ONUKOLPO: E-COMMERCE MANAGEMENT SYSTEM FOR UNPRIVILEGED WOMEN

PGD PROJECT

NABILA HOQUE

Department of Computer Science and Mathematics
Bangladesh Agricultural University
Mymensingh-2202

ONUKOLPO: E-COMMERCE MANAGEMENT SYSTEM FOR UNPRIVILEGED WOMEN

A Project

Submitted to

Bangladesh Agricultural University, Mymensingh
In Partial Fulfillment of the Requirements for the Degree of

Post-Graduated Diploma (PGD)

In

Information and Communications Technology (ICT)

By NABILA HOQUE

Roll No.: PGD1735

Registration No.: 17671

Session: 2021-22

Department of Computer Science and Mathematics

Bangladesh Agricultural University

Mymensingh-2202

JUNE 2022

ONUKOLPO: E-COMMERCE MANAGEMENT SYSTEM FOR UNPRIVILEGED WOMEN

A Project
Submitted to
Bangladesh Agricultural University, Mymensingh
In Partial Fulfillment of the Requirements for the Degree of

Post-Graduated Diploma (PGD)

in
Information and Communications Technology (ICT)

By NABILA HOQUE

Approved as to style and contents by

Prof. Dr. Md. Rakib HassanSupervisor

Prof. Muhammad Mustagis
Billah
Co-supervisor

Prof. Muhammad Mustagis Billah Chairman, Defense Committee

b

Director, PGD in ICT program Bangladesh Agricultural University Mymensingh-2202

JUNE 2022

ACKNOWLEDGEMENTS

All praises are due to "Almighty Allah" the great, gracious, merciful, the Creator and the Sustainer of the universe for bestowing mercy upon me and for imbibing confidence on me to complete the project work, successfully for the degree of Post-Graduated Diploma (PGD) In Information and Communications Technology (ICT), Bangladesh Agricultural University, Mymensingh.

The author expresses her deepest sense of gratitude, immense indebtedness, most sincere appreciation to her reverend teacher and research supervisor Dr. Md. Rakib Hassan, Professor and Head of the Department of Computer Science and Mathematics, Bangladesh Agricultural University, Mymensingh for his scholastic guidance, constant inspiration, exclusive suggestions, valuable advice and providing support during the entire period of research and report preparation.

The author expresses her extreme indebtedness, heartfelt appreciation and profound respect to her research co-supervisor Muhammad Mustagis Billah, Professor and Director, PGD in ICT program, BAU, Mymensingh for his valuable advice, creative suggestions, sincere cooperation and constant encouragement.

The author humbly takes the privilege to express her heartiest indebtedness and cordial thanks to all respected teachers of the Department of Computer Science and Mathematics, Bangladesh Agricultural University, Mymensingh for their valuable teaching, worthy suggestions, inspiration and guidence for improving her knowledge and academic skills in this esteemed discipline during the period of her post-graduation studies.

The author desires to express her heartiest gratitude and cordial thanks to Mr. Mohammad Aminul Islam(Assistant Professor) for his support and assistance during different phases of the study. The author feels much pleasure to convey the profound thanks to her friends, specially Zahid, Shuvo and all the Departmental staffs for their cooperation, valuable support, inspirational cheerfulness.

The author acknowledges with great regards and dedicated the research to her beloved mother (Parvin Begum), beloved father (Md. Nurul Hoque) and younger brother (Md. Eafi Nur) for their blessings, immeasurable love and inspiration, all out sacrifice, financial and moral support throughout the entire period of her academic life.

The Author

ABSTRACT

An easy graphical user interphase-based website is developed, so that both

buyer and seller can easily understand and buy/sell their products. In our

country, women can't do jobs after managing their household chores. But they

make different hand-made items which are actually popular and people love to

buy those hand-made items. Some of them make monipuri Shari or Jamalpuri

Bedsheet etc but these items are only available in specific places only. During

Covid period, their business have hampered a lot. Some of them lost interest in

making these items also. So if a mobile friendly website can be delivered to them,

then people all over the world can buy their items. Moreover, these products can

be bought worldwide and we can get international currency also by exporting

these items. There are many e-commerce website which is currently available

but the main problem is this available websites are not mobile friendly for the

sellers. Many international websites have easy user interphase which can be

accessed by their local sellers but in our country, this type of initiatives are taken

less and most of the interphases are quite difficult to understand and people lost

their interest because of it. This report offers a framework for determining

quality characteristics in terms of traits and it's usability to current sellers and

buyers.

