بسم الله الرحمن الرحيم

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
GAZIPUR, BANGLADESH

Online shopping

Authors:

Muhammed barry (160041006)
Abdoul Latif Hamadou (160041084)

Supervisor:

Tareque Mohmud Chowdhury

Assistant professor

Department of Computer Science and Engineering (CSE).

A project submitted to the Department of CSE in fulfilment of the requirements
For the Degree of Bachelor in CSE.
Academic Year: 2019-2020.

March, 2021

DEDICATION

To our beloved families, teachers and friends whose motivations and prayers, and continuous support to guide us to the completion of this work and enabled our future bright come into reality.

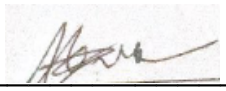
DECLARATION

This is to certify that the work presented in this thesis is authentic and it is the outcome of an investigation carried out by **Abdoul Latif Hamadou and Muhammed Barry** under the direct scrutiny of **Mr Tareque Mohmud Chowdhury** Assistant professor, Department of Computer Science and Engineering (CSE), Islamic University of Technology (IUT). We hereby declare that:

- **This documentation or part of it has not been submitted elsewhere for the award of any other Degree or Diploma. Rather, it accounts for the completion of our Bachelor program in Computer Science and Engineering at the Islamic University of Technology.**
- **All literatures and contributions mentioned here were carefully verified and fully acknowledged by their owners.**

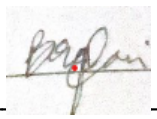
Submitted by:

Abdoul Latif Hamadou (160041084)



_____

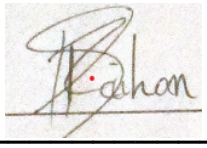
Muhammed Barry (160041006)



_____

Online Shopping

Approved by:



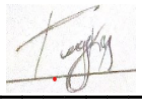
Prof. Dr. Abu Raihan Mostofa Kamal

Head, Department of Computer Science and Engineering, IUT

Mr. Tareque Mohmud Chowdhury

Project Supervisor

Lecturer, Department of Computer Science and Engineering, IUT



ABSTRACT

The business to consumer aspect of electronic commerce (e-commerce) is the most visible business use of the World Wide Web. The primary goal of an e-commerce site is to sell goods and services online. This project deals with developing an e-commerce website for Online laptops and phone sale. The system is implemented using a backend database, a middle tier of Microsoft Internet Information Services (IIS) and a web browser as the front end client. In order to develop an e-commerce website, a number of Technologies must be studied and understood. These include multi-tiered architecture, server and client side scripting techniques such as programming language (such as php), relational databases (such as MySQL).In this project, the main aim is to demonstrate that with better interaction features in laptops and smartphones web sites could improve sales over the net.

ACKNOWLEDGEMENT

We would like to express our deep sense of gratitude and convey thanks to everyone who helped us and supported during the completion of this project. First, we would like to express a deep sense of gratitude to all teacher's in the department of computer science and Engineering for helping, guiding, and supporting us throughout Bachelor's degree completion. It is an honor to have worked with **Tareque Mohmud Chowdhury**, Assistant professor, department of Computer Science and Engineering (CSE), who gave us idea on the project title and continuous guidance and support during the implementation of the project we also do appreciate his wonderful advises for the documentation of the project. We acknowledge our department for providing the courses and a great atmosphere that helped complete different chapters of this report. Last but not least, We would like to thank our family members for their constant and unrelenting support towards our education and for their impartial love for us. We would also like to thank our friends, without whom this project would have been impossible.

Table of Contents

LIST OF FIGURES ..... **Error! Bookmark not defined.**
CHAPTER 1: INTRODUCTION 10
1.1 Overview.....10
1.2 Motivation.....11
1.3 Problem statement..... **Error! Bookmark not defined.**
1.4Challenges…..12…
CHAPTER 2: SYSTEM ANALYSIS.....13
2.1 Introduction.....13
2.2 Objectives 13
2.3 Problem in the Current System.....16
2.4 Solution Outline.....17
3.Future works plan 17
CHAPTER 3: FEASIBILITY STUDY.....19
3.1 Introduction.....19
3.2 Feasibility Analysis.....19
3.2.1 Technical Feasibility.....19
3.2.2 Economic Feasibility 20
3.2.3 Operational Feasibility 20
CHAPTER 4: SYSTEM DESIGN.....21
4.1 User Activities 21
4.2 UML DIAGRAMS 21
4.2.1 Activity diagram ..... **Error! Bookmark not defined.**
4.2.2 Class diagram..... **Error! Bookmark not defined.**
4.2.3 Use case diagram 23

4.2.4 Sequence diagram……25
4.2.5 Context diagram…… 26
4.2.6 DFA Level One Diagram 27
CHAPTER 5: IMPLEMENTATION 27
5.1 Introduction.....27
5.2 Operational Requirements 27
5.3 Tutorial.....28
5.3.1 Home page ..... **Error! Bookmark not defined.**
5.3.1 Admin……30
5.3.2 Create account 32
5.3.3 Create product.....33
5.3.4 Update.....34
5.3.5 Add to cart 35
5.3.6 Payment 36
CHAPTER 6: CONCLUSION 37
REFERENCES.....37

CHAPTER 1: INTRODUCTION

1.1 Overview

An E-commerce is an online platform that facilitates the buying and selling of goods. This might involve the User, the Admin, supplier/retailer, and third parties. The internet is being used and as such security must be seen into

1.2 Motivation

- The African continent has not been using the full potentials of the E-commerce business. Almost all E-commerce businesses are notion based platforms. The major E-commerce sites like Amazon, Alibaba etc.. Have one branch in the whole of the African continent.

So we said to ourselves why we can’t build the Amazon of Africa

1.3 Problem statement

- How to bring E-commerce to the people of Africa and earn their trust to partake in the E-commerce world.

1.4 Challenges

- Learning new frameworks and tools that we haven't being introduced to.
- Attending online class on the screen then also continue to work on the project.
- Cybersecurity
- Order fulfillment
- Choosing the right technologies and partners
- Lack of awareness and trust
- Finding the right products and the perfect buyers.

CHAPTER 2: SYSTEM ANALYSIS

2.1 Introduction

Sometimes referred to as requirement analysis, system analysis is the process of collecting relevant information regarding any working system with the intention of identifying its strengths, problems and then analyze them in order to produce a new system having better functionalities and less limitations than the evaluated system. In this chapter, we are going to study the actual process of managing the manual system. Then identify the problems existing in it. Finally, we will propose some solutions to these problems.

2.3 objectives

What are the objectives of ecommerce?

Ecommerce business drives profitable growth with reduction is cost-to-customer, developing customer-reach, and providing a unique customer experience. It has become more than essential for B2B as well as other businesses to make the right use of ecommerce. Now, ecommerce is evolving or better say evolved into digital commerce that implies to the entire business journey from buying to delivery with an online experience. Below are the few objectives of ecommerce:

- **Reduce management costs**

Businesses aim at reducing the costs incurred for the betterment of their revenue. Automating the ecommerce business can help in reducing the management cost significantly. Moreover, the right use of digital marketing can help in reducing the cost spent on driving customers to such an extent that businesses can bring customers for free of cost.

- **Developing business relations**

With ecommerce as the primary use, business development can be easily achieved. The direct communication between a company and the customer, the business relationship can be boosted. Eventually, the ecommerce market shall be expanded.

- **Providing a unique customer experience**

Uncountable ecommerce businesses are functioning out there in the market. When a customer searches for a certain product (for instance, shampoo), they will probably click on the first three links that are shown on the Google Search Engine Results Page. All the rest links are either avoided, never seen, or are visited by a few. This itself shows the competition in the ecommerce market. One of the best ways to stand out from the crowd is by providing a unique customer experience. This includes giving a personalized experience to each customer or visitor of your online store, website, or mobile app. Some other pointers to consider are round the clock customer service, immediate responses to the queries rose, engaging with the customers, and so on.

- **Increasing the number of loyal customers**

Customers are the core of all business strategies. Therefore, ensuring the great customer experience is of prime importance for the growth of the business. You need to meet your customers where they spend their time. More than 60% of consumers look for purchasing goods and services online. If you meet your customers where they are already active, the chances of them,

interacting with your business increases two folds. You can increase the number of loyal customers by giving the best experience to your already existing customers as well as bring in newer customers.

