

# **ONLINE BOUTIQUE MERCHANDISE**

**A PROJECT REPORT**

*Submitted by*  
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**Under the guidance of**  
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**April 2021**

## **BONAFIDE CERTIFICATE**

Certified that this project report on **ONLINE BOUTIQUE  
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who carried out the capstone project work under my supervision.  
Certified further, that to the best of my knowledge the work reported  
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The project entitled **ONLINE BOUTIQUE MERCHANDISE** submitted by **STUDENT NAMES AND ID'S** is hereby approved as credible study of research topic and has been presented in satisfactory manner to warrant its acceptance as prerequisite to the degree for which it has been submitted. It is understood that by this approval, the undersigned do not necessarily endorse any conclusion drawn or opinion expressed therein, but approve the thesis for the purpose for which it is submitted.

### **EXAMINER 1**

Signature :

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### **EXTERNAL EXAMINER**

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Name :

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## **ABSTRACT**

The project is aimed at development of an online platform bringing together multiple merchandises to sell their products and services online. The online boutique merchandise platform was aimed at being responsive, robust, secure and user-friendly. The online boutique merchandise excels at providing a seamless experience for all system users including customers, store managers and platform admins.

The platform was developed keeping in view the fundamental E-commerce business paradigm which is gaining popularity and wide acceptance at a previously unprecedented rate. The developed platform will encompass complete business transaction life cycle and enable the customer and store managers to perform business operations and day-to-day tasks with relative ease including business transactions, product inventory, customer care and product showcasing.

The online boutique merchandise was developed in a manner to house multiple categories of clothing items offered by multiple stores. This will ensure the single get way for the customers looking for different clothing articles. The platform will be accessible from any standard browser available.

## **ACKNOWLEDGEMENT**

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## **LIST OF ABBREVIATIONS**

OBM	- Online Boutique Merchandise
EDI	- Electronic Data Interchange
HTTP	- Hyper Text Transfer Protocol
HTTPS	- Secure Hyper Text Transfer Protocol
CRUD	- Create, Read, Update and Delete
CSS	- Cascading Style Sheet
HTML	- Hyper Text Markup Language
SRS	- Software Requirement Specification
RAM	- Random Access Memory
ERD	- Entity Relationship Diagram

# **CHAPTER 1**

## **INTRODUCTION**

### **1.1 OVERVIEW**

The terminology “E-Commerce” is utilized to describe the process of selling and buying services and products being offered online from online merchants, vendors, and sellers through the internet. The fundamental underlying technologies that are encompassed by Electronic Commerce include electronic funds transfer, autonomous inventory management, mobile commerce, supply chain administration and management, electronic data exchange and automated data and collection and analysis of customers.

E-Commerce also refers towards the fully electronic, autonomous commerce in which business operations are performed with minimum physical intervention from human beings. More generally it also refers to the any set of transaction conducted online. The major services and business processes encompassing E-Commerce include customer care, online business transactions, exchanging information, services, and commodities by means of state-of-the-art telecommunications networks and Internet (Britannica.)

Our developed system Online Boutique Merchandise offers an integrated, easy, seamless and user friendly platform to the customers and online store vendors and sellers to sell and buy diverse clothing accessories without leaving the comfort of their homes. The developed web application is available on multiple platforms including Windows, Linux, MacOS, Ubuntu etc. The Online Boutique Merchandise web application is optimized and is made responsive for multiple screen display sizes including mobile phones, tablets and Laptops for enhanced and seamless user experience. The developed system allows buying

electronically the services and items, by their optimized selection based upon their specification on the developed platform.



*Figure 1 Service Stack of E-Commerce Applications.*

## **1.2 PURPOSE**

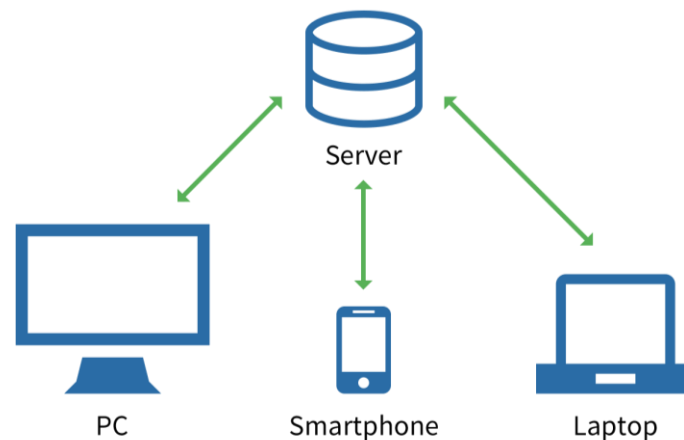
The document enlists and describes the functional and non-functional requirements of the developed Online Boutique Merchandise. The document also delineates the functional specifications of the developed platform. It is drafted in the technical format of SRS Software Requirement Specification document, to clearly and plainly enlist fundamental functionality required by the fully functional system. The document will also serve as development guide where, deemed necessary and later on to validate the functional requirements of the developed system. The document is also aimed at gathering and analyzing the

requirements of the system and resultantly provide an in-depth and understandable insight into the complete system architecture of Online Boutique Merchandise. It also helps in establishing the detailed and clear problem definition.

### 1.3 SCOPE OF THE PROJECT

The developed web application is named as “Online Boutique Merchandise”. The system architecture is formulated in a manner to facilitate the buyers and vendors offering their clothing items, in a fashionable manner. The fundamental underlying principle is cross platform availability of the web application to ensure its wide availability and enhancement of user experience.

The system architecture is formulated along traditional Client – Server model. The base instance of the Online Boutique Merchandise web application will run on the server, utilizing underlying available physical and computational resources to perform server-side operations. On client side each user will be provided with an remote seamless user interface, accessible through commercially available web browsers. The client will send the request to server running base of developed web application and after successful handshake the client will be provided with remote user interface to interact with.



*Figure 2 Illustration of Client Server architecture.*

The Online Boutique Merchandise will allow the customers, vendors / sellers and system admin to register themselves with the platform. After successful registration the above mentioned entities will become the part of the platform. The customer will be presented with option to browse the web application, view the products and stores, search and filter the product listings, select the enlisted products to his / her liking and subsequently add the selected products to cart. The customer can then decide to check out the cart or save the cart for later.

Similarly, after the successful registration the vendor/ sellers will be able to create their store on Online Boutique Merchandise platform. After verification from the admin, they will be presented with the option to add, view, update and delete the products and various clothing accessories directly associated with their store. Moreover, they will be presented with the options to manage the categories by performing standard CRUD functionality from their store panel. Furthermore, the vendors and sellers will be able to assign the products to available categories for better grouping and easy accessibility for customers. Online Boutique Merchandise platform will manage the individual store inventory seamlessly, synchronously and efficiently. The number of checked out products will be subtracted from the inventory ledger maintained and will inform the store owner on real time.

Lastly, the admin is super user of the proposed web application. The admin will be able to verify the store. The admin role will be responsible for managing and maintaining the Online Boutique Merchandise in real-time. Additionally, the admin will be responsible for handling any run time errors occurred caused because of internal server errors or caused due to power outage or external damage to physical computational resources. The admin will also be able to perform create, read, write and update operations on diverse set of entities and process, for instance view, delete the customers and stores.

Apart from that, Online Boutique Merchandise contains some bottle necks and constraints pertaining to the functionalities it can perform. The developed platform follows uni-role policy i.e., each role will have characteristic predefined options and cannot overlap with other roles. For instance, the admin cannot be a customer and order the product using admin credentials. Similarly, the store owners cannot be customers.

Moreover, the developed platform supports only one system admin. And the login credentials of the system admin role are hardcoded however, admin is given flexibility to change / modify profile details. The developed platform will only allow the single promotional item or accessory to be added to cart. Furthermore, the developed web application runs on localhost and is not deployed on World Wide Web (WWW). Also, the Online Boutique Merchandise platform involves some security risks pertaining to the fact that genuineness and intentions of the user cannot be verified as all the transactions and operations are happening online, without any physical intervention for most part.

