

Development of Take A Scroll – A smarter marketplace

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

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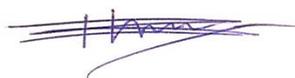
DAFFODIL INTERNATIONAL UNIVERSITY
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APPROVAL

This Project titled “Take a scroll” submitted by Tamjidul Islam Choudhury, ID: 172-15-9758, Jannatul ferdous, ID: 172-15-9813 , Fian Rana Shan , ID: 172-15-9790 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 02.05.2021.

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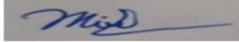
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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Moushumi Zaman Bonny**, Assistant Professor, Department of CSE, Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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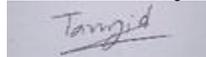
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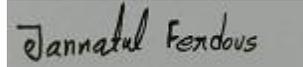
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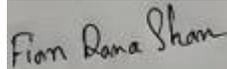
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ABSTRACT

Popularity of online shopping is increasing every day. Also demand of electronic products such as phones, laptops and computers are increasing rapidly. Besides, it's hard for people to find great deals of real estate and vehicles. People are also interested to buy used pc parts, electronics and vehicles but there are very few marketplaces that offers good value for money products and also those are not that reliable. Also, it's pretty tough to find the perfect real estate properties in desired location. In this era, going door to door for finding real estate is a kind of waste of time. Our developed project will connect verified sellers to the customers and Electronics, Vehicles and Real estate, everything in a same place. Customers don't need to worry about product quality anymore; verified sellers and real time customer service will make sure the clients are satisfied by our service. Also finding vehicles and real estate will become a lot easier because customers are one click away from finding their desired vehicles and real estate. Also we are offering import facility through admin so that users can import products through the admin. Overall, this project is a complete solution for the previously mentioned problem with lots of features.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Internet was made in the last part of the 60s as a little organization of computers and has advanced into the fundamental and most fundamental connection between organizations, governments and people. Web outperformed topographical limits, time impediments, cost and limitations [1]. Besides, it is easily accessible by anyone. It is an ease path for business models, technology advances and ideas to reach at an extraordinary number of individuals and gives the ideal climate to entrepreneurs [2].

Ecommerce refers to the purchasing and selling of merchandise or administrations utilizing the web, and the exchange of cash and information to execute these exchanges. Ecommerce is frequently used to refer to the offer of actual items on the web, yet it can likewise portray any sort of business exchange that is worked with through the web. Online shops have become part of our everyday lives. Innovative headway has made it feasible for individuals to sit in their homes and still shop on the web without going to an actual shop. Bangladeshi have likewise joined the pattern of internet business, so this venture is intended to plan an e-commerce online shop with the goal that individuals will have the option to buy their labor and products on the web. Anything we need we can get just in one mouse click [4].

There are mainly four types of ecommerce structure that can describe almost every transaction that takes place between consumers and businesses [3].

1. Business to Consumer (B2C): When a consumer buys products from a business.

2. Business to Business (B2B): When transactions takes place between two organizations. That is a business selling goods or services to another business.
3. Consumer to Consumer (C2C): When a consumer selling a good or service to other consumers.
4. Consumer to Business (C2B): When a business or organization buying products or services from a consumer.

Our system fall into the category of B2C that is Business to Consumer. Where will sell products or services to consumers.

1.2 Motivation

There are some motivations behind the development of the project. They are given below:

1. The markets of real estate, used electronics hardware and used cars are getting larger. But there's a lack of good providers of them.
2. There are marketplaces but they don't verify sellers so people often get scammed.
3. It's hard to find the desired product in market places because most of them don't use recommendation system.
4. In regular marketplaces, a lot of them don't give any customer support.

1.3 Objective

The objectives of the development of the project "take a scroll" are given below:

1. To create a marketplace where a seller can just verify his account with authentic infos, open a page for his shop and show their products to thousands of customers.
2. To ensure the customer safety via seller verification.

3. To ensure customer satisfaction. -To make it easier to find car, real estate and used electronic goods.
4. To analyse customer interest and use recommendation to find the desired product for the customers.
5. 24/7 customer support.

1.4 Expected Outcome

1. People will get a better marketplace for buying real estate, used cars and electronic products.
2. No hesitation about product quality. All the sellers are verified through admin panel.
3. Advantage of getting used and new electronics in the same marketplace.
4. Cash on delivery or instant payment, both options are available.
5. Ensuring 24/7 customer support for any kind of issues.

1.5 Report Layout

1. In the first chapter, we have discussed about motivation, objective and expected outcome of the project.
2. In the second chapter, we have discussed about the background circumstances of the project. We also talked about comparative studies, scope of the problem and challenges.
3. In the third chapter, it is all about the requirements such as business process modeling, requirement collection and analysis, logical database model and design requirements.
4. In the fourth chapter, we have discussed about front and back end of the project and also about implementation requirements.
5. In the fifth chapter, it contains implementation of database, schema and implementation testing.
6. In the last chapter, chapter no. 6, we have discussed about the conclusion and the scope for future development of our project which is pretty obvious for a growing E-commerce website.

CHAPTER 2

BACKGROUND

2.1 Introduction

Technology advancement has a great impact on everyday life and it has changed our life a lot comparing to the past times. In last 2 decades, we can get a clear view that how technology has changed our business, communication, entertainment and overall lifestyle [1]. At the time of invention of internet, it was a small network connecting a few computers, but now the evolution of internet has connected the whole world which has connected millions of companies, individuals and broke all the time and geographical boundaries. As the use of internet is increasing, lots of companies are using it to reach a greater number of people with their products through the internet. This is why E-commerce has begun. The effectiveness of E-commerce cannot be overlooked so most of the companies are trying to implement or have already implemented their traditional business method into E-commerce which includes communication, transactions etc [4].

E-business is comparatively newer in business sector. E-commerce website and market places are playing an important role in online shopping as online shopping is getting more popularity every day. But In Bangladesh, most of the E-commerce website and marketplaces has lot of lacking. So, to make online shopping safer and hassle free, "Take a Scroll" will play a very important role. Undoubtedly, Technology advancement requires electronic devices. But not everyone can afford it. And in our country, we don't have reliable used electronic hardware sources like E-bay, Alibaba etc. Also, lots of customers are out there who don't mind to buy used electronic product if it's sold by a reliable seller, the rate is cheaper than the new ones and ensures great product quality [2]. Besides, there are a lot of sellers who import or sell their products but do not have their own website to sell their products and doing their business in traditional way. Our

project includes not only used electronic products but also new electronic products, real estates and vehicles from reliable and verified sellers/shops.

The system has 3 roles, they are:

- Admin
- Vendor(Seller)
- Customer

In the system, all the users (i.e. Vendor, customer) will have to create their user accounts. To create an account as a vendor, one must submit his mail, national ID card number, his contact number, one copy of his image. On the other hand, customers can view products without any log in. But to create an order, customer must create an account with his mail and other contact information and also include his delivery address. Both type of users will have their dashboard to explore and control their activity in the system. Users can edit and update their profile details.

Vendors will have to create a store to post their product in a specific category. They can post both new and used products, vehicles and real estate including their specification. Vendor can add, delete or edit their products on the store page via their dashboard.

Customers can search for their desired products in search bar using product name and choose the products they want to buy from the listed products in different categories of the website. They can add or delete products to cart and confirm their order via check out. Payment can be done through mobile banking or cash on delivery. Customers can see their order status in their dashboard. Also customer can see related products as recommendation in the website.

2.2 Background

In spite of the way that e-business is a moderately recent in the business area, its concise history is loaded up with questionable occasions. The fast development of the prominence of the Internet from 1995 was went with by an exceptionally beneficial period for e-business organizations. Setting up a completely useful e-Business site was simple and cost effective and around then it was thought to ensure a positive outcome and benefits. The quantity of e-organizations continued filling in an endeavor for everyone to have an offer from the benefit pie. On the turn of the century, their number arrived at its pinnacle and their benefit openings and potential monetary development was covered. This prompted the enormous securities exchange breakdown of numerous e-business organizations which is known as dot.com bubble. Following a long term period where organizations had to rethink their essential methodology towards online business, development of e-organizations began to increment once more, arriving at twofold digit level through the current period.

The explosive growth of the e-Business throughout the most recent twenty years, has caught the consideration of numerous analysts and scholastics from different logical fields. Perceiving the variety of the idea of an e-Business, which conforms to the assorted idea of the Web, this report attempts to analyze the subject from an assortment of survey points. As indicated by Laudon and Traver [3] [5], e-Business follows something similar design as any past innovation driven insurgency. "Advancements grow first and afterward these advances are misused industrially. When business misuse of these advances becomes inescapable, a large group of social, social and policy centered issues emerge."

2.3 Comparative Studies

Ecommerce is ruling the trends of all businesses. Our projects mainly focus on the second hand computer products that are sold by individuals, second hand cars and flats or office space rents. If we consider environment of our country, Bangladesh we can see that second hand computers parts are sold frequently cause of good values on the products and demand relation. In our Country Ecommerce business are booming and have potential to grow even more with years [12]. But all off these organizations focuses only on new products. So our business has a different concept to it compare to others and also the target audience are different. For computer parts sell and buy portal we mainly targeting consumers who plays PC games, organizations who have small budget for technologies and consumers with very low budget [13].