Keywords: Website development, e-commerce, graphical user interphase

v

CONTENTS

Chapter	Title	Page No	
ACKNOWLEDGEMENTS			
ABSTRACT		\mathbf{V}	
CONTENTS			
LIST OF TABLES	LIST OF TABLES		
LIST OF FIGURE	S	IX	
ABBREVIATIONS			
CHAPTER 1 INT	CHAPTER 1 INTRODUCTION		
1.1.	A website that isn't mobile-friendly	2	
1.2.	An excessively slow loading website	3	
1.3.	Absence of trust seals and security authentication	3	
1.4.	Payment processing	3	
1.5.	Inventory/stock updates	3	
1.6.	Navigation to product pages	4	
1.7.	Image compression and alt text	4	
1.8.	Easily available resources	4	
CHAPTER 2 REV	TIEW OF EXISTING WORKS	6	
CHAPTER 3 METHODOLOGY		8	
3.1.	Hardware and software requirement for our system	8	
3.1.1	. HTML	8	
3.1.2. CSS		8	
3.1.3	8. Bootstrap	9	
3.1.4	. Javascript	9	
3.1.5. PHP		9	
3.1.6. XAMPP		10	
3.2.	Database SQL Tables	10	
3.3.	Data flow diagram (Dfd)	13	
CHAPTER 4 RES	ULTS	14	

4.1	. Adn	iin view		14
4.1	.1. Adm	in login page		14
4.1	.2. Adm	in registration page		14
4.1	.3. Adm	in Dashboard page		15
4.1	.4. Orde	er complete page:		15
4.1	5. Prod	ucts page (Admin view)		16
4.1	.6. Bran	ds page (Admin view)		16
4.1	7. Cate	gories page (Admin view	v)	17
4.1	.8. Cust	omers Page (Admin view	v)	17
4.2	Cust	omers view point	•	18
4.2	.1. Cust	omers view of the front p	page	18
4.2	.2. Regi	stration page		18
4.2	3. Cust	omer Log in portal		19
4.2	4. Cust	omer Cart Page		19
4.2	5. Cust	omer Check-out page	:	20
4.2	.6. Cust	omer order details	2	21
CHAPTER 5 SUMMARY AND CONCLUSION		1	22	
REFERENCES			;	23

LIST OF TABLES

TABLE		TITLE	PAGE
3.1	admin table		11
3.2	brands table		11
3.3	categories table		11
3.4	products table		12
3.5	cart table		12
3.6	orders table		12
3.7	user_info table		12

LIST OF FIGURES

Figure	TITLE		
3.1	MySQL Tables of Onukolpo website		
3.2	Short Data flow diagram of Onukolpo Website		
3.3	Elaborated Data flow diagram of Onukolpo E-commerce website	13	
4.1.1	Admin Login Page		
4.1.2	Admin Registration Page		
4.1.3	Admin Dashboard		
4.1.4	Order Completion page		
4.1.5	Products Page(admin view)		
4.1.6	Brands Page(Admin view)		
4.1.7	Categories Page		
4.1.8	Customers Details Page(Admin view)		
4.2.1	Customers view of the front page		
4.2.2	Customer registration page		
4.2.3	Customer log in portal (pop-up view)		
4.2.4	Customer Cart Page (Pop-up view)	20	
	Customer Cart Page (Page view)		
4.2.5	Customer Check-out page (with BKASH option)		
4.2.6	Customer Order Details	21	

ABBREVIATIONS

BAU Bangladesh Agricultural University

CSS Cascading Style Sheets

C# Programming Language for .net framework

FAQ Frequently asked questions

GUI Graphical User Interphase

HTML Hyper-Text Markup Language

PHP Hypertext Preprocessor

URL Uniform Resource Locators

WWW World Wide Web

CHAPTER 1

INTRODUCTION

The most seasoned and prosperous online retailers are starting to understand that having a high-quality website that delivers what it promises is more important than simply having a web presence or offering low prices. It is required to develop a framework and model that allows for the evaluation of a website's quality in order to achieve the desired quality of the e-commerce website.

E-commerce system helps us reaching out to our potential clients and gives our business good exposure. Due to a lack of time, the majority of people prefer to shop online, therefore we can quickly generate more income. People can choose and purchase preferred things whenever they want with the aid of an e-commerce website. We have the chance to make our goods and services accessible to customers around-the-clock with the aid of e-commerce web design.