#### 1.4 DEFINITIONS AND ACRONYMS

The definitions and acronyms of terminologies accompanying the document are enlisted below in tabular form:

Terminologies	Definitions
<b>Barcode</b>	A unique identifier assigned to single items
<b>Product</b>	An instance of an Item that has additional attributes: Name, Category
<b>Button</b>	A user interface element that allows a User to click and inform the system to take an action
<b>Checkbox</b>	A user interface element that allows a User to inform the system that he/she selected a particular item
<b>Checkout</b>	The process a Customer goes through to purchase an Item



<b>CRUD</b>	<b>Create, Retrieve, Update, Delete</b>
<b>Customer</b>	A person that is a user of the system but has created an account
<b>Inventory</b>	An object that holds items available for purchase by the Customer
<b>Item</b>	An individual entity in the inventory which has several descriptive attributes: Identifier, Price, Reorder Threshold, Stock
<b>Store Manager</b>	A single person that has the ability to create, retrieve, update and delete items in the store. This person cannot simultaneously act as a Customer and Manager.
<b>Promotion</b>	An item-wide percentage-off price discount applied to a Member's shopping cart
<b>Reorder</b>	The system process that automatically orders new stock of an item
<b>Reorder Threshold</b>	The numeric value of an item's stock that must be reached before the system will order additional quantities of the item
<b>Session</b>	The time which a User is actively using the system
<b>Shopping Cart</b>	An object that lists a Customer's selected Items, their applied promotions and gives them an option to check out
<b>Stock</b>	The quantity of any particular item the inventory has on hand
<b>Text Box</b>	A user interface element that allows a User to input text to the system
<b>Transaction</b>	The information related to a customer's purchase that is logged

*Table 1 Definition of Terminologies.*

## 1.5 ADDITIONAL INFORMATION

As discussed earlier the developed web application will follow a client server architecture. The server-side scripting is done utilizing widely used PHP framework Laravel. The front-end side of web application will be developed using Hyper Text Markup Language commonly termed as 'HTML'. The styling of web pages will be done using Cascading Style Sheets (CSS). Additionally, bootstrap will be incorporated in the developed platform to enhance the user experience and make the website more appealing and eye-catching. Moreover, JavaScript (JS) is integrated to make the Online Boutique Merchandise platform dynamic.

The above mentioned technological stack will make the web application dynamic and give it required flexibility. The utilized development stack is also necessary for cross platform availability of web application. The development stack will give the Online Boutique Merchandise platform much needed adaptability and responsiveness.

DEVELOPMENT STACK	
FRONT END	
HTML	To develop the fundamental structure of web pages.
CSS	To style the structured web pages.
Bootstrap	To make web pages and underlying components responsive.
JavaScript	To make the web application dynamic and for in browser processing.
SERVER SIDE	
PHP	For server side scripting.
LARAVEL	PHP framework.
MYSQL	Database to store, retrieve application data.

*Table 2 Development Stack for Proposed System.*

## **CHAPTER 2**

### **THEORETICAL BACKGROUND**

Globalization has changed and revolutionized the working demographics of global economy at an unprecedented rate. It has turned previously isolated world into a well connected single entity by molding it into flat world providing each every individual with leveled field to showcase their talents and have an positive impact to the world around them. It has enabled more individuals to participate in mainstream global economy, irrespective of their geophysical location. Through globalization it has become possible for organization to recruit global talent, conduct business operation through the globe and have global reach to sell their products world wide.

Like every other industry, globalization has introduced diversity in e-commerce resultantly creating new opportunities as well as introducing new challenges for small and large organizations and enterprises alike. E-commerce plays a vital role in alignment of business strategy with business operations so that business objectives are achieved in effective manner.

The role that the rapidly growing e-commerce presence plays in generating and sustaining the returns and revenues of the enterprises and businesses alike cannot be taken for granted. E-commerce plays an impactful, deterministic, and fundamental role in modern economy and revenue generation of enterprises and businesses that, if we were to sideline the revenue generated by e-commerce operations, businesses and economy in the world would come to a screeching halt and the collective world economy would suffer greatly.

Organizations and businesses all across the globe are embracing the idea of e-commerce and digital transformation with utmost zeal and enthusiasm. The

phenomenon is evolving at lightning fast rates, as the businesses, small and large alike, are actively finding ways to embrace the change. E-commerce is creating opportunities for organizations to be more productive, efficient and is assisting them in getting closer to the customers and effectively and efficiently controlling the supply chain.

It is almost impossible for one to perform commerce related business operation without the help of applications incorporating modern computational technology in one manner or another. Computational technologies, for instance the modern developments in networks and data communication stacks, have revolutionized our ability and efficiency performing day to day tasks. Similarly, because of previously unprecedented rapid development, each and every operation and facet of global e-commerce industry has been heavily influenced and revolutionized by the incorporation of technology. Technology has become very significant that it has become the large business itself from computer hardware manufacture to software innovation and growth, and robotics. Technology has become the billion dollar business for a number of people all around the globe.

In the rapidly digitizing world of ours, there arises a crucial need for organizations and businesses to accept the e-commerce as a viable business model and integrate principles of digital transformation associated with e-commerce in order to survive and prosper. But what constitutes the e-commerce digital transformation? The simple explanation is the usage of digital technologies, e.g., mobiles, computational models, analytics, and cloud to transform and revolutionize the manner in which the people work and businesses, companies and enterprises generate revenue, perform business operations and operate in general.

The way to making a successful online e-commerce store can be tricky and challenging and full of hurdles if unaware of ecommerce fundamental principles

and rules and what ecommerce is supposed to do for the growth and revenue generation of online businesses. Exploring and understanding the guidelines needed to properly implement the e-commerce program is a critical part to growing into successful with online shop business. However, the Online Boutique Merchandise is built around the fundamental e-commerce principles and successfully incorporates all the requirements and necessities to make online business a success. Moreover, the Online Boutique Merchandise offers a seamless e-commerce integration platform for wide array of businesses offering services in clothing accessories and items. It offers a hassle free optimized, flexible, adaptive store creation and integration platform and enable the store owners to showcase their product and services in attractive and fashionable manner.

The modern world is at the point where almost all businesses rely on e-commerce and maintaining positive online presence. Advancements in computation technology, cloud, cloud networking, hardware, software is rapidly become corners stone and foundation of modern e-commerce, an integral part of today's global economy. Without the usage of these components, there would be no development and innovation. The technologies are interlinked and grow as a network. This increase in commerce needs means increased expenditure on cloud infrastructure and system needs. Our developed system is flexible and adaptable enough to cater all these growing needs and requirements without incurring any excessive expenditures.

Interestingly, all of the individual e-commerce websites of today replicate the underlying approach of ancient reality brick-and-mortar buying, luring buyers into storefronts and close conversing with them about their needs and requirements. The merchant's main responsibility, as it has existed for centuries, is to show buyers regarding how particular qualities their product and services exhibit can improve their lives in innovative and significant ways and help buyers transact on the spot (spring, T., Jul. 2018)

The Online Boutique Merchandise platforms levels the e-commerce playing field and ensures that equal opportunities are made available for each and every one having access. Merchants anywhere will sustain storefronts on the platform with only a couple of clicks leading towards great accomplishments.

Lately, the option of opting e-commerce as viable business model has been made easier as the ecosystem of digital tools and advertising products has been evolved in the “extreme outsourcing” e-commerce model. The system of service providers includes a variety of infinitely scalable e-commerce infrastructure, tools and supply chain operation that placed still the smallest merchants on same footing as larger transactions (spring, T., Jul. 2018)

Safety underlies another crucial aspect of modern e-commerce industry, namely privacy of user data. The large construction, accumulation and usage of personal profiles that demonstrate the user actions over many years and in some private pursuits raises concerns. Such fears are thus far but partly addressed via government, self-regulation, and public force that will get instant cultural amplification on the Internet (Britannica.) Cyber-attacks are the great issue in today’s tech-driven world, and it’s just getting worse. Issues relating to the cyber security are the fastest growing offense in the United States. The cyber security industry is expanding quickly, purely driven by the increase in crime. According to the Cybersecurity Ventures study, the cyber security industry saw the increase of around 350 percent between 2004 and 2017. It rose from \$ 3.5Bn to \$ 120Bn in only over the decade with governments and institutions putting billions upon trillions to make their organizations and countries capable of coping with new threats and issues of the cyber world.

As the number of data networks, e-commerce and digital applications are growing simultaneously with the advancements in the internet, the opportunities of cyber victimization and cyber offences are also on the rise. Even a little error

in securing information or bad social networking will prove to be extremely harmful. If standardized and proper measures are not taken to secure the information, it gets easier for hackers or unauthorized users to initiate viruses or socially engineered attacks that are designed to take information which can prove disastrous monetarily, physically and emotionally. These diverse domain of issues and problems highlight the necessity for cyber security as an important way in protecting and keeping information from being used inappropriately.

Modern day organizations and their e-commerce business operations revolve around the successful, secure and reliable IT infrastructure, and none of the software, applications and codebases are deemed to be invulnerable from wide array of attack vectors. Keeping in regard, the developed Online Boutique Merchandise platform implements fundamental and effective security control and preventive measure.

Additionally, most modern day enterprises are facing challenging situations while meeting the internal and external requirements. Catering the needs of end consumers, shareholders and stakeholders is also tremendously difficult. Furthermore, they are subjected to strict rules and regulation concerning the data privacy, consumer safety and personally identifiable information processing and storage. Failure or negligence in compliance with any of safety and privacy standards can result in massive lawsuits that can not only financially cripple an organization but can also result in negative media publicity that destroy its market value and reputation. However, a well thought out and well formed effective e-commerce business plan and strategy can prevent that by maintaining all the standards while adding continuous value to business operations.



