TECH FARM BD: AN E-COMMERCE WEB APPLICATION

BY

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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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APPROVAL

This Project/internship titled **"Tech Farm Bd: An E-commerce Web Application"**, submitted by Md. Zahid Hasan, ID No: 183-15-2285 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfilment 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 *04/02/2023*.

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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Dr. S.M Aminul Haque, Associate 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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We would like to thank our entire course mate in Daffodil International University,who took part in this discuss while completing the course work.

Finally, we must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

It is a web-based project that I have created. For all those folks who are really busy with Their own lives, I have already established this project. It will always support them. I have incorporated all electronic devices and accessories that are crucial to our daily lives. I did a survey on this website, analyzed the findings, and received feedback that the majority of people utilize this type of project for their everyday needs. In this project, I've included two modules the User Face and the Admin Face, as well as use case and other diagrams that will be quite helpful to users. I promised to provide all the services for this project. aditionally, I have added a brand-new special function that makes my website significantly different from other websites in comparison to them. Due to the uniqueness of my website and the engaging features I've added, users will benefit from it.

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CHAPTER 1

Introduction

1.1 Introduction

E-commerce, often known as online trade or electronic commerce. E-commerce is the process of carrying out business or commercial transactions online in return for items, typically through transferring value across organizational or interpersonal boundaries. There are two key factors: the economic factor and the technological factor. Living has become more convenient and comfortable thanks to technology and science. People who are perpetually preoccupied with their employment and other everyday activities are known as e-commerce customers since they lack the time to go shopping in the market. We conduct our online shopping over telecommunications networks using the internet, a vital instrument for conducting global business based on cutting-edge technology. In the e-business, which entails the exchange of goods and services between websites and customers, building strong relationships with customers is crucial in order to gauge consumer satisfaction and churn rates. In the e-business, e-com is the exchange of goods and services between companies and clients it is critical to establish a strong relationship with consumers, to determine consumer satisfaction and dissatisfaction levels.

1.2 Motivations

Today, Bangladesh has a variety of online purchasing platforms. Many people encounter of numerous issues while shopping online. Also they don't know how to use websites properly to make purchases, therefore I want to help provide them with clear instructions and tip that website which is simple to use. Offering assistance to young people without jobs in order to lower unemployment in our own nation. I'm hoping that a forum like this would eventually result unemployment rates of 0%.

1.3 Objectives

There are main objectives of this project are:

1. Internet-based product or service promotion
2. Growing business ties
3. Creating a sense of business identity and brand awareness
4. Lowering the expense of management
5. By giving customers a special experience
6. Boosting the proportion of devoted customers
7. Increasing sales
8. Creating an e-commerce website that is responsive

1.4 Outcomes

The outcomes of this project are:

1. In the admin panel, admins can customize their security and safety settings.
2. Access to this website is limited and convenient
3. Customer and admin can easily chat via live chat
4. A user-friendly and constrained website will be provided
5. Every single one of these is very helpful to the customer

1.5 Project Finance

This website is entirely free since I created it using my own knowledge and expertise that I have gained from outside sources as well as my own experience and ideas.

1.6 Report Layout

TABLE 1: Description of report layout

Chapter no.	Description
01.	Introduction, motivation, objectives, outcomes, project finance, report layout.
02.	Background study, related work of this project, problems, challenges
03.	Requirement collection, flow chart, use case
04.	Project design application
05.	Implementation and testing of this project
06.	Impact on Society,Environment & Sustainability
07.	Conclusion & Future Scope

CHAPTER 2

Background Study

2.1 Introduction

Here I will discuss the background for this application. I will discuss E-commerce how to technologies this can make life easier for people in the 22th century.

2.2 Background Study

I used Visual Studio Code for coding and implementing the code. This is widely known to happen with any expose code, but it is especially well known to happen with the Microsoft targeted which customers may customize their theme, keyboard shortcuts, and preferences. The coding tool is user-friendly, and users can install plugins to add new functionality.I've also used all that code language earlier here,

Front-End:

1. React JS (JavaScript Frameworks or Library)
2. HTML, CSS

Back-End:

1. Node.js
2. Express.js

Database:

1. MongoDB (No-SQL database)
2. Mongoose library
   (This is a MongoDB database library for using relational data in MongoDB)
3. Security:
4. JWT (JSON Web Token)

2.3 Related Work

When I made the decision to establish a certain e-commerce project at that time, I looked through numerous projects. like boAt Lifestyle, StarTech, and TechLand. In order to construct my project for my country like my project, I primarily followed three websites in the world. But for now, I'll demonstrate just one:

Fig 2.1: Tech Land BD trusted retail computer store in Bangladesh

(Source-https://www.techlandbd.com/)

From TechLand, StarTech, boAt Lifestyle.,I have learned different things that are:

1. Thoughtful design
2. A good structure
3. Linguistic relationship
4. The administration and product setup are both really great

2.4 Analysis Table

TABLE 2: Analysis table of websites

Case	TechLand	StarTech	boAtlifestyle	Tech Farm
Registration Login for user	Yes	Yes	Yes	Yes
Registration Login for admin	Yes	Yes	Yes	Yes
Multilanguage	No	No	No	No
Discount/offer	Yes	Yes	Yes	Yes
User data update option	No	No	No	Yes
Profile update	Yes	Yes	Yes	Yes
Live chat	No	No	No	Yes
Help Desk	Yes	Yes	Yes	Yes

2.5 Problems position

1. It is difficult to gather user data
2. Daily updating is quite challenging with an internet connection
3. Setting up a location effectively is difficult large-scale reasons

2.6 Challenges

1. Reliable information and communication mechanisms
2. Management of system controls and the most recent data
3. Product setup is flawless and user-friendly

CHAPTER 3

Requirement Specification

3.1 Agile Model

For this system, I choose the "Agile process model.Agile models have several phases that are very essential for building a website.The most crucial aspects are that it will display each stage.

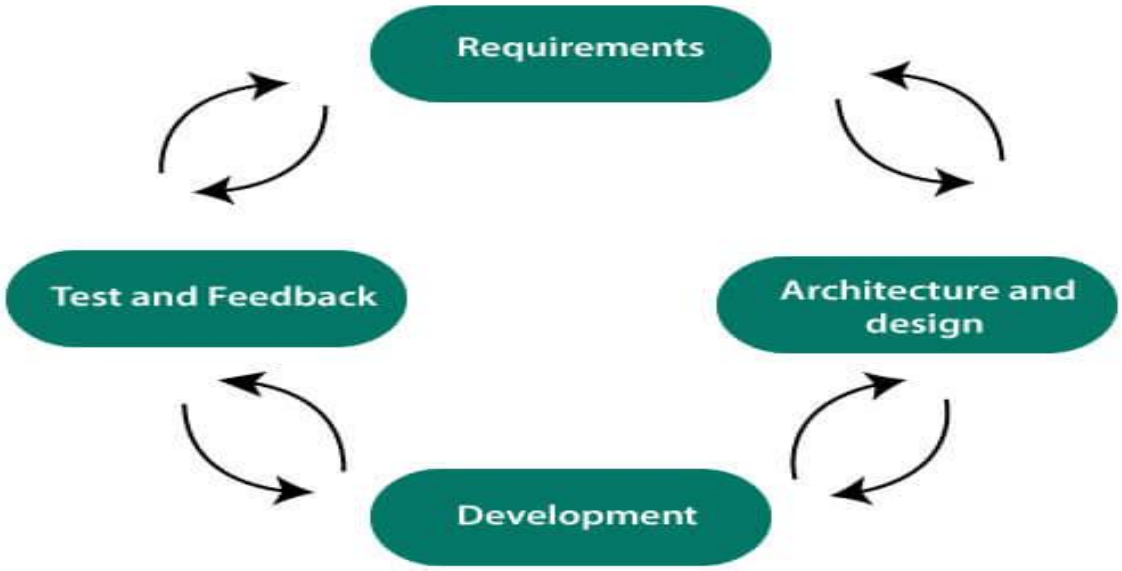


Fig 3.1: Agile model of stage sampling
(Source-https://www.researchgate.net/)