2.4 Scope of the Problem

Bangladesh is a developing country thus most of the people are average earning people. As of our income is low we tend buy things that offers best value according to the price of the products. And second hand products mostly offers better values if it has good conditions. Digital Bangladesh is a new world, a new dream and a new concept. Our present prime minister, Sheikh Hasina, declared to build up Bangladesh as a digital country by 2021 [10]. Since then this concept has become the journey of life with the people of Bangladesh. From this vision uses of computers has increased exponentially. Every sectors in our country is being digitalized. For example: Education, Medical, Administrative, Security, Banking System, Agriculture, Communication, Newspaper, Publication and many more [11].

To digitally maintain these complex system we need enough computing powers and technological support of advance tools. But these advance technologies and accessories comes with premium price and as our developing countries cannot afford this much expense and we tend to buy used products. Used cars have also high demands in our

country as most off middle class family cannot afford brand new cars with small salary scale. So they try to get a used car that comes in their budget [9]. Here budget is the main factor cause cars are like luxury products that only few percentages of this country can buy. But to sell or buy something there should be a specific place or something like a market and second hand products don't have any specific physical market place thus people cannot sell or buy their desired used products with ease. People search for their desired products within their contacts that sometimes fail in to find. Here our Projects can offer a digital platform to sell and buy used electronics and cars with every business features, customer features and support of an Ecommerce platform.

Another product of our system is to help people to find suitable accommodation for sell or rent and Office space for Organizations.

2.5 Challenges

The development phase of the applications were big challenge for us. We developed the system based on web and web technologies are always changing and hard to keep up with the changes [8]. Learning different technologies with different version compatibility was a big challenge for us. A big project like this takes a significant amount of time to develop and also require huge man power but we were only three people's team.

Dataset is a necessary part of every project. To generate the dataset of our project we collect information from different resources. The collected information was unstructured and had a lot of unnecessary attributes so it was significantly preprocessed before using in our project [14]. The processing of the data was done in a way that it should result like real world data which consumed a lot of our time.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Requirement Collection and Analysis

In the project, we have 3 kinds of actors

- Admin
- Vendor(seller)
- Customer

TABLE 3.1: REQUIREMENT COLLECTION AND ANALYSIS

Actor	Requirement Collection	Requirement Analysis
Admin	Log in	Admin must have access to the whole system. Admin can monitor all the functions and manage the whole system.
Admin	Approve , delete or modify	Admin will have the special access to approve any kind of request, delete or modify and file or information in the system.

Admin	System Control	Admin can handle issues like transaction, product issues, or directly communicate with both of the vendors and customers.
Vendor	Registration, Log in, profile management	Vendor will have to register for his account, log in to the system, create his store and can edit his profile from dashboard.
Vendor	Product create, edit, update, delete	Vendors can create his products by filling up required information in the product create form and can also edit and update product information and also delete product from dashboard.
Vendor	Deliver products	Vendor will deliver products to the customers through our delivery system according to the order information provided by the customer.

Customer	Registration, Log in, profile management	Customer can log in to the system by filling up required information. They can log into the system to order products and also edit and update their profile information from dashboard.
Customer	Create, delete order	Customer can create add items to cart and create order, also he can delete order before time limit.
Customer	Payment	Customer can either pay cash on delivery or payment through SSLCOMMERZ using his desired payment method.

This is the requirement analysis for our project.

3.2 Logical Data Model

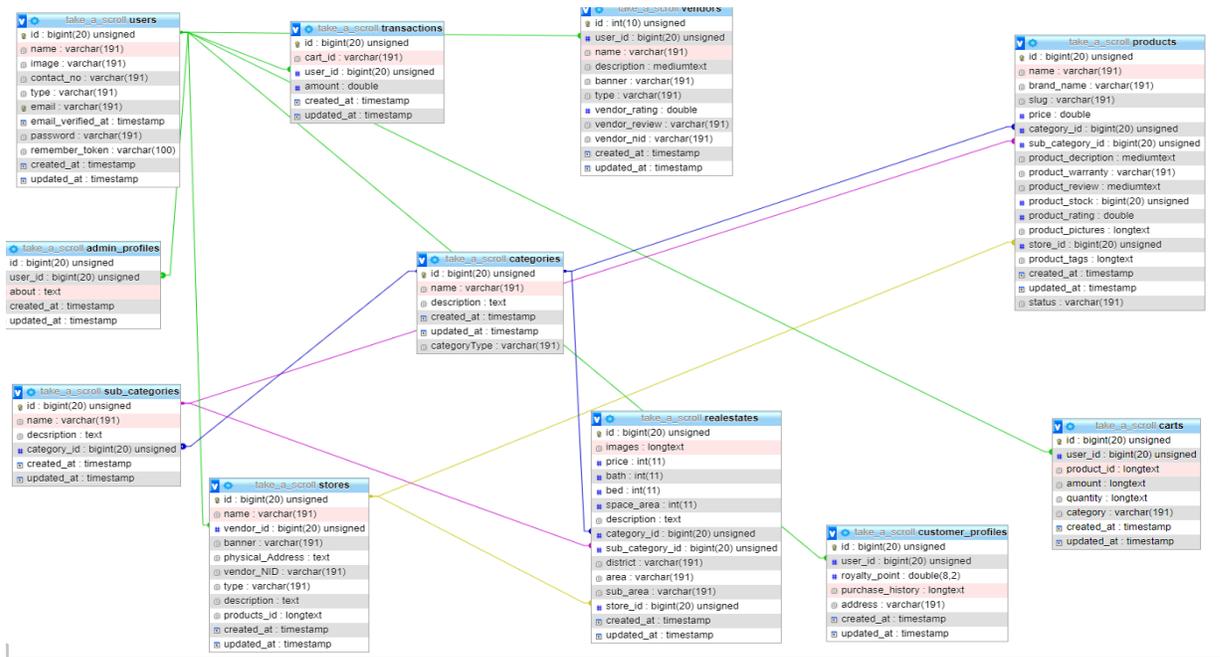


Figure 3.1: Logical Data Model

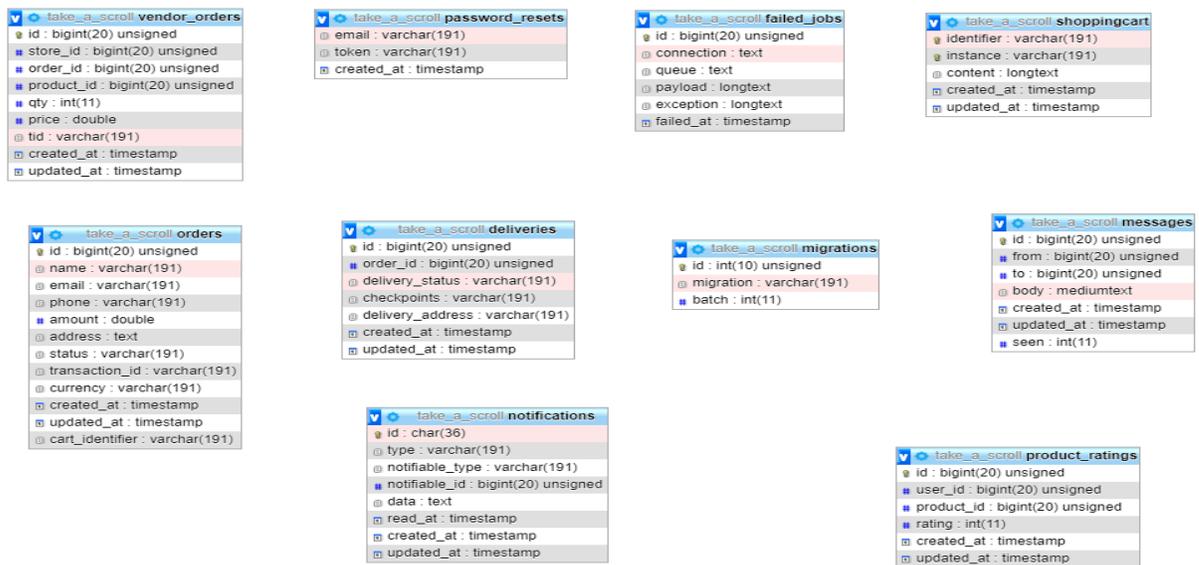


Figure 3.2: Logical Data Model (2)

3.3 Design Requirements

Ecommerce project is always a big project that has many functionalities. There are some fundamental features which are necessary for an ecommerce business [2]. Customer features are also important as they need to feel ease when searching for a product or buying it.

From the previous discussions, we can understand that there is lot of functionalities in our system and some of them are mandatory according to the requirement analysis. The functionalities are given below:

Vendor can do some important functionality. He can register for his account by providing the required authentic information. He will have to log in in order to create a store where he can insert his products. After inserting products, he can edit and update his products information if necessary. Also he can delete a listing from his store and he will deliver products after an order is placed by the customer through our system's delivery service.