*Figure 3 E-Commerce as an viable option.*

Resource management is also a significant challenge faced by the small and large enterprises alike. Most organization with no e-commerce strategies face common pitfalls in resource balancing and efficient management of available resources. The organization's executives and managers cannot effectively allocate the critical organizational resources. Effective e-commerce business strategy can lead towards the successful organization and planning of organizational initiatives ensuring continuous and adequate support.



Another key motivating factor for businesses to adopt e-commerce is the increased accountability at every level of organizational hierarchy, as an end product afterwards the successful adoption.

The e-commerce encourages the executives and organizational leadership to exercise their decision-making power in a well thought out manner that will empower the organization, its employees and its objectives, leading to creation of harmonious, encouraging and cooperative culture.

The developed platform Online Business Boutique implements state of the art techniques to engage customers and store their interactions. Synchronous, consistent and transaction based database schema is incorporated into the developed platform to store customer interactions, following successful practices and principles of e-commerce. The developed database schema will ensure that the Online Boutique Merchandise developed platform will be able to fulfill the business requirement of continuous and seamless availability, by making the data easily accessible wherever and whenever needed. The developed platform will not need any increased computational infrastructure to be bought, as the magnitude to data continues to grow.

Businesses and organizations that see the digital innovations in e-commerce through the lens of traditional business process technology generally end up losing the benefits that e-commerce has to offer. The digital transformation journey moves the organization and businesses from the process-defined world to the data-driven reality and it greatly transforms the value the organization delivers to customers and end users (Bendor-Samuel, P., Jul. 2017).

E-commerce is no longer an option; it's the new way of doing business. E-commerce has become imperative and is powerful enough for the organizations to adopt it and enhance their capabilities in producing the high-value end user

experiences. E-commerce is proving to be fundamental and crucial, and the organizations have begun to innovate and adapt themselves accordingly.

## **CHAPTER 3**

### **PROPOSED SYSTEM**

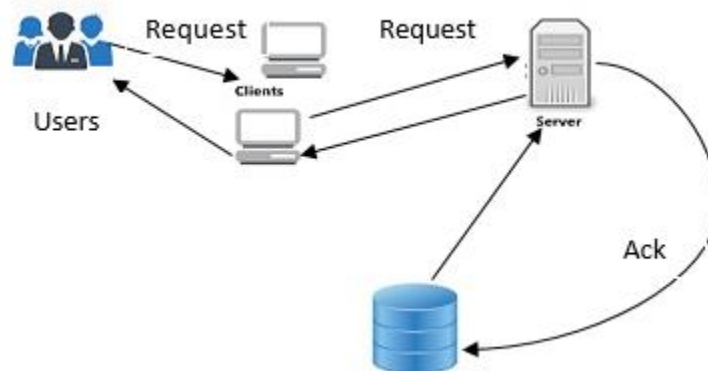
This chapter illustrates the brief technical description of the developed e-commerce platform Online Boutique Merchandise, its architecture, organization, planning and within certain constraints the chapter also demonstrates extent of functionality of the developed platform. The chapter provides an in-depth overview and description of the developed Online Boutique Merchandise platform to sufficiently determine the feasibility and usability of the finished product.

The Online Boutique Merchandise implements a web application that is used to sell multiple clothing accessories and items online. The system has inbuilt capability to manage and administer online stores from a single dashboard. The developed system automates the several business processes, for instance, the inventory levels, orders, sales, and their subsequent deliveries. The developed platform provides an out of the box innovative and efficient option for organization and companies working in clothing industry to integrate themselves with the Online Boutique Merchandise e-commerce platform and resultantly, boost their revenues and returns. The key capabilities of proposed platform are sleek product enlisting, multiple stores, inventory optimization and responsive cross platform availability.

The platform implements a data-centered model with a connected database to allow multiple stores and customers to be connected. This allows for later expansion while still supporting the targeted multiple businesses.

### 3.1 ARCHITECTURE

The Online Boutique Merchandise web application constitutes of a data centered architecture in which all the application associated data is centralized and is being accessed frequently, subsequently resulting in the modification of data on a larger frequency. The purpose behind implementation of data centralized model was to achieve the integrity of the data. Our system constitutes of diverse components which communicate through the shared data repositories. By implementing the data-centered model we able to achieve the integrity of data. The data-centered model also added backup and restoring capabilities to our system. We were able to achieve scalability and reusability. The model also helped in reducing the overhead of transient data between our system's components. However, the application of data centered model to some extent has increased the expense of moving the data on a network.



*Figure 4 System Architecture Diagram.*

The fundamental part of the developed Online Boutique Merchandise web application is the implementation of a web based interface which displays the data in real-time concerning the system entities such as products, carts, stores, inventory etc. The developed web based interface integrates many features, the first and foremost being its capability to view the current product real time, along with the capability of searching and sorting the products present

in the inventory. The second feature integrated in the web based interface is that it enables the end users to modify and customize the application settings, with some constraints.

The system also maintains a behind the scenes inventory for added products and clothing items of every individual store. It contains sales details, purchase details and the available stock that are available. The system comes with provision of updating and maintaining the stock too. The application likewise gives the remaining equalization of the stock maintaining it synchronous with the details of the transactions. The developed web application provides the feature of entitling the every new stock entry and its creation date which makes it feasible to update and maintain the stocks inventory.

### **3.2 DESCRIPTION OF CODE BASE**

The programming languages used for the creation of the Online Boutique Merchandise's web application are Hyper Text Markup Language (HTML) and Cascading Style Sheets (CSS). JavaScript scripting is utilized for creation of interactive web content, for making it responsive, for making the web application dynamic and for client side processing and calculations. PHP's widely used framework Laravel is used for server-side scripting with MYSQL to perform database functionality. The Online Boutique Merchandise was designed using Atom editor, in which three tier architecture structure was implemented.

The Online Boutique Merchandise web application implementation is monolithic and entails to a single repository. As a result, the code base has simplified integration. Due to implementation of monolithic code base changes to the different components and refactoring of the code in between the different components can be done very easily and feasibly. This approach has decreased the complexity of the source code and has contributed towards making it more optimized, impactful, productive and less complex. The adopted coding practices

have positively influenced the stability, maintainability, readability of code and web application and has resultantly made the code much simpler.

The code for developed web application is optimized to be easy to understand and user friendly. The source code encompasses the coding standards and is written with the descriptive function and variable names. The components of the Online Boutique Merchandise were created accordingly to suit the use cases and to fulfill different requirements including scalability, maintainability, performance, modifiability, testability, modularity, resilience, availability and security of the system. The code was written to be optimized for the limited computing resources such as processing, memory, and communication. The inputs and outputs are kept consistent throughout the code base as much as possible. The source code is based on capturing the implicit assumptions and, was written while keeping in the view that, it encodes the knowledge about the domain the Online Boutique Merchandise is meant to serve, as well as how it will be executed.

The external frameworks that are used to support the development of the Online Boutique Merchandise include jQuery, Bootstrap and Laravel. These external frameworks have been incorporated into development stack as they provide a reasonable way to automate the overhead associated with the common activities performed by the Online Boutique Merchandise web application. The external frameworks have also increased the code reusability to a larger extent. The application of frameworks like bootstrap and JQuery have made the product responsive and dynamic. and have set the control flow of the developed web application. The authentication and authorizing features of the external frameworks have also been utilized. The application of the generic modules of the frameworks also ensure that the developed product Online Boutique Merchandise is in full compliance with the business rules and that it is structured, maintainable and upgradable as well. The utilization of frameworks has made the system inter-operable while ensuring the market standards.

To ensure the code quality of the Online Boutique Merchandise we have maintained well defined interfaces and have kept the extra dependencies minimum throughout the code base. The source code is user friendly and self explanatory to a larger extent. A well written and brief documentation, comments and code reviews have also been maintained for the purpose of increasing the code readability and ensuring its quality. The code follows a consistent style which ensures its high code quality. Further the code had been analyzed several times during code creation phase before the code reviews and legacy code had been refactored where required.

### **3.3 FUNCTIONALITY**

While developing the system a cognizant exertion has been made to create and develop a product software package, utilizing accessible tools, technologies, strategies, assets and the resources – that would generate a legitimate business standard System. While making the system, it has been kept in regard to develop it as user friendly, cost-effective, flexible and as practical and as adaptable as could be expected with the resources available.

The quality criteria implemented to gauge the usability and feasibility of resultant web application is summed as follows:

1. *Reliability*: Reliability criteria is used to check how much system is reliable when it comes to use.
2. *Performance efficiency*: This criterion is used to judge how efficiently system performs tasks. This may be in terms of time,
3. *Security*: This tells how much system is secure for customers. This includes authentication and authorization process.
4. *Maintainability*: This tells system efficiency in terms of adaptability to changing needs.

