E-commerce Website

A project report

Submitted By

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In partial fulfilment for the award of the degree of

Bachelor of Engineering

in

Computer Engineering

G H Patel College of Engineering and Technology

V.V. Nagar

Charutar Vidya Mandal University, Anand

A.Y. 2023-24

G H Patel College of Engineering and Technology

V.V. Nagar, Anand

CERTIFICATE

This is to certify that the project report submitted along with the project entitled **E-commerce website** has been carried out by **Vrajkumar Gaurangkumar Parekh** under my guidance in partial fulfilment for the degree of Bachelor of Engineering in Computer Engineering, 6th Semester of Charutar Vidya Mandal University, Anand during the academic year 2022-23.

Prof. Nirav Raja
Internal Guide

Dr. Maulika Patel
Head of the Department

12002040501081

COMPANY CERTIFICATE

TECHELECON
TECHNOLOGY SIMPLIFIED

HR/TEPL/303 ***26.06.2023***

CERTIFICATE

This is to certify that ***Mr.Vrajkumar G Parekh (Id No.12002040501081)*** *Student* of **Computer Engineering** *from* **G H Patel College of Engineering & Technology – V V Nagar** *has undergone for* ***Internship*** *in our organization & completed successfully during* **22.05.2023 to 22.06.2023.**

During this period, we have found him regular, sincere and enthusiastic.

For, Tech Elecon Pvt.Ltd.

Nirali Trivedi
Group HR Head

G H Patel College of Engineering and Technology

V.V. Nagar, Anand

DECLARATION

We hereby declare that the Internship report submitted along with the Project entitled E-commerce website in partial fulfilment for the degree of Bachelor of Engineering in Computer Engineering to Charutar Vidya Mandal University, Anand is a bonfide record of original project work carried out by me at Tech Elecon Pvt. Ltd., Anand under the supervision of Mr. Satyam Raval and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	**Sign of Student**
Vrajkumar Gaurangkumar Parekh	_____

ACKNOWLEDGEMENT

I would like to thank to all those who helpd me for guiding me and answering all my doubts with patience. This project work appears in the current form due to the assistance, guidance, and support of several people. It is my pleasure to offer sincere thanks to all of them.

I take immense pleasure in thanking our Head of Department **Dr. Maulika Patel** for helping me out in all projects related work and providing me a vision for internship.

I also thank my internal guide **prof. Nirav Raja,** for his precious support and encouragement which he had provided in completion of my work. I am immensely grateful to all involved in this project as without their inspiration and valuable suggestion it would not have been possible to develop the project within the prescribed time.

Thank You
Vrajkumar Parekh

ABSTRACT

Electronic Commerce is process of doing business through computer networks. A person sitting on his chair in front of a computer can access all the facilities of the Internet to buy or sell the products.

Unlike traditional commerce that is carried out physically with effort of a person to go & get products, ecommerce has made it easier for human to reduce physical work and to save time. E-Commerce which was started in early 1990's has taken a great leap in the world of computers, but the fact that has hindered the growth of e-commerce is security. Security is the challenge facing e-commerce today & there is still a lot of advancement made in the field of security.

The main advantage of e-commerce over traditional commerce is the user can browse online shops, compare prices and order merchandise sitting at home on their PC.

For increasing the use of e-commerce in developing countries the B2B e-commerce is implemented for improving access to global markets for firms in developing countries. For a developing country advancement in the field of e-commerce is essential. The research strategy shows the importance of the e-commerce in developing countries for business applications.

INTRODUCTION ABOUT COMPANY

Tech Elecon Pvt. Ltd is the IT division of the Elecon group of companies and has more than 25 years of experience in the fields of hardware, software, and networking solutions. Situated in the heart of Vitthal, Udyognagar Industrial Estate and in the proximity of the educational town of Vallabh Vidyanagar. Tech Elecon is all set to reach new heights in the field of IT solutions.

Tech Elecon is ready with all sorts of solutions and deliver any application that is web based and further our solutions are designed to adapt your business rather than your business adapting the software. Their solutions are 100% fruitful and empower you to take control of client's business online and in real time!

Tech Elecon have more than 100 employees with specialized skills in software development, custom software development, and e-commerce software development using custom software programming including.NET, C#.NET, PHP, and Open Source and Oracle.

Tech Elecon delivers quality products and services with a focus on integrating the same with existing technologies, providing the required automation to our customers to help them achieve their business objectives.

Mr. Nilesh Naik, the company's general manager, is at the helm of the Techelecon organization. Mr. Satyam Raval, as Deputy General Manager, and after that, Manager and Associate Manager Positions are listed. At the bottom, there are trainees at entry level, who follow up to engineer, senior engineer, also executive and senior executive engineer.

Different Service of the Company

Tech Elecon has extensive experience in providing IT services and has successfully adapted to technological advancements, making it the leading IT infrastructure management service provider in the region. Our cutting-edge delivery model covers all stages of the solution lifecycle, including planning, deploying, managing, maintaining, auditing, upgrading, and improving.

Tech Elecon recognize that each client has unique needs and expectations when it comes to infrastructure and service providers. Our clients have the flexibility to choose from a wide range of IT infrastructure management and performance services based on their specific requirements. They can opt for on-site services or hybrid solutions that include on-site troubleshooting and support services.

Tech Elecon Provide Following Service for Business

- Hardware maintenance and repairing

- Service desk management
- Desktop management
- Network management
- Messaging administration
- Back-up management

Other Services

- Software Development Services
- Software Licensing
- Microsoft Product Implementation
- Linux Servers / Desktop Implementation

Capacity of the Company

Currently our company holds over more than 100 employees. But as the company is growing rapidly, capacity is going higher and higher.

DIFFERENT DEPARTMENT

ERP: The ERP (Enterprise Resource Planning) department is responsible for implementing, maintaining, and upgrading the ERP system in an organization. The ERP system integrates various business processes such as accounting, human resources, procurement, inventory, and customer relationship management into a single system to increase efficiency and streamline operations. The ERP department works closely with other departments to ensure the system meets the organization's needs and provides support and training to end-users.

Software: This department is responsible for maintaining the company's IT infrastructure and supporting employees. They develop web applications using technologies such as .Net and ReactJS and provide technical assistance to clients and employees to resolve any issues they may encounter. Their focus is to ensure smooth functioning of the IT systems and provide reliable technical support to the organization.

Networking and Hardware: The hardware department is responsible for the physical components of a computer system, including design, construction, maintenance, troubleshooting, and repair, while the network department is responsible for the setup, configuration, and maintenance of computer networks, including hardware and software components, protocols, addressing, security, monitoring, and troubleshooting.

SEQUENCE OF OPERATION FOR MANUFACTURING OF END PRODUCT

Main end product of our company is mostly the software. Software is a very different thing other than industry's End products. Its process is very different. The main flow of software development is as per below:

1. **Client requirement understanding:** First step to build something is to know what to build. Specially in the case of software it is very important to understand the client requirement completely as if the requirement changes, then it will create huge problems in later part of the development. Often a requirement document is created which is called a client requirement document to make things clearer.
2. **Planning:** Second step to build something is to know how to build. In software development, we need to decide the entire flow of the process like which technology stack will be used? Which type of architecture will be used? Etc.
3. **Development:** After sufficient planning comes the development part. In this part actual software is built. Or at least part of the software is built in methods like agile delivery methods.
4. **Review and QA:** Internal review and QA is done to ensure the quality of the final product as in software in this case. It also helps to identify the bugs before releasing the software.
5. **Release or Deployment:** In this phase the software is delivered to the client either the direct code or hosted service.
6. **Maintenance:** This part comes in picture after the final delivery of the software. This phase includes tasks such as making sure the service is always running, bug fixes etc.

DIFFERENT STAGES OF THE PRODUCTION

At our company we mostly use an agile development process in which the software is delivered in different parts or phases which are called the sprints. Each sprint contains the upgraded version of the software, and it is kept upgrading unless we reach the final product.

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1. INTRODUCTION

In recent years, e-commerce has become an increasingly important part of global economy, with more and more businesses turning to online platforms to sell their products and services. As a result, the demand for high-quality e-commerce websites has never been higher, and the development of such websites has become an essential aspect of modern business.

This report aims to provide an overview of the design, development, and implementation of an e-commerce website. The website is intended to be a platform for a fictional business that specializes in selling a wide range of products to customers worldwide. The report will provide a detailed analysis of the website's features, functionality, and overall design, as well as the technologies used in its development.

The report will also discuss the various challenges faced during the development process, including issues related to security, scalability, and user experience. Additionally, the report will explore the potential impact of the website on the fictional business's operations, including its ability to reach new customers and increase sales.

Overall, this report is intended to serve as a comprehensive guide for anyone interested in developing an e-commerce website, providing valuable insights into the design, development, and implementation process. By examining the key features and functionality of a successful e-commerce website, this report aims to provide valuable lessons and best practices for businesses looking to expand their online presence and reach new customers.

1.1 PURPOSE

The e-commerce website for electronics item shop web application is intended to provide complete solutions for vendors as well as customers through a single get way using the internet. It will enable vendors to setup online shops, customer to browse through the shop and purchase them online without having to visit the shop physically. The administration module will enable a system administrator to approve and reject requests for new shops and maintain various lists of shop category.

1.2 SCOPE

This system allows the customer’s to maintain their cart for add or remove the product over the internet. The intention of the system is to buy products online without going outside. If shopping system is only physical, customers have to go to shop and there is no guarantee that the customer will find specific branded products under

one shop. By using this latest technology of internet user can get products which they actually want from the retailers itself by sitting on the couch.

1.3 PLATFORM SPECIFICATIONS

- **Front end**: HTML, CSS, JavaScript, React.js
  - HTML: HTML is used to create and save web document.
  - CSS: (Cascading Style Sheets) Create attractive Layout
  - JavaScript: it is a programming language, commonly use with web browsers.
  - React.js: This is frontend framework used to implement webpages in component form.