Customer will register for his account and log in to his account in order to place an order. Customer can register for an account by providing his contact information and address. He can update his profile info anytime. Customer can buy products by adding it to the cart and confirm it by check out. He has both options for cash on delivery and instant payment through SSLCOMMERZ using his desired payment method [16]. Customer can add or delete item into the cart and he can cancel order within the order pending period.

Admin plays an important role here. Admin has access to all the functions of the system. He can monitor all the functions and manage the whole system. Besides admin have some more important roles. He has the special access to approve any request. He can delete, update or modify any file or information in the system. Customer can directly use chat option to contact admin and import products from foreign sites through admin. Also, admin handles all the issues which includes product issues, transaction issues etc.

CHAPTER 4

DESIGN SPECIFICATIONS

4.1 Front-end Design

The main purpose of this project is to develop a system to provide the customers used electronics products, cars and flat or office space for rent. Ecommerce platform needs to be attractive and interactive to provide comfort to the customer's service. We have designed our system to be very user friendly and interactive [8]. After hitting our URL users will be on the Home page of the system (figure 4.1) where different types of product will be seen by them. Our system has three main roles: Customer, Vendor and Admin. Customer and vendor can register with required information.

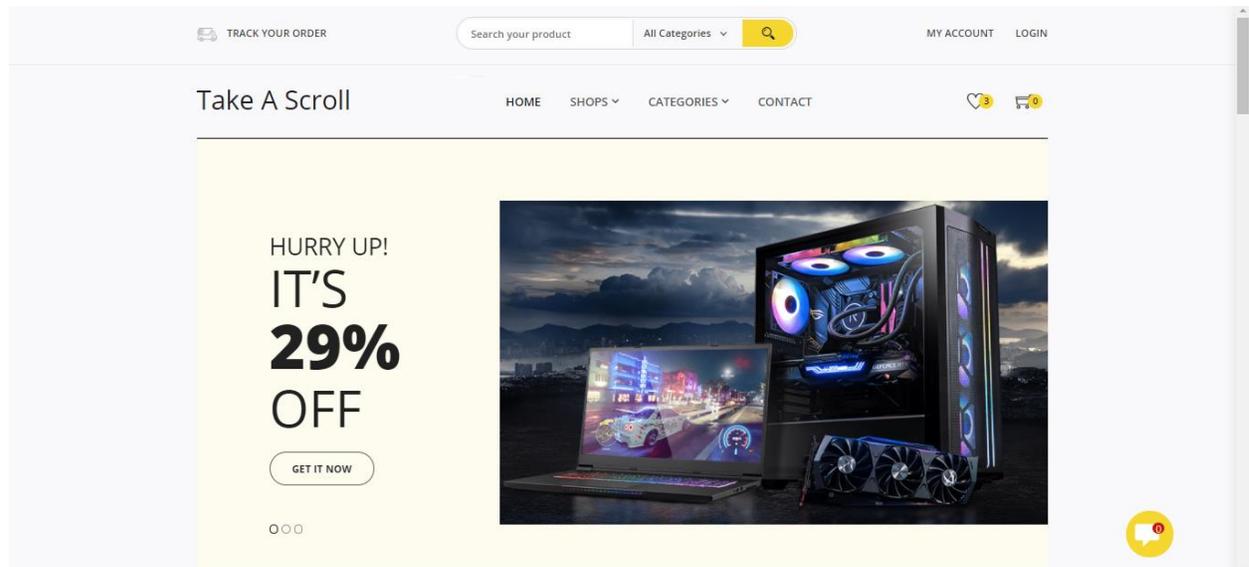


Figure 4.1: Landing page of Take A Scroll

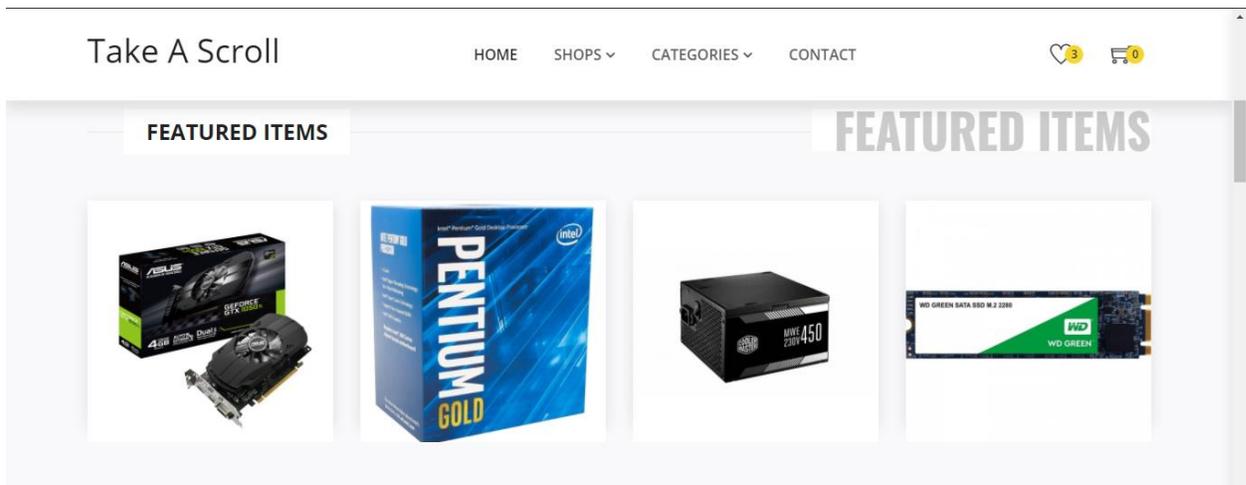


Figure 4.2: Landing page, Featured Items

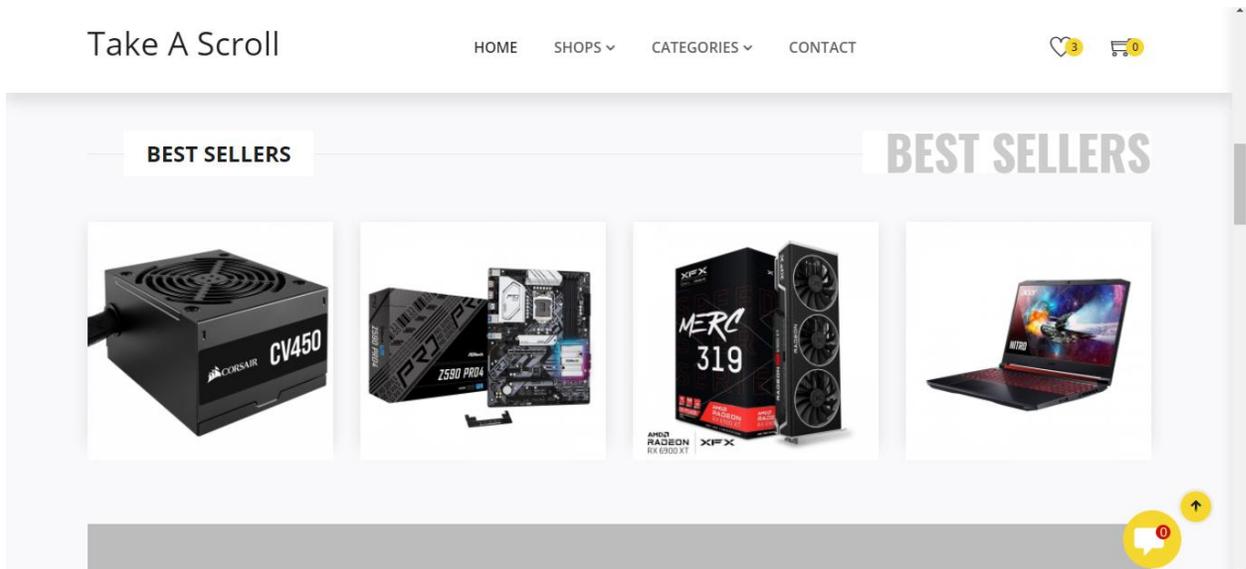
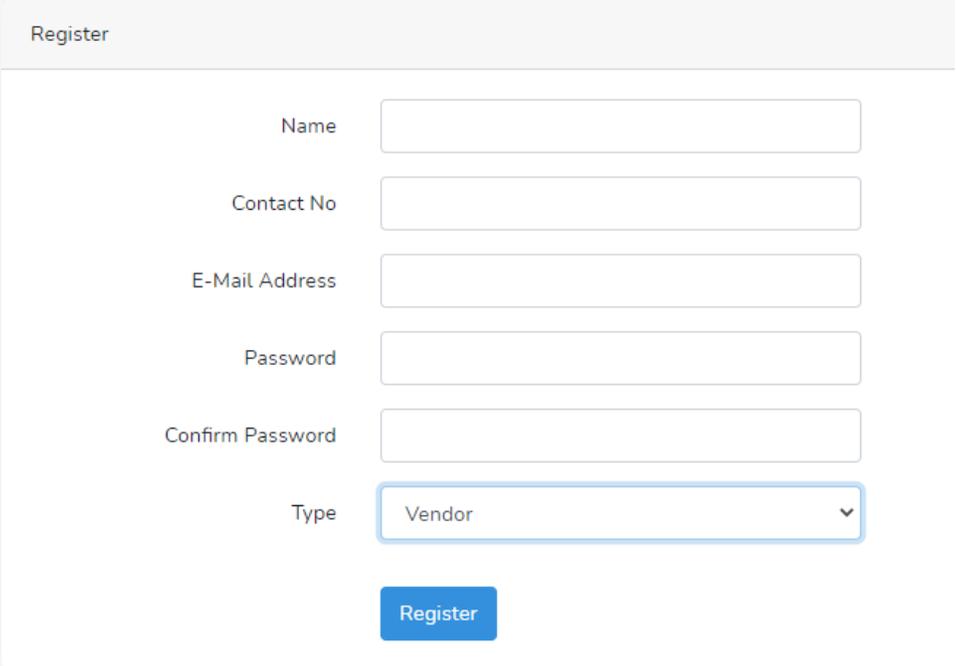