5. *Test ability*: This states the level of ease with which system can be tested. This includes testing of individual components of system as well as testing complete system.

To conclude, Online Boutique Merchandise is a web based e-commerce platform fulfilling all the business standards. It has integrated all the components which are required by the modern online stores for effective operations. The resultant product is successful in making the web application where we can update, insert and delete the item as per the requirement. This application also comes with a feature of simple report on daily basis to know the daily sales and purchase details.



## **CHAPTER 4**

### **REQUIREMENT SPECIFICATION**

The chapter describes the functional and non-functional requirement specifications for the intended system. It breakdowns the Online Boutique Merchandise web application into modules on the basis of functionality being desired and provides an in depth analysis of functional requirements of these modules.

#### **4.1 USER INTERFACE REQUIREMENTS**

The most pivotal requirement for the user interface is its user friendliness and feasibility. The web pages have to be highly optimized and have minimum size, to ensure easy, fast loading and seamless experience within the browser. The interface needs to be developed in manner so that all integrated components, such as buttons, text boxes, lists and sliders would not take excessive time to load and do not use excessive physical resources. The interface must also add to overall security of the web application and deny unauthorized access to the system's resources. The interface needs to have following enlisted qualities:

1. Responsive to different screen sizes
2. Easy to use
3. Dynamic
4. User Friendly
5. Simplified
6. Minimalistic
7. Should address interchangeability and compatibility requirements of desired system
8. Scalable

## 4.2 HARDWARE REQUIREMENTS

The fundamental hardware requirement for the developed system is to be cross platform operatable. Additionally, it should offer same det of functionality and display the interface consistently and with relatively same views across multiple platforms and browsers. The minimum hardware requirements for running the system have be enlisted below:

- System Processor: Core i3 or above
- System RAM: 4 GB or above
- System Hard Disk: 120 GB or above
- Network Interface Card / Wi-Fi Adapter

## 4.3 SOFTWARE REQUIREMENTS

The software requirements for the Online Boutique Merchandise to deploy it successfully and achieve the desired seamless and efficient experience are given in following table.

<b>Operating System</b>	Windows, MACOS, Linux, Android, Ubuntu, Unix etc.
<b>Server Application</b>	XAMPP / WAMPP
<b>Database Server</b>	MySQL database
<b>Browser</b>	Opera, Chrome, Firefox, Edge, Safari

*Table 3 System Software Requirements.*

## 4.4 IN-APP COMMUNICATION INTERFACE

PHP's built-in session variables will be utilized to establish communication channels in between different sections of web application. Additionally, cookies

and Laravel's state management will also be integrated to provide seamless experience.

#### **4.5 FUNCTIONAL REQUIREMENTS**

The functional requirements for the proposed system have been identified and enlisted below:

1. The developed system needs to have three roles to handle use case requirements, namely, Customer, Store Admin / Merchant and Administrator / Admin.
2. All of the above mentioned roles have to be able to register with the system.
3. Only after being successfully registered, the Customer, Merchant and Admin can log into their account by providing valid login credentials.
4. After being logged into the web application, the system must maintain the user state and only provide access to intended resources and web pages.
5. All the transactions carried out by the users of the system must be handled, recorded and subsequently logged.
6. The customer will be able to view product listing and add the desired product and items to cart.
7. The customer will also be able to browse individual store pages.
8. The customer will be provided with the option to filter and sort the enlisted products.
9. The items in the cart can be checked out immediately or the cart can be saved for later use.
10. The cart can only be checked out if the customer is logged. If customer is not logged in, he/ she will be redirected to login page.
11. The Merchant will be able to create and delete store.
12. The Merchant will be able to add products and products in the created store.
13. The Merchant will be provided the option to create price, description and various other associated attributes.

14. Additionally, the merchant will also be responsible for internal processing of the orders placed.
15. An inventory will also be managed behind the scenes for every available product.
16. The system Admin will be responsible for approving new registered stores.
17. The overall maintainability of website will also be performed by the admin.
18. The web application will also incorporate a constructive feedback mechanism.
19. The product will have individual ratings which will be displayed on product enlisting's web page.

#### **4.6 NON-FUNCTIONAL REQUIREMENTS**

The non-functional requirements for developed web application will be as follows:

1. Scalability
2. Continuous Availability
3. Security
4. Reliability of the system
5. Portability
6. Flexibility
7. Maintainability

## **CHAPTER 5**

### **SYSTEM DESIGN**

#### **5.1 ENTITY RELATIONSHIP DIAGRAM**

ERD diagrams or Entity Relationship diagrams highlight the relation between the various entities of the system. They provide the insight into nature of the transactions that will be carried out. They also demonstrate the key attributes of the individual entities.

The entities for developed system are enlisted as follows:

1. Product
2. Admin
3. Store
4. Purchases
5. Customer
6. Users
7. Product Information
8. Password Resets

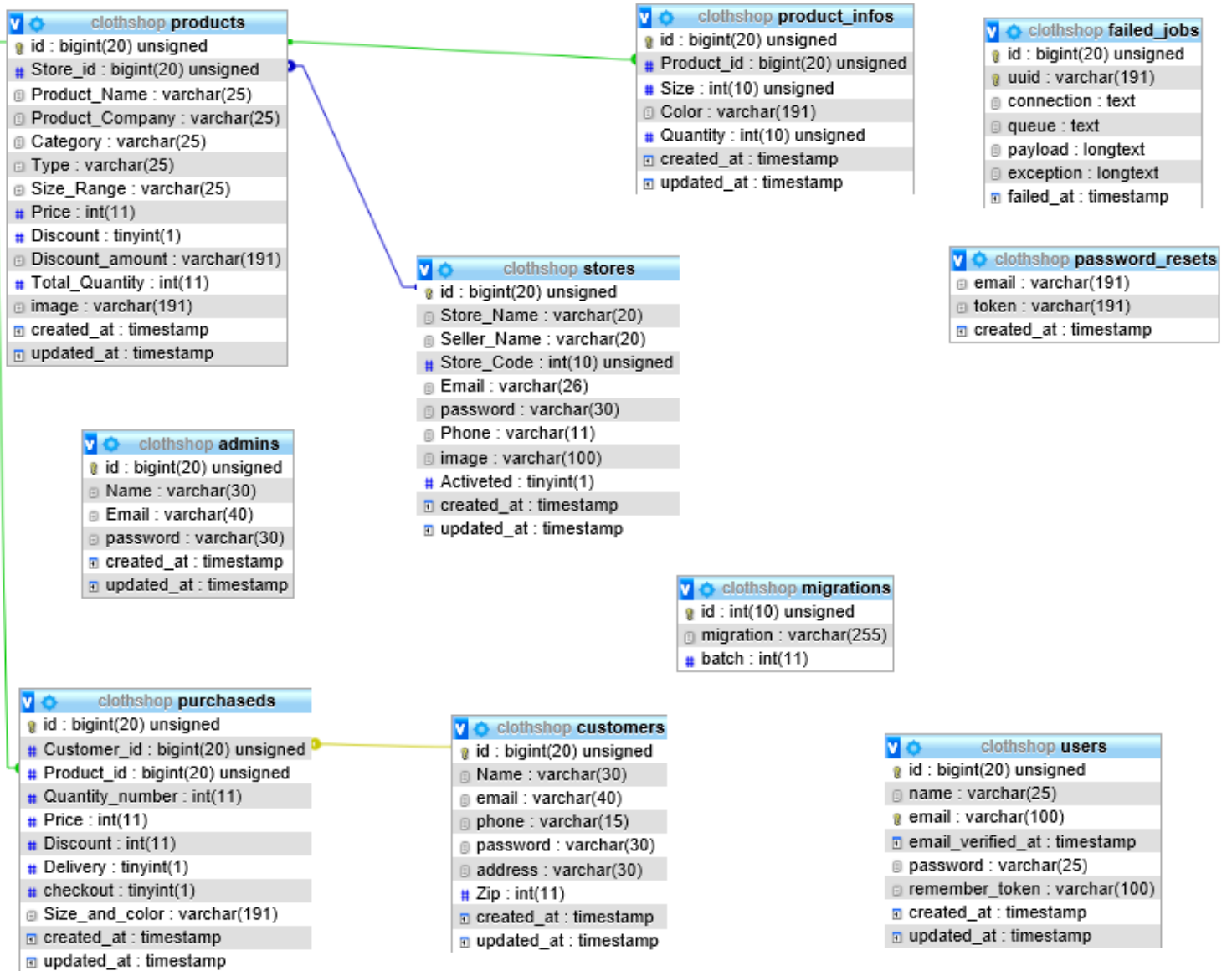


Figure 5 Entity Relationship Diagram

## 5.2 USE CASE DIAGRAM

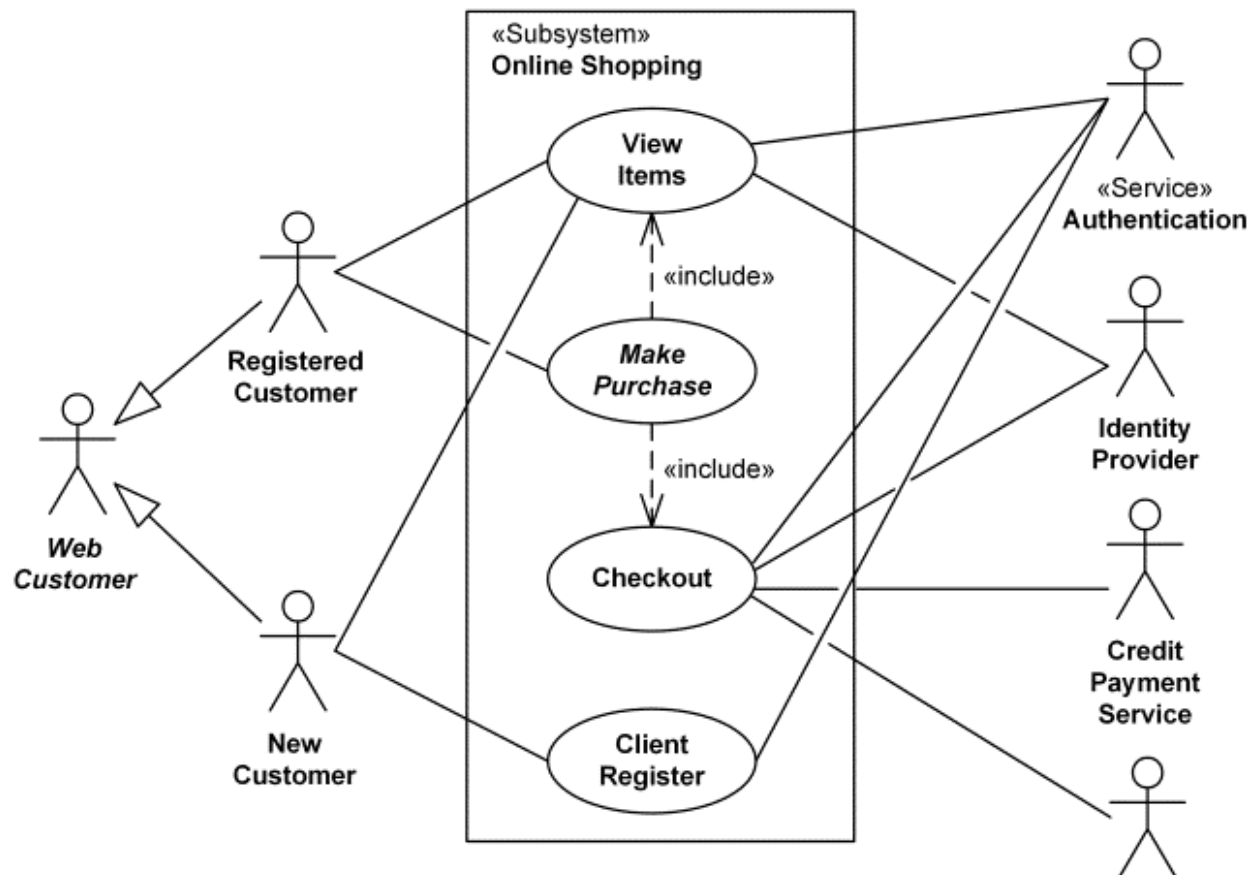


Figure 6 Top Level Use Case Scenario for the Online Boutique Merchandise.

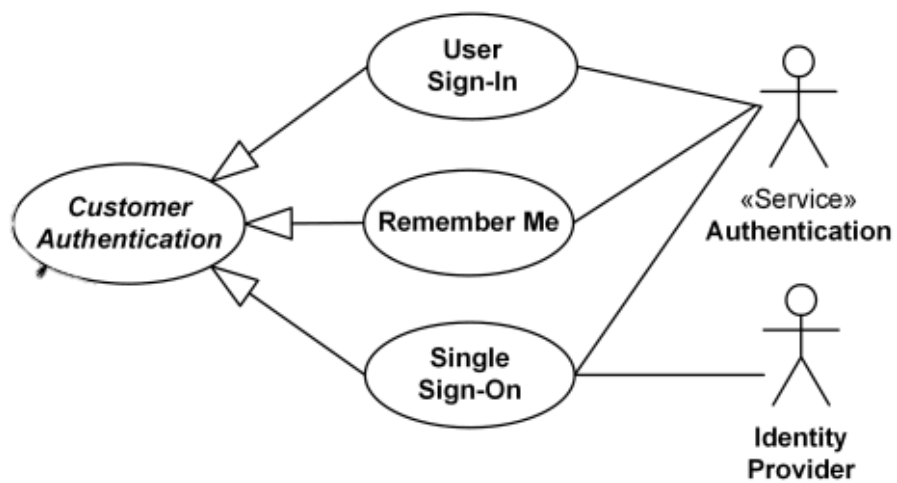


Figure 7 User Authentication / Login User Case.