- **Boosting the efficiency of services**

With the continually evolving technology, you need to enhance the efficiency of your services. By choosing an online ecommerce platform to create an online store, you can efficiently reduce the cost of managing and selling online. You have various opportunities to boost the efficiency of your service that eventually enhances the revenue earned. By reducing the delivery time, you can witness happy customers getting back to your business two times faster. Another way is to provide your customers with automated services such as status update, invoice creating, chat support, etc. When you update your efficiency of delivering products or services to your customers, you are creating a strong online presence that helps you sell more.

- **Developing relevant target**

Developing relevant traffic for an ecommerce business is a common objective. Whether an ecommerce website or an online store, building traffic is one of the most important objectives. However, you should know that not all traffic is useful for your business. If you are successfully creating traffic for your ecommerce site or store, but most of the people in the traffic do not require the products or services you provide, the traffic is not causing any good to your business. For instance, your marketing strategies were attractive enough for teenagers; your business would not be receiving any boost in sales. Therefore, along with boosting your traffic, you need to analyze your traffic. Here comes the need for collecting customer data. Collecting customer data include demographics such as age, location, and gender, customer interests, browsing history, browser history, and so on. By saving these data, you can aim in targeting the relevant market.

- **Making responsive ecommerce website**

With the increasing use of smartphones for shopping online, it has become more than mandatory for ecommerce businesses to go mobile. Apart from creating a native mobile app, like the one offered from Builderfly, you need to create a responsive ecommerce website. It is one of the major objectives of all leading ecommerce businesses. By responsive, it means to create a website that can be viewed from any devices of varying screen size, equally. Studies say that Google may next rank a website based on its mobile website. It means that any website that has a responsive design would be ranked on top of the website that does not have one. Making your ecommerce website responsive can help you optimize it. A mobile-friendly website earns more traffic than the rest.

- **Increasing sales**

The objective of increasing sales will always remain continuous and constant for an ecommerce business. In order to thrive in the ecommerce industry, we need to boost our sales, constantly. All other objectives are zeroed down to make this objective happen. However, we also need to look into our past store analytics and figure out the marketing tactics that have worked well for us to increase sales. Although these objectives could help us in gaining sales, nothing can beat the tried and tested marketing tactics for our business. For instance, the products that are sold the most, ideally the best seller can be used for remarketing and grab more attention. Any marketing strategy we used earlier including the email targeting and traffic boosting tactics must be revisited and worked upon to increase sales. Based on the above-mentioned objectives and the marketing tactics that actually worked for you, we need to design our marketing plan. Only we can decide what is perfect for our business and what is not. Every business is unique, and so is ours!

2.4 Problem in the current system

Less than 30% of African e-commerce start-ups are profitable because companies face problems such as lack of funding, lack of trust and logistical difficulties. This is what the Afri-Shopping report reveals: Exploring the African E-commerce Startup Ecosystem Report 2017 published by Disrupt Africa. In addition we can add:

- Digital Divide Barriers to E-commerce Penetration in Africa
- Lack of Adequate ICT Infrastructure
- Lack of ICT Knowledge
- Threat of Cybercrimes

2.5 Solution outline

Bridging the Digital Divide through Regulatory Reform
The problems facing Africa's ICT sectors can be resolved through legal reform aimed at creating market liberalization, promoting ICT awareness and controlling cybercrimes. These solutions are discussed below.

- **Liberalizing ICT Markets**

Efficient market liberalization should expose African countries to ICT investment by both foreign and local financiers.

3.Future works plan

The future plans of our project can be listed as follows**:**

- Build

Build the admin panel

- Ensure

Ensure the frontend dynamic

- Data

Take full info from the user

- security

Increase security

- AI

Add a chatbot and product suggestion

- Versatile

Allow people to be able to buy and sell globally.

CHAPTER 3: FEASIBILITY STUDY

3.1 Introduction

In this chapter, we will discuss about the feasibility study of our project. We will detail some technical, economic and operational feasibility.

3.2 Feasibility Analysis

3.2.1 Technical Feasibility

The technical feasibility of our project is determining that whether the technology is available or not, our current technical resources are enough to develop the project or not. Our system will need only available hardware and software. MySQL database does not require any complex configurations or compatibilities issues. NetBeans IDE is free for form designing.

3.2.2 Economic Feasibility

We have done cost analysis for our system to determine whether the current financial conditions are suitable to implement our system. This investigation led to the following conclusion:

- All dependent facilities are satisfied from open source materials.
- No extra facilities or resources needed to implement our system.

3.2.3 Operational Feasibility

The following elements are the outcomes of our operational feasibility investigation.

- There is a system administrator who is able to use our application
- The system has a nice GUI with notifications enabled to guide the user
- The website is user-friendly and there is no extra training needed for using it

Chapter 4:SYSTEM DESIGN

4.1 User activities

Customer opens the online shopping page, customer search for a product, view for a product he can also browse for a product to view the product. When it's done he can add item to the shopping card if he likes the product else he can do more shopping. The online customer can view shopping cart as well as update shopping cart (add product or delete),done with the shopping.

The payment method is also possible. For this particular project the customer can paid by using PayPal system.

4.2 UML diagrams

4.2.1 Activity diagram

Activity diagram is an important diagram in UML to describe the dynamic aspects of the system.

Activity diagram is basically a flowchart to represent the flow from one activity to another activity. The activity can be described as an operation of the system. In this particular project the activity diagram can be represented as follow:

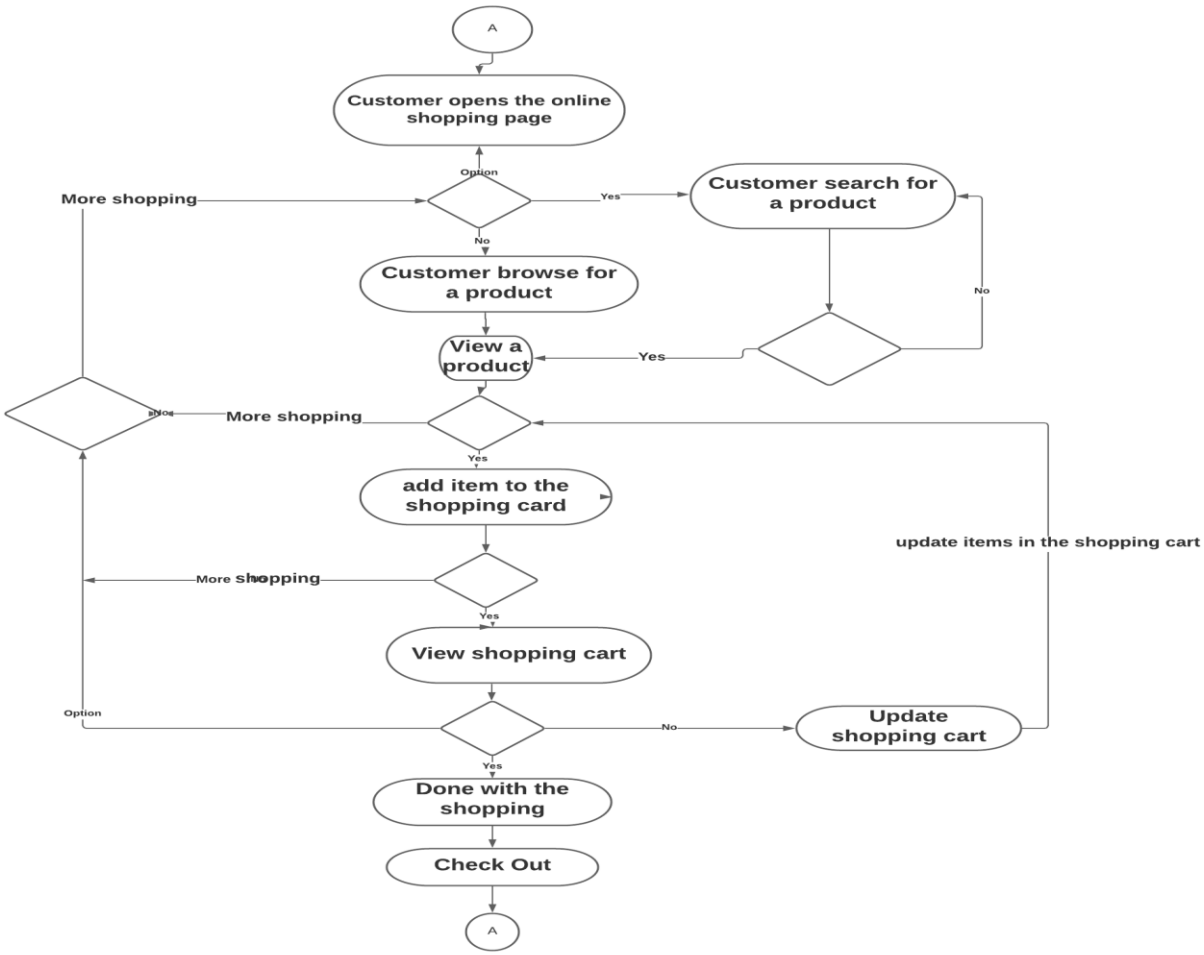


Figure: Activity diagram

Customer opens the online shopping page, customer search for a product, view for a product he can also browse for a product to view the product. When it's done he can add item to the shopping card if he likes the product else he can do more shopping. The online customer can view shopping cart as well as update shopping cart (add product or delete), done with the shopping.

4.2.2 Class diagram

The purpose of the diagram is to introduce some common terms, "dictionary" for online shopping - Customer, Web User, Account, Shopping Cart, Product, Order, Payment, etc. and relationships between.

It could be used as a common ground between business analysts and software developers.

Each customer has unique id and is linked to exactly one **account**. Account owns shopping cart and orders. Customer could register as a web user to be able to buy items online. Customer is not required to be a web user because purchases could also be made by phone or by ordering from catalogues. Web user has login name which also serves as unique id. Web user could be in several states - new, active, temporary blocked, or banned, and be linked to a **shopping cart**. Shopping cart belongs to account.

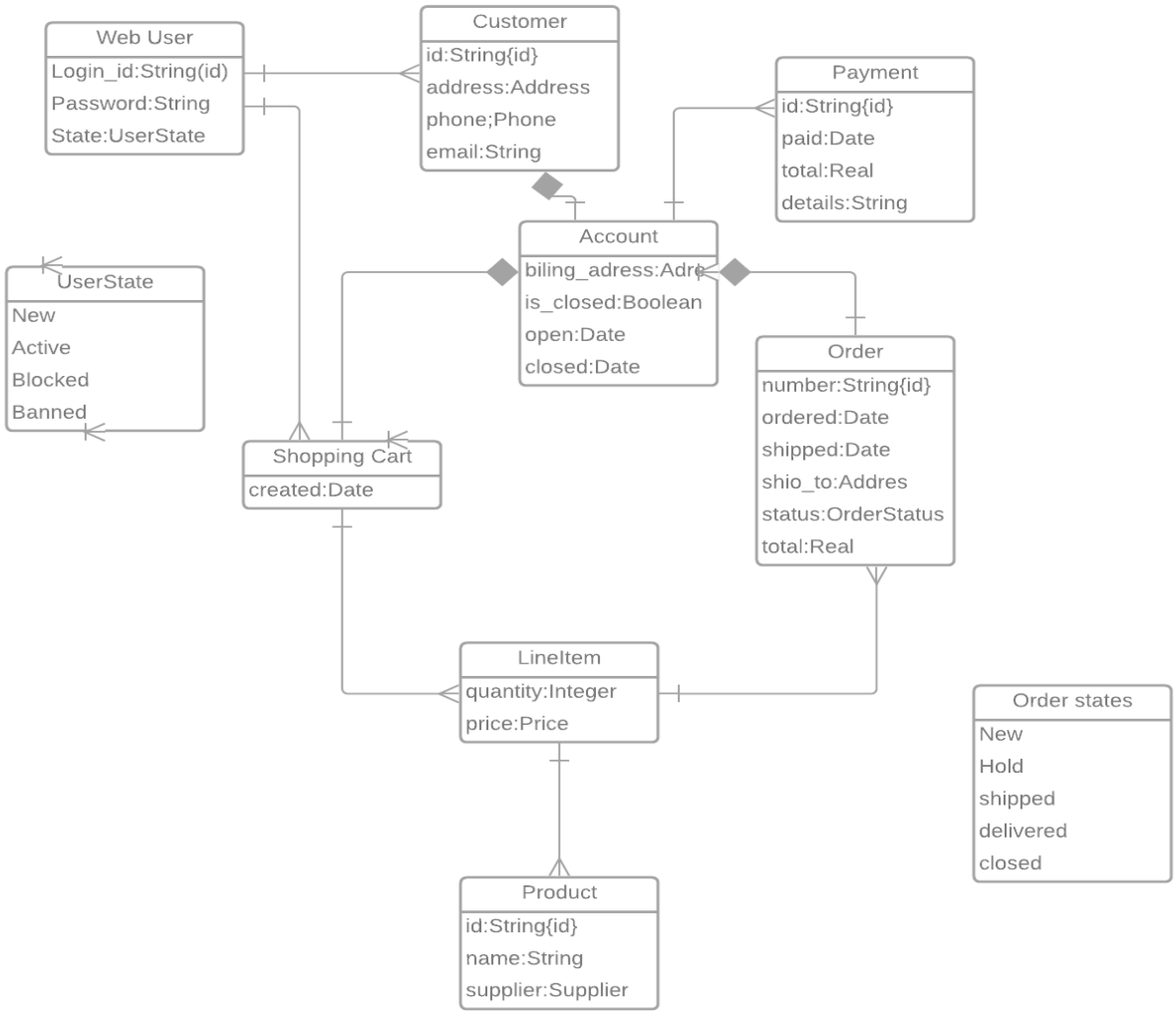


figure UML CLASS DIAGRAM

Account owns customer orders. Customer may have no orders. Customer orders are sorted and unique. Each order could refer to several **payments**, possibly none. Every payment has unique id and is related to exactly one account.
Each order has current order status. Both order and shopping cart have **line items** linked to a specific product. Each line item is related to exactly one product. A product could be associated to many line items or no item at all.

4.2.3 Use case diagram

The use case diagram are usually referred to as behavior diagram used to describe the actions of all user in a system.