Figure 4.3: Landing page, Best seller

Figure 4.4 shows the register page of the system. It has all required fields such as name, email address, contact number, user type and password. Here user type refers to if any user wants to register as customer or vendor.

take_a_scroll



The image shows a registration form titled "Register". It contains the following fields and controls:

- Name:
- Contact No:
- E-Mail Address:
- Password:
- Confirm Password:
- Type: A dropdown menu with "Vendor" selected and a downward arrow.
- Register: A blue button.

Figure 4.4: Registration page

After registering completion a user can login any time. Login will require the registered email address and saved password to our system respected to the email address. User can also reset the password through email verification. After logging in user will be redirected to their respective dashboard. If the user is customer it will be customer dashboard and if the user is vendor it will be vendor dashboard. Admin can also login to their dashboard with credential. Below figure 4.3 shows our login page:

The image shows a web page for logging in. At the top left, the text 'take_a_scroll' is visible. At the top right, there are links for 'Login' and 'Register'. The central part of the page is a white box with a light gray border, titled 'Login'. Inside this box, there are two input fields: 'E-Mail Address' and 'Password'. Below these fields is a checkbox labeled 'Remember Me'. At the bottom of the box, there is a blue button labeled 'Login' and a blue link labeled 'Forgot Your Password?'.

Figure 4.5: Login page

Products are shown with a grid styles. Grids have information like Name, Category, Price and Ratings.

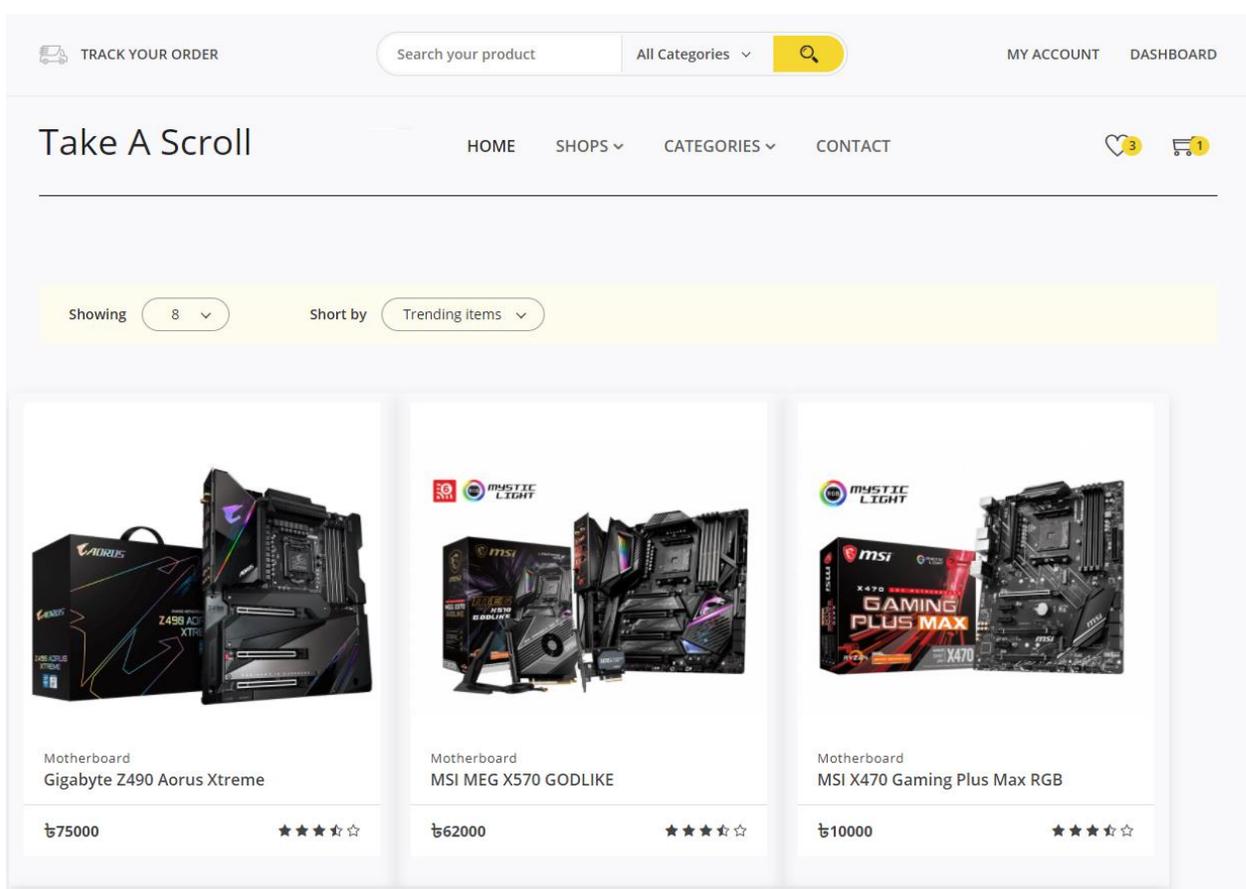


Figure 4.6: Products view

Single page view page shows a single product with all the details with it. This page has feature like pictures view of the product. Add to cart or contact the seller. Before adding to the cart user can increase quantity of the products. Ratings of the product are also shown here so that customer can get an idea how good the product is.

Take A Scroll

HOME SHOPS ▾ CATEGORIES ▾ CONTACT

♥ 3 🛒 0



Motherboard

MSI MEG X570 GODLIKE ₹62000

★★★★☆

Model: MSI MEG X570 GODLIKE Supports 2nd and 3rd Gen AMD Ryzen / Ryzen Processors Mystic Light Infinity II Dynamic Dashboard Extended Heat-pipe Design

Availability: In Stock

Quantity

🛒 ADD TO CART ♥

Share: [f](#) [t](#) [@](#) [G+](#)

Figure 4.7: Single Product view of Computer Parts

Take A Scroll

HOME SHOPS ▾ CATEGORIES ▾ CONTACT

♥ 3 🛒 0



Commercial Space

₹16000000

★★★★☆

Availability: Out Of Stock

Quantity

CONTACT

Share: [f](#) [t](#) [@](#) [G+](#)

Figure 4.8: Single Product view Flat for rent

Our system has many variety of products from computer parts, such as different brands, size color, and capacity. And every category has it its own sub-categories. Computers has sub-categories of Processor, Motherboard, Ram, Graphics Card, Power Supply, SSD, Hard Disk and Casing. Electronics has Laptop and Smartphone. Cars has Sports, SUV, sedan, Private Car and Micro bus