- **Back end:** Node.js, MongoDB
  - Node.js: It is a technology that allows software developers to create dynamically generated web pages as per client request.
  - MongoDB: MongoDB is a database, widely used for accessing querying, updating, and managing databases data.

- **Software Requirement**
  - MongoDB Atlas,
  - Node.js

- **Hardware Requirement:**
  - Minimum RAM: 512 MB
  - Hard Disk: 500 GB
  - Operating System: Windows 7, 8, 10

2. SYSTEM REQUIREMENT ANALYSIS

2.1 PRODUCT PERSPECTIVE

The Online Shopping system (OSS) application enables vendors to set up online shops, customers to browse through the shops, and a system administrator to approve and reject requests for new shops and maintain lists of shop categories. Also the developer is designing an online shopping site to manage the items in the shop and also help customers to purchase them online without visiting the shop physically. The online shopping system will use the internet as the sole method for selling goods to its consumers. This product aimed toward a person who don't want to visit the shop as he might don't get time for that or might not interested in visiting there and dealing with lot of formalities.

2.2 SYSTEM INTERFACES

- **User Interfaces**
  - This section provides a detailed description of all inputs into and outputs from the system. It also gives a description of the hardware, software and communication interfaces and provides basic prototypes of the user interface.
  - The protocol used shall be HTTP.
  - The Port number used will be 80.
  - There shall be logical address of the system in IPv4 format.

- **Hardware Interfaces**
  - Laptop/Desktop PC-Purpose of this is to give information when Patients ask information about doctors, medicine available lab tests etc. To perform such Action it need very efficient computer otherwise due to that reason patients have to wait for a long time to get what they ask for.
  - Laser Printer (B/W) - This device is for printing patients' info etc.
  - Wi-Fi router - Wi-Fi router is used to for internetwork operations inside of a hospital and simply data transmission from pc's to sever.

- **Software Interfaces**

- MongoDB Atlas - Database connectivity and management
- OS Windows 7/8/10- Very user friendly and common OS

2.2.1 Economic Feasibility

The project is economically feasible as the only cost involved is having a computer with the minimum requirements mentioned earlier. For the users to access the application, the only cost involved will be in getting access to the Internet.

2.2.2 Technical Feasibility

To deploy the application, the only technical aspects needed are mentioned below:

Operating Environment Win 2000/XP

Platform .Net Framework & IISDatabase SQL Server 2005

- **For Users:**

  Internet Browser

  Internet Connection

2.2.3 Behavioural Feasibility

The application requires no special technical guidance and all the views available in the application are self-explanatory. The users are well guided with warning and failure messages for all the actions taken.

3. SPECIFIC REQUIREMENTS

3.1 Functional Requirements:

This section provides requirement overview of the system. Various functional modules that can be implemented by the system will be –

- **Registration: -** If customer wants to buy the product then he/she must be registered, unregistered user can't go to the shopping cart.
- **Login: -** Customer logins to the system by entering valid user id and password for the shopping.
- **Changes to Cart: -** Changes to cart means the customer after login or registration can make order or cancel order of the product from the shopping cart.
- **Payment: -** In this system we are dealing the mode of payment by Cash. We will extend this to credit card, debit card etc. in the future.
- **Logout: -** After ordering or surfing for the product customer has to logout.
- **Report Generation: -** After ordering for the product, the system will sent one copy of the bill to the customer's Email-address and another one for the system data base.
- **Update details: -** User can change or update their details.
- **Filter by category: -** User can show products by applying category wise filters to show particular product.

3.2 Non-Functional Requirements:

Following Non-Functional Requirements will be there in the insurance to the internet:

- Secure access to consumer's confidential data.
- 24X7 availability.
- Better component design to get better performance at peak time.
- Flexible service based architecture will be highly desirable for future extension of.Non-Functional Requirements define system properties and constraints. Various other Non-Functional Requirements are:
- Security
- Reliability
- Maintainability
- Portability
- Extensibility
- Reusability

- Compatibility
- Resource utilization

3.3 Performance Requirements:

In order to maintain an acceptable speed at maximum number of uploads allowed from a particular customer as any number of users can access to the system at any time. Also the connections to the servers will be based on the attributes of the user like his location and server will be working 24X7 times.

3.4 Technical Issues: This system will work on client-server architecture. It will require an internet server and which will be able to run application. The system should support some commonly used browser such as IE, mozzila-firefox, chrome etc.