The following are reasons why an agile approach is important while developing or maintaining a website:

1. To confirm their more accurate evaluation
2. Assemble their top suggestions
3. Display the competency assessment results
4. Examining each of their tools and frameworks
5. Both developers and clients can easily grasp it

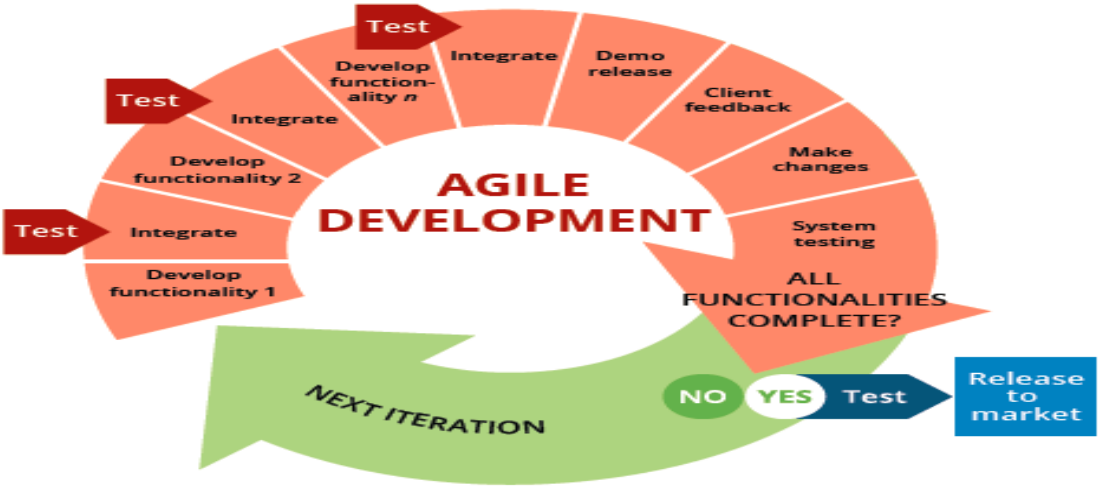


Fig 3.2: Agile model of E-commerce

(Source-https://www.specbee.com/blogs/how-ecommerce-project-management-key-revenue-)

A project can be divided into phases using the Agile Method. As the market grows, users are getting more particular about the software they use. Agile is the method that can handle it because it has the necessary capabilities.

3.2 E-commerce Business Models

E-commerce business models come in a wide variety in the current world. In order for people to continue purchasing the necessities of daily life, you can talk about all business models in e-commerce that will benefit consumers, our society, and people.

Fig 3.3: E-commerce Business Model

(Source-https://enterslice.com/)

3.3 Requirements analysis & design

To move forward with their e-commerce or with any development website, requirement analysis and design are crucial. Those are crucial for effective and efficient designing as well as analysis for daily upgrading. The steps of the analysis are now listed below:

1. Including the relevant context
2. Contextually developing
3. Modeling
4. Complete the context
5. Feedback

Now given below their diagram:

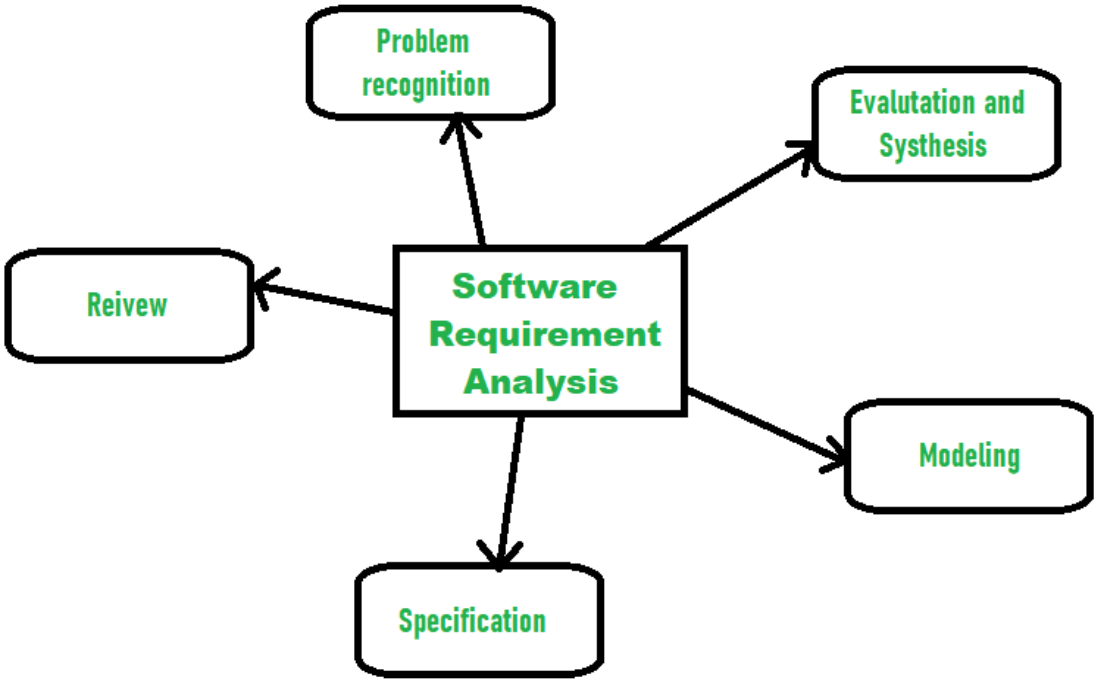


Fig 3.4: Requirement analysis diagram

(Source-https://www.geeksforgeeks.org/activities-involved-in-requirement-analysis/)

3.4 Testing & Coding

It is necessary to set up testing and coding after all requirement designing and analysis is complete because both are crucial to any development project.First we must setup the des ign and design model,then we must code the implementation,configure the coding,&then test it.We must locate their errors for testing, and their testing feedback is currently listed below:

1. The project correct or incorrect
2. This project is well organized or not
3. This project be completed successfully or not
4. The back-end software is dependable and understandable
5. Optimal capacity and performance

3.5 Maintaining of this project

Below is a list of tasks that the maintenance panel can be done:

1. View the entire project for which I have previously provided a description
2. After that,I have to determine the whole project and matching my requirement that all condition are right or wrong,
3. After checking this project, I must be talking about my finance-talking about my project budget
4. Finding the errors in this project
5. Solving errors with maintaining safety laws

3.6 Flow chart diagram

Admins and users alike will benefit from this initiative. The entire process is shown below in a flow chart. This flowchart depicts the general process for both users and clients.