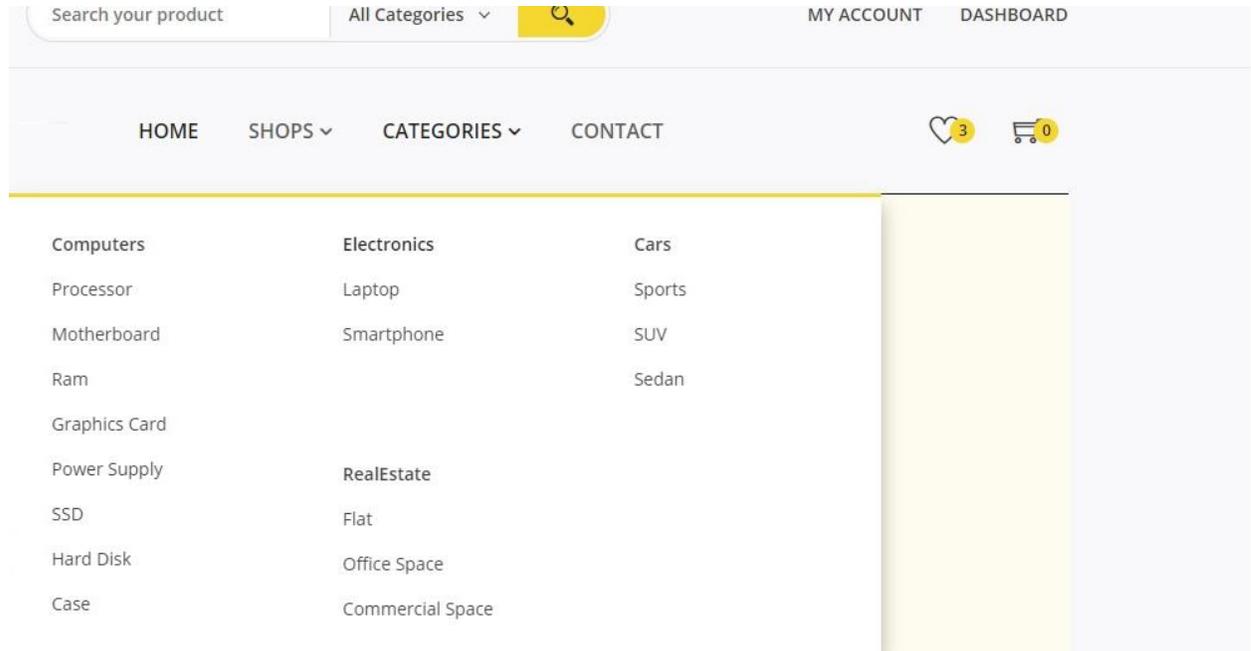


Figure 4.9: Categories and Sub-categories

All the store are also can be found in one list to find your favorite store easily. Stores are listed here as of their types. Products can only be added by the store type. Thus one store only contains one kind of products.

HOME SHOPS ▾ CATEGORIES ▾ CONTACT		
Electronics	Realestate	Cars
Communist IT	ABC Real Estate	AutoMuseumBD
Supreme Tech	Redrock Properties	True Car BD
PC Land	Elite Properties LTD	
Infernal Technologies Ltd		
Tech Junkies		
Source Technologies		
Metro IT Solution		
United IT Ltd		
Modern IT Solutions		

Figure 4.10: Store List according to types

After deciding which product to buy customer can add products to the cart. Cart has the details of an order like which product and how many is going to be ordered. Total price of a product is calculated based on the quantity of the products. Then the total price is also calculated. All these calculations happens in real time. Customer can also remove an item from the cart and also increase or decrease the quantity of the products.

Take A Scroll

HOME SHOPS ▾ CATEGORIES ▾ CONTACT

♥ 3 🛒 3

CHECK-OUT

IMAGE	PRODUCT	PRICE	QUANTITY	TOTAL	REMOVE
	Intel core i9-9900K	₹28000	- 1 +	₹ 28000	
	AMD Ryzen 5 3600	₹13500	- 1 +	₹ 13500	
	MSI MEG X570 GODLIKE	₹62000	- 1 +	₹ 62000	

Figure 4.11: Product Cart

After confirming the cart customer move forward to checkout. Here customer can choose two different methods of payment [16].

1. Pay Now:

Pay Now will lead to a payment gateway with different options like VISA, Mastercard, Payoneer. Mobile banking like Bkash, Rocket, Nagad and more.

2. Pay On Deliver:

Offers customers to pay when products will be delivered to their home.

These payment option can be chosen if acceptable by the vendor.

TRACK YOUR ORDER Search your product All Categories MY ACCOUNT DASHBOARD

Take A Scroll HOME SHOPS CATEGORIES CONTACT

Your Cart.. Wanna CheckOut ??

Product	Unit Price	Quantity	Total
Intel core i9-9900K	28000	1	28000
AMD Ryzen 5 3600	13500	1	13500
MSI MEG X570 GODLIKE	62000	1	62000
Total Amount =			103500

PAY NOW **PAY ON DELIVERY** **CANCEL**

Figure 4.12: Cart Checkout

SSLCOMMERZ is a method of transaction for online services. It is very secure and authorized by SSL Wireless. SSLCOMMERZ is the first online payment gateway blessing for local businesses. We have implemented this payment gate way so that user can pay their bill with very comfortable experience. SSLCOMMERZ offers different options like: VISA, Mastercard, Payoneer. Mobile banking like bkaash, Rocket, nogod and more [16].

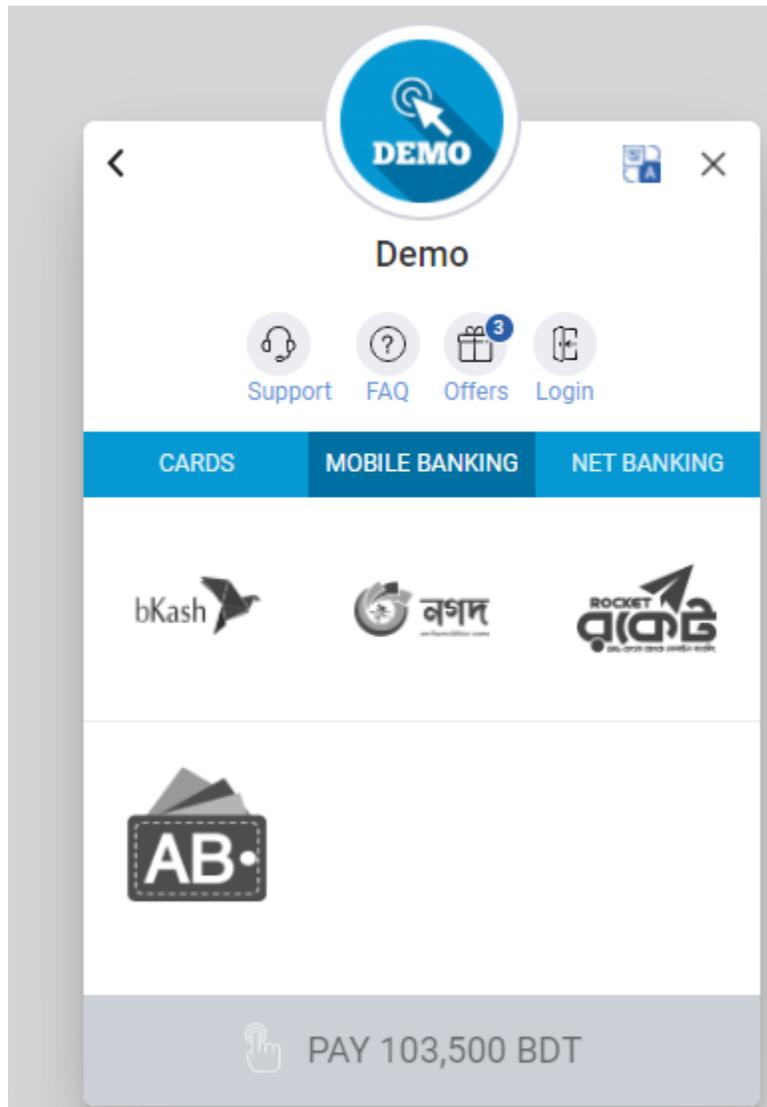


Figure 4.13: Payment Gateway

After logging in vendors will be redirected to their dashboard. The dashboard has many functionalities. First of all vendor needs to create a store. The products will be added under a store always. Store creation requires store name, address, banner, store description store type and more. And also requires vendors to provide his/her National ID number for verification purpose.

The image shows a web form for creating a store. It contains the following elements:

- Store Name:** A text input field with the placeholder text "Put Store Name".
- National ID Card Number:** A text input field with the placeholder text "Put National ID Number".
- Upload Store Banner (Recommended: 13:6 ratio):** A section with a blue button labeled "Select Image" and a camera icon.
- Store Description:** A large text area with the placeholder text "Put Your Store Description".
- Store Type:** A dropdown menu with the placeholder text "---Select---".
- Submit:** A blue button at the bottom left of the form.