4. SYSTEM ANALYSIS

4.1 E-R DIAGRAM

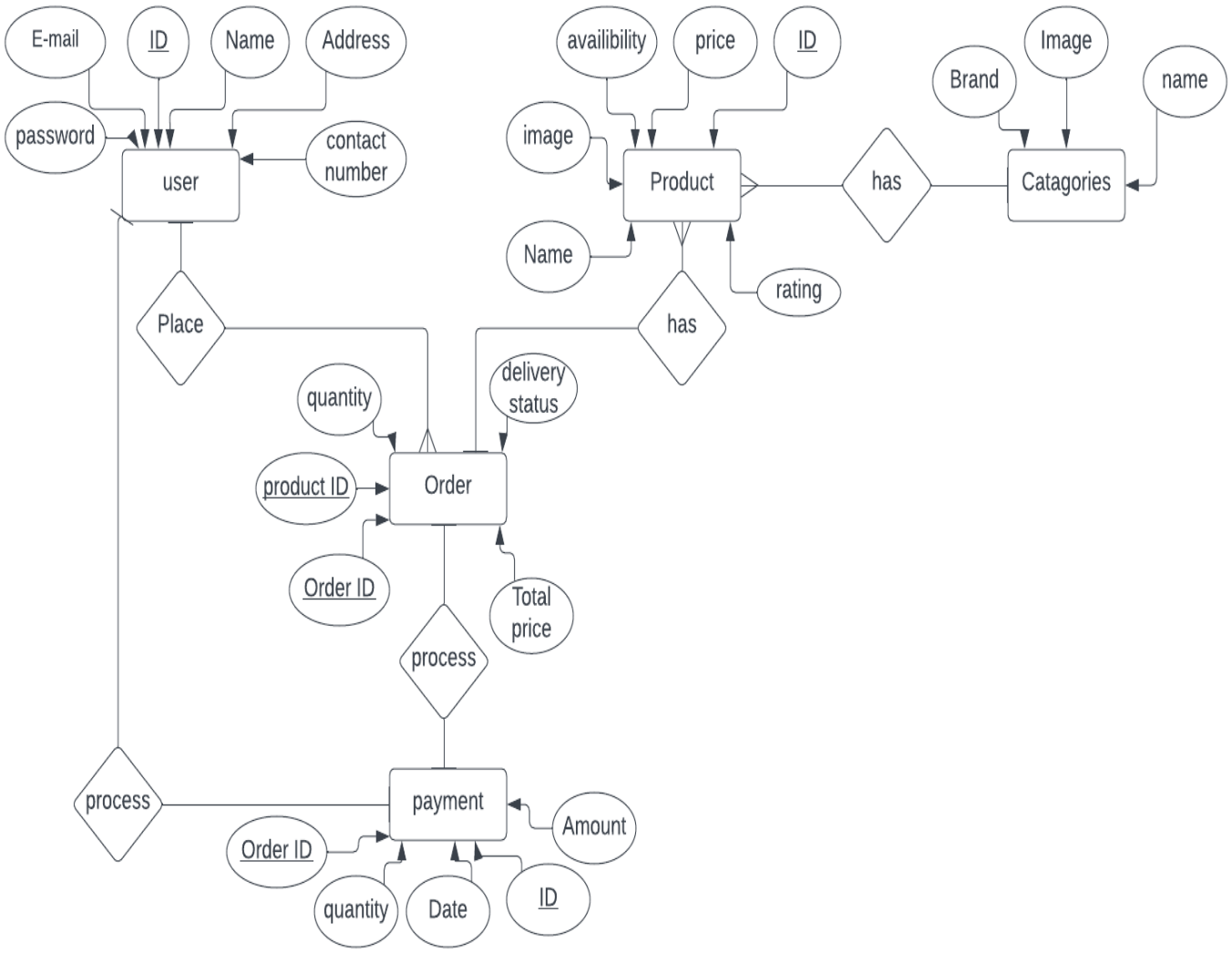

Fig 4.1: **E-R diagram**

4.2 DATA FLOW DIAGRAM

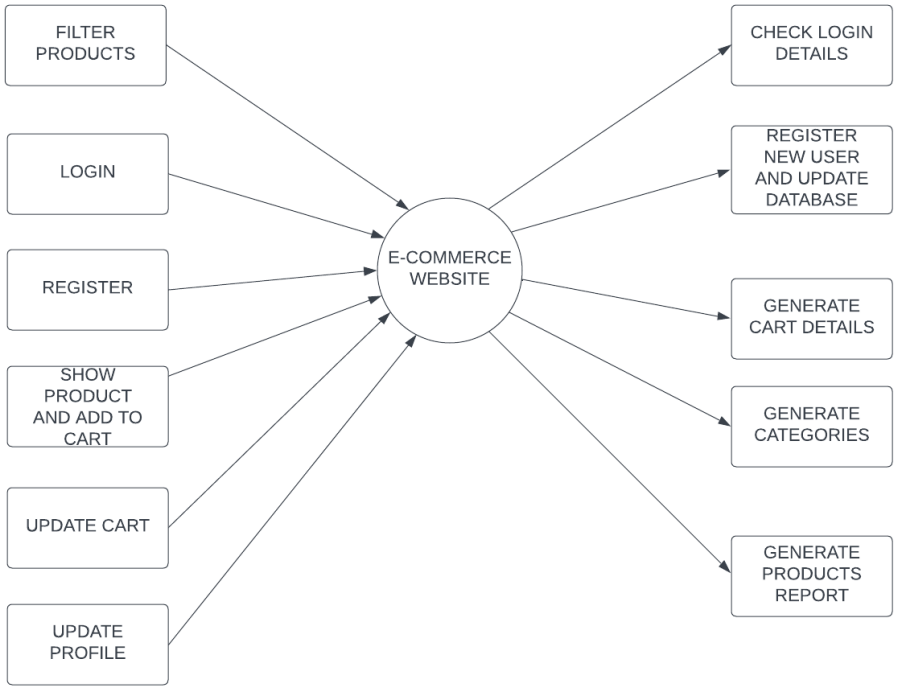

Fig 4.2: **data-flow diagram (level-0)**

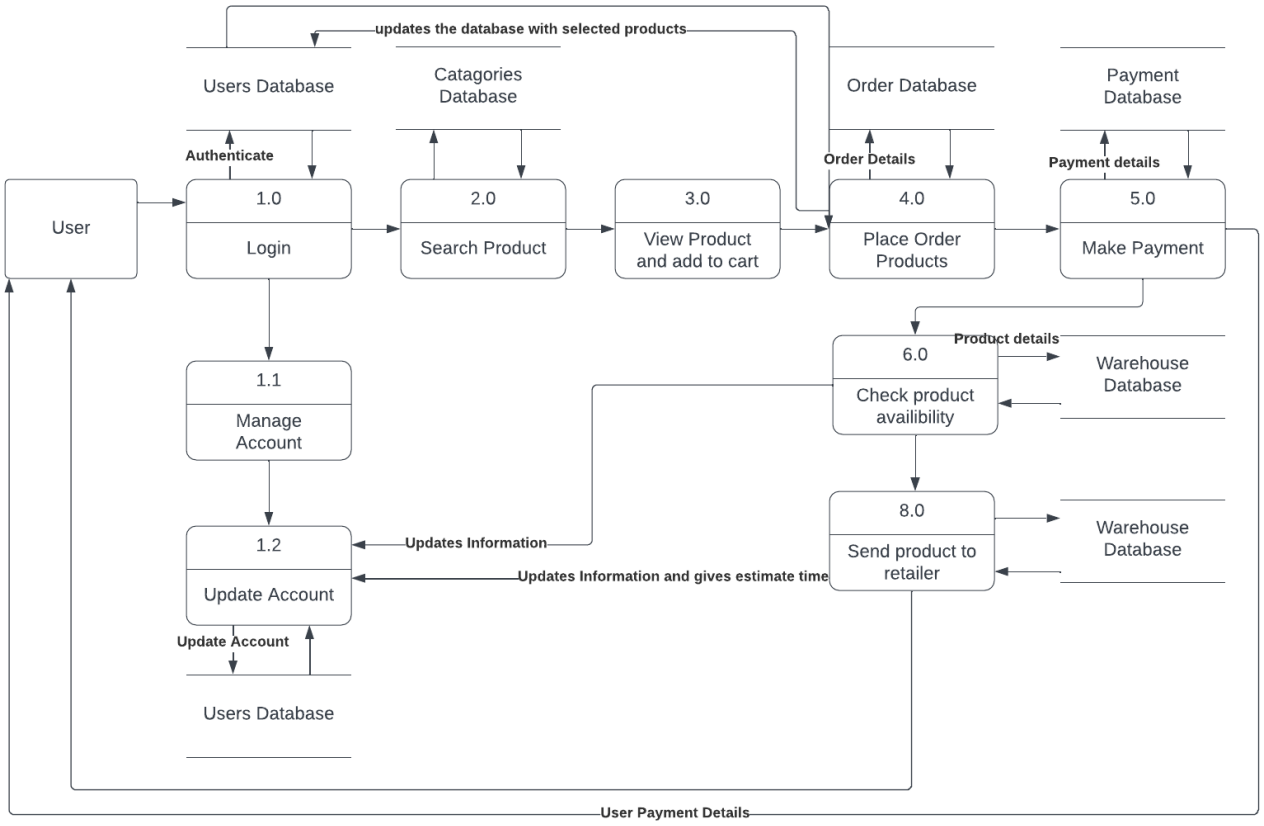

Fig 4.2: **data-flow diagram (level-1)**

4.3 USE CASE DIAGRAM

Fig 4.3: **use case diagram**

4.4 SEQUENCE DIAGRAM

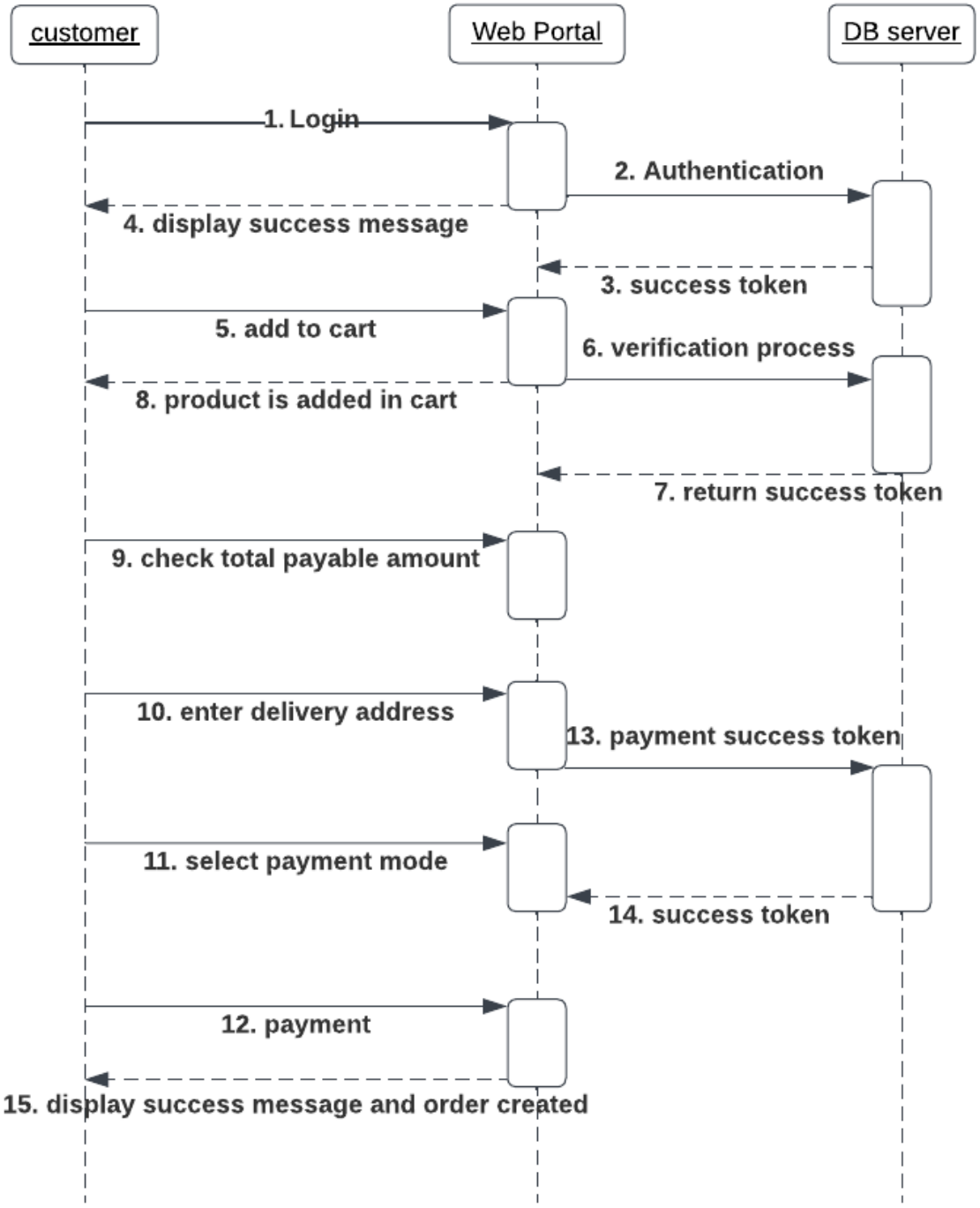

Fig 4.4: **sequence diagram**

4.5 STATE TRANSITION DIAGRAM

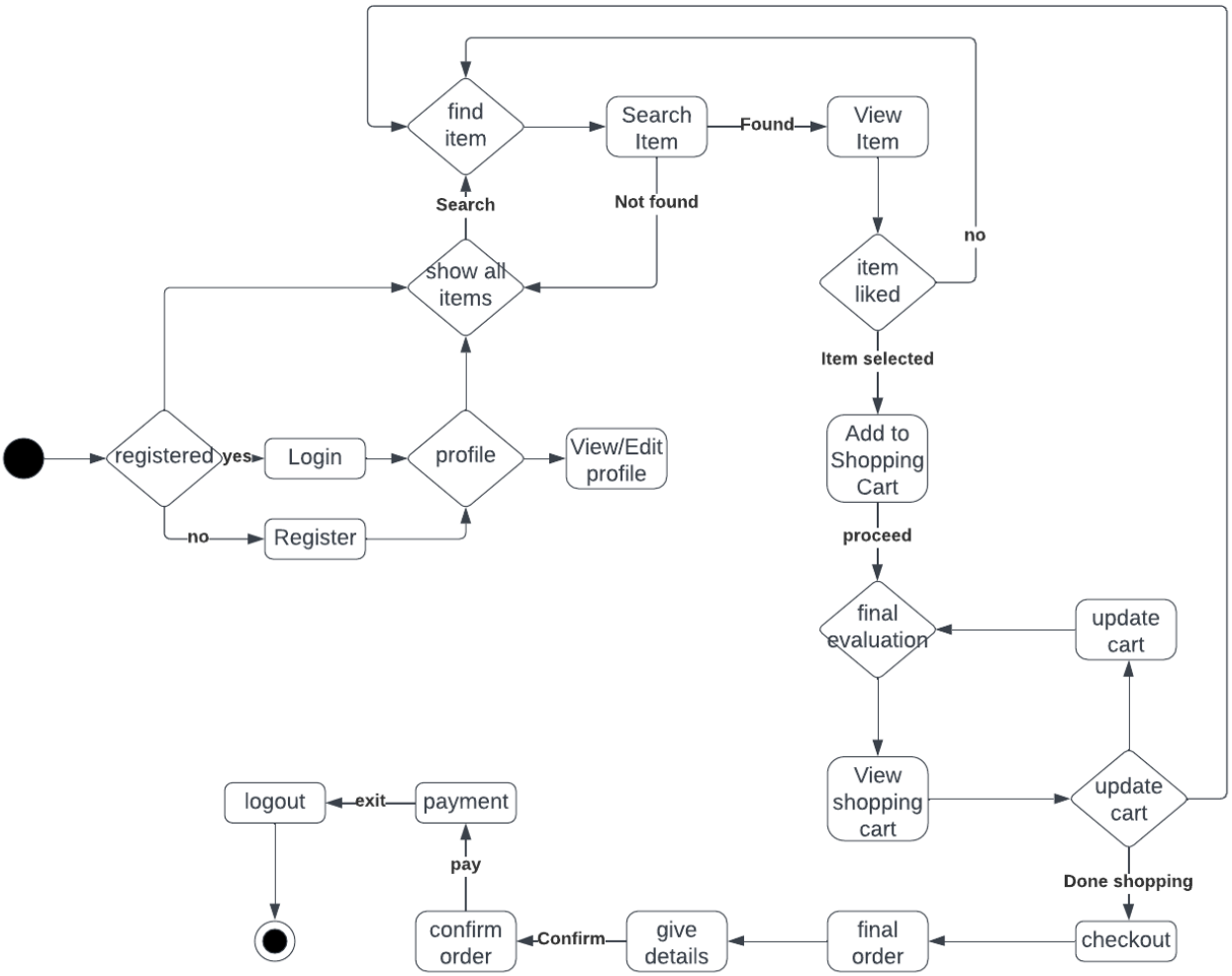

Fig 4.5: **state transition diagram**

4.6 DATA DICTIONARY

Users:-

Data Item	Data Type	Number of bytes for Storage	Description
Id	Object	12	Primary key
name	string	255	Name of customer
email	string	255	Email id
Password	string	255	Password(encrypted)
Phone	string	255	Phone number(10 digits)
Address	string	255	Address of customer
Answer	string	255	Security Question
role	Integer	8	1 or 0

Products:

Data Item	Data Type	Numberof bytesfor Storage	Description
Id	Object	12	Primary key
Name	string	255	Name of product
Slug	string	255	Category of product (in modified form)
Description	string	255	Description
Price	Integer	8	Price of Product
Category	Integer	8	Category of product