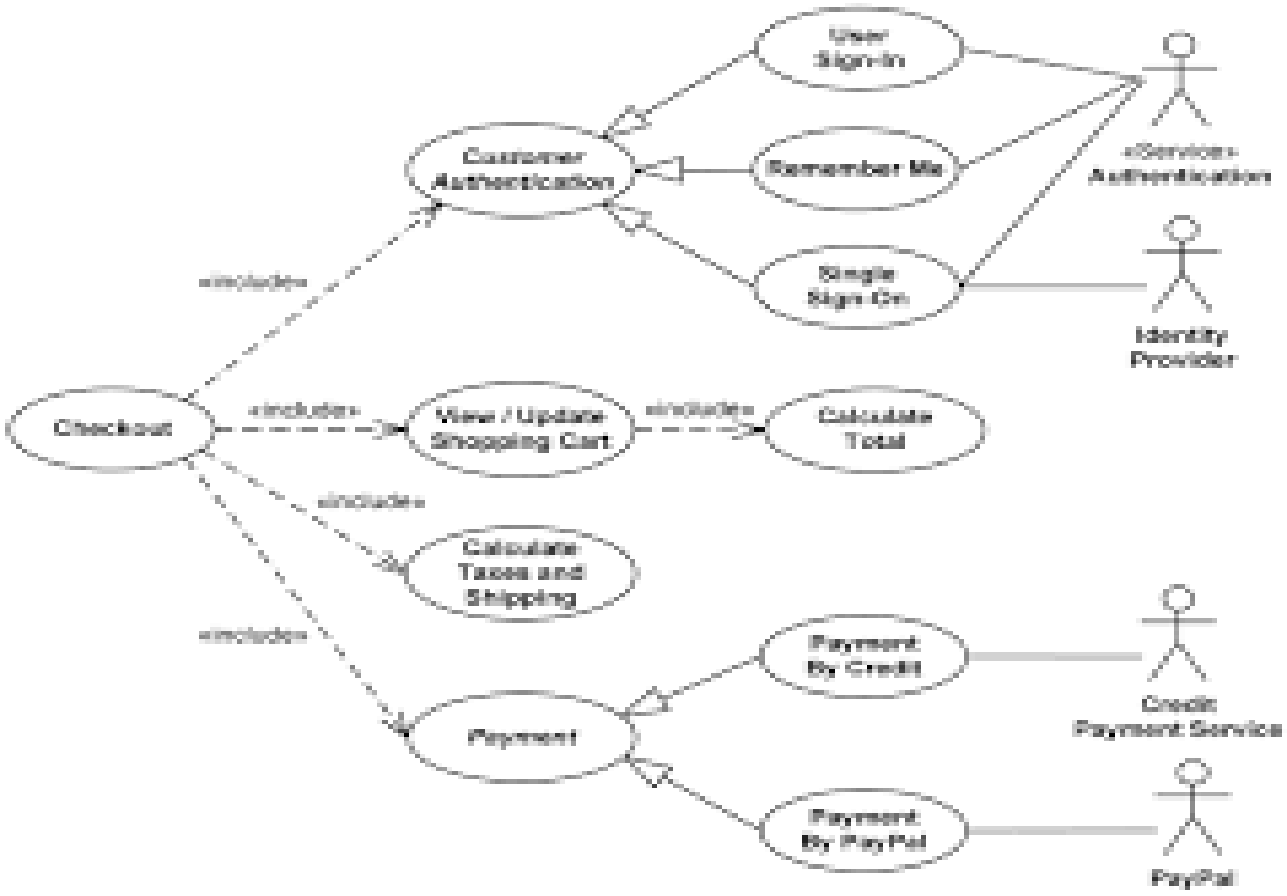


Figure: Use case diagram

4.2.4 Sequence diagram

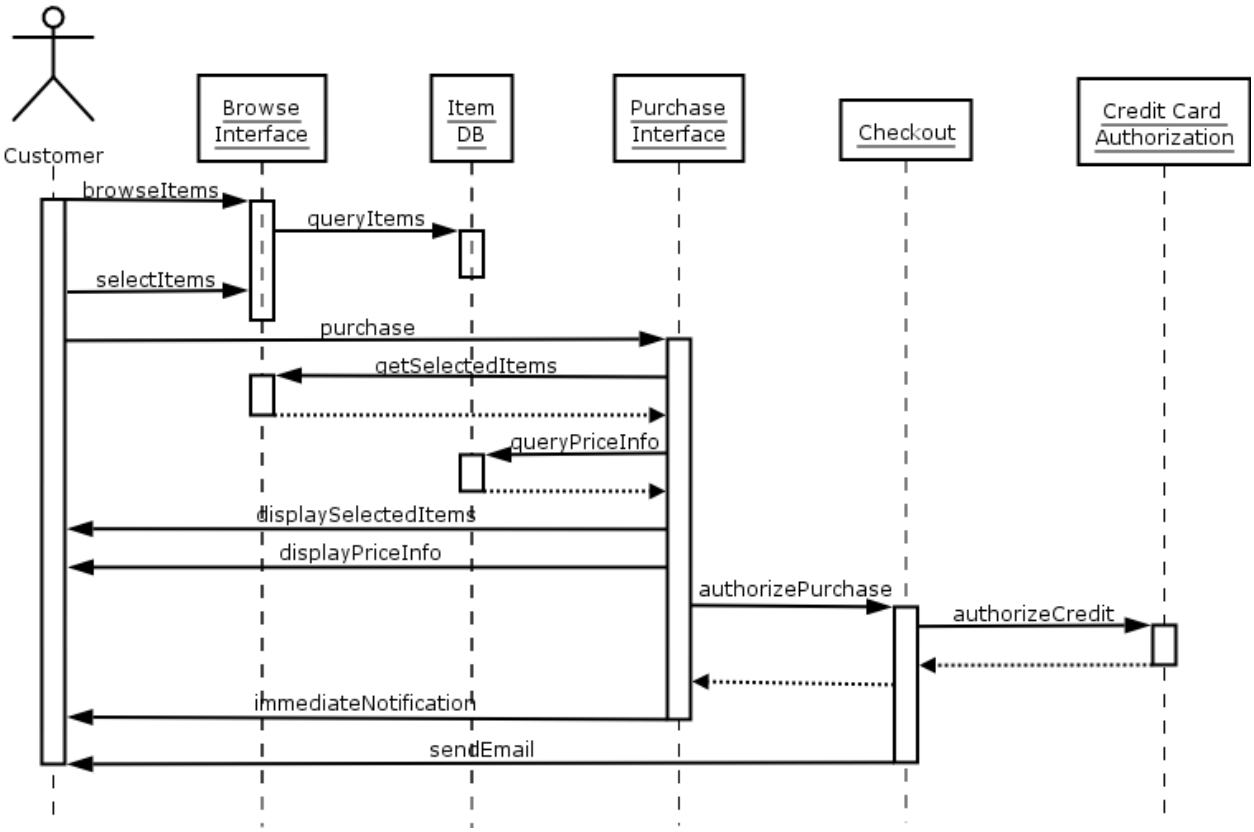


Figure :Sequence diagram

4.2.5 Context diagram

Sometimes called a level O data-flow diagram is drawn in order to define and clarify the boundaries of the software system.it identifies the flows of information between the system and external entities. The figure below represent our online shopping system:

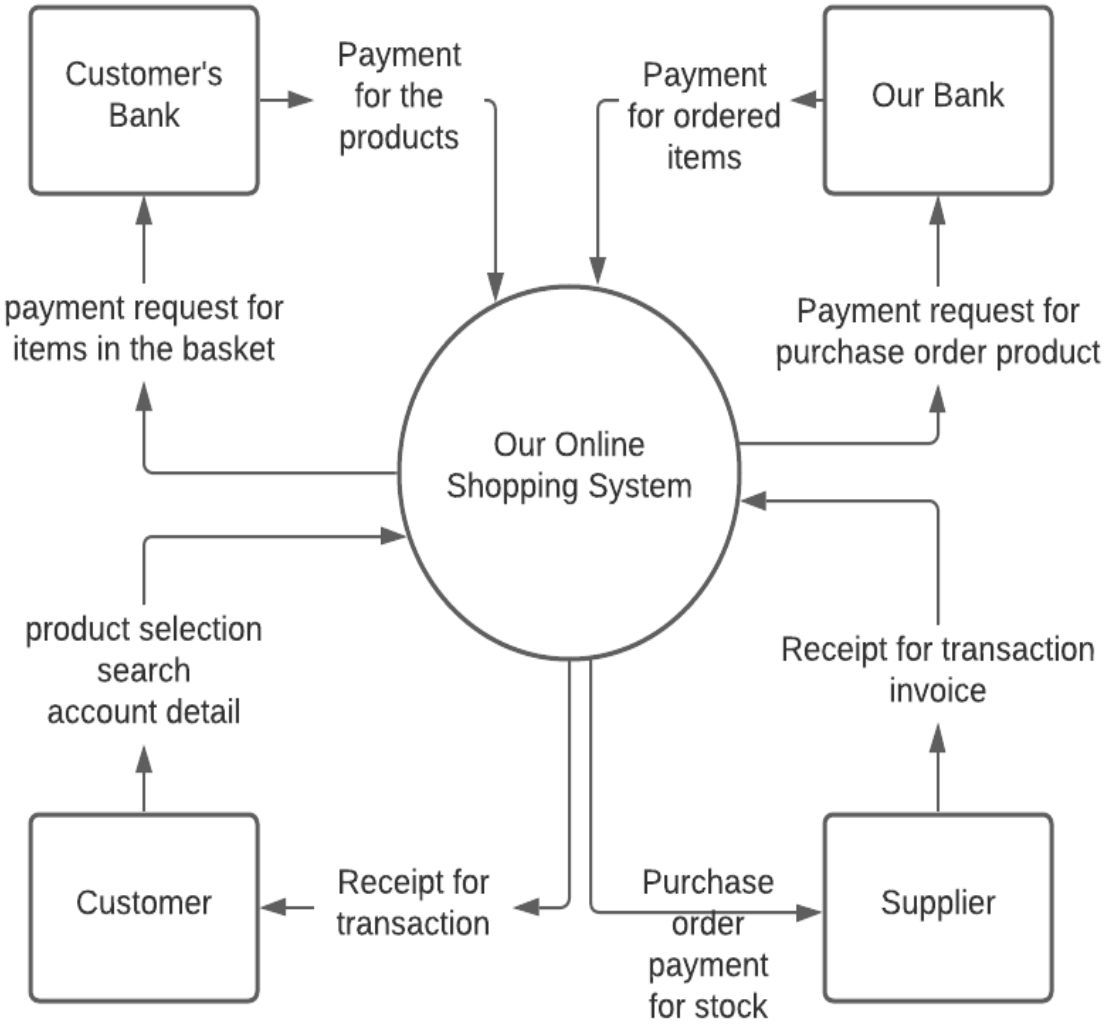


Figure: Context diagram

4.2.6 DFA level 1

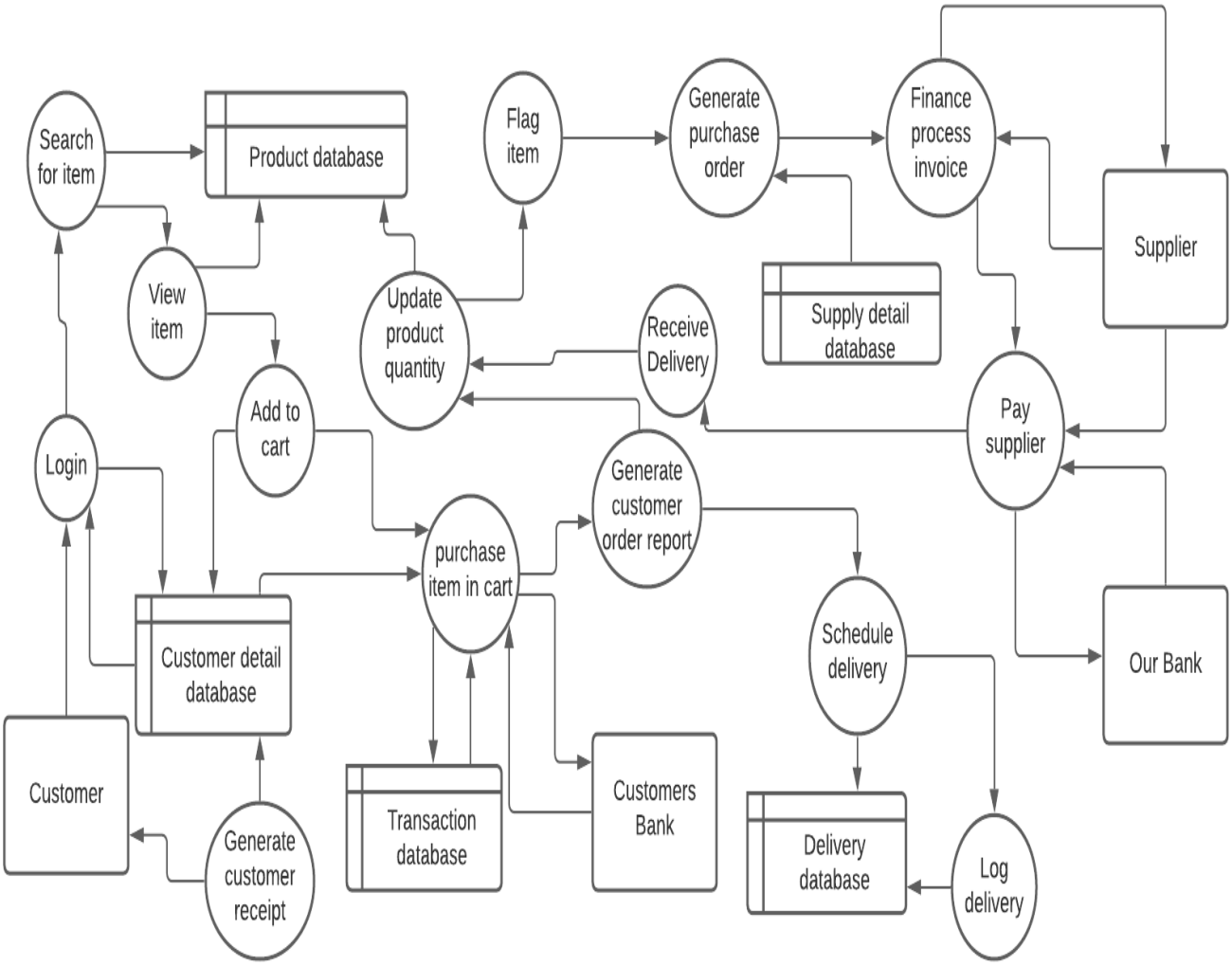


Figure: DFA level 1

CHAPTER 5: IMPLEMENTATION

5.1 Introduction

This chapter will present our Online shopping system highlighting its operational requirements along with a tutorial showing how to operate with it.

5.2 Operational Requirements

❖ Development tools:

- HTML5 and CSS3: Semantic Elements, CSS Grid, Flexbox
- React: Components, Props, Events, Hooks, Router, Axios
- Redux: Store, Reducers, Actions
- Node & Express: Web API, Body Parser, File Upload, JWT
- MongoDB: Mongoose, Aggregation
- Development: ESLint, Babel, Git, Github,
- Stripe & PayPal: Online payment methods
- Vs code

  .

❖ Documentation tools:

- MS power point
- MS Visio 2016
- MS Word

❖ Graphical Design tools:

- CSS Grid

- Photoshop

❖ Hardware requirements:

- At least 2GB of RAM
- Hard Disk space with a minimum 320GB
- CPU – Intel Core 2 Duo

5.3 Tutorial

This section will act as a user manual. There will be instructions on how to operate with the system depending on the desired action.