Now given below the flow chart shows:

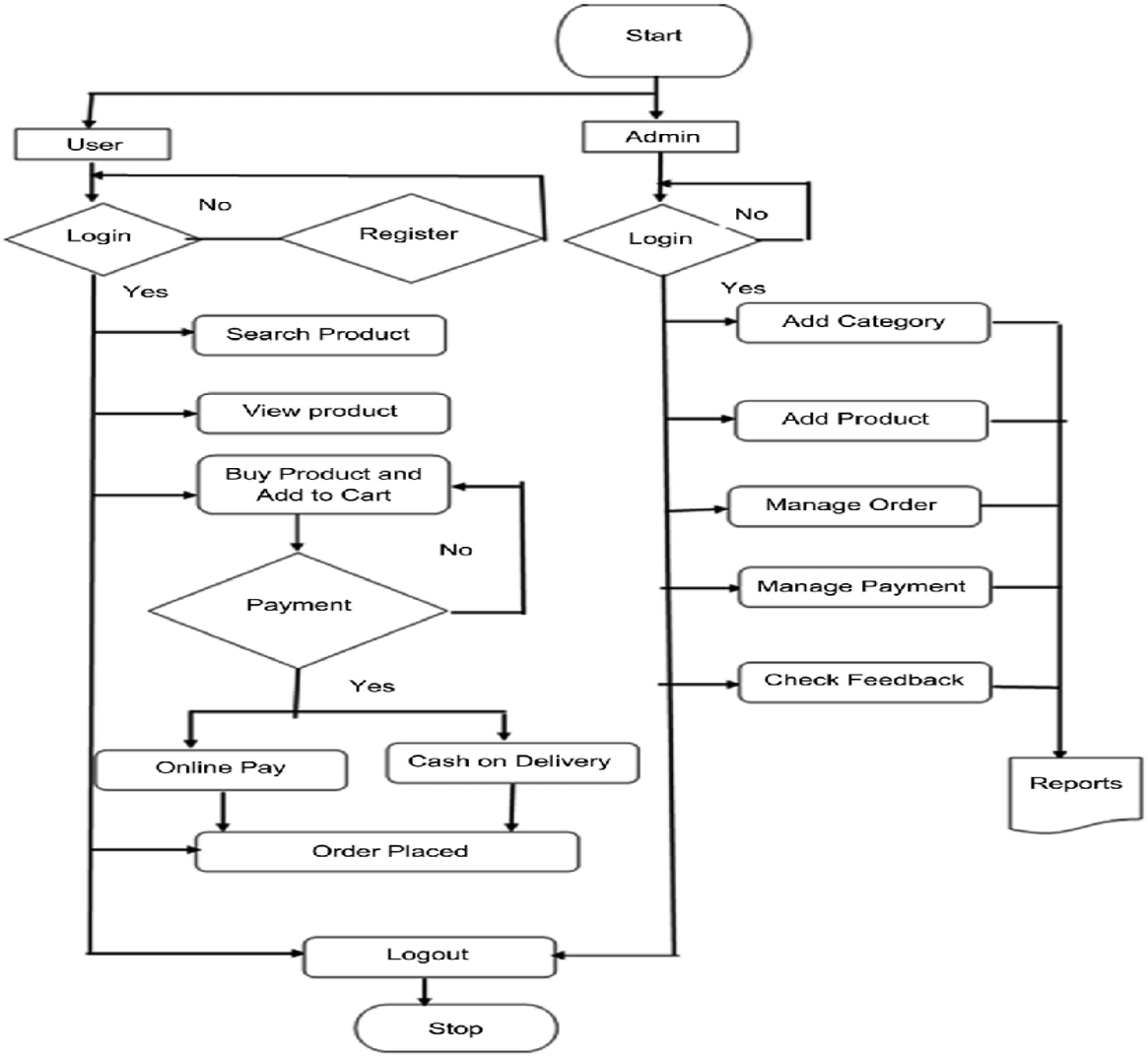


Figure 3.5: Flow chart diagram of e-commerce shopping

(Source-https://www.researchgate.net/)

The user and the admin both benefit from this initiative. However, admin has complete control. However, a simple user can't perform all tasks.

3.7 Use Case Diagram

Here is given below the whole procedure in the case chart.

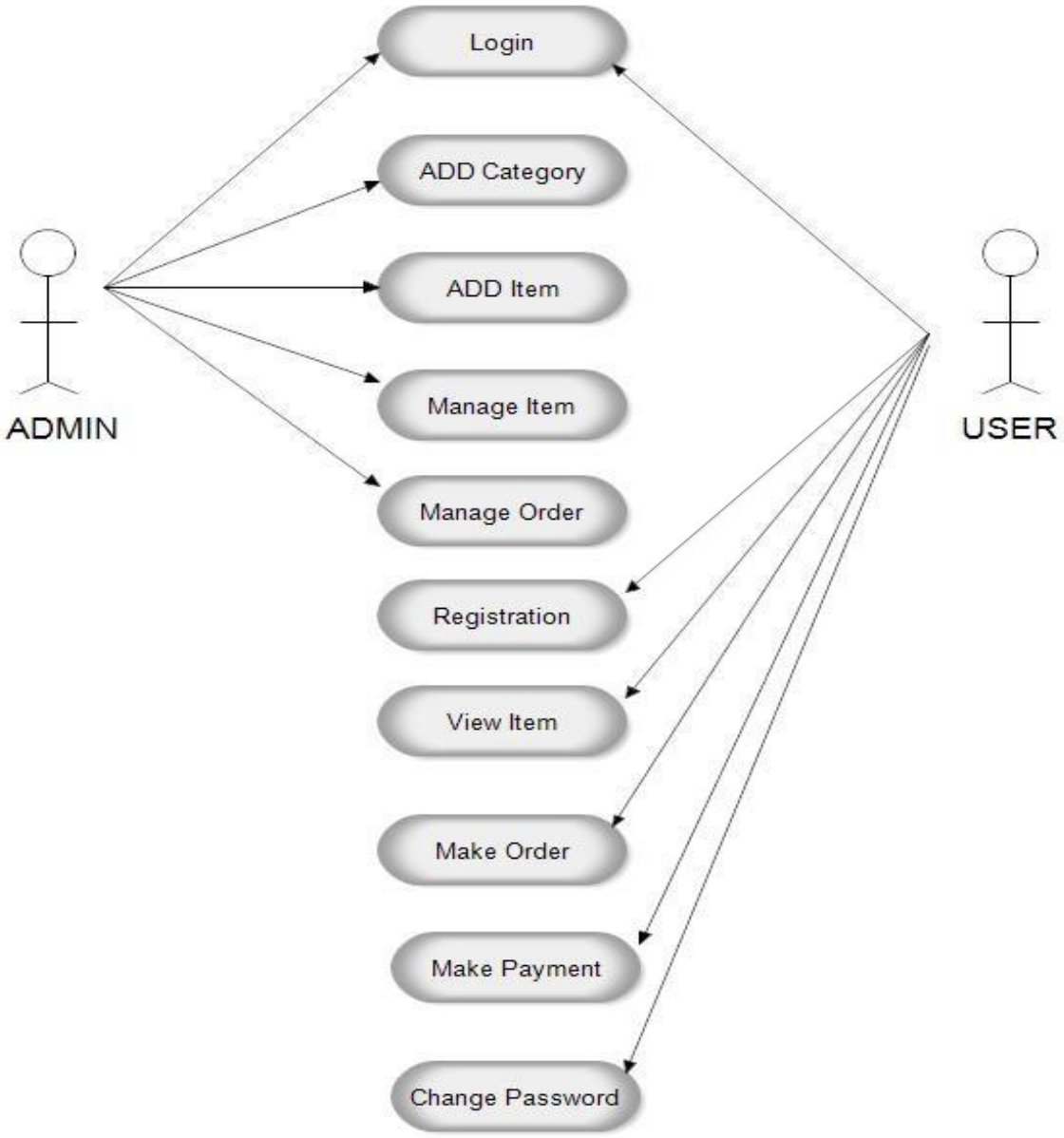


Fig 3.6: Use case diagram of online shopping

(Source-https://meeraacademy.com/use-case-diagram-for-online-shopping/)

The use case diagram is essentially linked to the user and admin,who are linked for both their flexibility and their order system.