quantity	Integer	8	Number of products
photo	Object	12	image

Orders:

Data Item	DataType	Numberof bytesfor Storage	Description
id	object	12	Unique Identification (primary key)(not-null)
products	string	255	Group of products
payment	object	12	Description of payment
buyer	object	12	User (buyer) id
status	string	255	Whether product is delivered or not

Category:

DataItem	DataType	Numberof bytesfor Storage	Description
Id	Object	12	Primary key
Name	string	255	Name of category
Slug	String	255	Name of category(in modified form)

5. IMPLEMENTATION

1. Database design

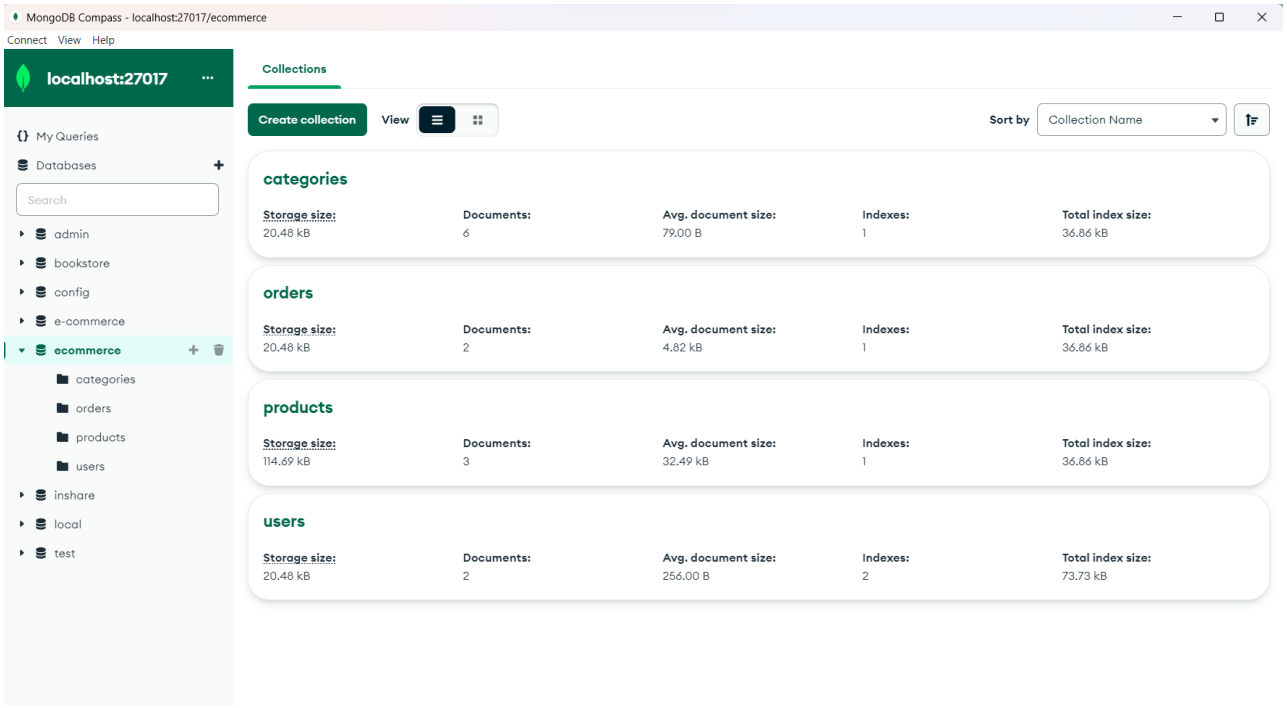

Fig 5.1: **database design**

2. login Page

This page consists of log in form which accepts email id of user or admin and password through which user or admin can login to website. If user forgets password, he/she can click on ‘forgot password’ button to reset password.

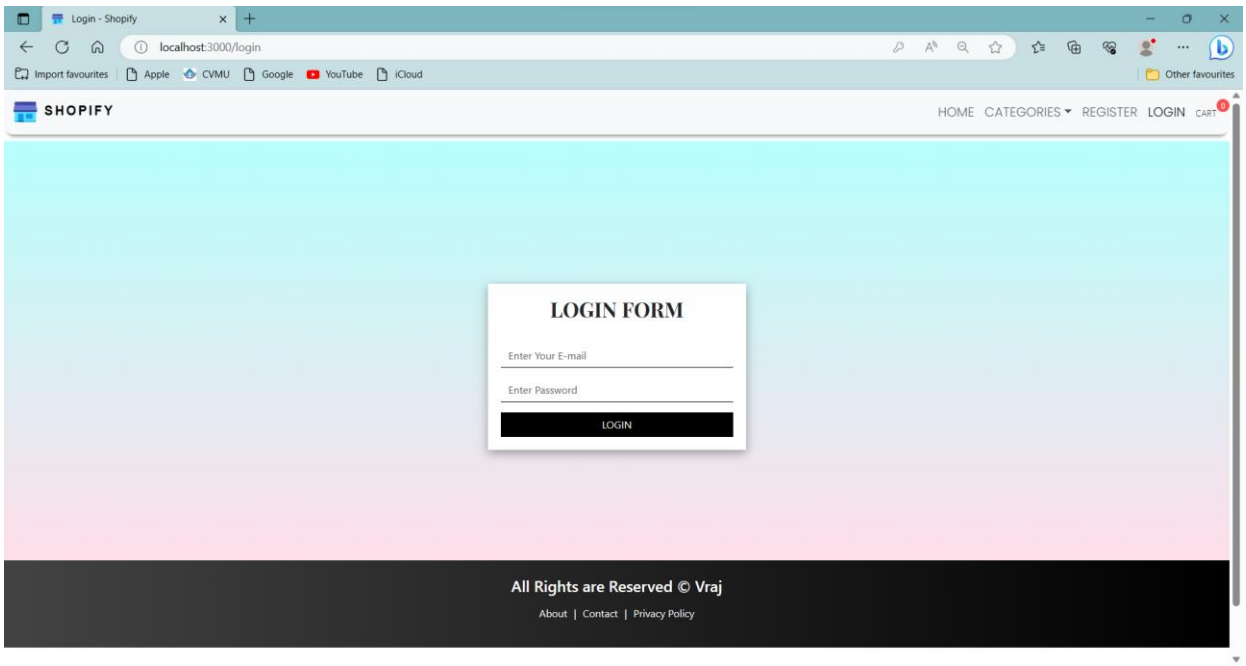

Fig 5.2: **login page**

3. Registration page

This is the page which will render while clicking on ‘register’ button available on navbar. User can enter name, email id, password, phone number, and address and security question i.e.: birth place. This security question helps while resetting password.