Customers can also leave comments about goods and services on an e-commerce website. As a result, the website's owner receives feedback. He can use this comments to enhance and better the services. A business owner benefits over time from maintaining contact with the clients. Therefore, ecommerce growth is crucial in the competitive world of today.

Now-a-days, individuals prefer using an online shopping cart when purchasing gifts for their family and friends. Nearly everything is accessible online. All we have to do is go to the website, choose a product, put it in our shopping basket, and make a payment. The present will be delivered on schedule to the specified location. Thus it is straightforward and hassle-free.

We can add items to our "wishlist" on an e-commerce website and purchase them at a later time. As a result, since the product is already preserved in our list, we do not need to go through the process of searching for it again. E-commerce

websites are so user-friendly because of this. Here is how it works for those who have questions concerning product delivery and related difficulties.

People occasionally have concerns regarding the promptness of the delivery of the merchandise because the entire purchasing procedure occurs online. We can file a complaint in the "goods return" area if our ordered item never arrives or arrives late. The necessary actions will then be done to guarantee that we receive what we bought.

But due to the lack of easy graphical user interface (GUI), many local members don't use e-commerce website as they hardly understand the management system of it. For this reason, our local famous products like Monipuri Shari, Katha and bedsheet , Jamalpuri dresses and bedsheets, Tangail's kotakhesh shari and different wooden jewelries' can't get accesss to the e-commerce market.

As Bangladesh is a floodplain country, people face many difficulties time to time. People need to close their supershop in different times for catastrophes like flood, hortal and in occasional times also. But if they maintain an e-commerce website, they can easily give their services in online through it.

Some problems which we face in our day-to-day life during using other ecommerce websites and what we can do to minimize it- is given below-

1.1. A website that isn't mobile-friendly

The majority of people who visit our e-commerce website will do it using a mobile device. Many of our mobile users are probably going to quit our site before they even start looking through our products if it isn't optimized for these people (that is, if it isn't responsive or has a mobile-friendly version).

1.2. An excessively slow loading website

A too-slow e-commerce website might actually cause visitors to lose trust in it, despite the fact that the web design is attractive to users. If our website takes longer than five seconds to load, nearly 50% of visitors will depart. So, we have kept only the major features in it to make it faster.

1.3. Absence of trust seals and security authentication

Visitors to our website seek independent verification of its security. A verified "Secure" button will show up next to our URL if we purchase an SSL certificate for our website. We are currently working on it. This provides users with reassurance that we are providing them with a secure website.

1.4. Payment processing

Increasing sales is one of the main objectives of an e-commerce business. Our website must be able to handle consumer payments for it to be able to do that. Additionally, our customers will want options for how they can make a purchase. Certain consumers may prefer to continue using their credit or debit card (Visa, MasterCard, American Express etc.). Furthermore, some consumers may choose Bkash because they feel more at ease with it. We have added Cash on Delivery system also, so consumer can pay at their doorstep during receiving the parcel.

1.5. Inventory/stock updates

The objective of having an online store would be defeated if we have to manually update our inventory each time a user made a purchase on our website. Automating our inventory will save us a ton of time and help us avoid mistakes that might happen when doing it manually, regardless of how many products we sell on our e-commerce website.

Assume someone purchasing a product on our website that is out of stock, or worse, that it slipped our notice and it took us weeks to even notice the problem. Using inventory management software, we can forecast how many of each product will sell, figure out how much stock we should keep on hand, and much more.

1.6. Navigation to product pages

Within two clicks, users should be able to access any product. Our site's structure and primary navigation will probably need to change, but our users will undoubtedly appreciate the extra work. Since many e-commerce websites provide hundreds or even thousands of products, this makes e-commerce web design challenging. It can be difficult to arrange them in a way that makes navigation as simple as possible for the user.

1.7. Image compression and alt text

Making our image files as compact as we can while preserving the quality of the photo is known as image compression. E-commerce websites are some of the most image dense website out there. We can minimize its density by using image compression softwares.

When an image can't load, our website's code includes image alt text, which might impact how well it performs in search results. Our alt text should be descriptive with a few pertinent keywords, but it shouldn't be overly keyword-heavy like the rest of our website's content. Each image's alt tag needs to be just lengthy enough to adequately describe the image.

1.8. Easily available resources

Simply said, a lack of information is a major factor in why any website may experience high bounce rates. It might be simple for features to be overlooked despite all the effort we put into building our website.