3.8 Login/Registration

There are two categories of users who can log in and register here:

1. User &
2. Admin

User

Customers can quickly locate their products by using search engines. After selecting a product, customers can view the product description and track their order.

Admin

In the admin panel, the administrator can set up any aspect of the websites' data about the slider,discount, and other features for the product can all be changed, added,or removed the administrator.

3.9 Activity Diagram For Admin and Customer

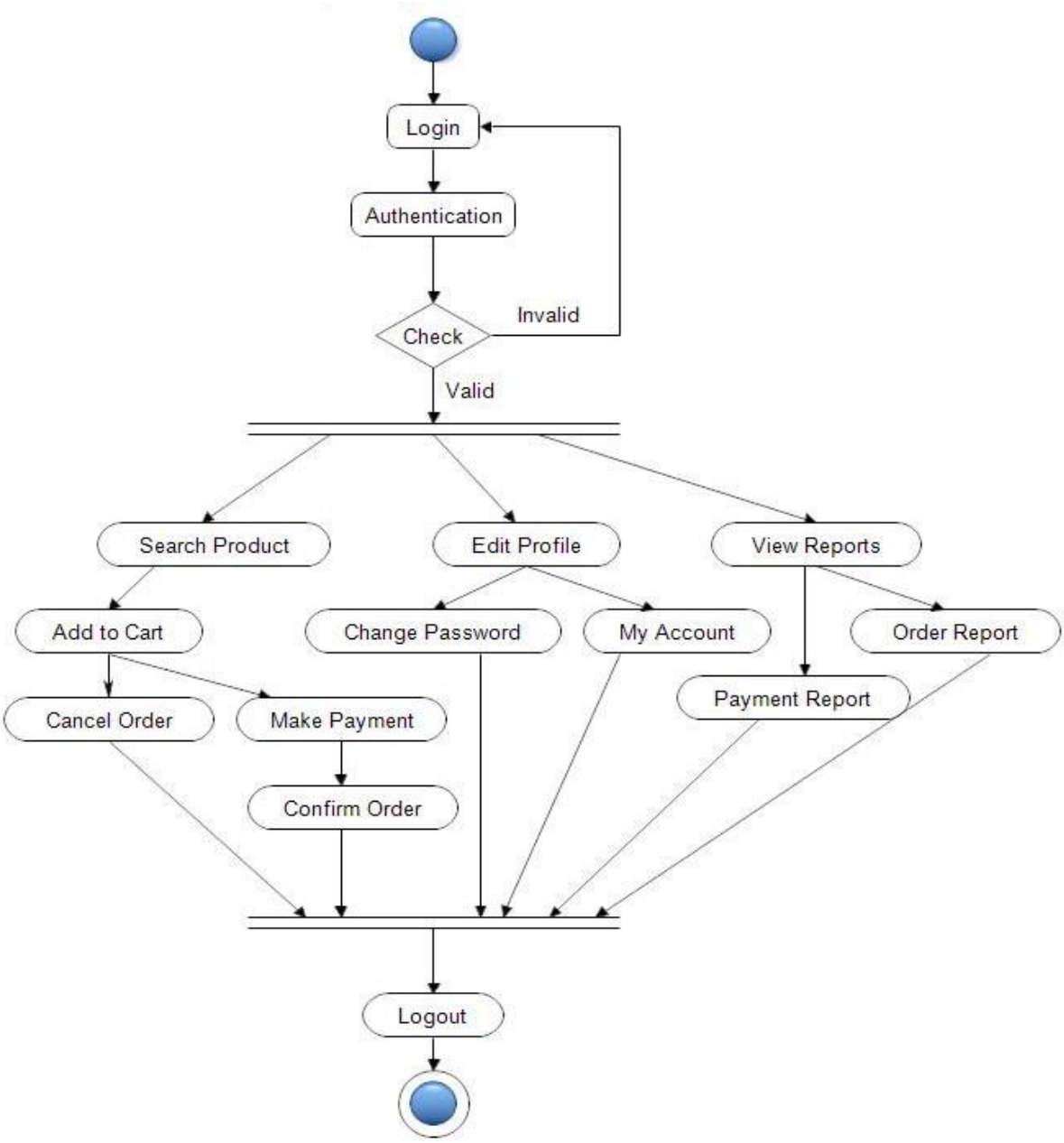


Fig 3.7: Activity Diagram For Customer

(Source-https://meeraacademy.com/activity-diagram-for-online-shopping-website/)

Since they depict the relationship between the actions in an activity, activity diagrams are comparable to flowcharts.