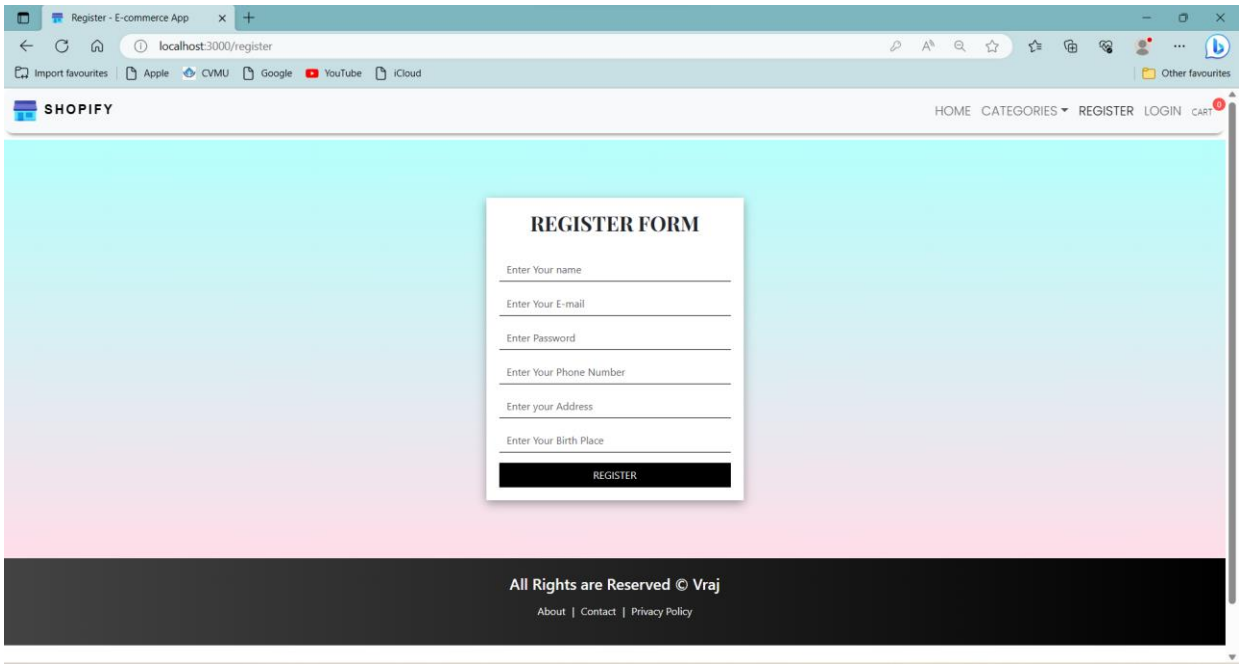

Fig 5.3: **registration page**

4. Home page

This is the home page of e-commerce website in which all products are shown and user can search product and also filter products by category and price.

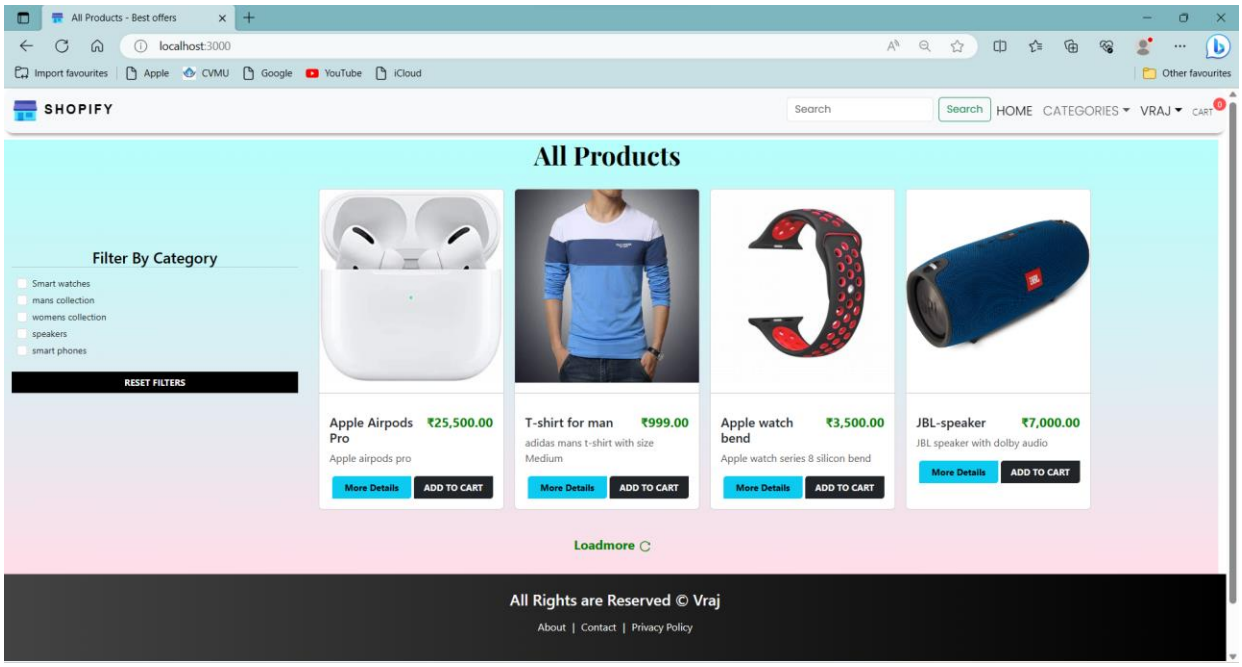

Fig 5.4: **home page**

5. About us page

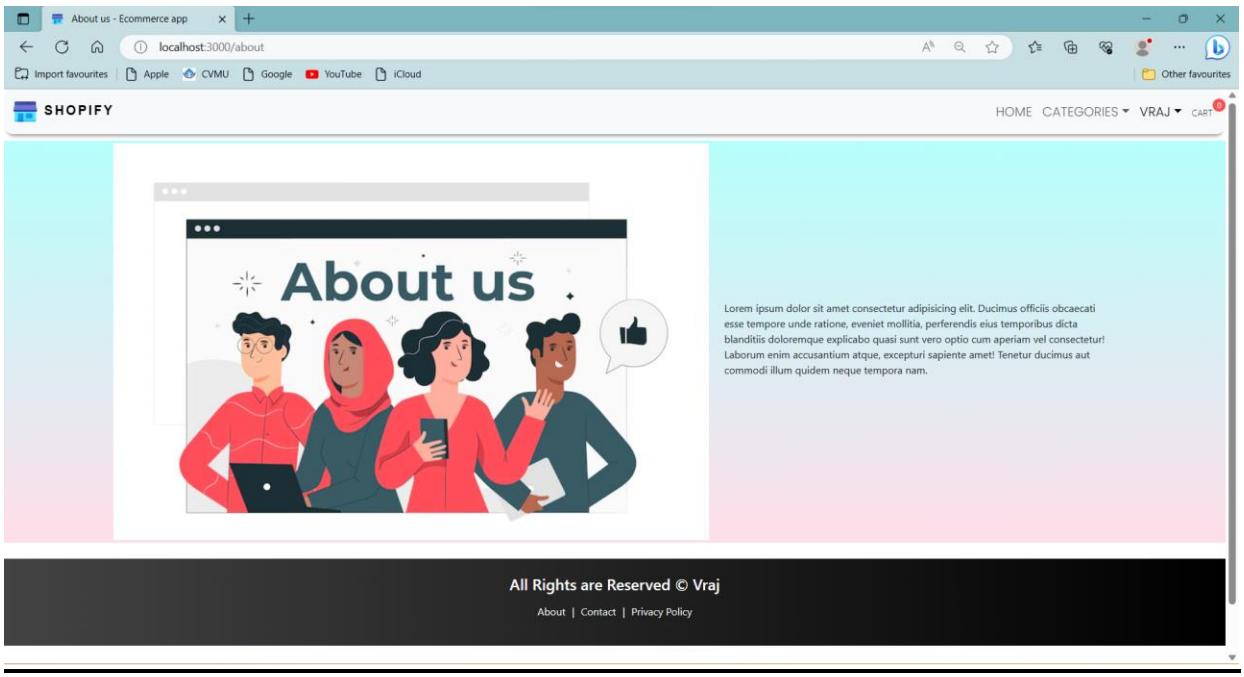

Fig 5.5: **about_us page**

6. contact us page

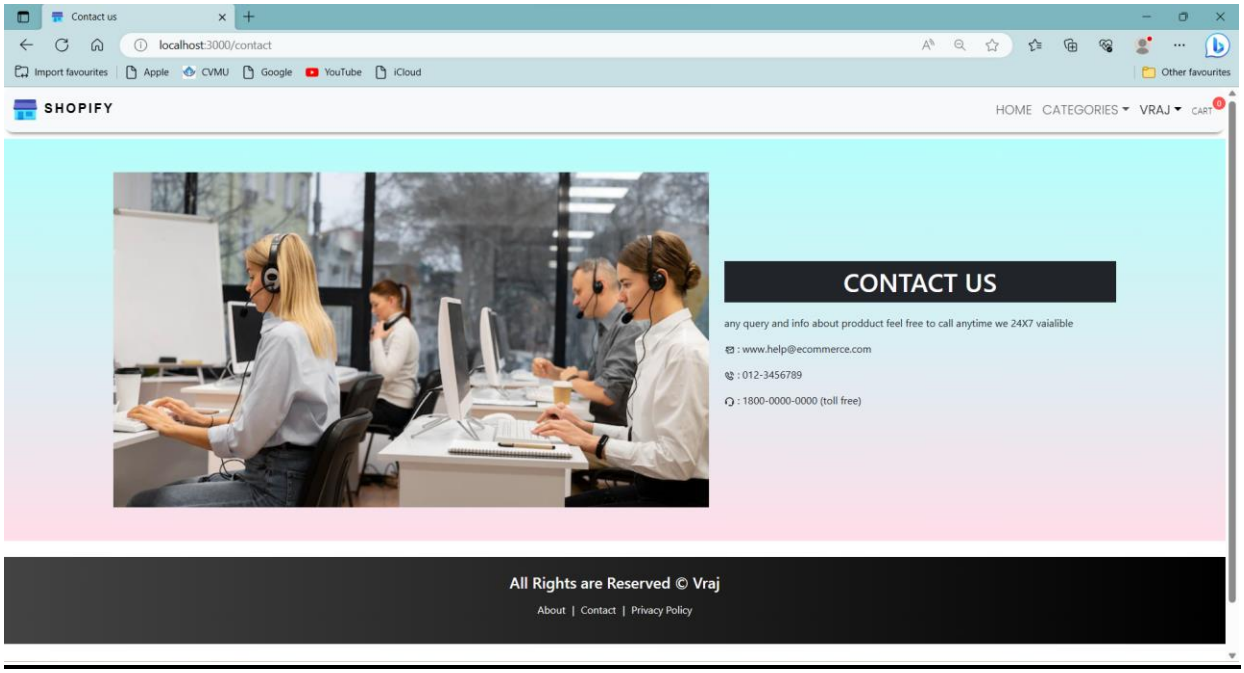

Fig 5.6: **contact_us page**

7. Categories page

This page describes all the categories added by admin.