These specifics are what cause website visitors to quit, lose faith in our company, or remove items from their shopping carts. We're asking a lot of our customers to submit their personal and payment information, even if our products are reasonably priced. Therefore, it is our duty to make sure that we are answering all of their questions, or offering them a clear, concise way to do so.

We might utilize the resources listed below to improve user convenience on our website:

- A customization service can be added in the order confirmation page so that people can give their customized choice also.
- Customers should be able to see our shipping information from any page on our website.
- In the header and bottom of our website, we can clearly display our contact information.
- Links to our social media pages are included in the bottom so that users may locate us simply.

Objectives:

- 1. To make an easy graphical user interface system so that seller and buyer can easily access to the website
- 2. To encourage local sellers to sell internationally with the help of Onukolpo website

CHAPTER 2

REVIEW OF EXISTING WORKS

In recent years, different types of websites have been created which are pretty awesome. However, this websites also has some drawbacks also. Some of the existing works in this field is represented below-

If we see the website www.naaptol.com, then we can notice images in content, easy navigation, and discount offer by websites. This makes the website absolutely amazing but it has drawbacks also and that is - camouflaged information on the home page makes it harder to understand.

In www.yepme.com website, there are easy registration, navigation, easy understanding of the information and fastest downloading of the images but the content, and ease of use and use of Multilanguage makes it a little bit difficult[1].

In www.snapdeal.com, the easy registration, no misleading link, no orphan pages, no broken links, aesthetic appeal make the website more eye-catching but the use of Multilanguage, inadequate company information and irrelevant product information sometimes make people confused to go for their right deal[2].

In www.jabong.com, the content information is good, adequate images and text size, company and product information are not complex but the use of multilanguage, inadequate company information, irrelevant product information confuses people a lot.

In www.myntra.com, the structure of the website, navigation, and design of the website is very much user friendly but it has missing shopping information, and lack of easy search facility[3].

In www.flipkart.com, easy navigation, the structure of the website and design of the website attach people a longer time in their page but the provided content, more download time, and non supporting multilanguage makes a barrier.

In www.quikr.com, downloading time of images is less, simple communication with the site, and true information was provided by the site which makes it easier to the people but the content aspect, more download time and nonsupporting multilanguage create some drawbacks.

In www.futurebazzar.com, up to date information, relevant and true information, no misleading link, no broken link, and no orphan pages is very much helpful but the design aspects i.e lack of page structure, poor visibility of font, nonproper color combination, nonsupporting multilanguage makes it difficult to use.

In www.ebay.com, easy navigation, and structure of the website is good but the content, and ease of use of the website, and nonsupporting multilanguage redirects their customers to the other pages.

In www.homeshop18.com, the content of the site, easy navigation, and good design make people engaged to their website but the structure, and ease of use of the website, and nonsupporting Multilanguage sometimes redirects their customers to the other pages.

CHAPTER 3

METHODOLOGY

3.1. Hardware and software requirement for our system

We should always check to see if our machine can run the software before installing it. In this project, hardwares (computers, laptops) were connected to the internet via several softwares. This e-commerce system, which is described below, was created using a few software tools and platforms.

3.1.1. HTML

For pages intended to be viewed in a web browser, the HyperText Markup Language is the accepted markup language. HTML documents are received by web browsers from a web server or local storage and are then rendered into multimedia web pages. HTML originally provided hints for the document's appearance in addition to semantic descriptions of a web page's structure.

The skeleton of an HTML page is an HTML element. With the aid of HTML structures, it is possible to embed interactive forms as well as photos and other objects into the produced page.

3.1.2. CSS

The display of a document published in a markup language, such as HTML or XML, can be described using CSS, a style sheet language[4]. Along with HTML and JavaScript, CSS is a key component of the World Wide Web. Layout, color, and font may all be separated from content and presentation using CSS[5].

By specifying the pertinent CSS in a separate.css file, which reduces complexity and repetition in the structural content, this separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple web pages to share formatting, and enable the .css file to be cached to improve page load speed between the pages that share the file and its formatting.

3.1.3. Bootstrap

A free and open-source CSS framework called Bootstrap which is designed for developing front-end websites that are mobile friendly. For typography, forms, buttons, navigation, and other interface elements, it contains HTML, CSS, and (optionally) JavaScript-based design templates[6].