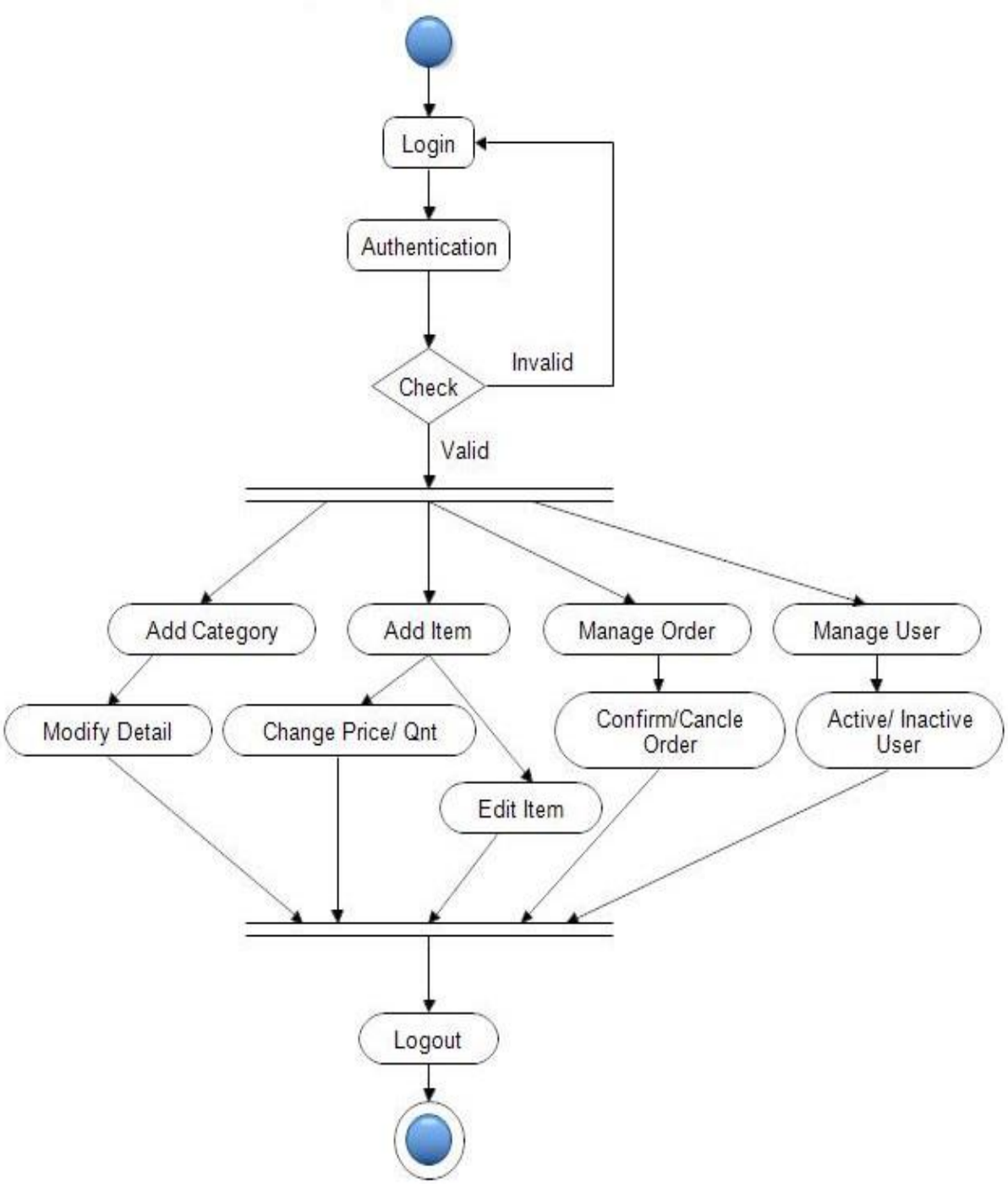


Fig 3.8: Activity Diagram For Admin

(Source-https://meeraacademy.com/activity-diagram-for-online-shopping-website/)

This diagram shows how an administrator oversees every step of an e-commerce project.

3.10 Design Requirement

Project usability is largely dependent on the project's design, which can play a significant part in the project. As a result, the work for the user/customer and admin becomes considerably simpler for them.

TABLE 3: Requiered design of website

SL NO.	***Parameter***	***Admin Page***	***User Page***
i	Registration system	Yes, as an admin	Yes, they can
ii	Log in page	Yes	Yes, they can
iii	Password change	Yes	Yes, they can
iv	View	Yes	If they are registered, Yes
v	Update info	Yes	Yes they can
vi	Profile change	Yes	Yes, if they are registered
vii	Logout	Yes	Yes, they can
viii	Product update	Yes	No, they can’t

CHAPTER 4

Design Specification

4.1 Project Overview

Home Page: Tech Farm Bd: An E-commerce Web Application

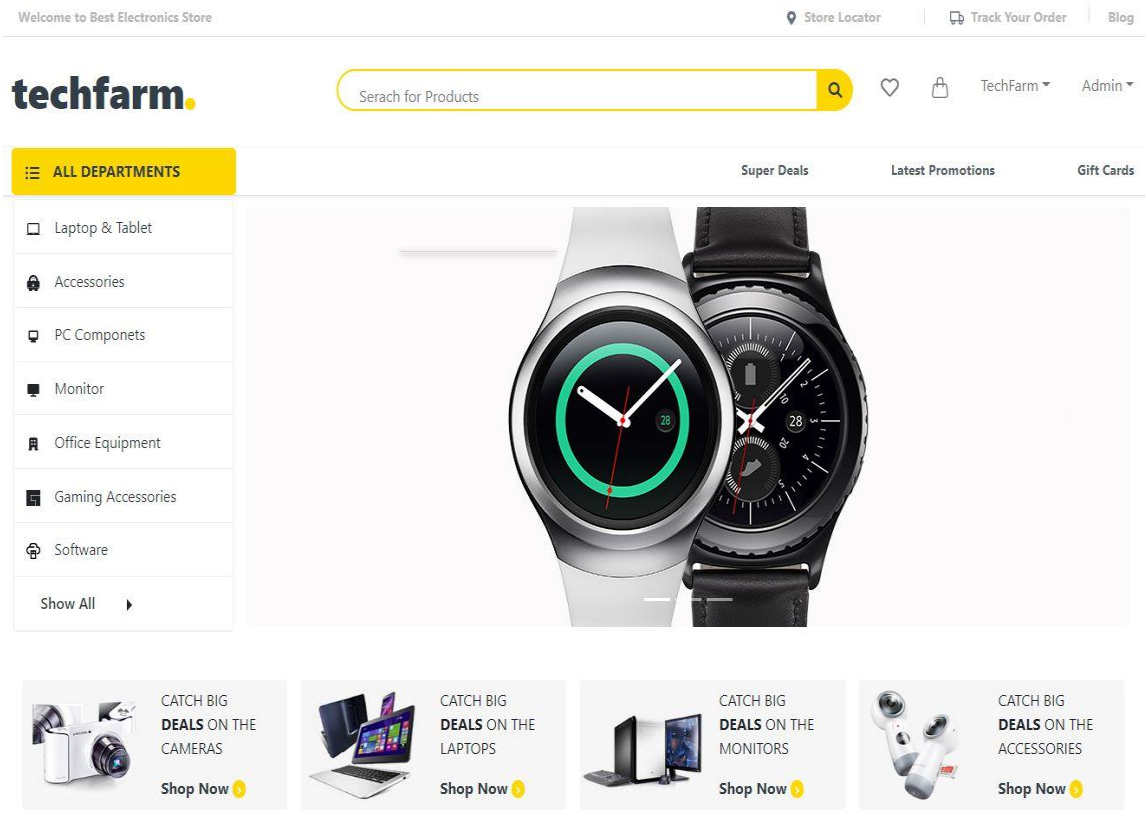


Fig 4.1: Home Page of this project

This is the home page of my project.