5.3.1 Home page

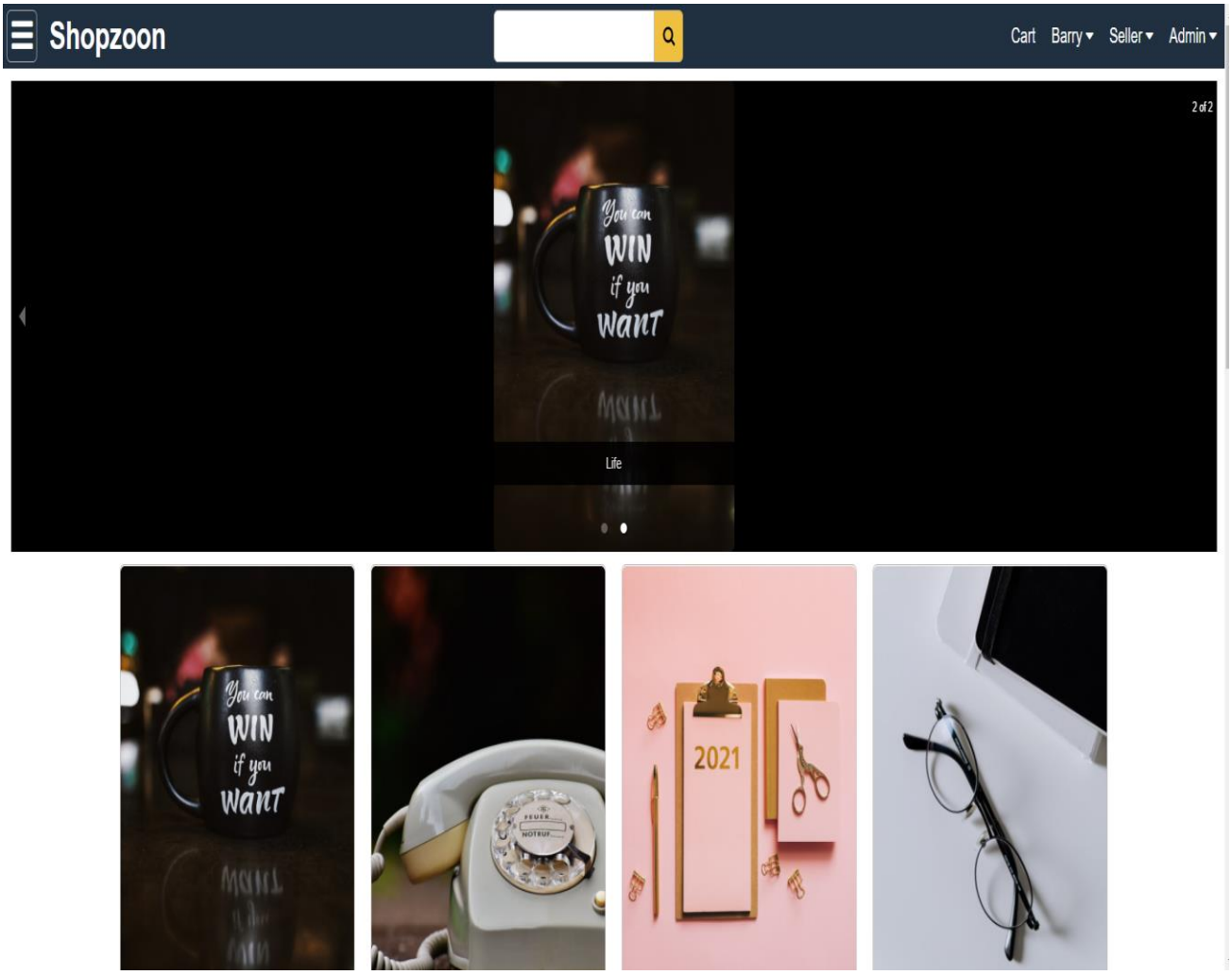


Figure: Home page

The user can view different items as well as different options in order to use the application. The internet user can also sign as a seller, as admin or as a customer.

5.3.1 admin

I

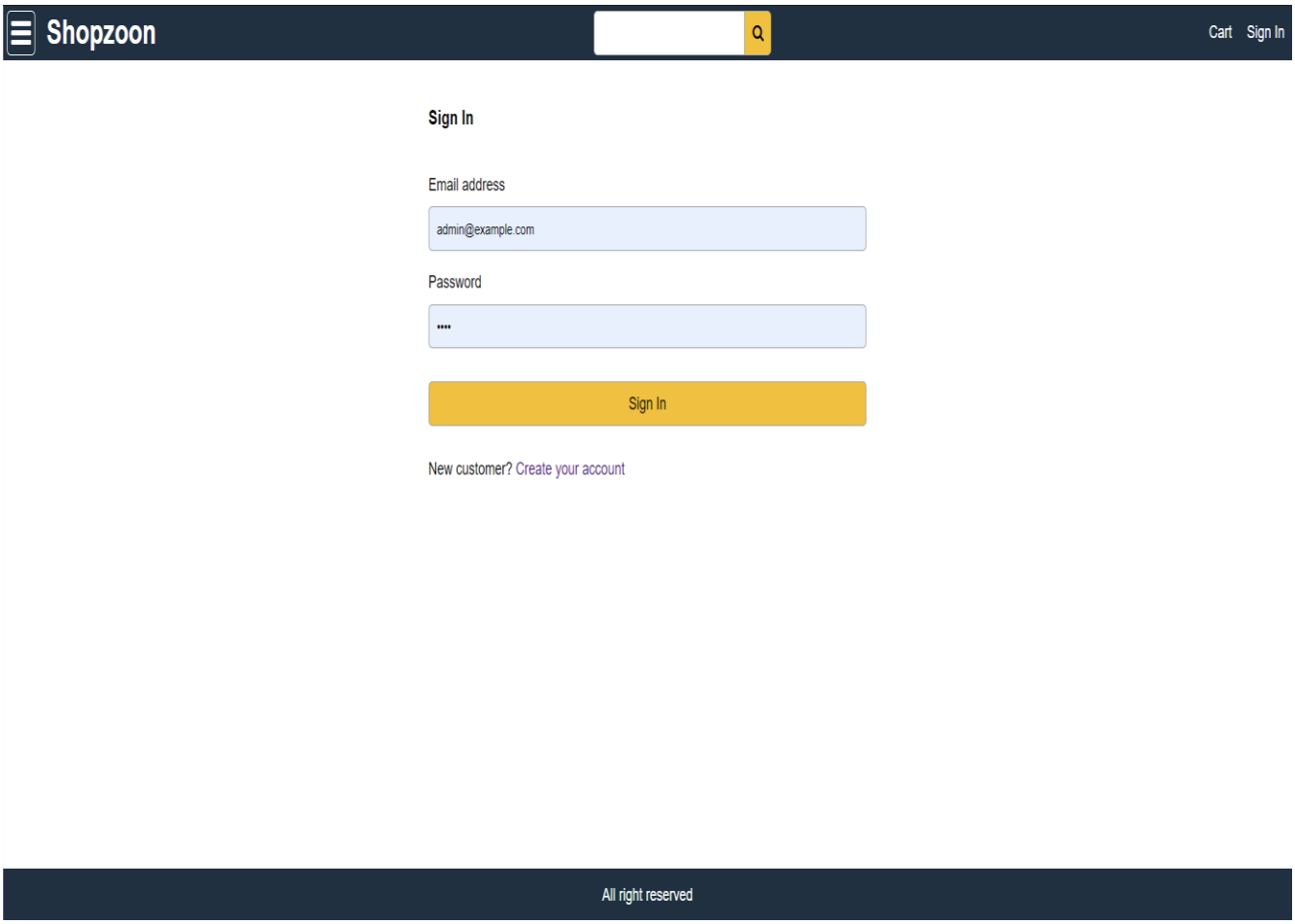


Figure: sign admin

5.3.2 Create account

User can create an account

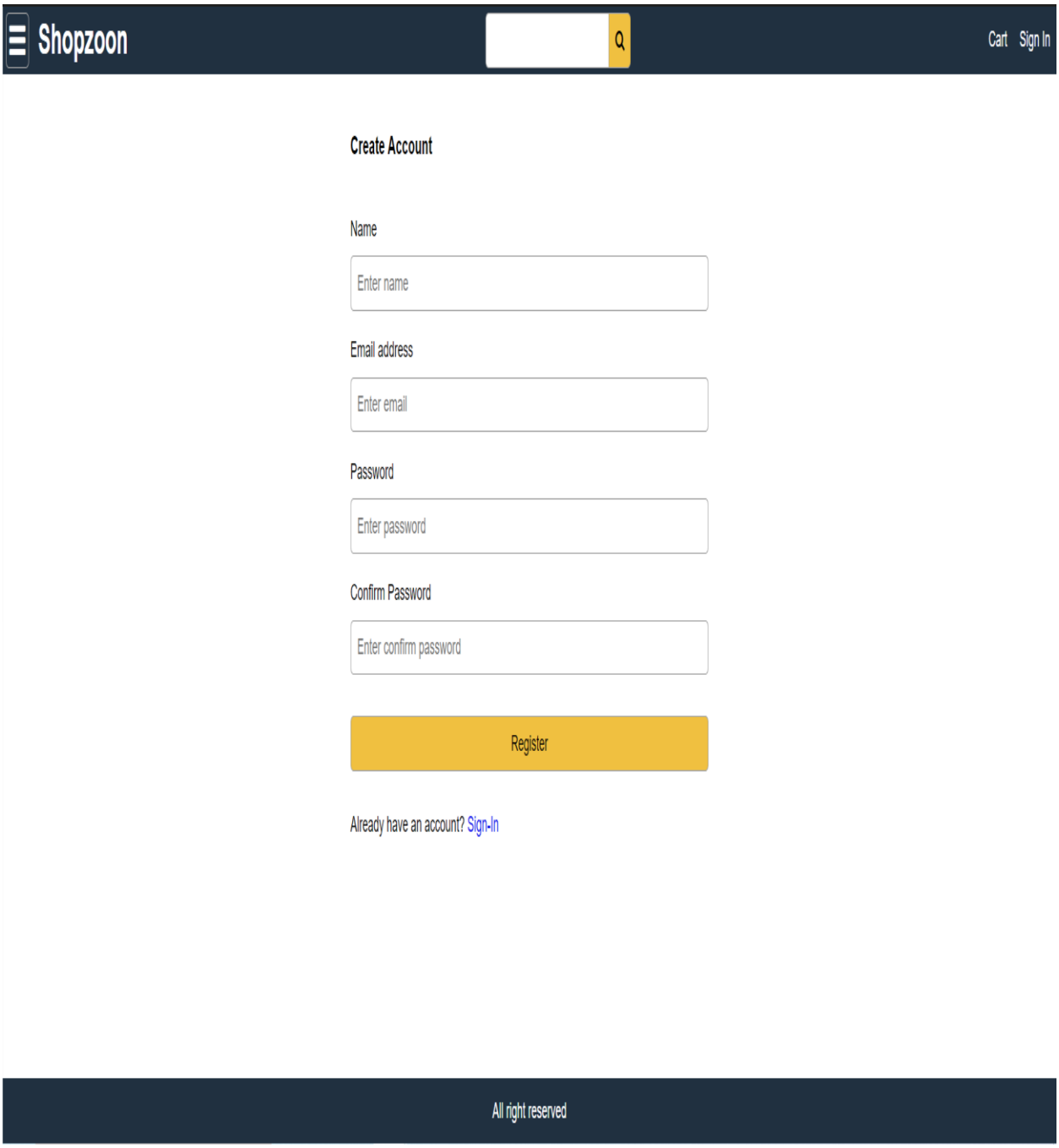


Figure: Create account

5.3.3 Create a product

We can notice from this figure below that an admin can create product (Edit, delete)