The main goal of adding it to a web project is to apply the color, size, font, and layout options of Bootstrap to that project. Therefore, the main determinant is whether the responsible developers like those options. All HTML components have basic style declarations once Bootstrap is introduced to a project. As a result, texts, tables, and form components appear consistently in all web browsers. In order to further personalize the appearance of their contents, developers can make use of the CSS classes defined in Bootstrap.

3.1.4. Javascript

Along with HTML and CSS, the programming language JavaScript[6], sometimes known as JS, is one of the foundational elements of the World Wide Web. To run the code on users' devices, every major web browser has a separate JavaScript engine[7].

It features first-class functions, prototype-based object orientation, and dynamic typing[8]. It supports event-driven, functional, and imperative programming paradigms and is multi-paradigm. It offers application programming interfaces (APIs) for using the Document Object Model, regular expressions, dates, and standard data structures (DOM).

3.1.5. PHP

PHP is a multipurpose scripting language designed with web development in mind. A PHP interpreter, typically implemented as a module or as an executable for the Common Gateway Interface (CGI), processes PHP code on a web server[9]. The output of the interpreted and executed PHP code, which may be any kind of data (such as produced HTML or binary image data), would make up all or a

portion of an HTTP response on a web server. It is possible to choreograph or facilitate the development of that answer by utilizing various web template systems, web content management systems, and web frameworks. Using the command line, PHP code can also be executed directly.

3.1.6. **XAMPP**

The Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages are the core components of XAMPP[10], a free and open-source cross-platform web server solution stack bundle created by Apache Friends. It is possible to switch from a local test server to a live server because the majority of real-world web server deployments employ the same components as XAMPP[11].

A WAMP or LAMP stack can be rapidly and easily loaded on an operating system by a developer owing to XAMPP's simplicity of deployment, with the added benefit that Bitnami makes it simple to install popular add-on apps like WordPress and Joomla!

3.2. Database SQL Tables

Firstly, the database (ecommerceapp) table needs to be created by following order and structures.



The tables are aligned in this following orders:

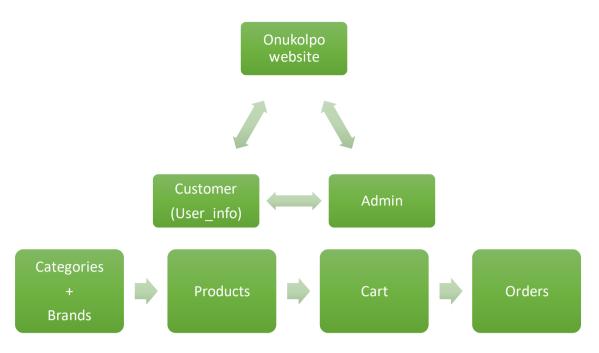


Fig.3.1. MySQL Tables of Onukolpo website

Admin can go through all of the tables and can edit the tables. Customer can watch the categories, brands and products but can't edit those. After the customer places order, then it is shown in Orders table. Admin can check the transaction id and send their parcel according to the delivery address.

We are going to follow the structures given below:

Table 3.1 admin table:

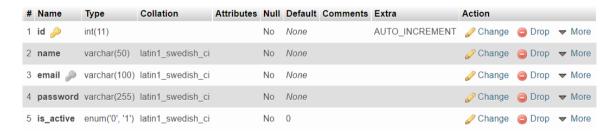


Table 3.2 brands table:



Table 3.3 categories table:



Table 3.4 products table:



Table 3.5 cart table:

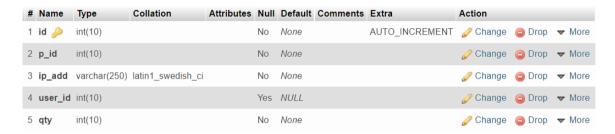
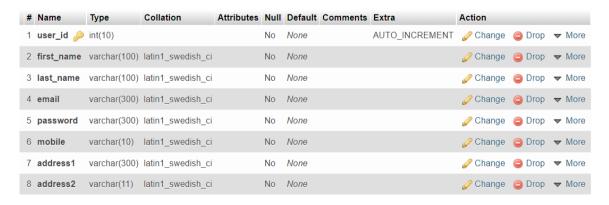


Table 3.6 orders table:



Table 3.7 user_info table:



In this way, MySQL tables are formed . Foreign keys are used in products table where brands maintain their 'brands_id' and categories maintain their 'cat_id'.