Footer Page

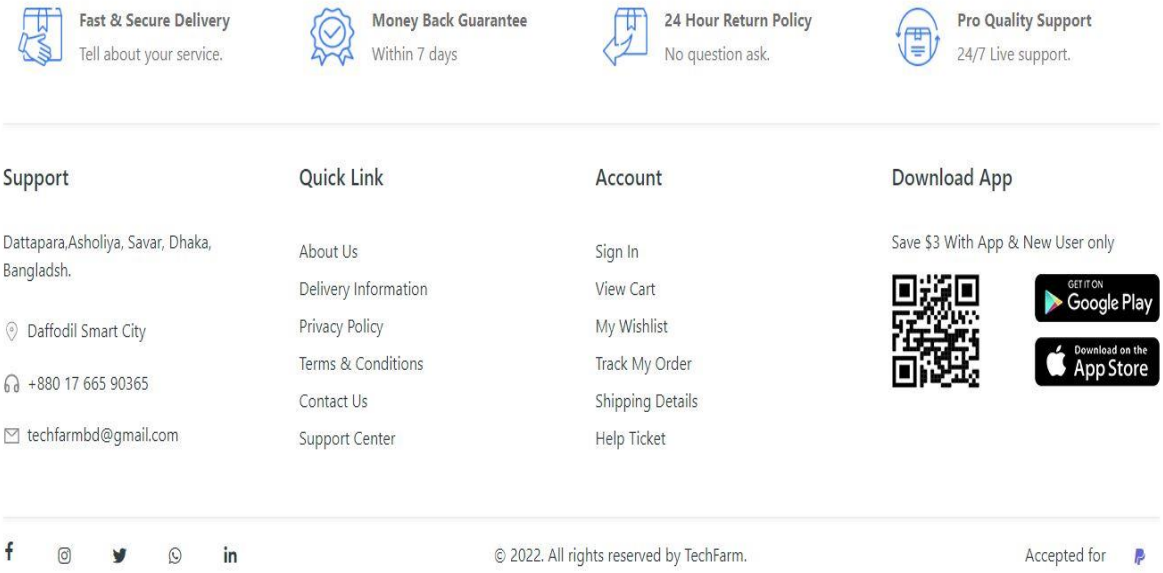


Fig 4.2: Footer Page of this project

This is my project footer page.

Sign Up Page

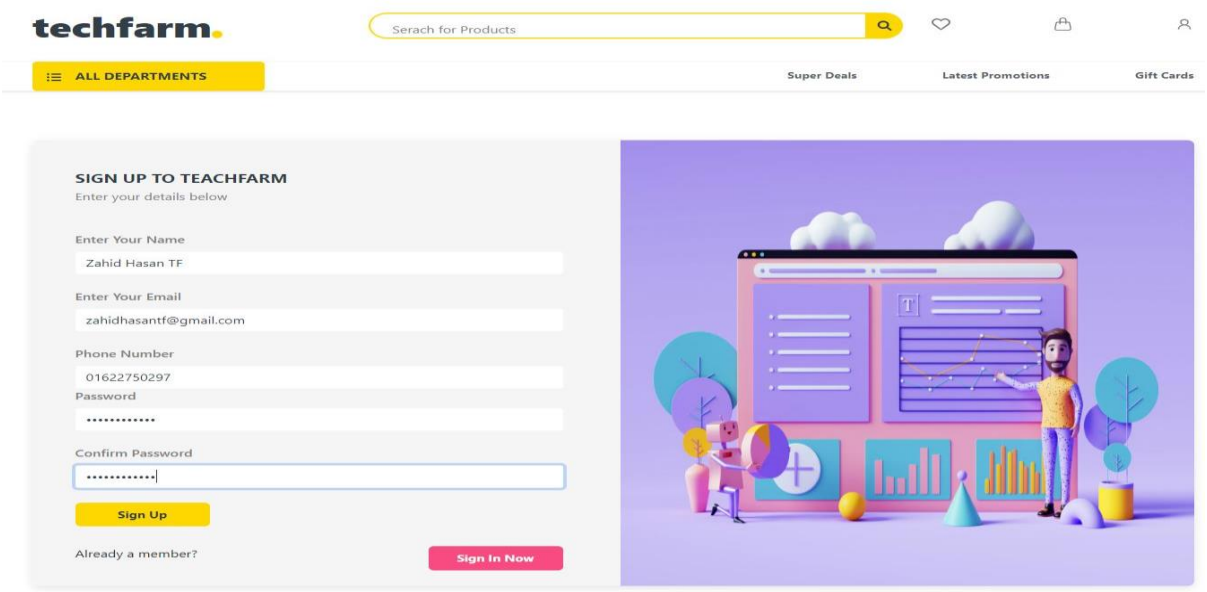


Fig 4.3: Sign-up Page of this project

This is the sign up page. This page allows you to sign Up.

Sign In Page

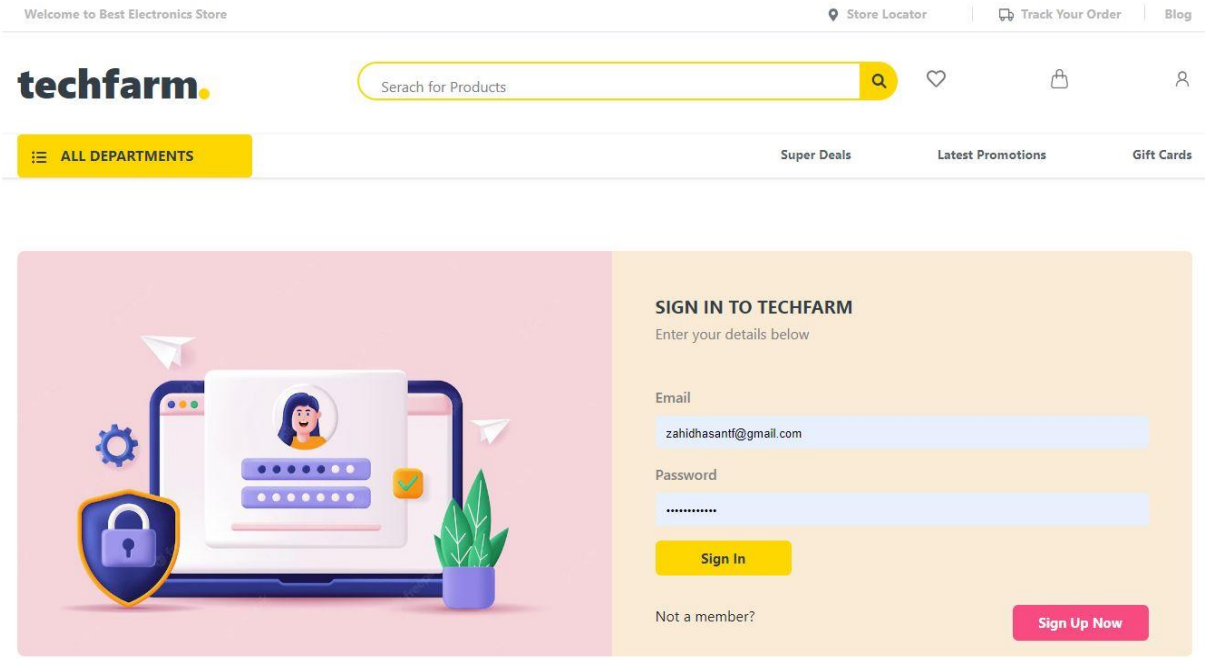


Fig 4.4: Sign-in Page of this project

This is the sign in page. This page allows you to sign in.