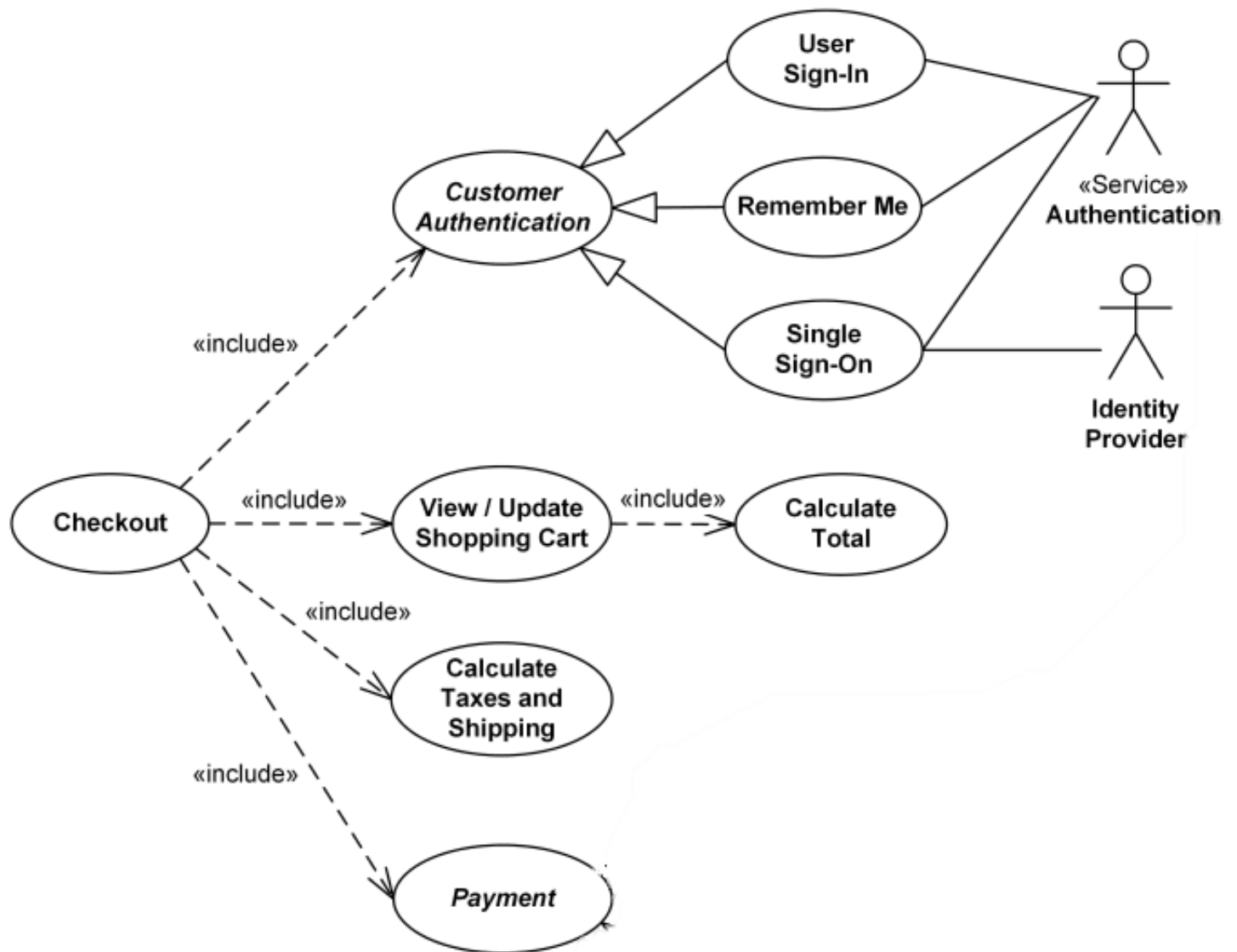


Figure 8 Top Level Checkout Use Case Diagram



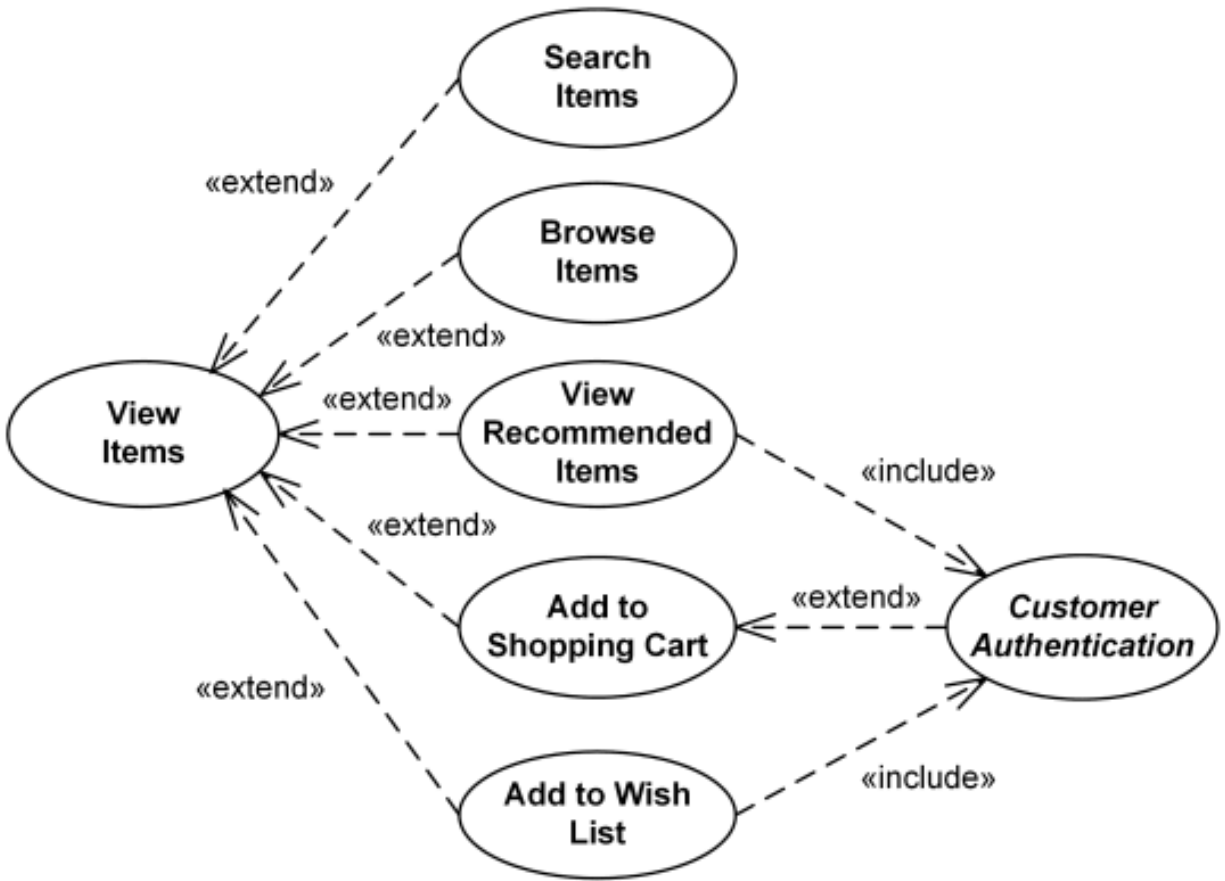


Figure 9 Product View Use Case Diagram.