Figure 4.14: Vendor dashboard, creating a store

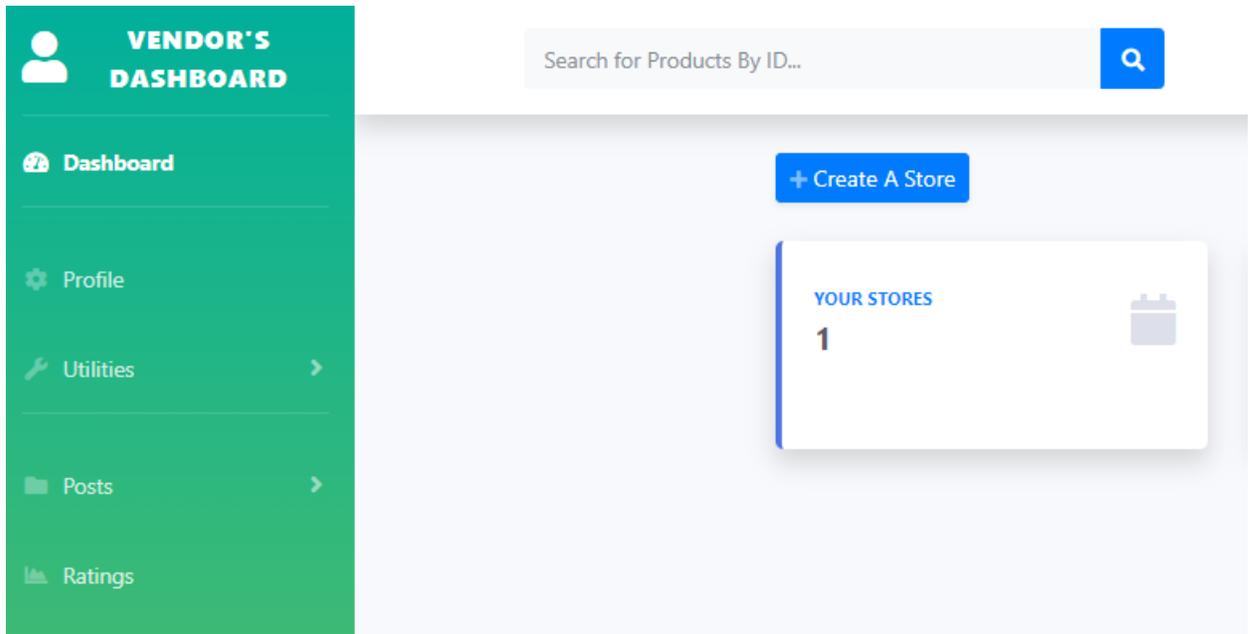


Figure 4.15: Vendor dashboard, store list

Figure 4.16 shows the list of the products in any store.

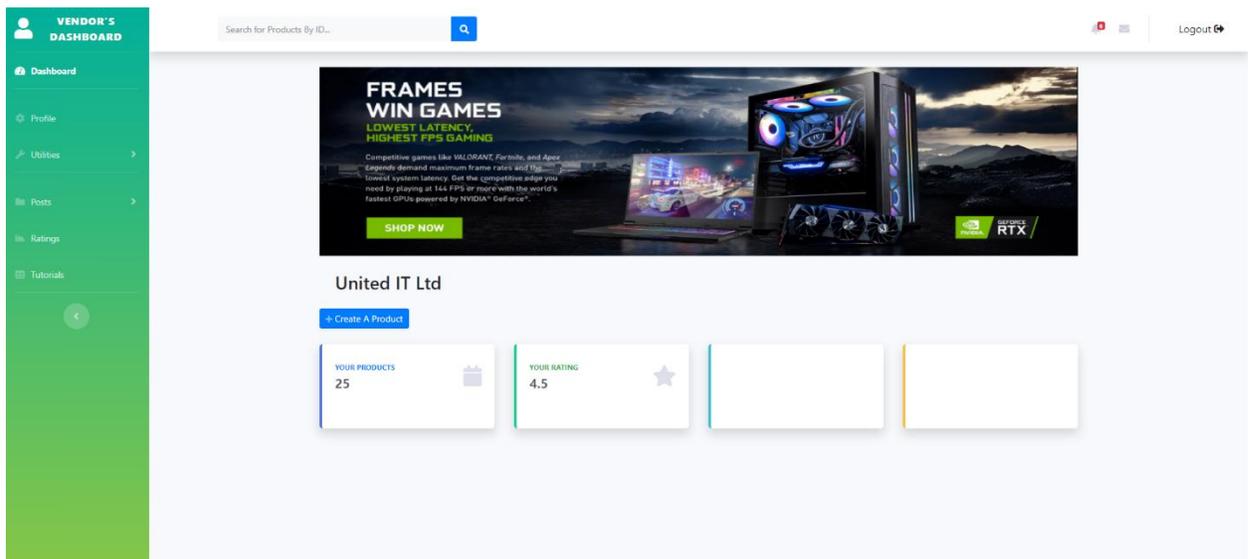


Figure 4.16: Vendor dashboard, Store view



Communist IT

Showing 8 ▾ Short by Trending items ▾ Pages 1 of 25



Figure 4.17: Vendor dashboard, Store wise product view

After creating a store vendor can add products to the store. Products creation requires product name, product price, pictures, product type, category, sub-category, details, quantity, brand, and warranty and product status.

Search for Products By ID... 

Product Name: ASRock H470M-HDV 10th Gen

Product Price: 8000

Product Category: Computers

Product Sub-Category: Motherboard

Product Status: Used

Product Warranty (Optional): 24 month

Product Stock Amount: 22

Product Brand: Asrock

Product Description

Normal 

- Supports 10th Gen Intel® Core™ Processors (Socket 1200)
- Supports DDR4 2933MHz
- 1 PCIe 3.0 x16, 1 PCIe 3.0 x1
- Graphics Output Options : HDMI, D-Sub, DVI
- 7.1 CH HD Audio (Realtek ALC897 Audio Codec)
- 4 SATA3
- 4 USB 3.2 Gen1 (2 Front, 2 Rear)



Figure 4.18: Creating a new product

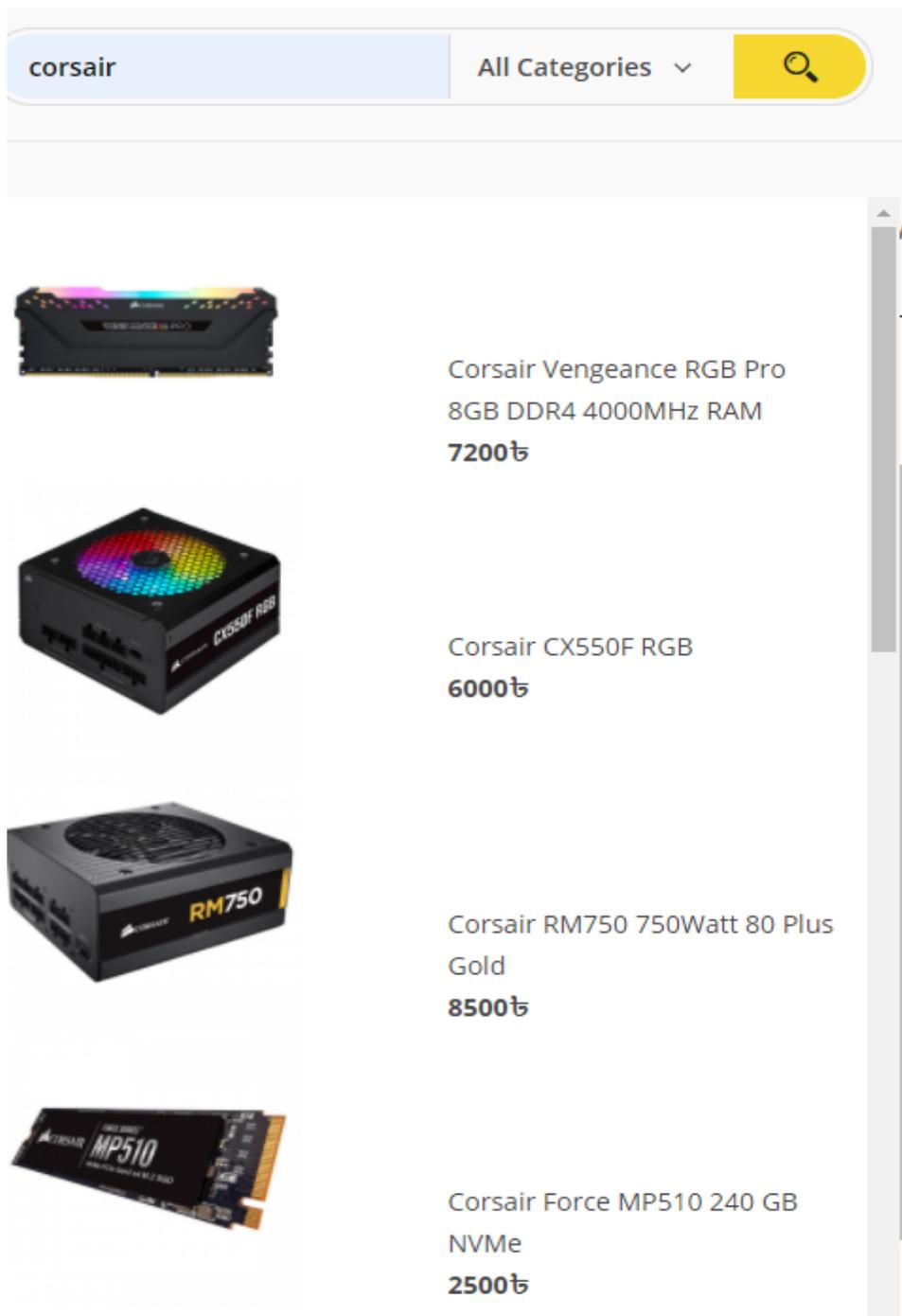
Products details can always be updated by the vendor. And also vendor can delete a product permanently.

Search for Products By ID...