User Info Update Page

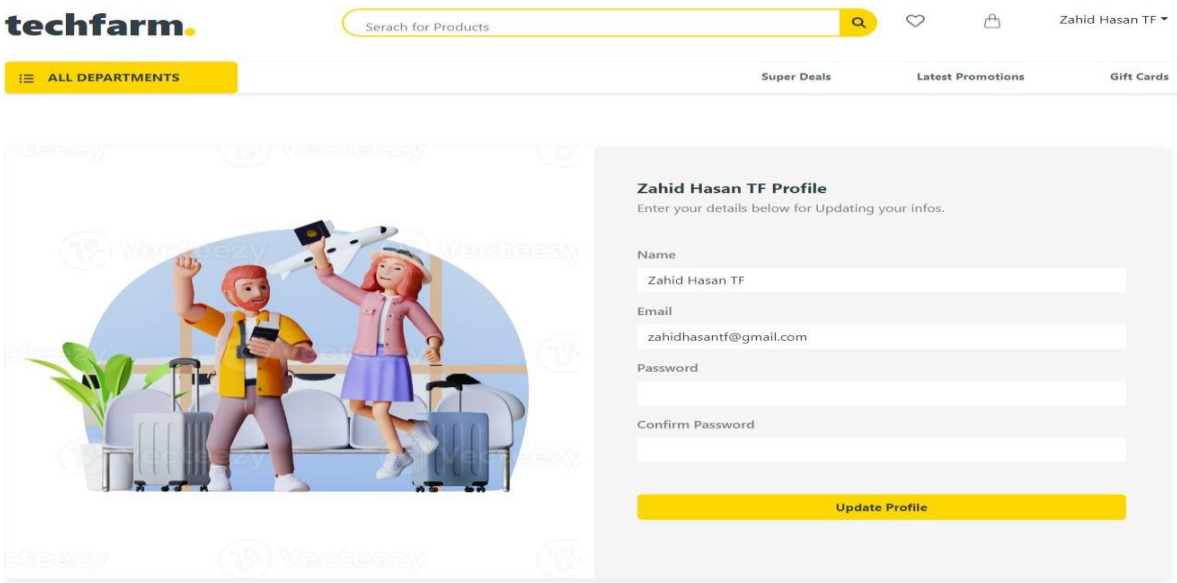


Fig 4.5: User info. Page of this project

Categories Page

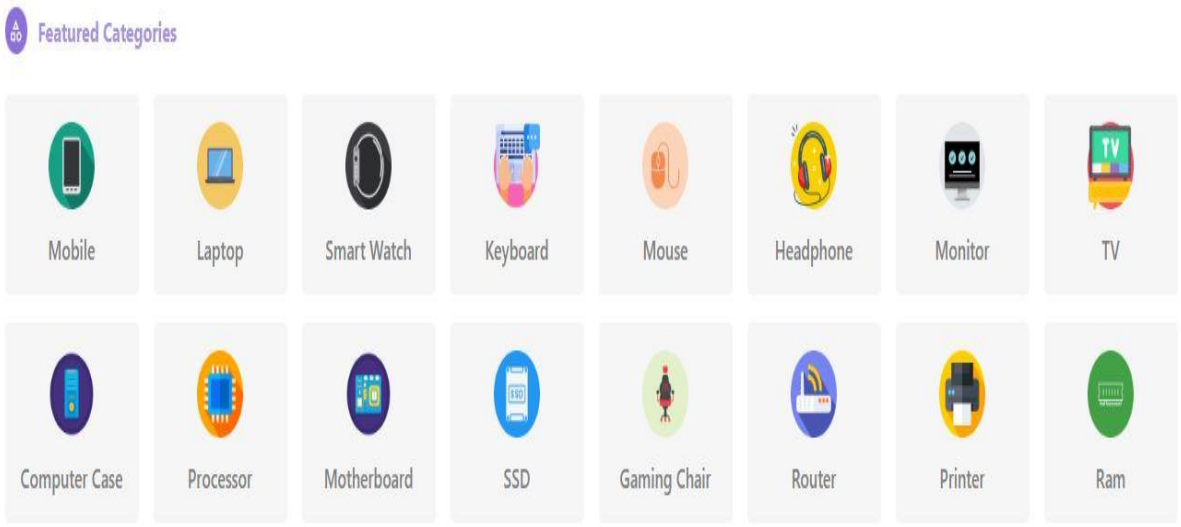


Fig 4.6: Categories Page of this project

Product Page

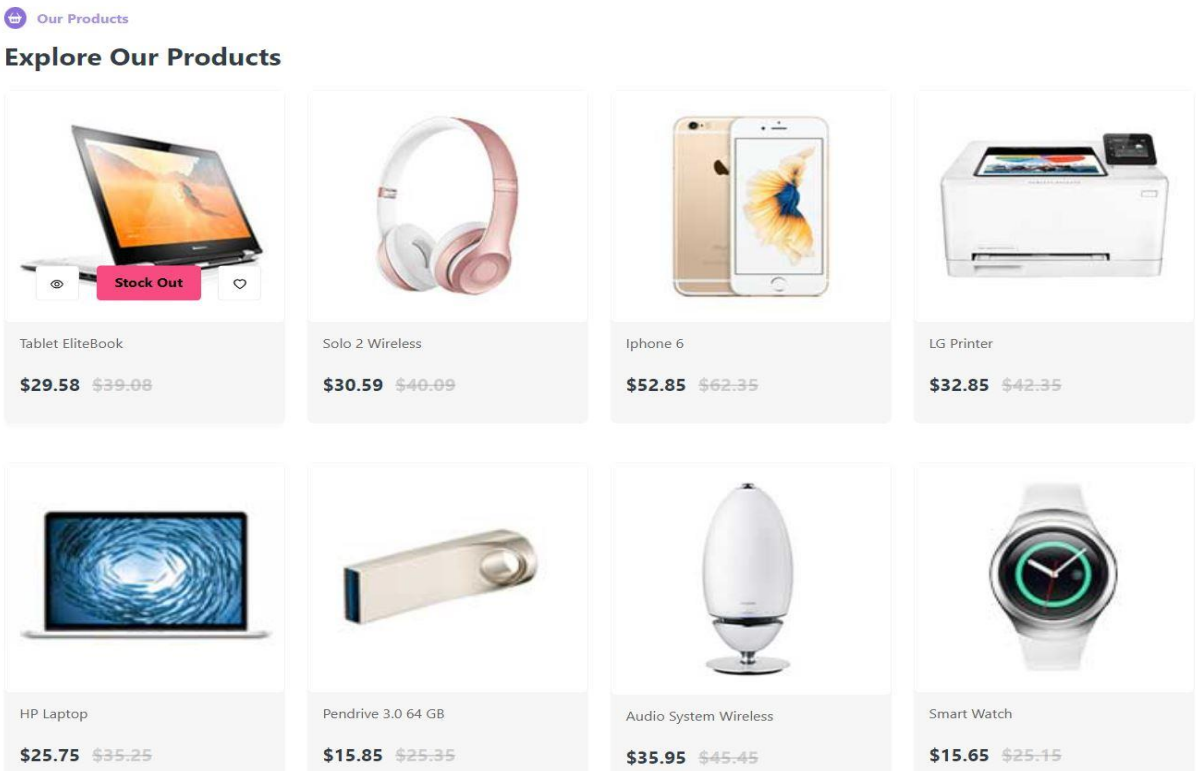


Fig 4.7: Product Page of this project