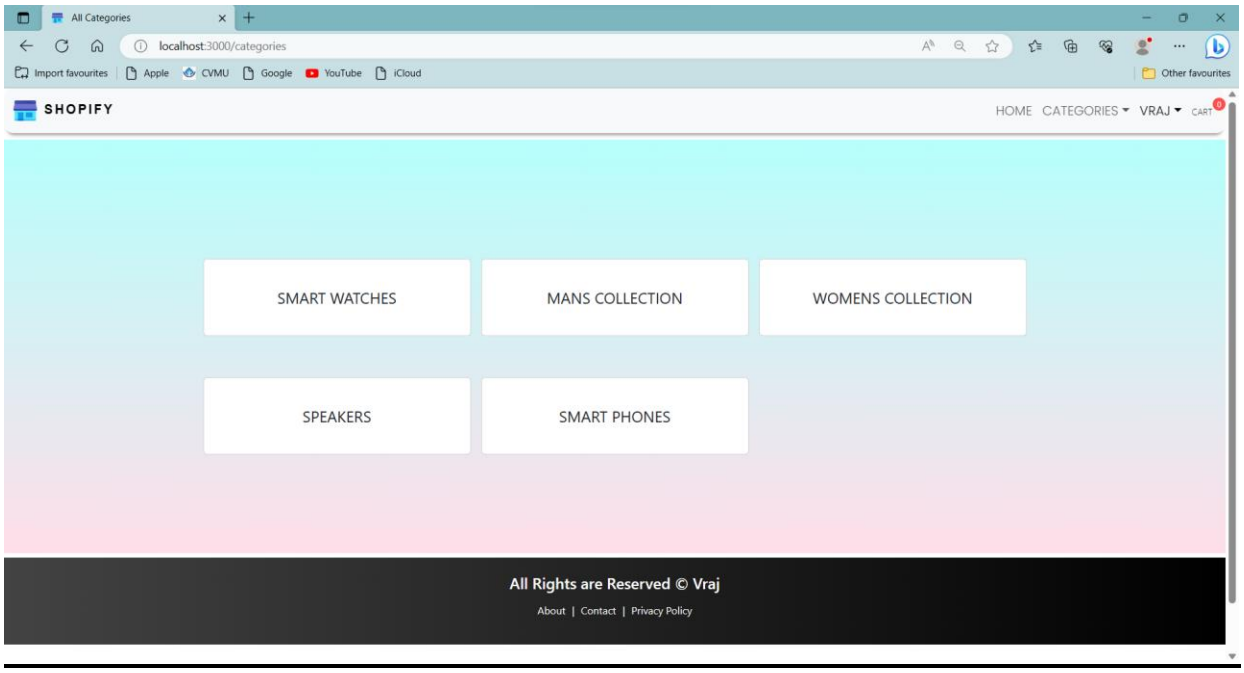

Fig 5.7: **categories page**

8. category page

This page shows all the products related to specific category i.e. speakers.

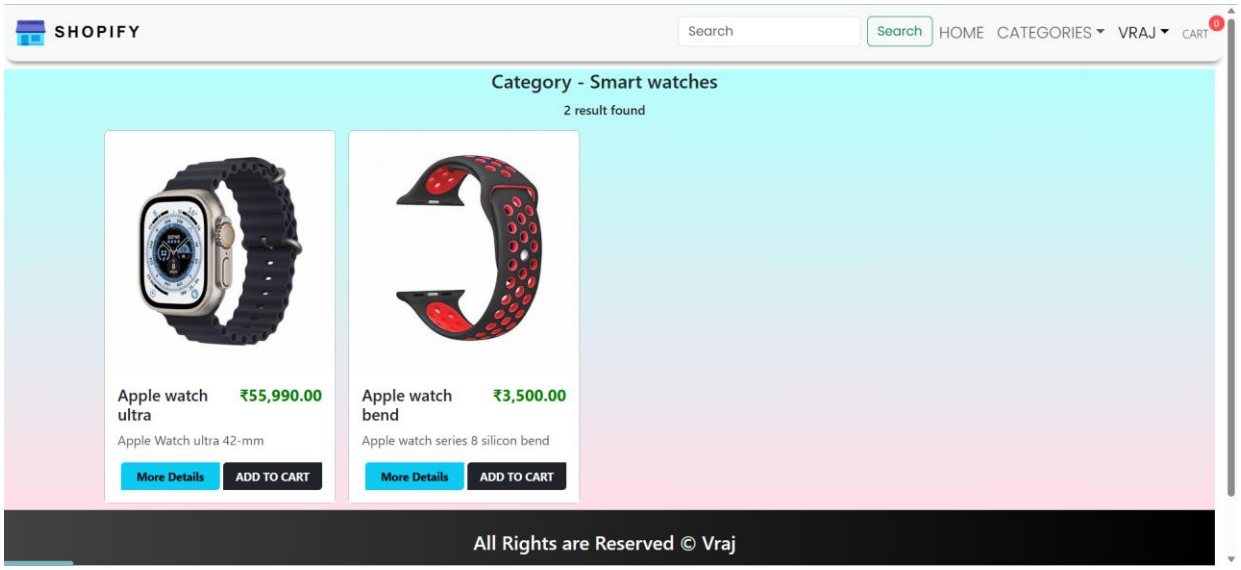

Fig 5.8: **category page**

9. Product Details page

This page shows particular product details and also shows products which are having similar type of category

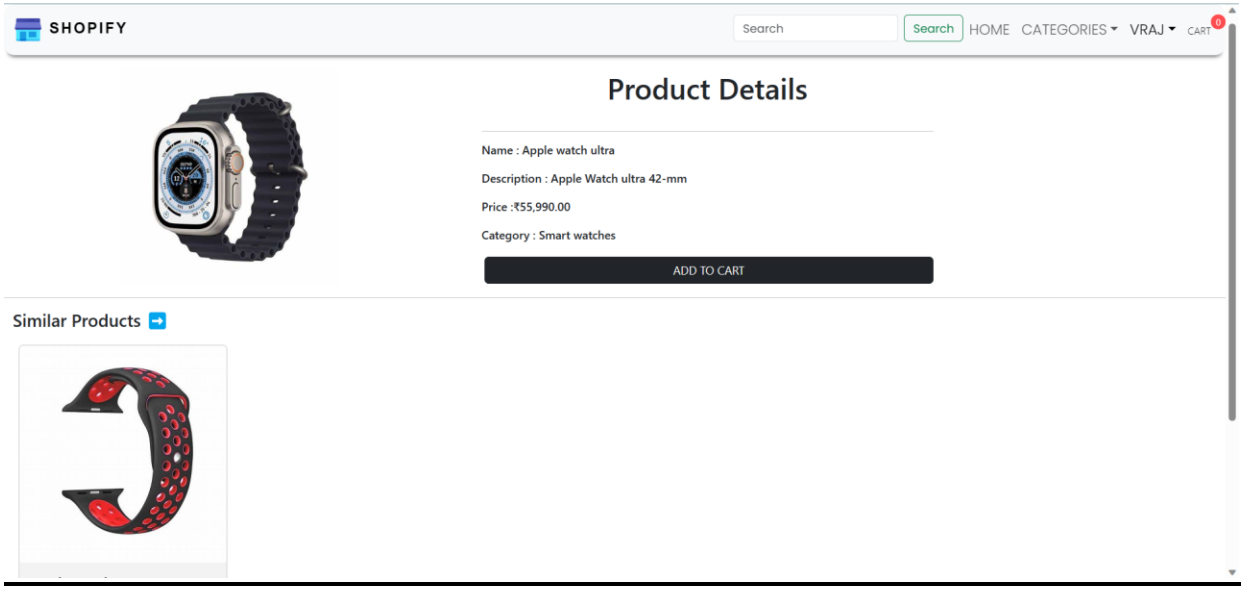

Fig 5.9: **product details page**

10. Cart page

This is the page which shows the products which is added to cart by specific user. This page shows the products its price and total price of all products. User can edit delivery address and pay money according to total price.