Product Name	Product Price	
<input type="text" value="Western Digital 1TB Purple Surveillance HDD"/>	<input type="text" value="3700"/>	
Product Category(Current: Computers) <input type="text" value="----Select----"/>		
Product Warranty (Optional)	Product Stock Amount	Product Brand
<input type="text" value="24 months"/>	<input type="text" value="50"/>	<input type="text" value="Western Digital"/>
Product Description		
<p>Normal <input type="button" value="B"/> <input type="button" value="I"/> <input type="button" value="U"/> <input type="button" value="S"/> <input type="button" value="≡"/> <input type="button" value="≡"/> <input type="button" value="≡"/> <input type="button" value="”"/> <input type="button" value="’"/> <input type="button" value="≡"/> <input type="button" value="≡"/> <input type="button" value="≡"/> <input type="button" value="≡"/> <input type="button" value="A"/> <input type="button" value=""/> <input type="button" value=""/></p> <p>Model: Western Digital 1TB 3.5" PURPLE WD10PURX Capacity: 1000 GB Interface: SATA 6 Gb/s Rotational Speed: RPM- 5400 Idle Mode- 4.1 (dBA)7</p>		
		
<input type="button" value="Update Info"/>		

Figure 4.19: Updating a product

Customers can search for their desired products from the home page. Search are designed to be specific and accurate according to the key words.



The screenshot shows a search bar at the top with the text "corsair" entered. To the right of the search bar is a dropdown menu labeled "All Categories" and a yellow search button with a magnifying glass icon. Below the search bar, four product listings are displayed, each with a product image, a title, and a price. The products are: Corsair Vengeance RGB Pro 8GB DDR4 4000MHz RAM (7200 ₺), Corsair CX550F RGB (6000 ₺), Corsair RM750 750Watt 80 Plus Gold (8500 ₺), and Corsair Force MP510 240 GB NVMe (2500 ₺).

Product Name	Price (₺)
Corsair Vengeance RGB Pro 8GB DDR4 4000MHz RAM	7200
Corsair CX550F RGB	6000
Corsair RM750 750Watt 80 Plus Gold	8500
Corsair Force MP510 240 GB NVMe	2500

Figure 4.20: Search with keywords

Customers can also search for products according to their categories.

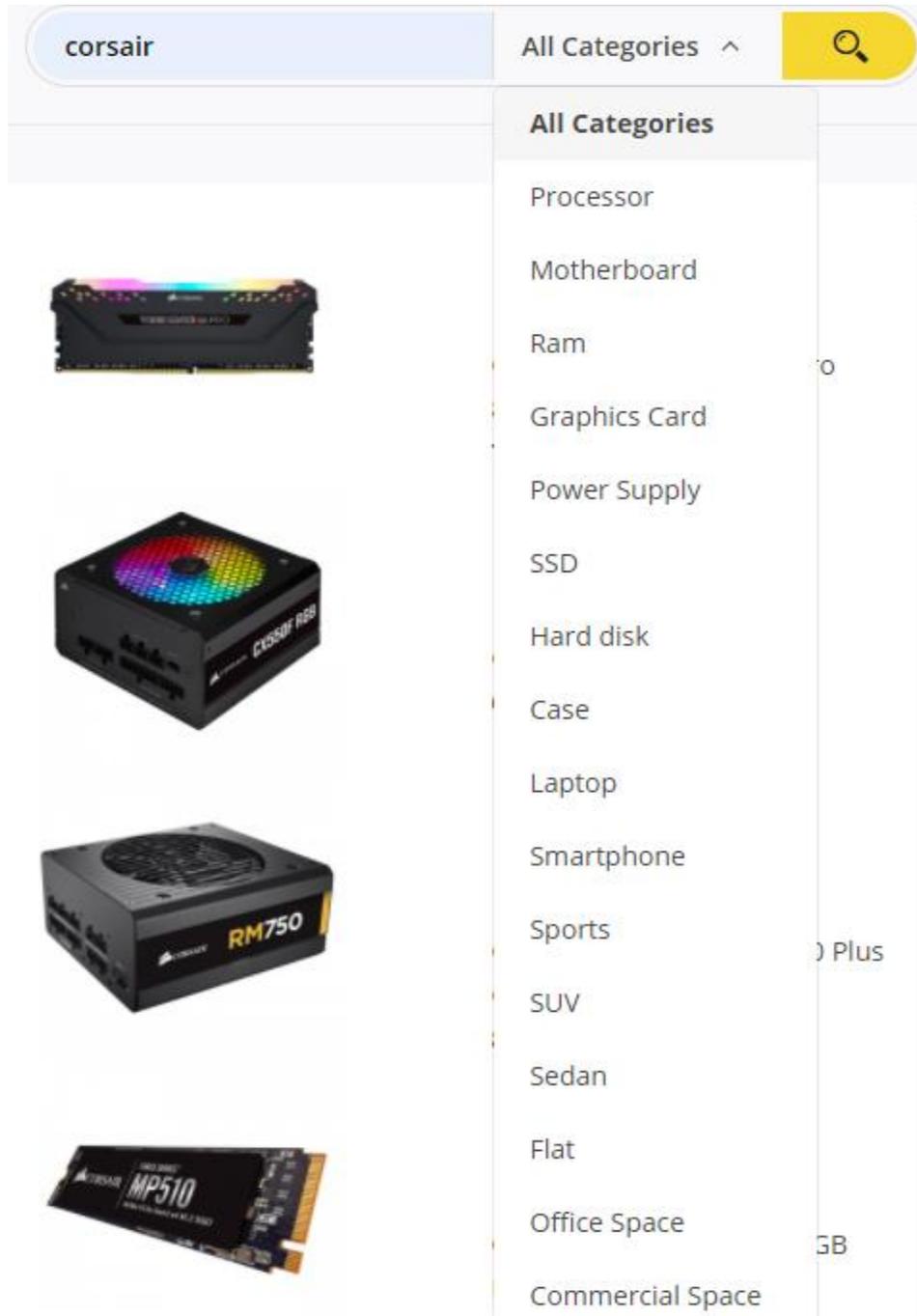


Figure 4.21: Search according to categories

4.2 Back-end Design

Our project is based on the web, Thus there was two main choice for backend language as trends going on in technology. We chose PHP as our main language with framework Laravel. As for our frontend technology we chose Vuejs. Vuejs is a framework for javascript language. Without javascript we cannot think of modern day web applications [17] [18].

We have utilized PHP as our back end language due to the improvement of libraries and partner techniques and the article arranged element it offers other than that it is a veteran of web advances and as yet standing high above other fresher server side dialects [8]. World's 60% of the sites and web applications use are as yet running PHP in their back-end. We pick Laravel for the out-of-the-container security and adaptability it gives and Laravel is the favored decision for the PHP people group for huge versatile undertakings that is inclined to versatility later on and our application makes certain to scale later on if necessary. In our application, we utilized some assistance specialist type execution since we have a update highlight in our application thus the worker needs to run a help laborer toward the back in to determine this issue, we are utilizing crontab to serve cronjobs of our application [7].

For database we cannot think of any other than SQL. Ecommerce has a lot of relations among different modules and data. So relational database is right choice to make. MySQL database management system is being used in our system development. And the server we chose to run the system is XAMPP.

4.3 Implementation Requirement

HTML

HTML or Hyper Text Markup Language is a markup language which is the most basic language to build the basic structure of a webpage. It is the language in which most of the websites are built. Usually HTML is used along with CSS.

CSS

CSS or Cascading style sheet is a style sheet language that is used for styling markup language such as HTML, XML XHTML etc. CSS describes how an element of a webpage should be presented in a webpage. For example CSS describes the fonts, colors, size, space, and alignment etc. of a webpage.

JavaScript

JavaScript is a high level language and it is one of the most popular scripting language for webpages. It is a lightweight language with first class functions. It is a very powerful web programming language and in the meantime flexible as well. It enables the dynamic behavior of a website and more than 97% websites use it for their client side web page behavior [17] [19].

Bootstrap

Bootstrap is a framework of CSS that contains JavaScript and CSS. It's an open source CSS framework for front end web development. It is mainly a HTML, CSS and JavaScript Library that focuses on making development of informative webpages simpler.

jQuery

jQuery is a quick, little, and highlight rich JavaScript library. It makes things like HTML archive crossing and control, event handling, animation, and Ajax a lot easier with a simple to-utilize API that works across a large number of programs. With a combination of flexibility and extensibility.

Ajax

Ajax is a bunch of web development technique utilizing many web technologies on the user side to make asynchronous web applications. With Ajax, web applications can send and receive information from a server asynchronously (in background) without reloading the existing page.

JSON

JavaScript Object Notation (JSON) is a standard text based structure for addressing organized information dependent on JavaScript object syntax. It is usually used for transferring information in web applications (e.g., sending some information from the server to the customer, so it tends to be shown on a site page, or the other way around)

Vue.js

Vue.js (or Vue) is an open-source front end JavaScript system for building UIs and single-page applications. Vue.js highlights a gradually versatile engineering that focus around component composition and declarative rendering. The main library is focused on view layer only [18].

PHP

PHP (recursive abbreviation for PHP: Hypertext Preprocessor) is a broadly utilized open source universally useful scripting language that is particularly appropriate for web improvement and can be installed into HTML. It is a server side scripting language that is used for creating static or dynamic websites or web applications [8].

