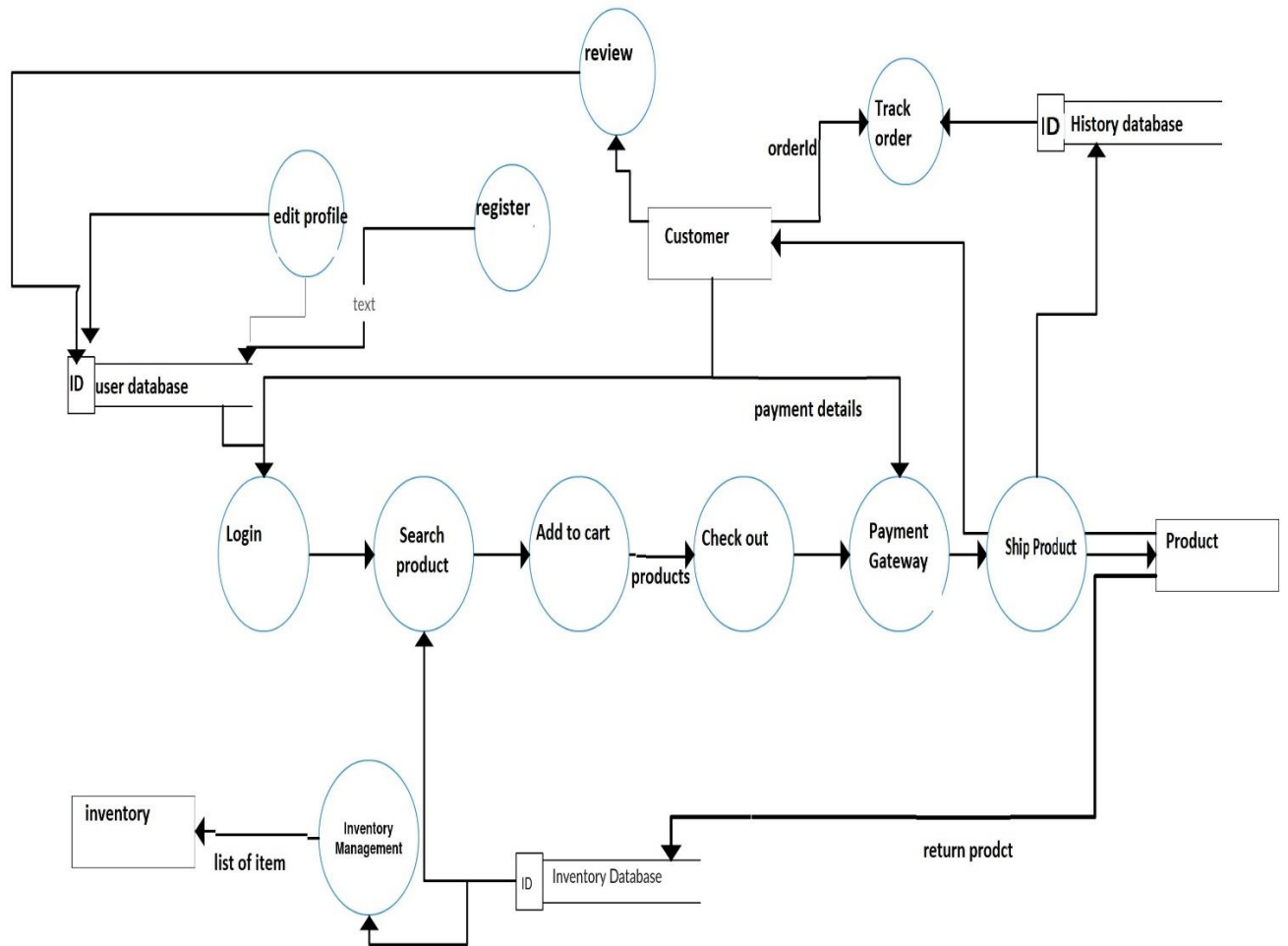


Figure 4.3.1: DFD Diagram of E-Commerce Website

4.4 Activity Diagram

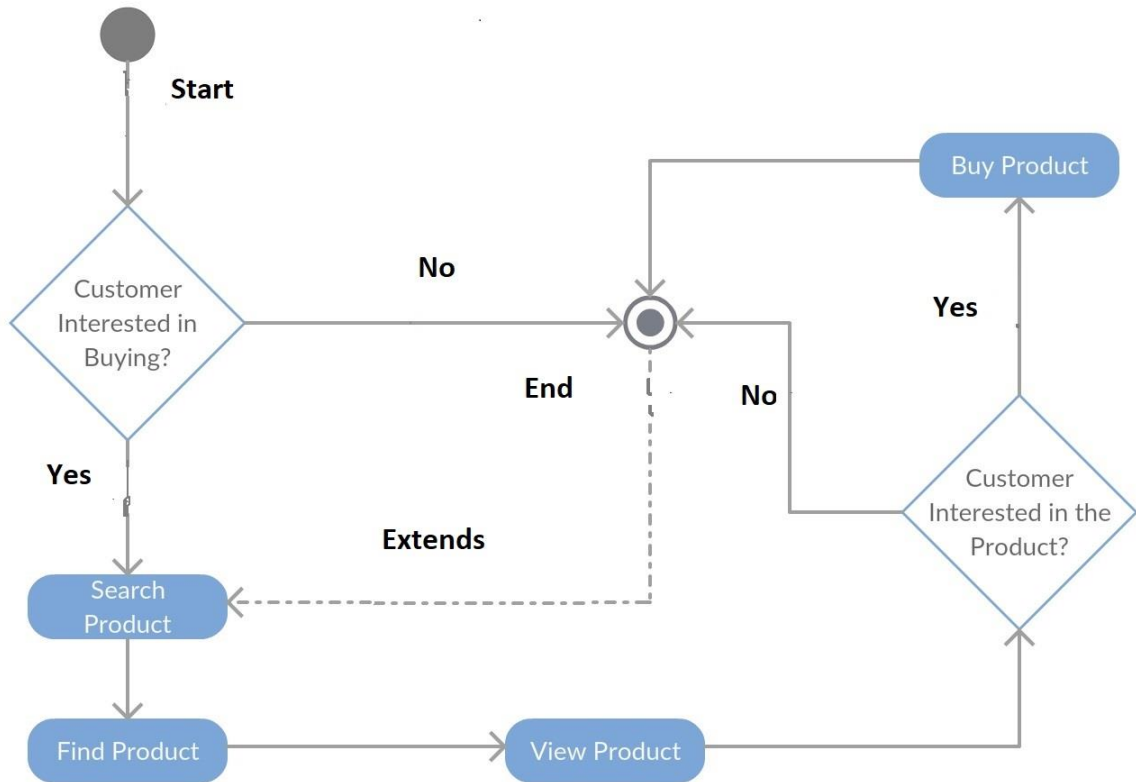


Figure 4.4.1: Activity Diagram of E-Commerce Website

4.5 Sequence Diagram

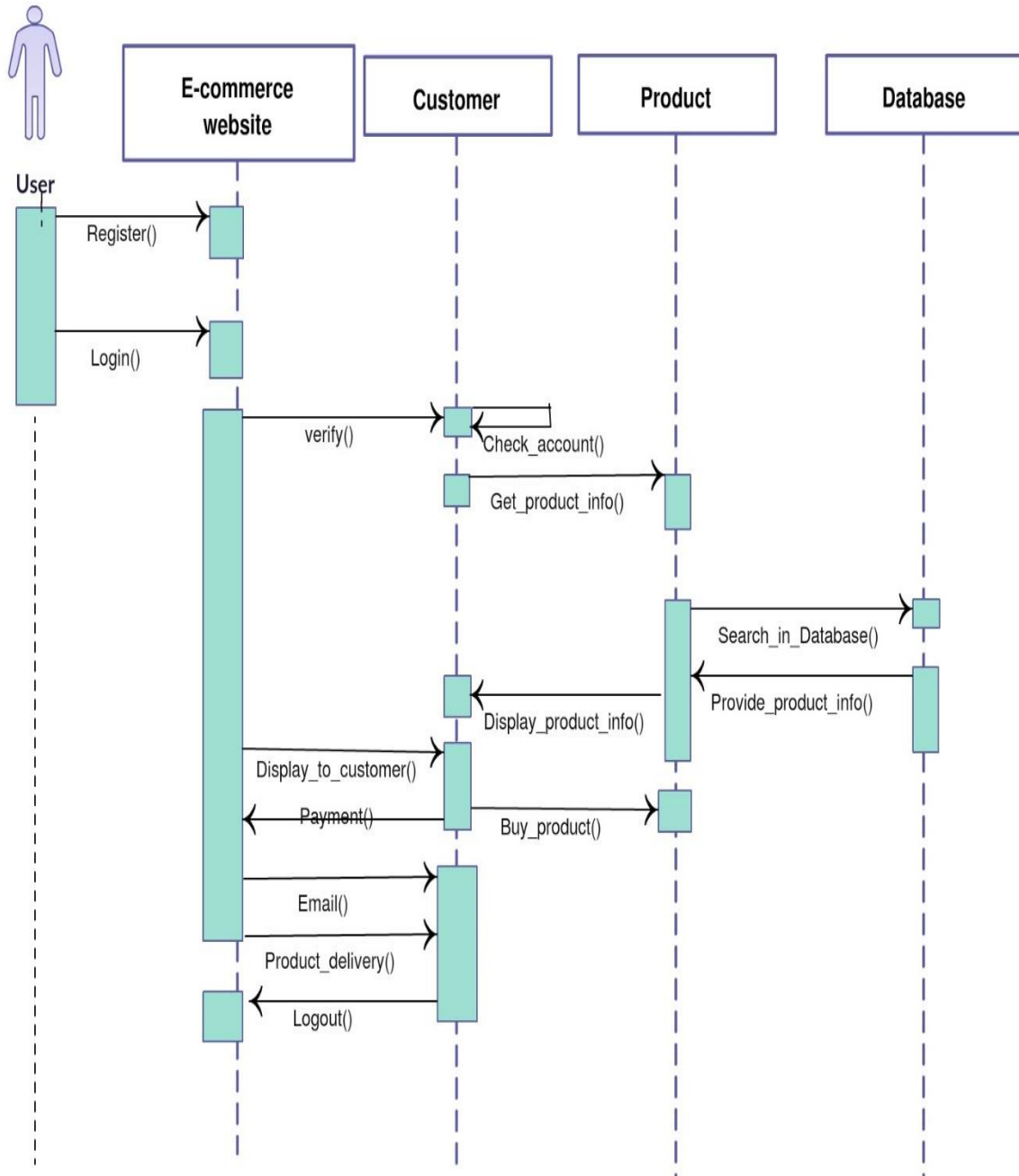