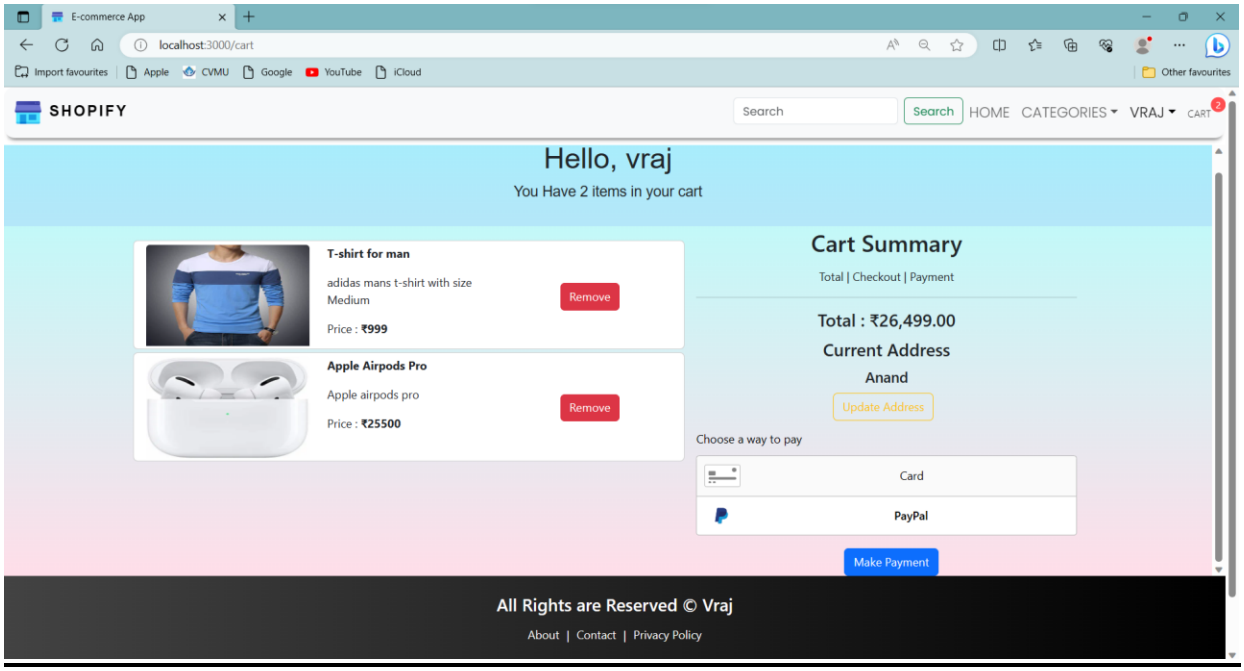

Fig 5.10: **cart page**

11. Profile page

This page is for editing personal details of user.

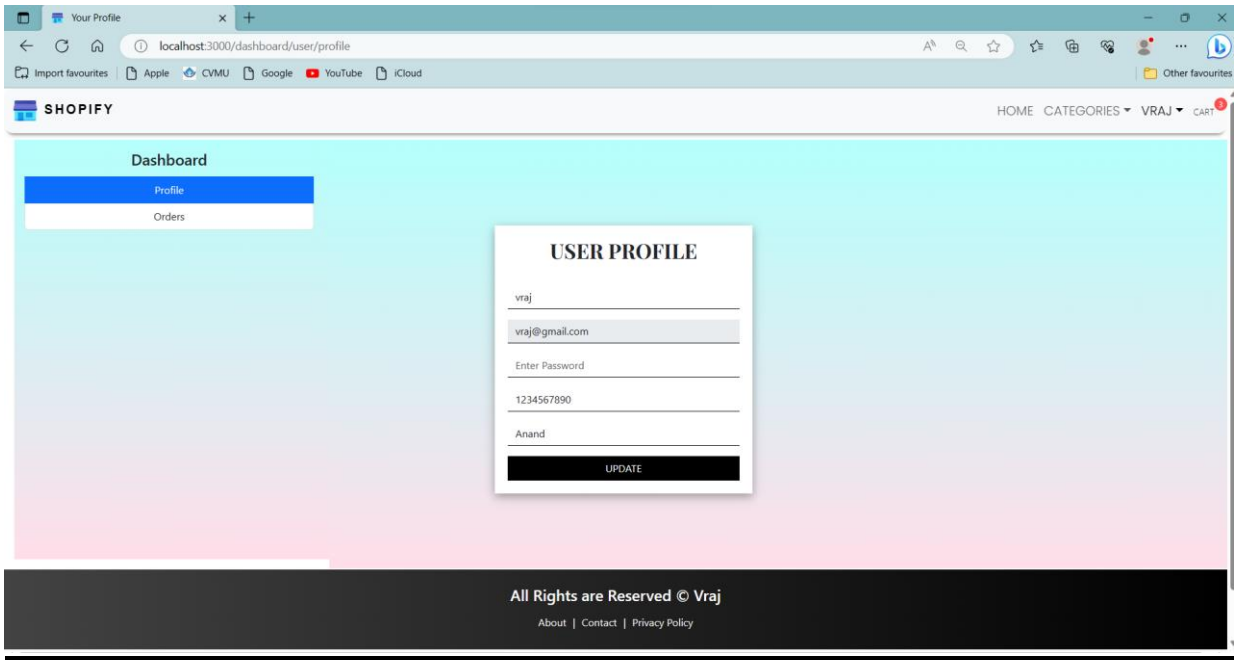

Fig 5.11: **profile page**

12. orders page

User can show their ordered products on his page and also get print receipt of it.

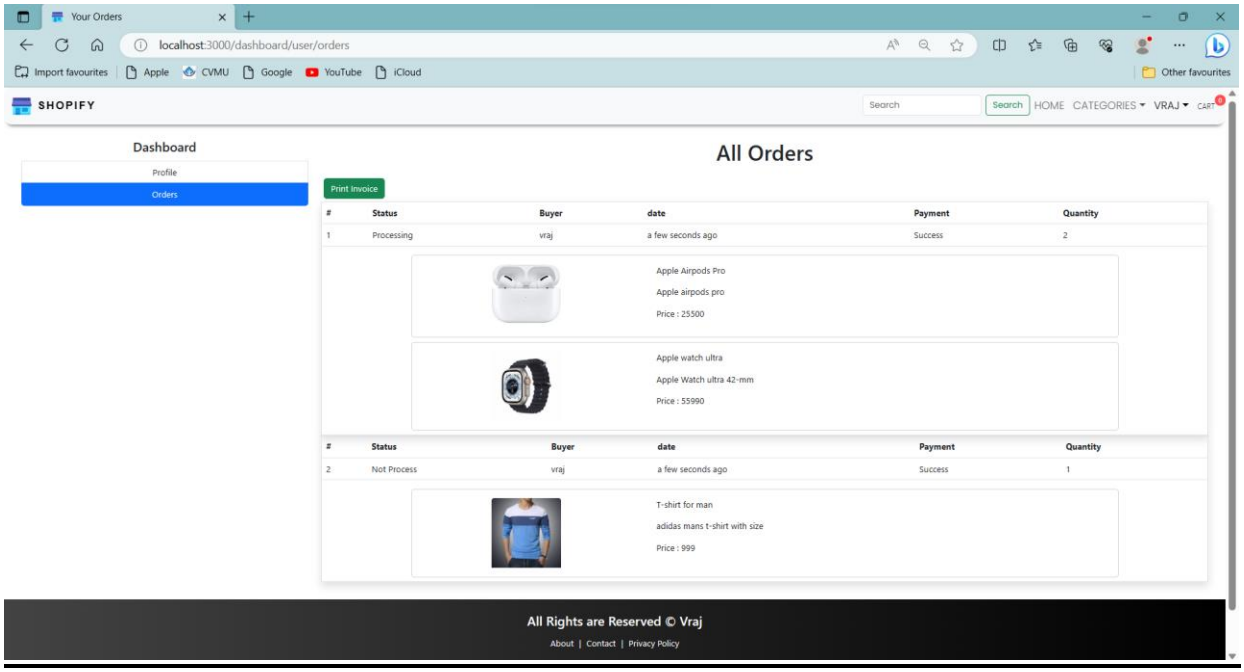

Fig 5.12: **orders page**

13. Create products page

Admin can create a new product.

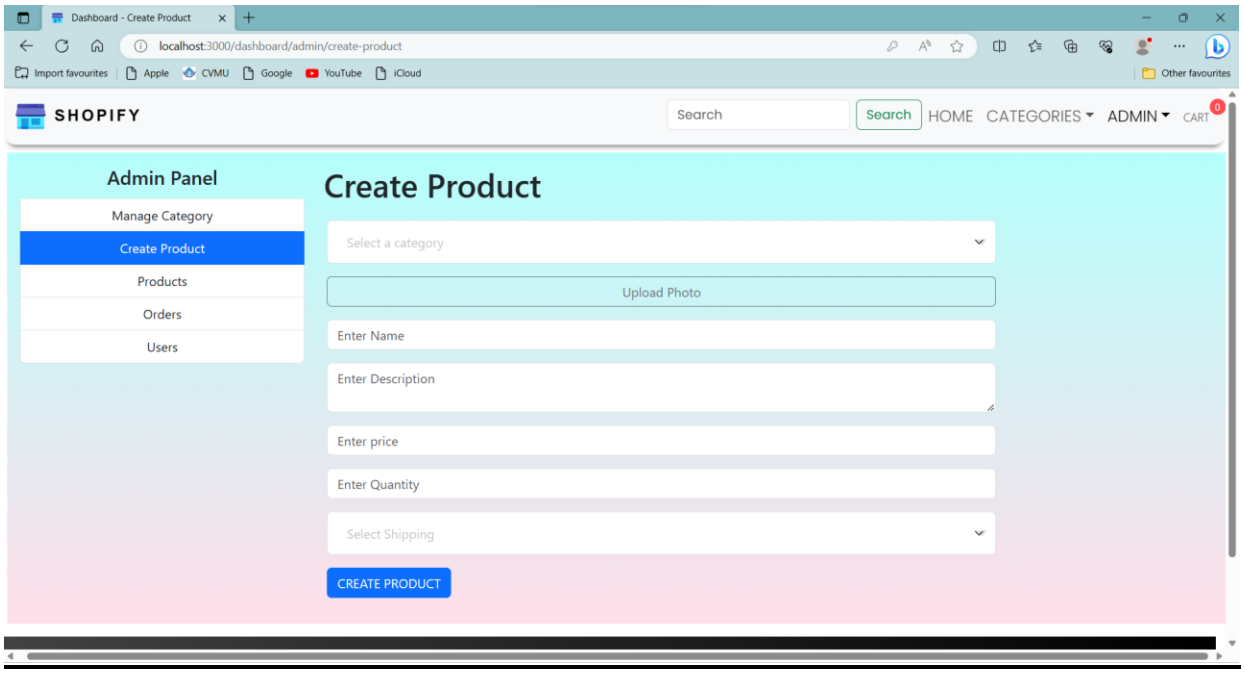

Fig 5.13: **create products page**

14. Manage Category page

Admin can manage categories and also add new one.