### 5.3 COMPONENT DIAGRAM

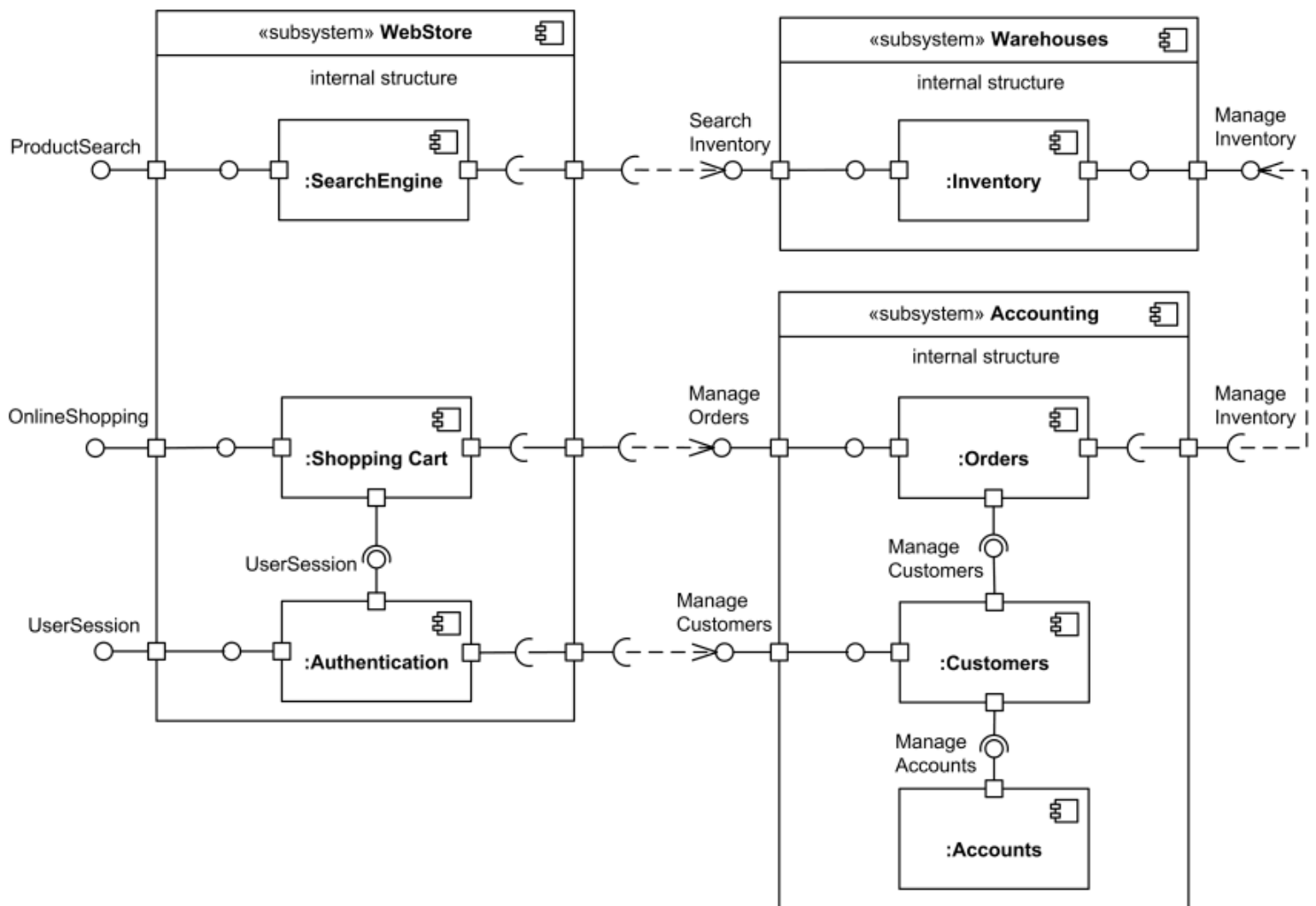


Figure 10 System Level Component Diagram

## 5.4 ACTIVITY DIAGRAM

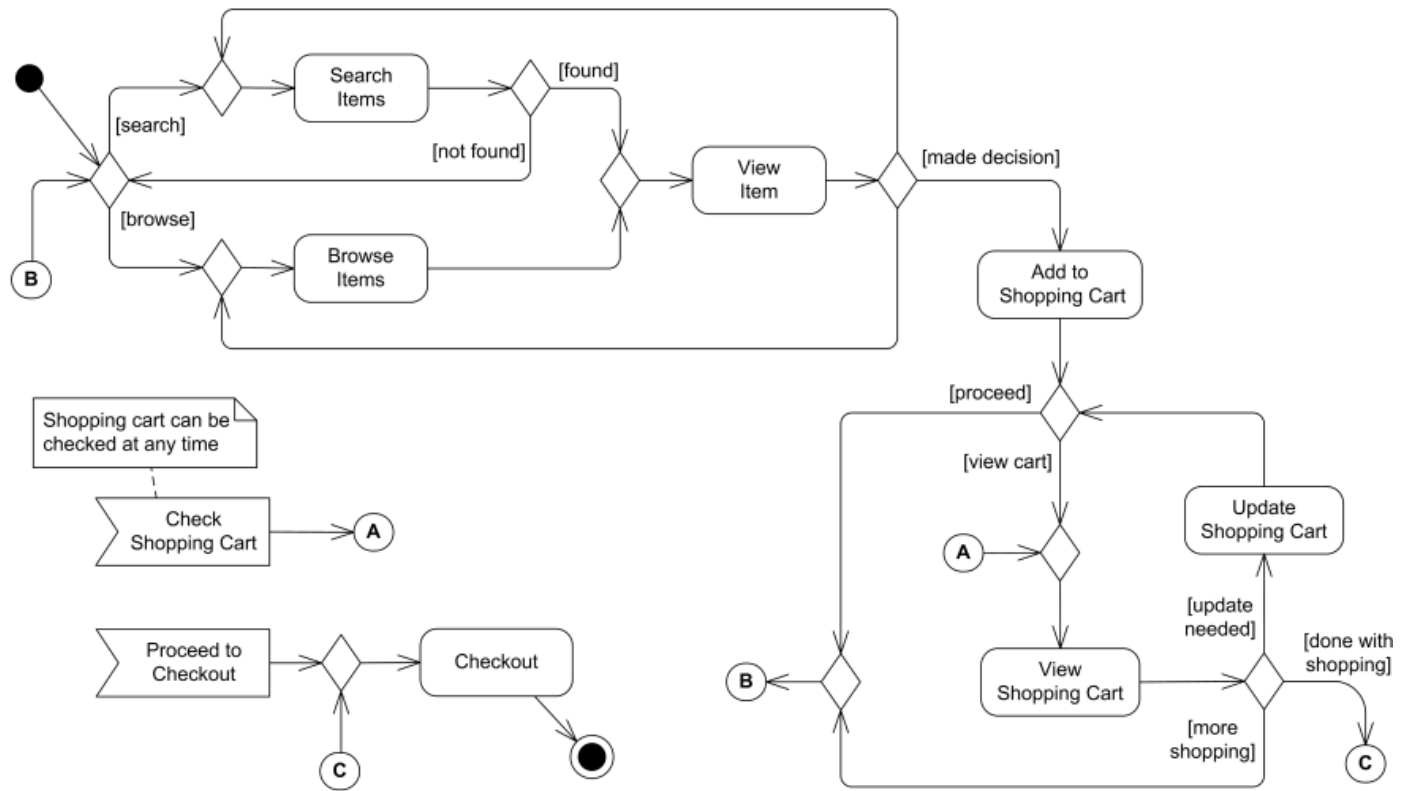


Figure 11 Activity Diagram for Online Shopping

## **CHAPTER 6**

### **IMPLEMENTATION**

Two methodologies for the development of system were initially considered. Further on, based on the evaluation and in-depth requirement analysis Waterfall specific methodology was adopted as a development framework.

#### **1. Waterfall Methodology**

The waterfall methodology is based on the conventional form that has been popular for development as it has simplistic approach in terms of planning and execution. This brings structure and would lead to an extensive documentation.

#### **2. Agile Methodology**

Given the possibility that the requirements can vary and there is a short time frame involved Agile method would also meet the objective for this specific web development. This approach would enable a quick turnaround for any modification that is needed, iterations are possible over short period of time for managing complex deliverables.

The waterfall methodology which was adopted was determined by scope of the work and because of requirement of meeting the stakeholder's requirements which needs to be documented first. The Information System Development model that fulfills requirements and best suits the design needs of proposed system for Online Boutique Merchandise is Waterfall Model. The Waterfall Model is chosen as development model because all of the requirements, objectives and scope of the proposed system were established beforehand, and comprehension of information system was developed by thorough study of existing system.

Additionally, because of the incremental and linear development approach of the waterfall model it best suits the Online Boutique Merchandise development lifecycle, and its incorporation will be a quite straightforward process.

## **CHAPTER 7**

### **CONCLUSION**

To conclude, Online Boutique Merchandise is a web based e-commerce platform fulfilling all the business standards. It has integrated all the components which are required by the modern online stores for effective operations. The platform was developed keeping in view the fundamental E-commerce business paradigm which is gaining popularity and wide acceptance at a previously unprecedented rate. The Online Boutique Merchandise implements a web application that is used to sell multiple clothing accessories and items online. The system has inbuilt capability to manage and administer online stores from a single dashboard. The developed system automates the several business processes, for instance, the inventory levels, orders, sales, and their subsequent deliveries. The developed platform provides an out of the box innovative and efficient option for organization and companies working in clothing industry to integrate themselves with the Online Boutique Merchandise e-commerce platform and resultantly, boost their revenues and returns.

## CHAPTER 8

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## CHAPTER 9

### APPENDICES

Admin Dashboard

Sign Up

Sign Up

Already have an account? [Sign In](#)

Admin Dashboard

Sign In

Sign In

Don't have an account yet ? [Sign Up](#)

Admin Dashboard

button', 'chart' etc.

admin

DASHBOARD

CUSTOMERS


SELLER

ADD STORE

TOTAL CUSTOMERS40%

TOTAL STORES65%

Store: X-ShopCode: 12345




Discription:

Seller Name: Seller || Email : seller@gmail.com

Stop SharingDelete

Store: AmzonOminiCode: 789987



Discription:

Seller Name: amzon || Email : amzon@gmail.com

Stop SharingDelete

Admin Dashboard

button', 'chart' etc.

admin

DASHBOARD

CUSTOMERS


SELLER

ADD STORE

TOTAL CUSTOMERS40%

TOTAL STORES65%

Store



Store Name: X-Shop

Store Code: 12345

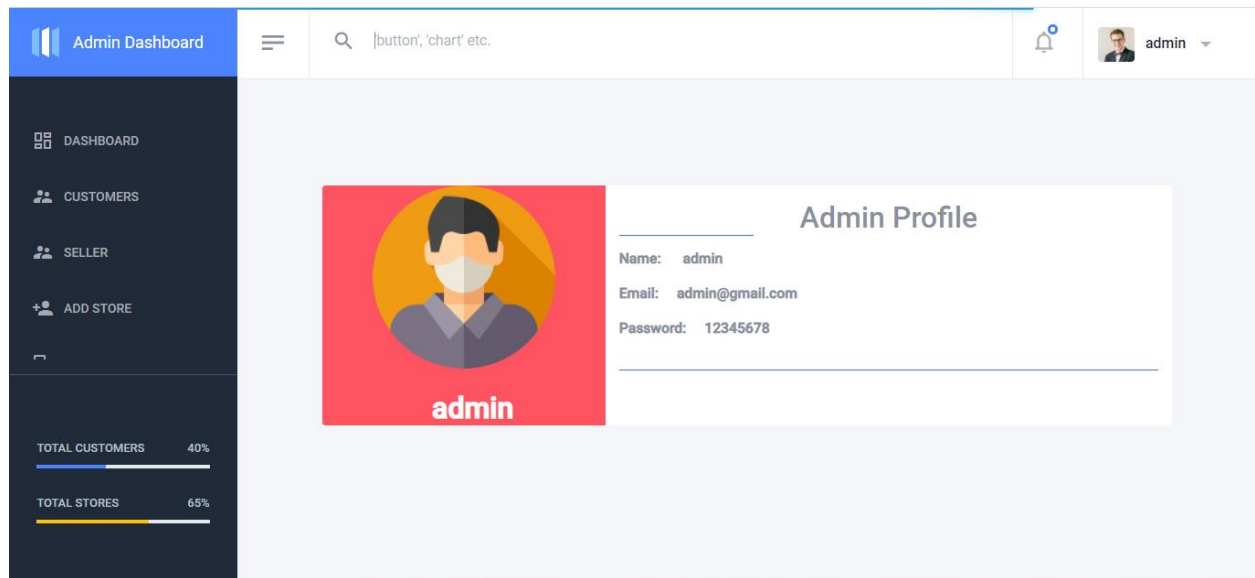
Email: Seller@Gmail.Com

Password: 12345

Seller Name: Seller

Phone No: 87354261266

Delete



### STORE

Store Name:

Seller Name:

Store Code:

Phone No:


Email:

Password:

Store logo:  
 W...jpeg

REGISTER NOW

Don't have an account yet ? [Login](#)