Figure 4.5.1: Sequence Diagram of E-Commerce Website

4.6 Class Diagram

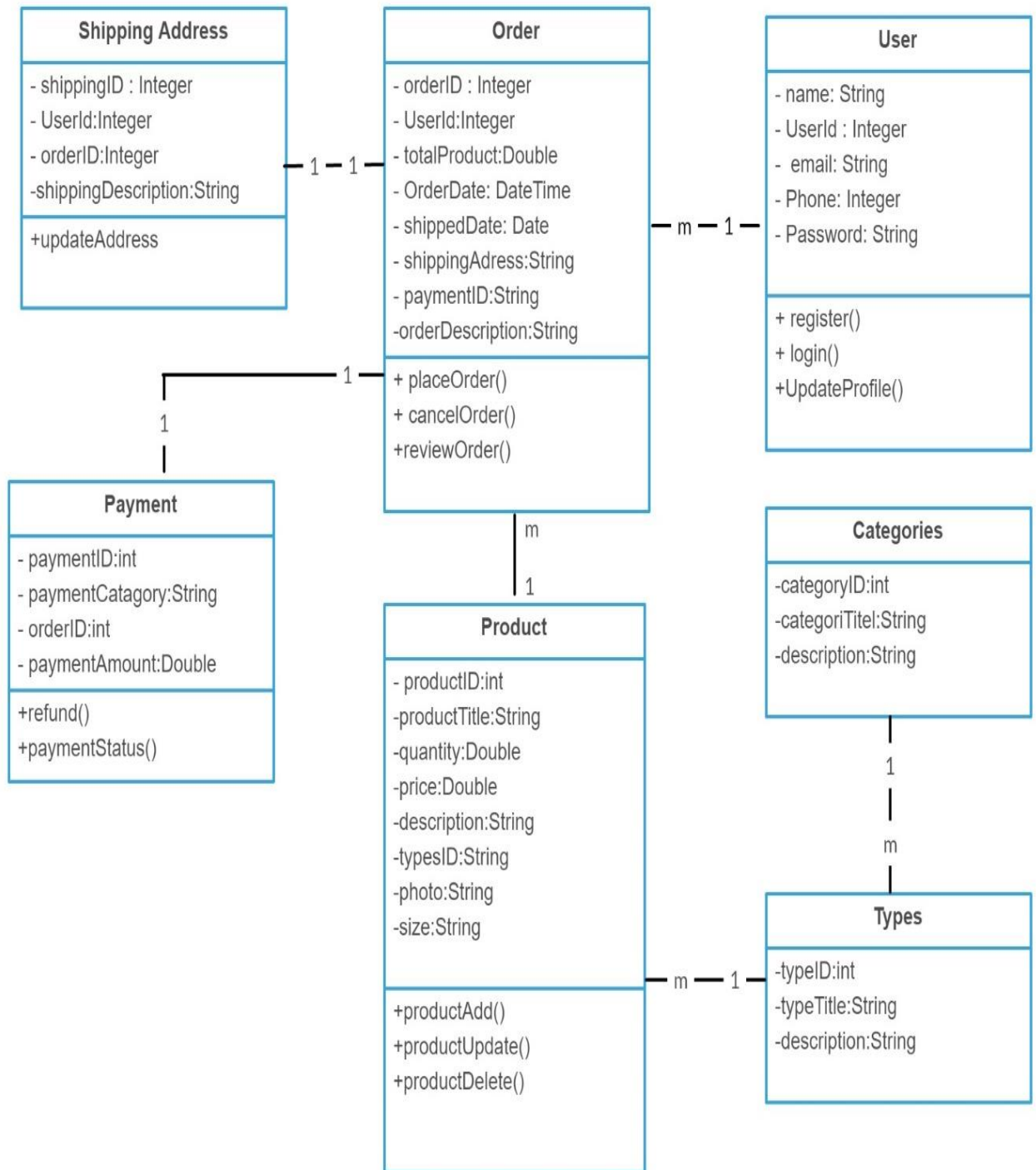


Figure 4.6.1: Class Diagram of E-Commerce Website

4.7 Deployment Diagram

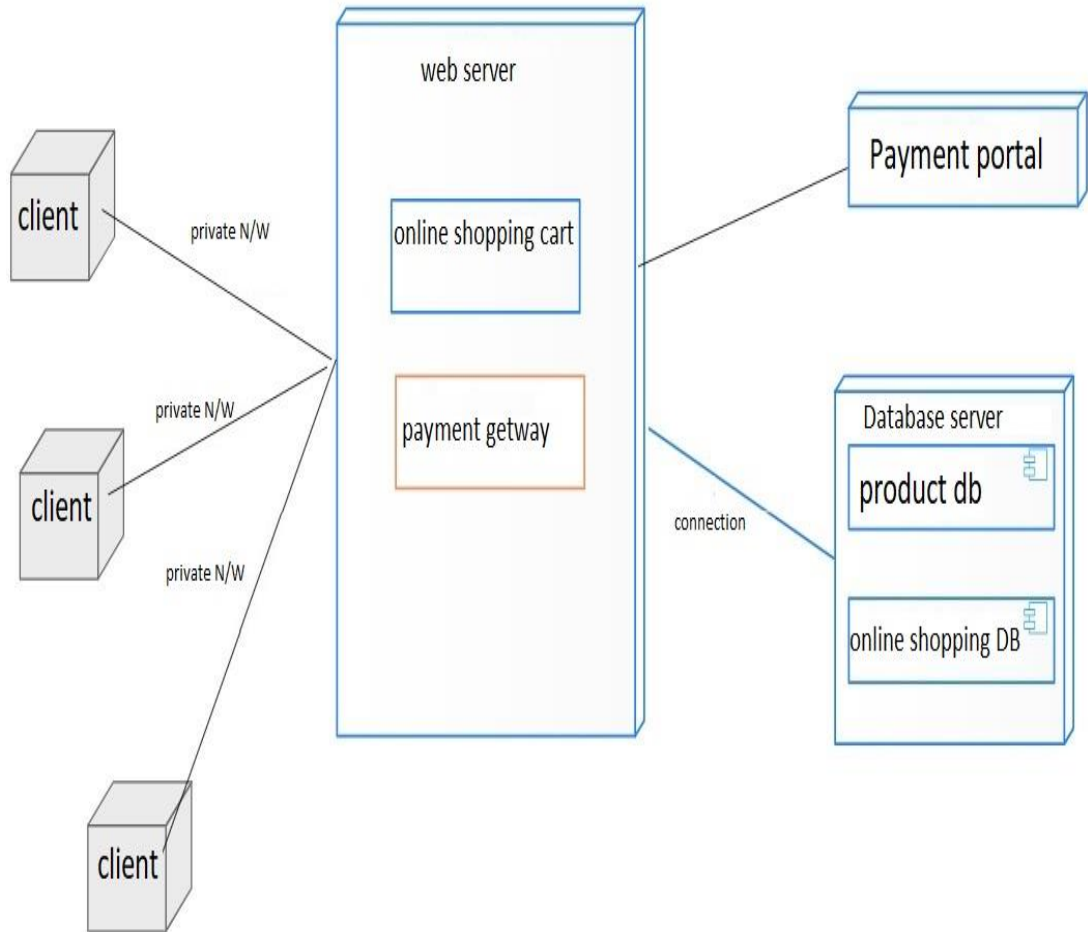