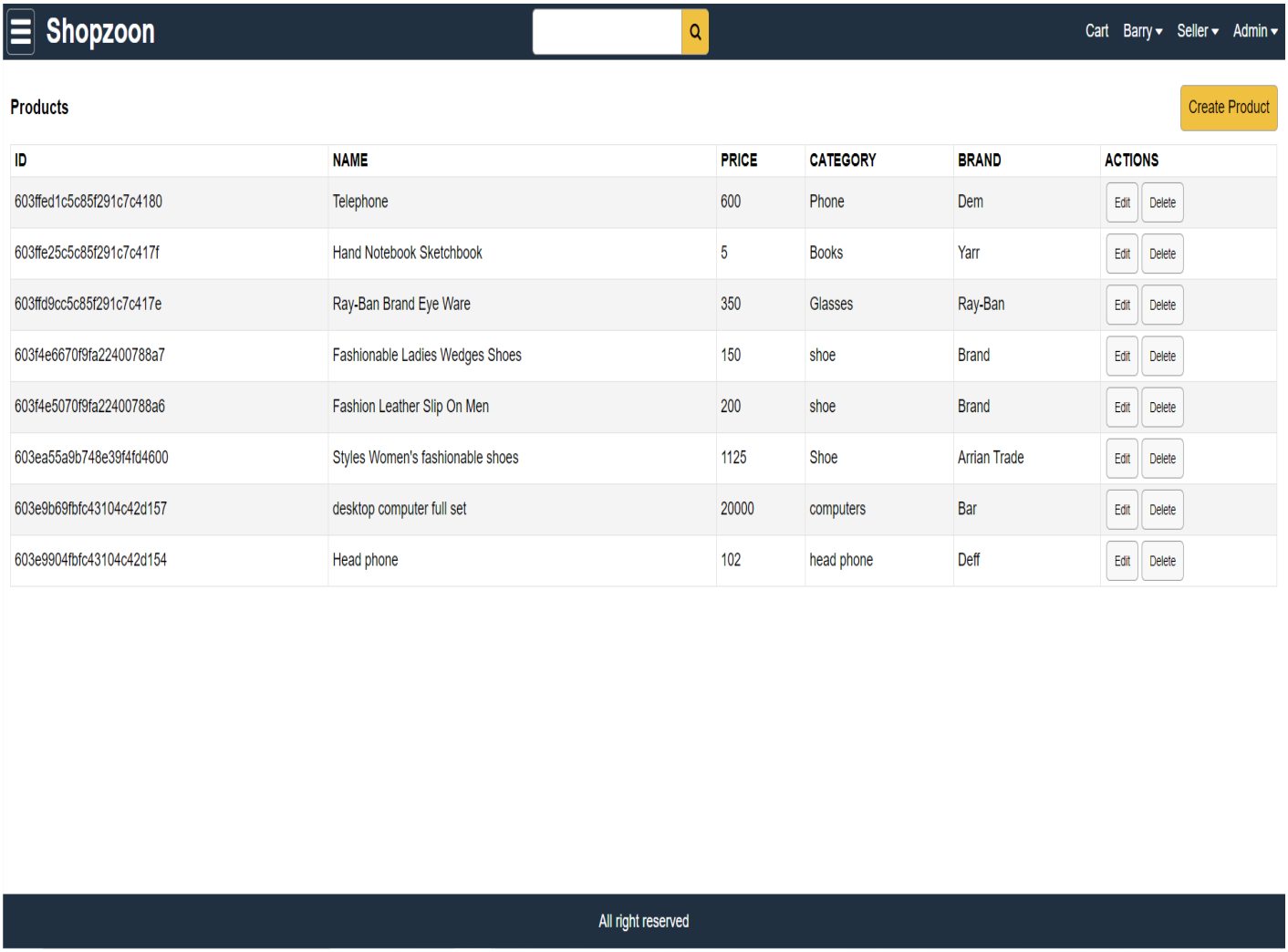


Figure: Create product

5.3.4 Update

The internet user has the ability to update informations and all the details..

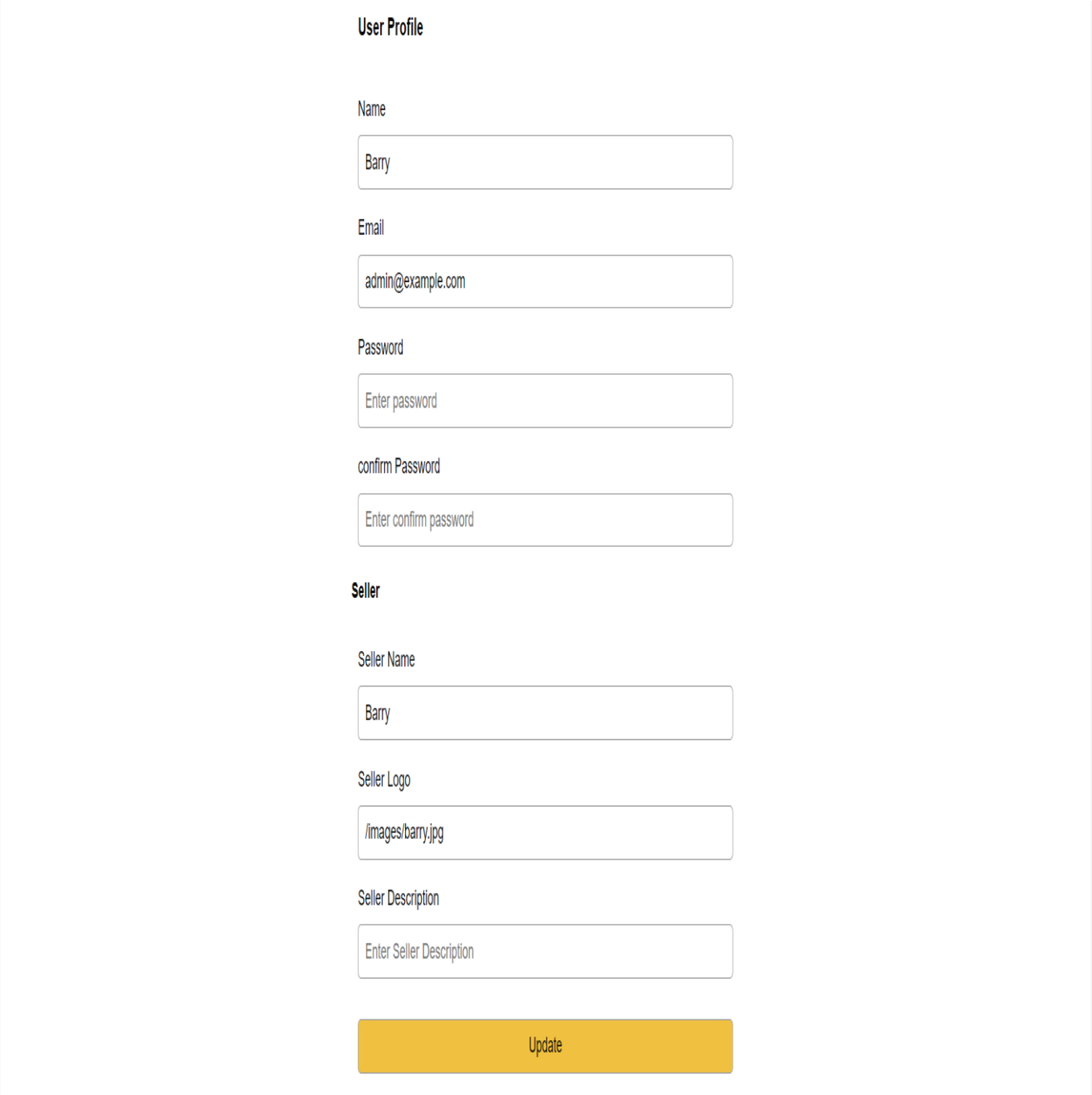
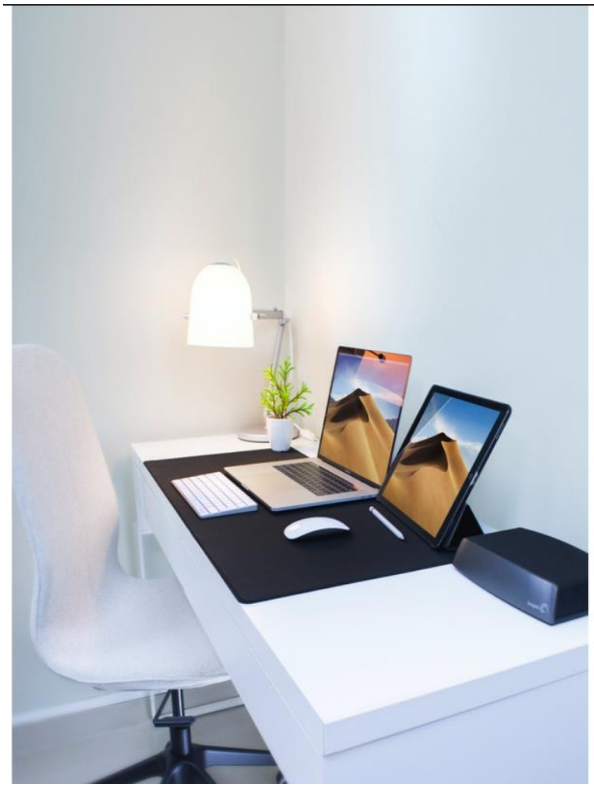