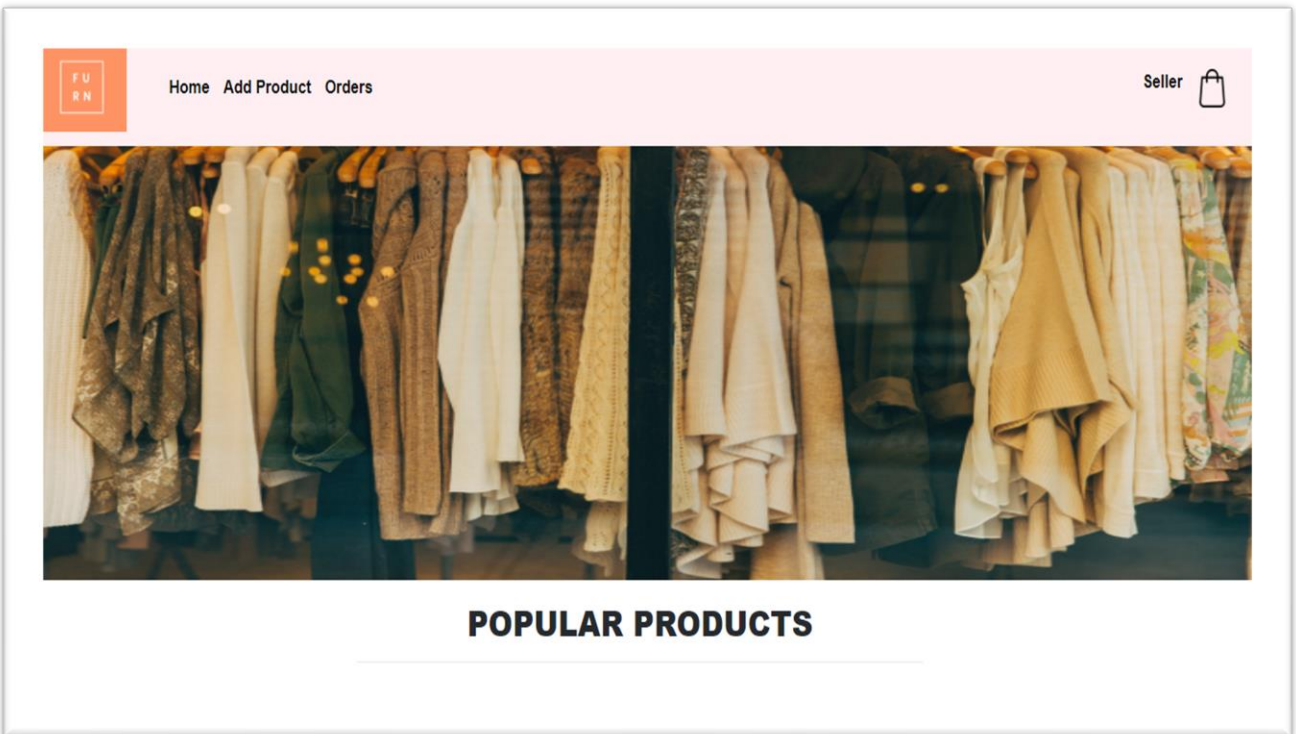


Store Login

### Sign In

Sign In

Don't have an account yet ? [Sign Up](#)



FURN

Home Add Product Orders

Seller

### CREATE NEW Product

Product Name:	Abaya		Company Name:	xyx	
Category:	Abaya	Type:	Women	Size Range:	30 to 40
Price:	3000	Discount:	No	Discount amount:	0
Quantity:	12	Product Image:	<input type="button" value="Choose File"/> abaya2.jpg		

Create Store

### Product Information

Color

Black

Size

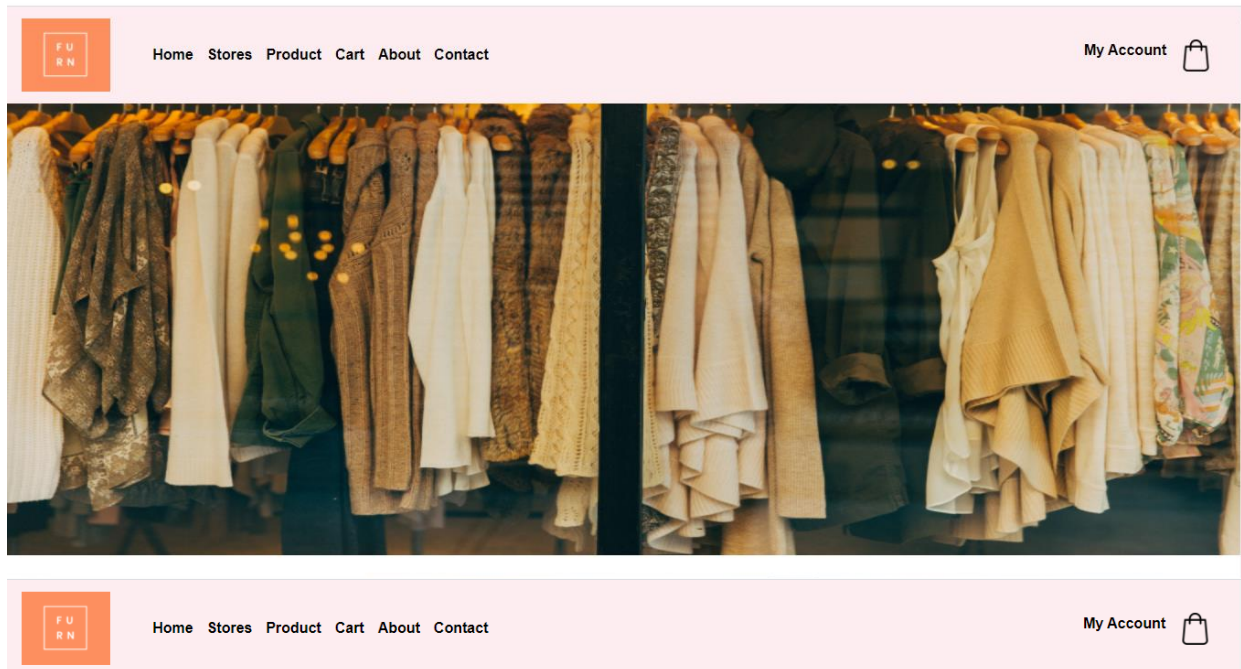
16

Quantity


2

Cancel

Add to collection



### X-Shop



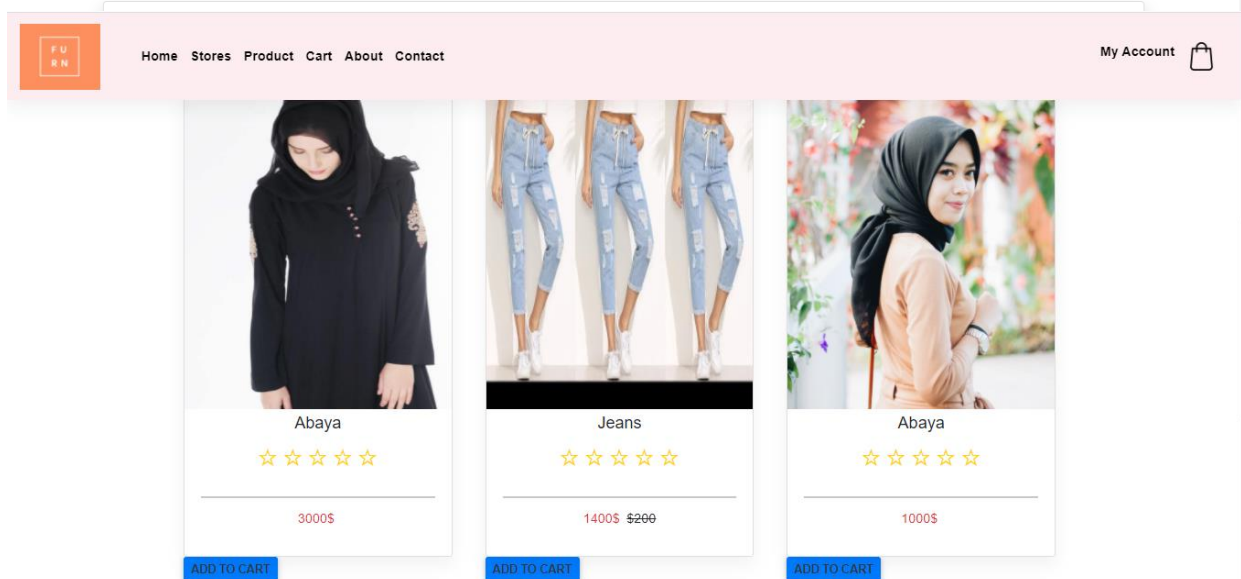
Seller: Seller

Product:

Phone: 87354261266

Email: seller@gmail.com


Visit Store






--Customer Panel--


### Create Account




User Name




abc@gmail.com




phone



password



Address




zip code


SignUp

Don't have an account? [Sign Up](#)

### Sign In



zee@gmail.com



.....

Login

Don't have an account? [Sign Up](#)  
[Forgot your password?](#)



Title: Abaya

Company: xyx

+

Description:

Size Range:30 to 40    Total Quantity:12

Update

Delete

Title: Jeans

Company: XYZ

+

Description:

Size Range:20 t0 33    Total Quantity:12

Update

Delete

Abaya

Size AND Color:

8 , White

▼

Price:

1000\$

Save To Cart