Figure 4.7.1: Deployment Diagram of E-Commerce Website

4.8 User Interface

Home page

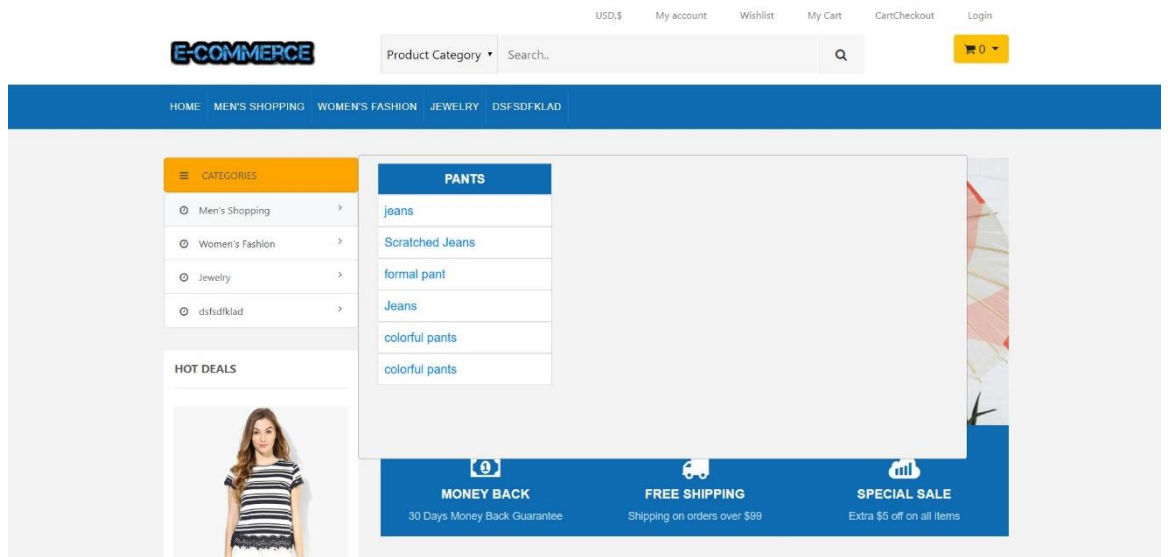


Figure 4.8.1: Screenshot of Home page

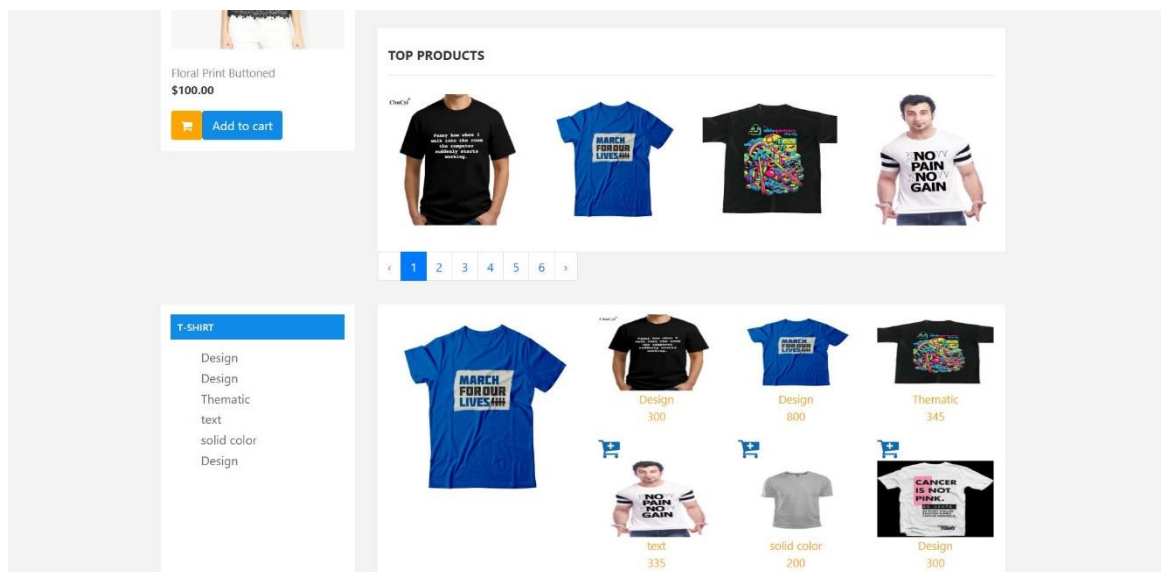


Figure 4.8.2: Screenshot of Home page

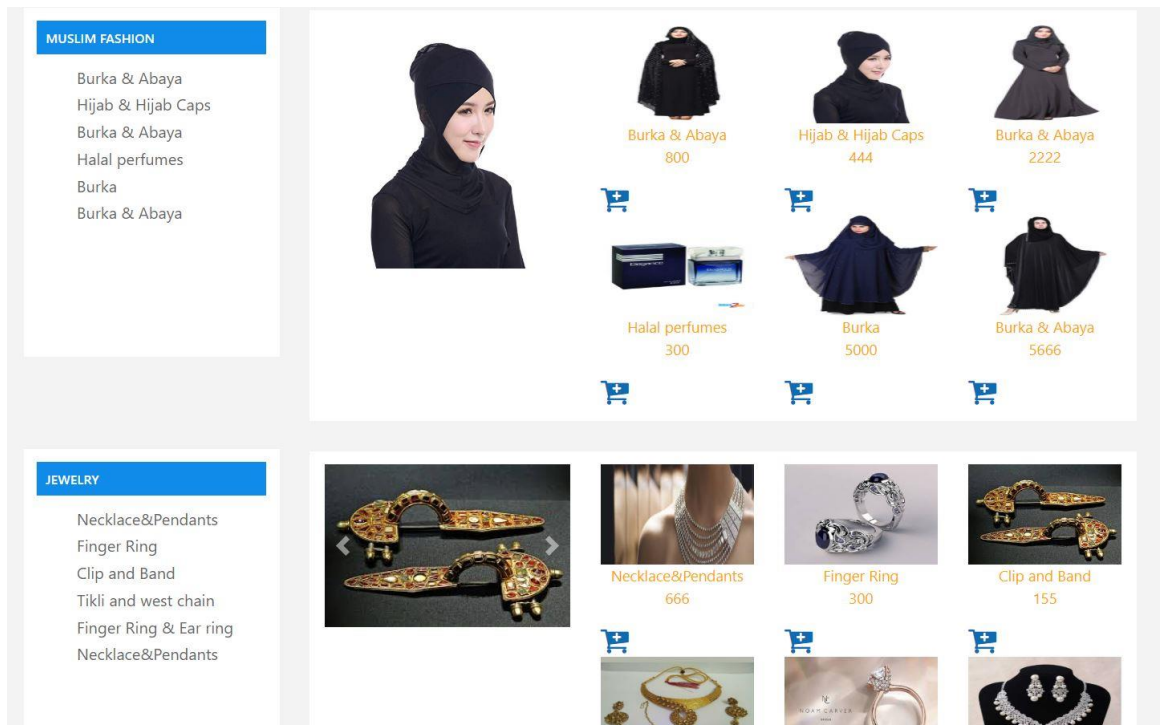