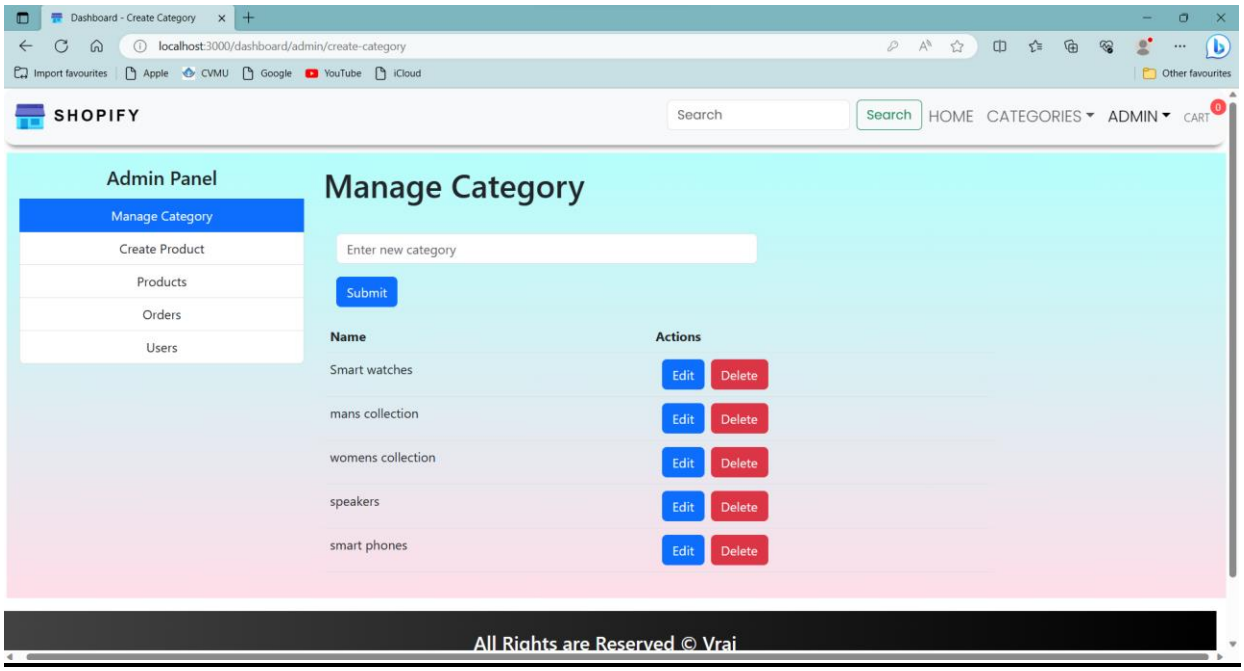

Fig 5.14: **Manage category page**

15. All users page

Admin can show all registered users.

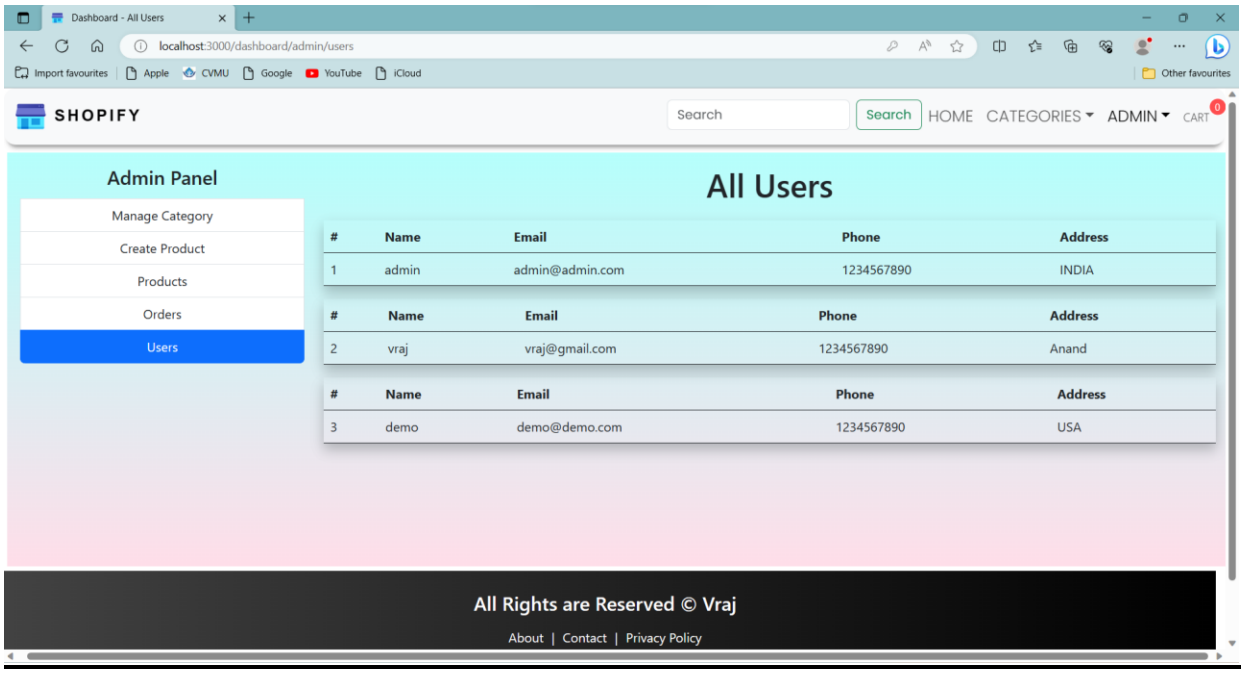

Fig 5.15: **All users page**

16. All orders page

Admin can show all orders ordered by different users and change the status of it.

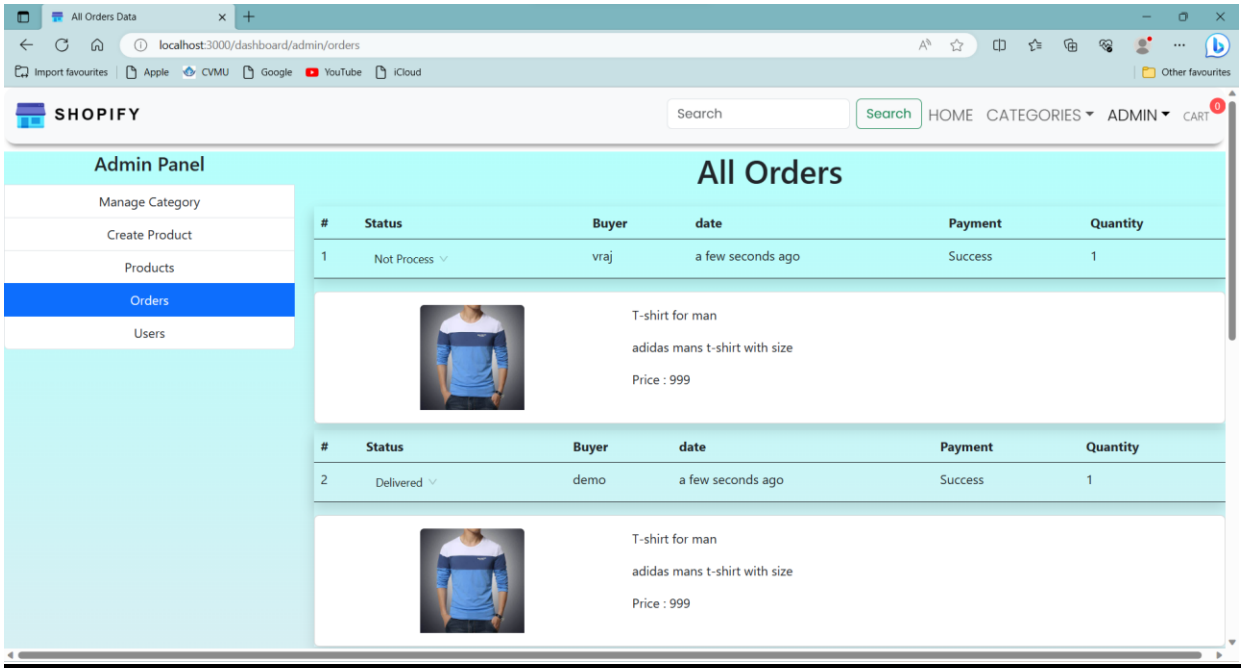

Fig 5.16: **All orders page**

6. CONCLUSION

Working on the project was an excellent experience. It helped us to understand the importance of planning, designing and implementation so far we have learnt in our theory books. It helped us unleashing our creativity while working in a team. It also realized the importance of team working, communication as a part of this project. The project was successfully completed after a lot of efforts and work hours.

This project underwent number of compiling, debugging, removing errors, making it bug free, and interactivity making it more reliable and useful. This project focused that scheduling a project and adhering to that schedule creates a hard sense of time- management. The entire project has been developed and deployed as per the requirements stated by the user. It is found to be bug free as per the testing standards that are implemented.

Finally, we like to conclude that we put all our efforts throughout the development of our project and tried to fulfil most of the requirements of the user.

7. REFERENCES

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