Laravel

Laravel is a web application system with expressive, exquisite punctuation. A web system that gives a construction and beginning stage for making an application, permitting someone to focus on making something amazing.

MySQL

MySQL Database Service is a completely managed database service to send cloud-native applications. HeatWave, a high performance analytical engine speeds up MySQL execution by 400x.

MVC

MVC is a software design pattern generally used for creating UIs that separates the connected program rationale into three interconnected components. This is done to isolate interior portrayals of data from the manners in which data is introduced to and acknowledged from the client.

Vue2editor

A simple to use however yet incredible and adjustable rich content manager powered by Quill.js and Vue.js.

Vue simple alert

The Simple Alert part helps designers in making beautiful, flexible, adjustable, responsive alert/confirm/prompt dialogue boxes dependent on the well known SweetAlert 2 library.

Tinker

Tinker permits one to interact with his whole Laravel application on the command line, including Eloquent models, jobs, events, and that's just the beginning.

Guzzlehttp

Guzzle is a PHP HTTP client that makes it simple to send HTTP request and integrates with web administrations.

PusherPHP

PHP library for collaborating with the Pusher Channels HTTP API.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

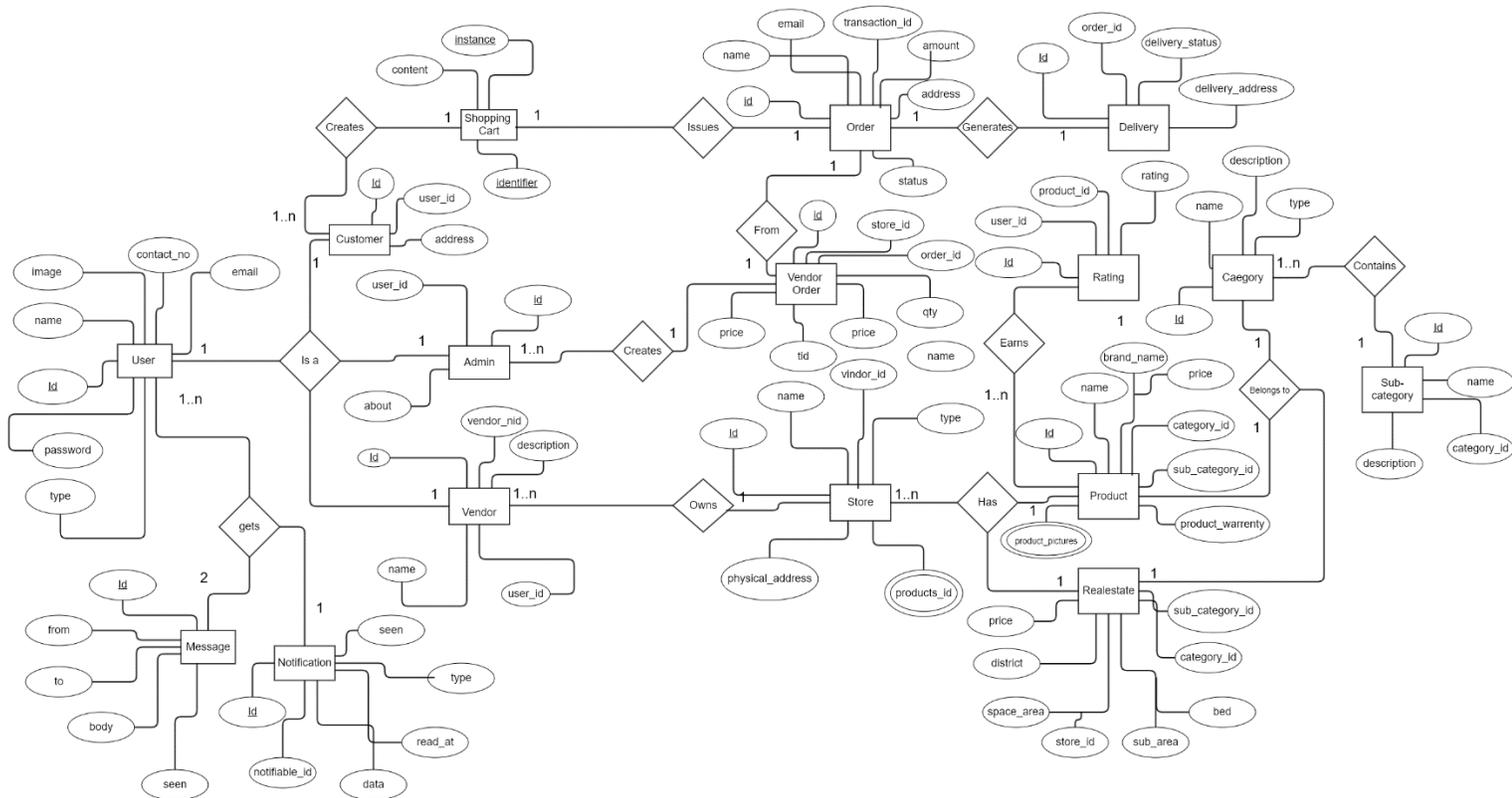


Figure 5.1: Entity Relationship Diagram

The above diagram (figure: 5.1) shows Entity Relationship Diagram of our project. It has main 3 roles: Admin, Vendor and Customer. As we have used Laravel framework configuration and implementation was very easy. Data base was created with simple command line

```
CREATE DATABASE take_a_scroll
```

By writing the below lines we have successfully configured database environment with the server.

```
DB_CONNECTION=mysql
```

```
DB_HOST= 127.0.0.1
```

```
DB_PORT=3306 DB_DATABASE= take_a_scroll
```

```
DB_USERNAME= root
```

```
DB_PASSWORD=
```

After that we have wrote Schema for all our tables. We have 20 tables in total.

```
public function up()
{
    Schema::create('users', function (Blueprint $table) {
        $table->id();
        $table->string('name');
        $table->string('image')->nullable();
        $table->string('contact_no');
        $table->string('type');
        $table->string('email')->unique();
        $table->timestamp('email_verified_at')->nullable();
        $table->string('password');
        $table->rememberToken();
        $table->timestamps();
    });
}
```

Figure 5.2: User Model Schema

```

public function up()
{
    Schema::create('products', function (Blueprint $table) {
        $table->id();
        $table->string('name');
        $table->string('brand_name');
        $table->string('slug');
        $table->double('price');
        $table->unsignedBigInteger('category_id');
        $table->foreign('category_id')->references('id')->on('categories')->onDelete(
            'cascade');
        $table->unsignedBigInteger('sub_category_id');
        $table->foreign('sub_category_id')->references('id')->on('sub_categories')->onDelete(
            'cascade');
        $table->mediumText('product_description');
        $table->string('product_warranty')->nullable();
        $table->mediumText('product_review')->nullable();
        $table->unsignedBigInteger('product_stock');
        $table->double('product_rating');
        $table->json('product_pictures')->nullable();
        $table->string('product_tags')->nullable();
        // $table->unsignedBigInteger('vendor_id');
        // $table->foreign('vendor_id')->references('id')->on('users')->onDelete('cascade');
        $table->foreignId('store_id')->constrained('stores')->onDelete('cascade');
        $table->timestamps();
    });
}

```

Figure 5.3: Product Model Schema

After that Every Table was Migrated to the database with below command.

```
php artisan migrate
```

5.2 Testing Implementation

Each part of every module was tested at the same time of the development. So there will be a little chance to be error in the functionality. Coding were done with “Pair Programming” methodology where atleast two of us were coding at same time one was observing and other was coding and vice versa. It is proven method to develop an error less application [21] [22].

We have followed all the necessary steps in application building, analyzed all the requirements and tested all the functionality is working as the user requires. Also we tested the interactions and responses from backend to frontend and the notification of execution of a task.

Using frameworks improved the scalability, security and performance a lot. And also in future when the database will get bigger with times the performance will not fade away [23].

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Discussion and conclusion

Our project “Take a scroll” is an E-commerce website that is mainly focused on solving the problems that the similar websites have [8] [9]. Here, customers can purchase their desired product without being worried about the quality and safety. In our website, customer can buy vendor’s products and also if customer doesn’t find his desired product, he can import it by texting the admin through our system’s chat option. We are leaving no stone unturned to make our clients satisfied.

By using our website, a client can easily find his desired electronic goods, vehicles and real estates. To develop this project we have learnt a lot of things like HTML, CSS, PHP, JavaScript,, some framework like Bootstrap, Laravel etc. Because of these languages, frameworks, libraries and UX design, we hope that our customers will feel comfortable while using our service [20].

6.2 Scope for future Development

We have tried to implement all the necessary functionality in our project “Take A Scroll” and it’s almost ready for commercial use. But it still has some scope for future development. If our customers and vendors demand for further development to get some additional functionality, we will implement that for them. We will develop an interactive mobile application for both Android and IOS [17]. We will also apply “user data mining” for generating individual product recommendation in future.

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