Figure 4.8.3: Screenshot of Home page

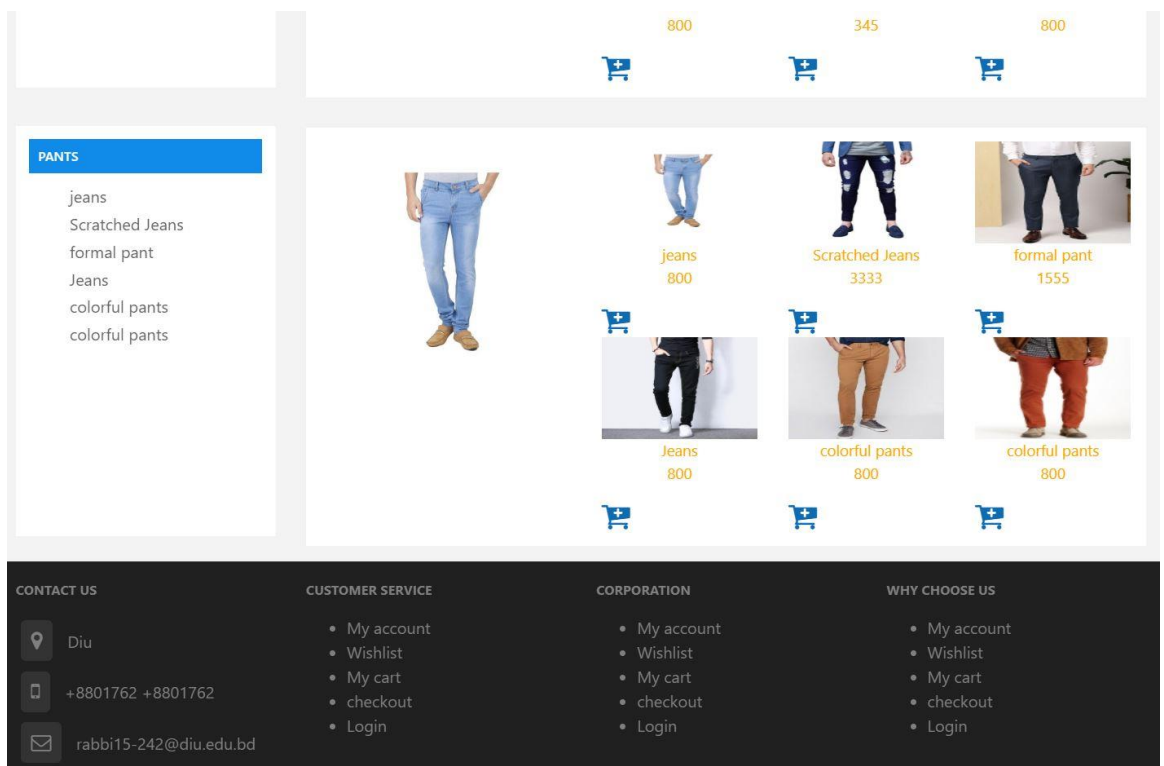
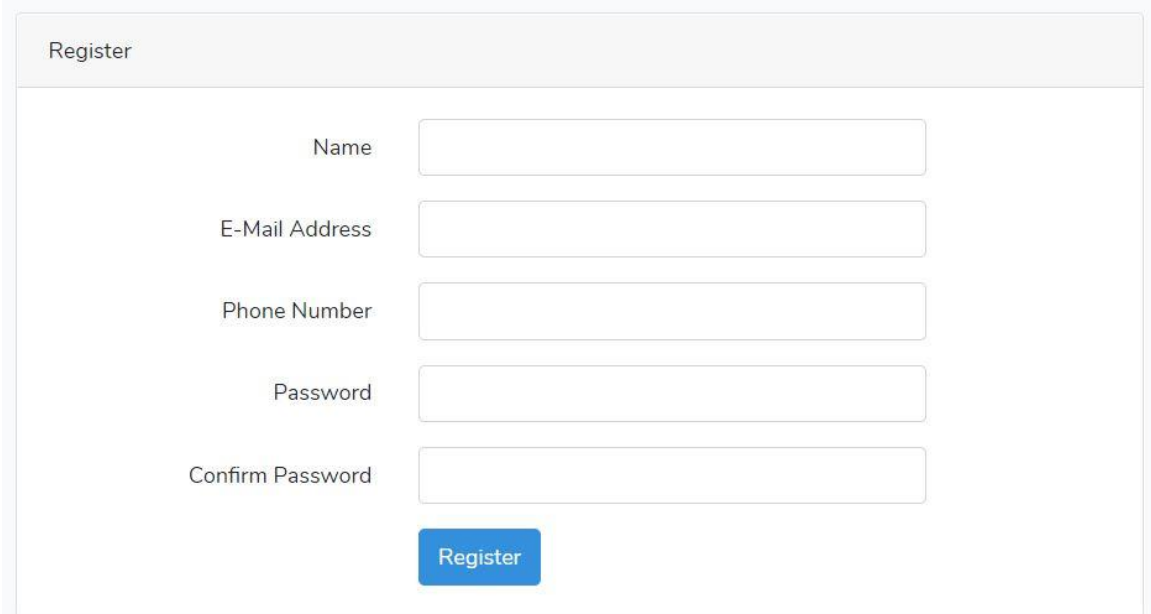


Figure 4.8.4: Screenshot of Home page

Output: As every website, there is a need to show all the products in a short a, is called home page which contains the details about what services that website gives. Same way we have our home page, login option for register as permanent member. End user can order items too, but as a register user end users will not have the full access, they will not be notified for discounts or other benefits.

Registration page



The screenshot shows a registration form titled "Register". It contains five input fields: "Name", "E-Mail Address", "Phone Number", "Password", and "Confirm Password". Below the fields is a blue "Register" button.