3.3. Data flow diagram (Dfd)

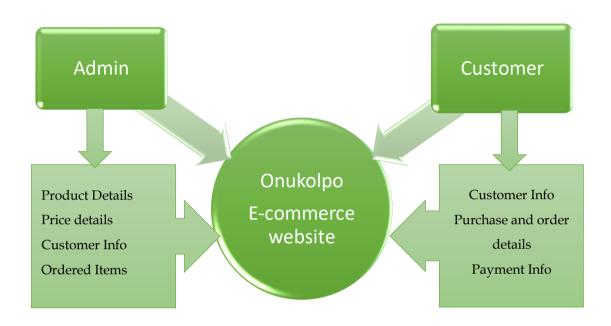


Fig.3.2. Short Data flow diagram of Onukolpo Website

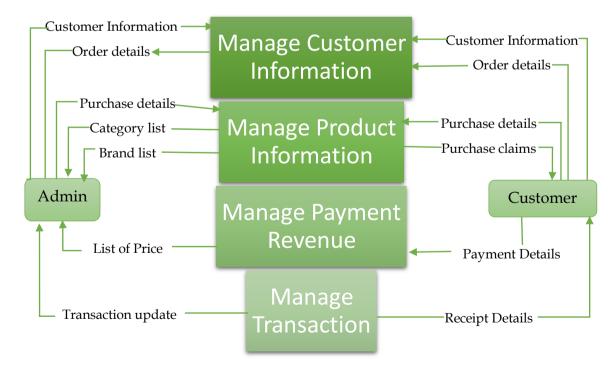


Fig.3.3. Elaborated Data flow diagram of Onukolpo E-commerce website

CHAPTER 4

RESULTS

Firstly, the connection was done with the help of php through constants.php file in backend. I created connection with admin pages first, then I worked on customer pages. The customization of color, texture, shape, formations were done through CSS and button click events were done using Javascript.

4.1. Admin view

4.1.1. Admin login page

Admin needs to login their profile to see the datails of the shop and one can customize their webpages from admin dashboard. The admin log in page is shown below:

Admin Login

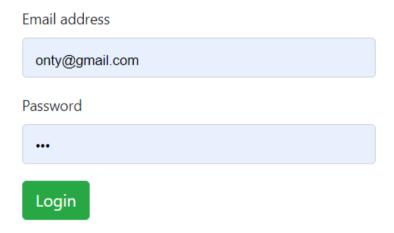


Fig 4.1.1. Admin Login Page

4.1.2. Admin registration page

Admin registration page looks like below:

Admin Registration

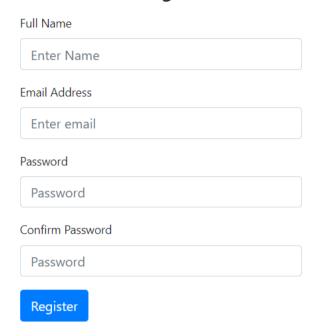


Fig 4.1.2. Admin registration page

4.1.3. Admin Dashboard page

Admin dashboard page looks like below:

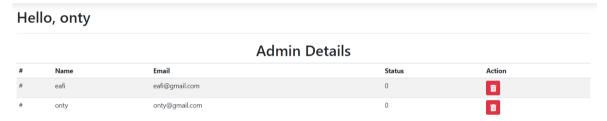


Fig 4.1.3 Admin Dashboard

4.1.4. Order complete page:

When customers pay for their products, then it appears in the "Orders" page. Admins can see it from here and deliver the product in their given address. The "Orders" page is shown below:



Fig. 4.1.4. Order Completion page

4.1.5. Products page (Admin view)

Admin can add, change or delete products from products page, which is shown below:

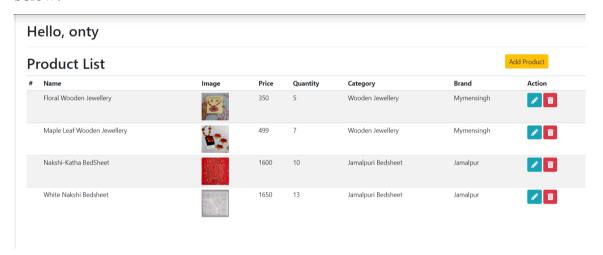


Fig. 4.1.5. Products Page(admin view)

4.1.6. Brands page (Admin view)

Admin can add, edit or delete brands name from that specific page. The page is shown below:

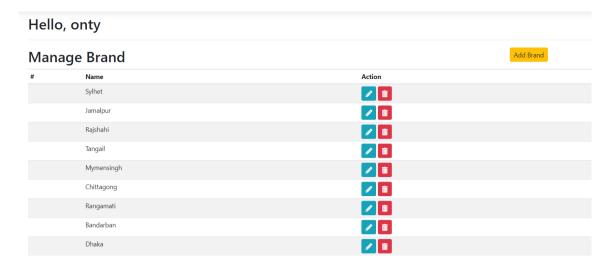


Fig. 4.1.6. Brands Page(Admin view)

4.1.7. Categories page (Admin view)

Admin can add, edit or delete categories name from that specific page. The page is shown below:



Fig. 4.1.7. Categories Page (Admin view)

4.1.8. Customers Page (Admin view)

Admin can see customer details from customers page and deliver their products in their given address.

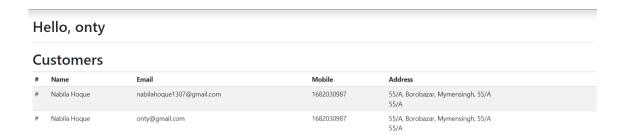


Fig. 4.1.8. Customers Details Page(Admin view)

4.2. Customers view point

After completing the admin profile pages, I've worked on customer pages, which is shown here:

4.2.1. Customers view of the front page

The customer views of my webpage look like below:

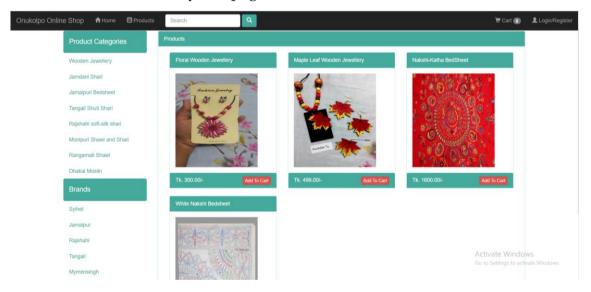


Fig. 4.2.1. Customers view of the front page

4.2.2. Registration page

The customer registration page looks like below:

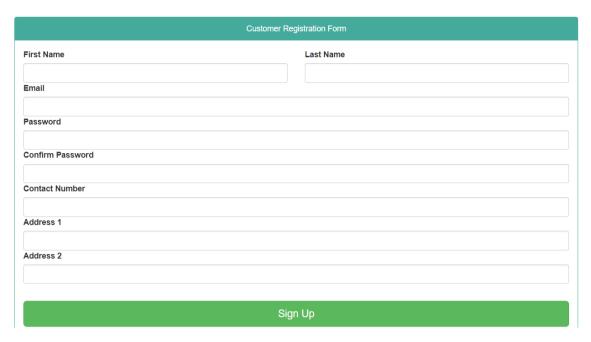


Fig. 4.2.2. Customer registration page

4.2.3. Customer Log in portal

The login portion appear on the right side of the screen like below:

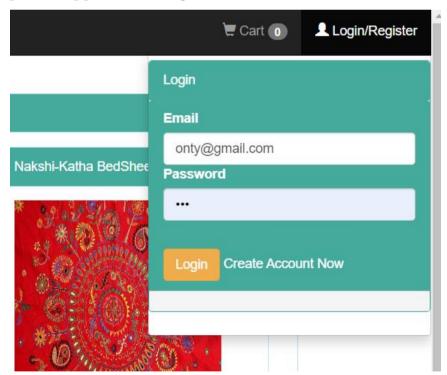


Fig. 4.2.3. Customer log in portal (pop-up view)

4.2.4. Customer Cart Page

When I add products in the cart, it looks like this:

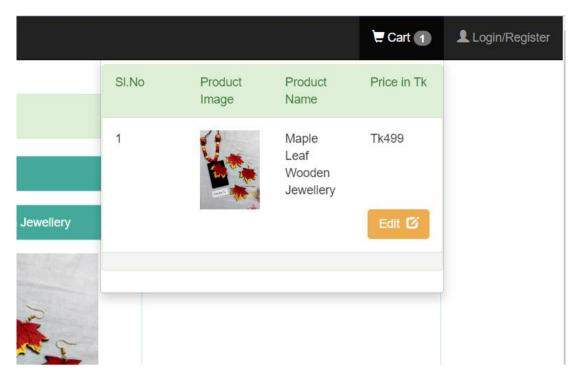


Fig. 4.2.4. Customer Cart Page (Pop-up view)

The cart page looks like below:

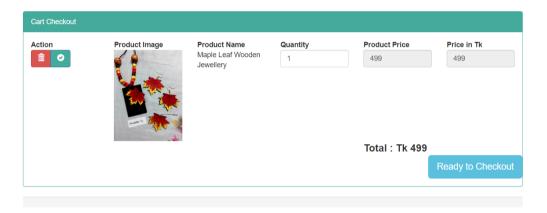


Fig. 4.2.4. Customer Cart page

4.2.5. Customer Check-out page

When "Ready to Checkout" is clicked, then the checkout page appears like below:

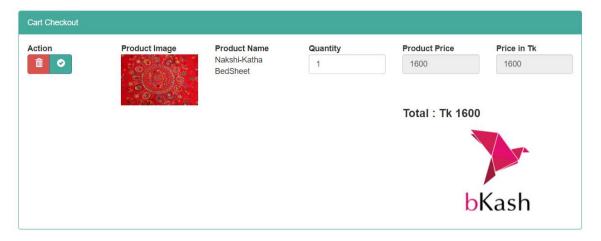


Fig. 4.2.5. Customer Check-out page (with BKASH option)

4.2.6. Customer order details

When someone pays for their products, then it appears to this page:

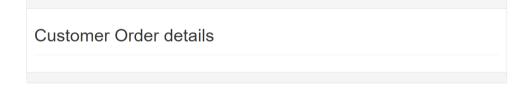


Fig. 4.2.6. Customer order details

CHAPTER 5

SUMMARY AND CONCLUSION

Everything, including online purchasing, has drawbacks and advantages, so how each one use the e-commerce site is totally up to the individual. In Onukolpo website, easy graphical interface has used for admins and customers user preference. As this website is mobile friendly, so sellers can easily understand how to upload their products and set their prices. Buyers can get their preferable products at a cheaper rate also because there is no middle man in here. Sellers don't need any shop to show-case their items. As these both save cost and time, sellers can give different eye-catching offers to their customers also.

This website has some drawbacks also. An SSL certificate should be purchased so that a verified "Secure" button will show up next to the URL which will make the website more secure and trustworthy. Moreover, it provides users with reassurance that they are purchasing from a secure website. In payment, Paypal and other types of payment procedures should be added for international consumers.

Overall, Onukolpo e-commerce website is easy to use for both admin and customer. We are working on the complications and hopefully, we will overcome the problems in a shorter period of time.

REFERENCES

- [1] M. Du Toit and C. Bothma, "Evaluating the usability of an academic marketing department's website from a marketing student's perspective," *International Retail and Marketing Review*, vol. 5, no. 1, pp. 25-37, 2009.
- [2] V. McKinney, K. Yoon, and F. M. Zahedi, "The measurement of web-customer satisfaction: An expectation and disconfirmation approach," *Information systems research*, vol. 13, no. 3, pp. 296-315, 2002.
- [3] P. Zhang, G. v. Dran, P. Blake, and V. Pipithsuksunt, "A comparison of the most important website features in different domains: an empirical study of user perceptions," 2000.
- [4] J. N. Robbins, Learning web design: A beginner's guide to HTML, CSS, JavaScript, and web graphics. "O'Reilly Media, Inc.", 2012.
- [5] W. W. W. Consortium, "Cascading style sheets level 2 revision 1 (CSS 2.1) specification," 2011.
- [6] D. Flanagan, *JavaScript: the definitive guide*. O'reilly, 2006.
- [7] A. Pano, D. Graziotin, and P. Abrahamsson, "Factors and actors leading to the adoption of a JavaScript framework," *Empirical Software Engineering*, vol. 23, no. 6, pp. 3503-3534, 2018.
- [8] W. T. Wong, "Dynamic Taint Analysis in JavaScript for JavaScript," Carnegie Mellon University, 2020.
- [9] D. K. Ahmad, M. F. Ahmad, M. N. Ahmad, and A. S. Ahmad, "An Experiment of Animation Development in Hypertext Preprocessor (PHP) and Hypertext Markup Language (HTML)," *Int. J. Sci. Res. in Computer Science and Engineering Vol*, vol. 8, no. 2, 2020.
- [10] J. Mack, Y.-H. F. Hu, and M. A. Hoppa, "A study of existing cross-site scripting detection and prevention techniques using XAMPP and VirtualBox," *Virginia Journal of Science*, vol. 70, no. 3, p. 1, 2019.
- [11] W. J. Gilmore, Beginning PHP and MySQL: from novice to professional. Apress, 2010.