Figure :update

5.3.5 Add to cart

After viewing items, we can add to cart and ones the product has been added successfully then we can check the cart.

Adding to cart is possible PayPal has given a good system.



desktop computer full set

☆☆☆☆☆ 0 reviews

Pirce : $20000

Description:

Full CPU/PC -1 Year Replace Warranty & 3 Years' Service Warranty. Display,Processor, Hard Drive, Ram 1 Year Replace Warranty Main Board: 3 Years' Service Warranty. Power supply, Power Cable, Cooling Fan, Etc warranty 10 days available. If there is product problem or loss 100% Change it. Purchase our product with 100% Warranty & Guaranty. Product Warranty Papers will be available within 7 days from the time of delivery. Or a Daraz invoice will suffice for your warranty.

Seller

Barry

☆☆☆☆☆ 0 reviews

Price $20000

Status In Stock

Qty 1

Add to Cart

Figure: Add to cart

5.3.5 Payment

The user has the possibility of paying online by using PayPal.

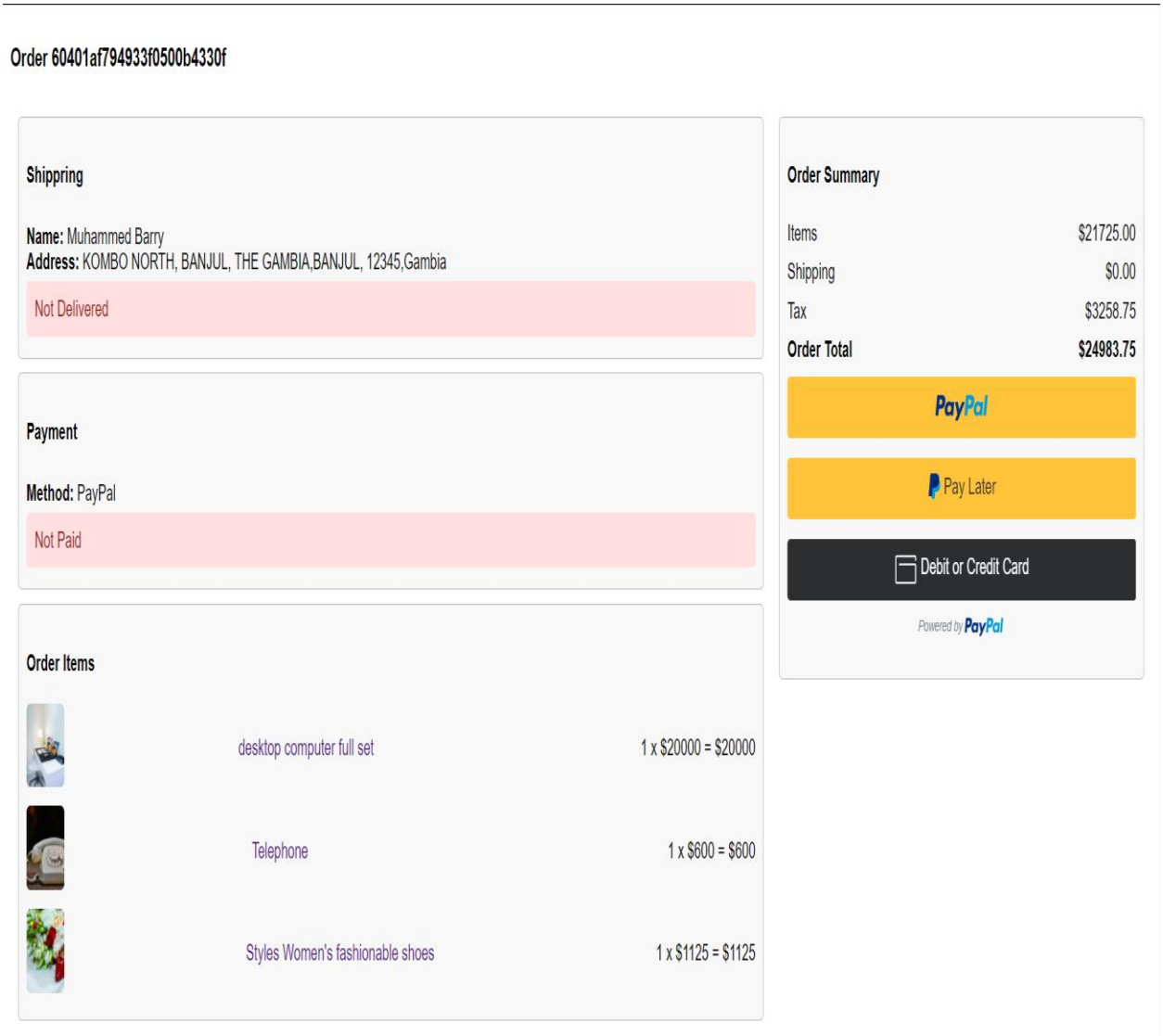


Figure: buying goods

Chapter 6: Conclusion

By the grace and help of God, we will try our upmost best to ensure that this project that we have started can soon be realized so as to pay back to our nations the continent and the world at large. Technology has made significant progress over the years to provide consumers a better online shopping experience and will continue to do so for years to come. With the rapid growth of products and brands, people have speculated that online shopping will overtake in-store shopping. While this has been the case in some areas, there is still demand for brick and mortar stores in market areas where the consumer feels more comfortable seeing and touching the product being bought. However, the availability of online shopping has produced a more educated consumer that can shop around with relative ease without having to spend a large amount of time. In exchange, online shopping has opened up doors to many small retailers that would never be in business if they had to incur the high cost of owning a brick and mortar store. At the end, it has been a win-win situation for both consumer and sellers.

REFERENCES

- www.visual-paradigm.com
- www.lucidchart.com
- https://brill.com/view/journals/ajls/5/3/article-p243_2.xml?language=en