Figure 4.8.5: Screenshot of Registration page

Output: A registration page contains some input field to fill up. User must use their valid information as we check the info for security to create an account for this website. Without valid email address, phone number user cannot get registered for the system. The input field contains JQuery as it will check the email address is valid or not.

Login page

User Login: [OR registration](#)

E-Mail Address

Password

Remember Me

[Forgot Your Password?](#)

Figure 4.8.6: Screenshot of login page

Output: In our login page, user simply use their email and password for get into the website as a registered user. If user is not registered yet, then there is an option “OR registration”, clicking that link will allow user to get registered. Registration means giving some valid information to the system which will be saved in the database, that’s why user don’t need to write contact number and shipping address at every order placement. But non-registered user have to write address and contact number each time of order. Registered user selected items stores in a cart but without registration or login the cart will be lost. There is an option to reset password with “Forgot Your Password” option.

Cart item page

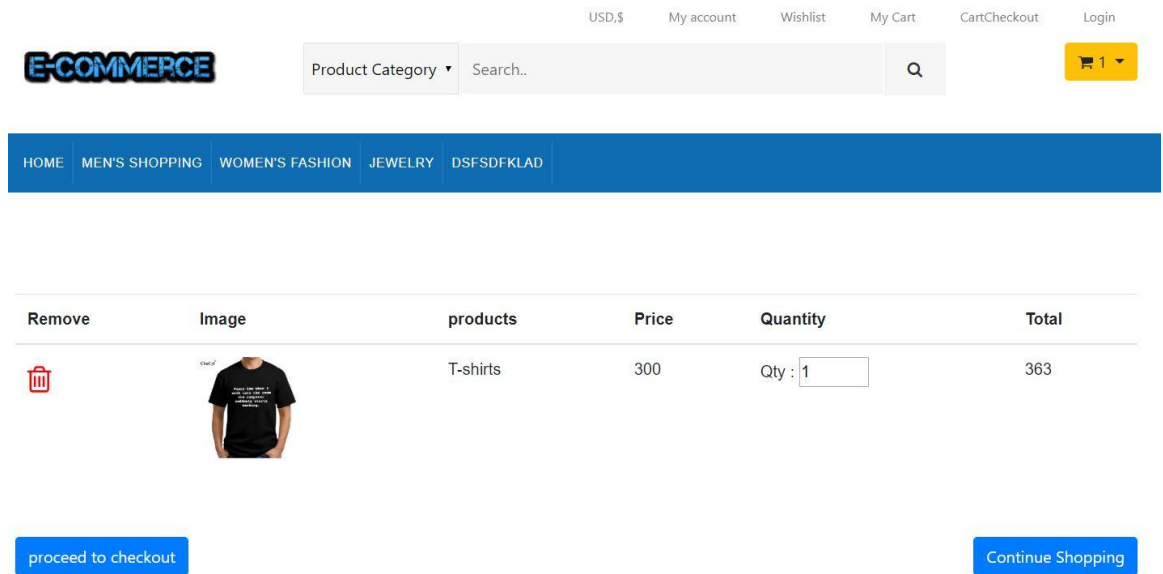


Figure 4.8.7: Screenshot of Cart item list

Output: In cart list, user will see an image of product, name of the product, price per product, quantity selected by user, Total amount for the product. The cart have options to increase or decrease item quantity, delete any item that user don't need any more to order or save in the cart. Continue button to proceed the order.

Order Info page

Your Order					Shipping Address					
Id	Orderid	ProductName	qty	total	orderid	name	email	phone	city	fullAdd
34	27	Burka & Abaya	1	800	27	Golam	golamrabbi@gmail.com	1762337526	Savar,update	Savar,Dhaka,
35	27	Burka & Abaya	1	800	updateAddress					

[download receipt](#)

Figure 4.8.9: Screenshot of Order information and shipping address

Output: Final page where user find what items are selected with order id, product name, quantity, and total price. Users shipping address with contact number is provided. Update address option is to update any information provided wrong.

Update Shipping Address

Update Shipping Address

Name:

Email:

Phone:

City:

Full Address:

Figure 4.8.10: Screenshot of Update Shipping Address

Output: The information provided wrong can be changed from this update address page. Both of the input box must be provided with details of full address. Clicking on the update button save the current information.

Update Payment Method

Select Payment Method



account no:

pin no:

Fig: 4.8.11: Payment Method

Output: Payment method is final step for completing purchasing. By payment user can confirm their payment. User can get payment by bkaash & Rocket Mobile Banking

Money Receive

MONEY RECEIPT					
PRODUCT INFORMATIONS					
OrderID	Product	Qty	Total		
27	Burka & Abaya	1	800		
27	Burka & Abaya	1	800		
SHIPPING ADDRESS					
orderid	name	email	phone	city	fullAdd
27	Golam	golamrabbi@gmail.com	1762337526	Savar,update	Savar,Dhaka,bangladesh

Figure 4.8.11: Screenshot of Money Receive

Output: Money receipt is for ensure about transaction in completed. User can download the money receipt from the shipping address page to keep a copy of order placement.

CHAPTER 5

TESTING AND EVALUATION

5.1 Testing

With testing phase, we checked it for the bugs of the application. Without any bug, the application is ok but if any bug found then we will use some method to fix the bugs.

5.2 Testing List

1. Functionality Testing
2. Usability Testing
3. Interface Testing
4. Database Testing
5. Compatibility Testing
6. Performance Testing
7. Security testing

5.2.1 Functionality Testing

Functionality testing is for checking the links of pages, form testing, cookie testing and database connection testing.

Test Forms are working as probable including-

- ✓ Without filling a mandatory field, then an error message will be shown.
- ✓ Default values will be checked again.
- ✓ Users same information will not be accepted again in the database.

Test Cookies are doing well. Cookie is a small file that keeps the user active so that user don't need to login again. It is like keep a session for the user.

- ✓ Deleting cache means also delete cookies.

Test HTML and CSS

- ✓ Check syntax error
- ✓ Readable Color Schemas

- ✓ Check standard compliance such as W3C, OASIS.

5.2.2 Usability Testing

The navigation bar and grammatical errors of a web pages are checked by usability testing. Also checks if the pas is user-friendly.

Navigation testing:

Button, links, menu and other options should work properly in different size of pages and reliable on all devices.

Content Testing:

- ✓ The grammatical error & spelling mistakes are checked.
- ✓ If image not found then an “alt” text will be shown.

5.2.3 Interface Testing

The proper interaction between users input value and the database server are checked by interface testing. Interface testing confirms about not showing any error messages.

There are three types of interface testing:

- ✓ **Application:** If the information is ok, user do not get any error message but if the information sent to the server is wrong, user will get error message.
- ✓ **Web Server:** It manages all application requests short of any service rejection.
- ✓ **Database server:** Runs query to show exact result from the server.

5.2.4 Database Testing

Database testing is the main fact of any web application.

- ✓ While CURD operation in database, database testing maintain data integrity.
- ✓ Return proper result executing queries.
- ✓ Also checks the response time of query executed in the database.
- ✓ Read from the database and shows the accuracy of the data.

5.2.5 Compatibility Testing

Responsiveness in different devices is checked by compatibility testing which include-

Browser Compatibility Test:

Any browser will support the website in the same way. Will responsive be in different devices. All the function will work properly in different browser like google chrome, Mozilla Firefox, Opera mini etc. and also check mobile browsers.

5.2.6 Performance Testing

Performance testing checks web load and web stress. Web load testing checks for many users can access the same page at same time. Also a web page can handle heavy load or not. Web stress testing checks about the site that how it reacts and recovers during the stress time.

- ✓ Application will response depending on internet speed.
- ✓ Reduce load time for server side cache enable.
- ✓ It is checked that how will a site recover when a crash occurs due to peak load.
- ✓ Sometimes the application crashes due to maximum load, from such an event, how will our site recover from it.

5.2.7 Security testing

Security testing main fact of any system. Unregistered users cannot access internal pages. Admin panel is not accessible for end user. Security testing will include-

- ✓ Without login user cannot access secure pages.
- ✓ Without appropriate access some documents should not be downloadable.
- ✓ Long time inactive user sessions will be automatically deleted.

CHAPTER 6

CONCLUSION AND FUTURE WORK

6.1 Goal

The main future goal of our project is maintaining a good relation between the buyer and the seller. Easy marketing system and save time. We are trying our best to satisfy our users. It is very certain that if we can represent and bring it out with a proper way the design and development of E-Commerce site can replace the total usual system within few months.

6.2 Limitations

- i. The ordered place distance will make long time to deliver.
- ii. The user cannot displace an order but in delivery time user can discard the order.
- iii. Un-registration users cart items will not be saved and cannot order further from cart.

6.3 Future Work and Plan

We will make our security more strong to find out real users. Using customers feedback, we will find both customer and seller information about any cheating. Integrate Payment system.

Conclusion

Think out that in abroad, they fully give priority of their family because they know how much important is a family member. So finally, time is very valuable and we will ensure that you will have your family with you and we will provide every needs of you. Just you need you visit us online, place your order. Your time, money everything will be saved. Our website will create more employment, reduce physical work for you, no need to forget about anything or any product, save time. We developed this site because many other sites like this have many problems that we are have solved with our one.

References

- [1] Syed Emdad Ullah, Developing an E-commerce website, IEEE, 16177709, 28 July 2016 IEEE
- [2] E.L. Thompson, S. D. Nowicki, T. Mayer, "Unified Modeling Language" in Professional PHP, Indianapolis, Indiana:Wiley, pp. April, 2019 Google Scholar
- [3] Ajkerdeal, visited on 01 April 2019 [online]
available at <https://ajkerdeal.com/>
- [4] Retailbd, visited on 02 April 2019 [online]
available: <https://retailbd.com/>
- [5] Bootstrap, Last update on 02 April 2019 [online]
available: <https://getbootstrap.com/docs/4.2/getting-started/introduction/>
- [6] W3Schools, Last update on 03 April 2019[online]
available: <https://www.w3schools.com/>
- [7] JQuery, Last update on 03 April 2019 [online]
available at <https://jquery.com/>
- [8] Laravel, Last update on 02 April 2019 [online]
available: <https://laravel.com/docs/5.7> [Last update on 02 April 2019]
- [9] Lucidchart, Visited on 3April 2019 [online]
available: <https://www.lucidchart.com/>