Product Cart Page

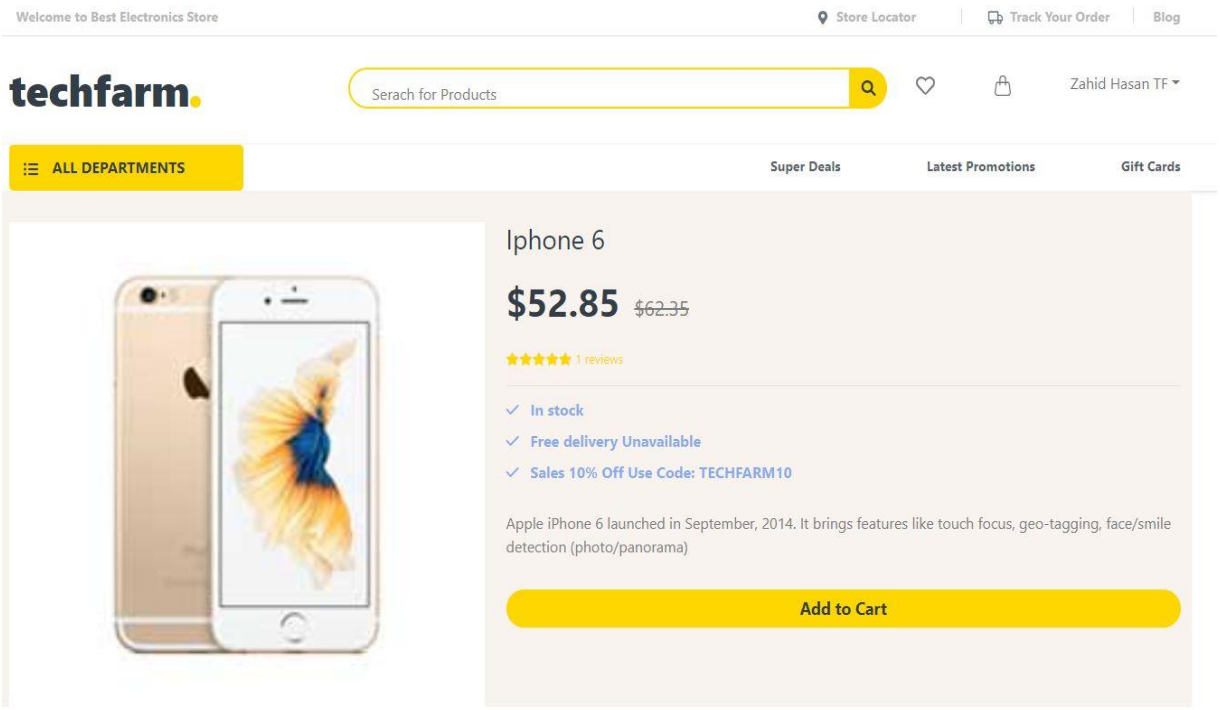


Fig 4.8: Product cart of this project

Product Review Page:

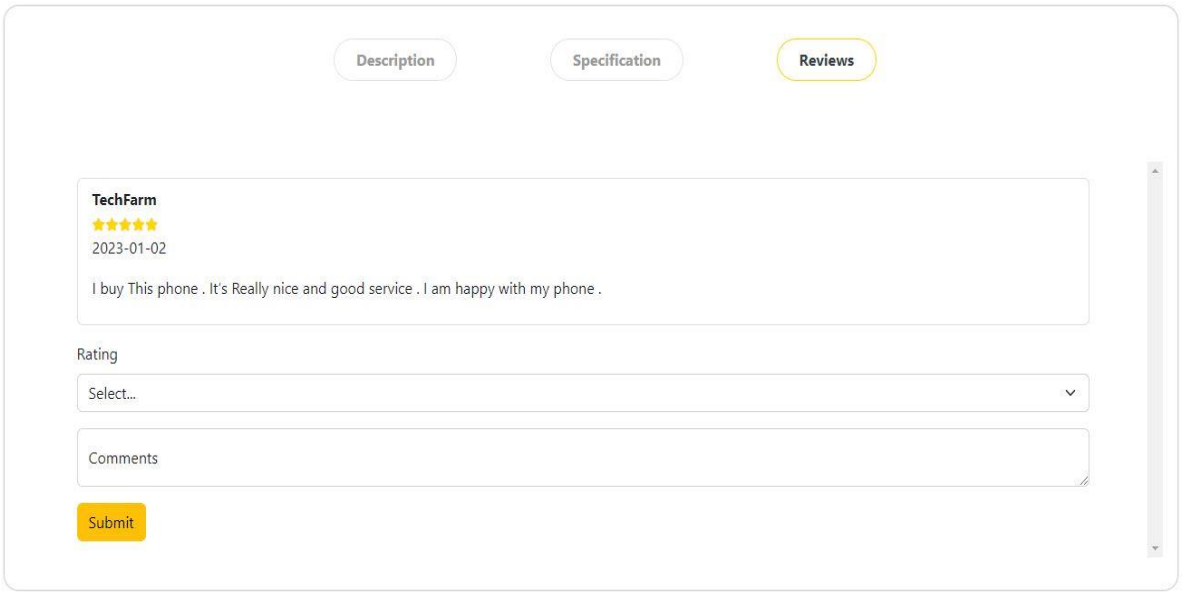


Fig 4.9: Review Page of this project

Process Page

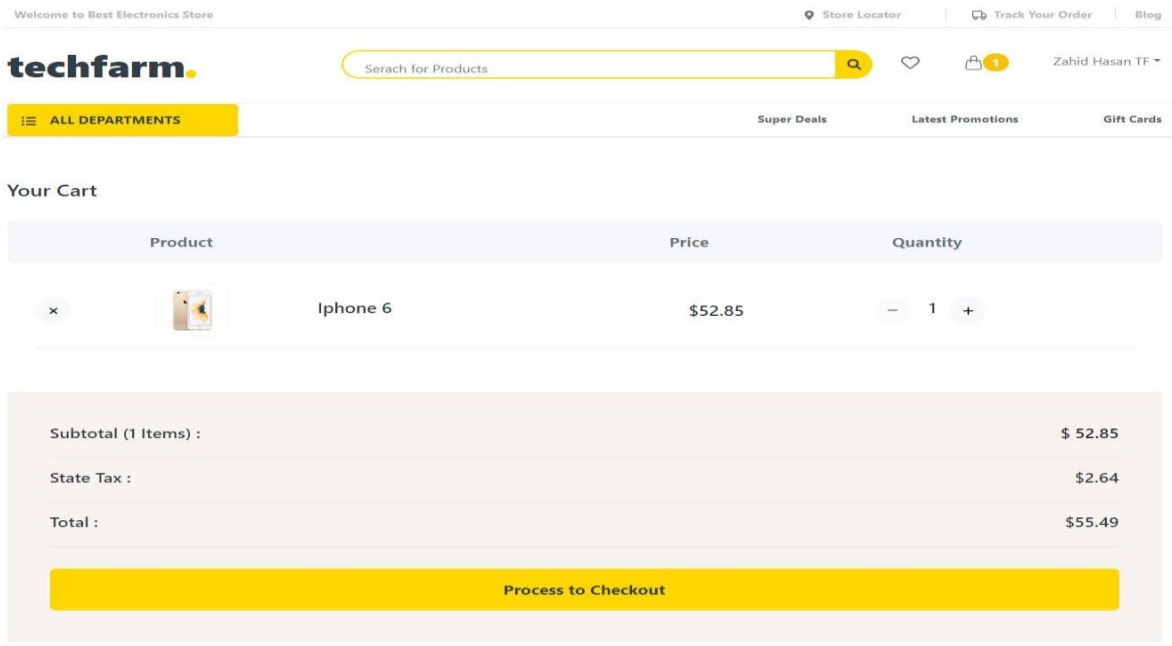


Fig 4.10: Process Page of this project

Shipping process page

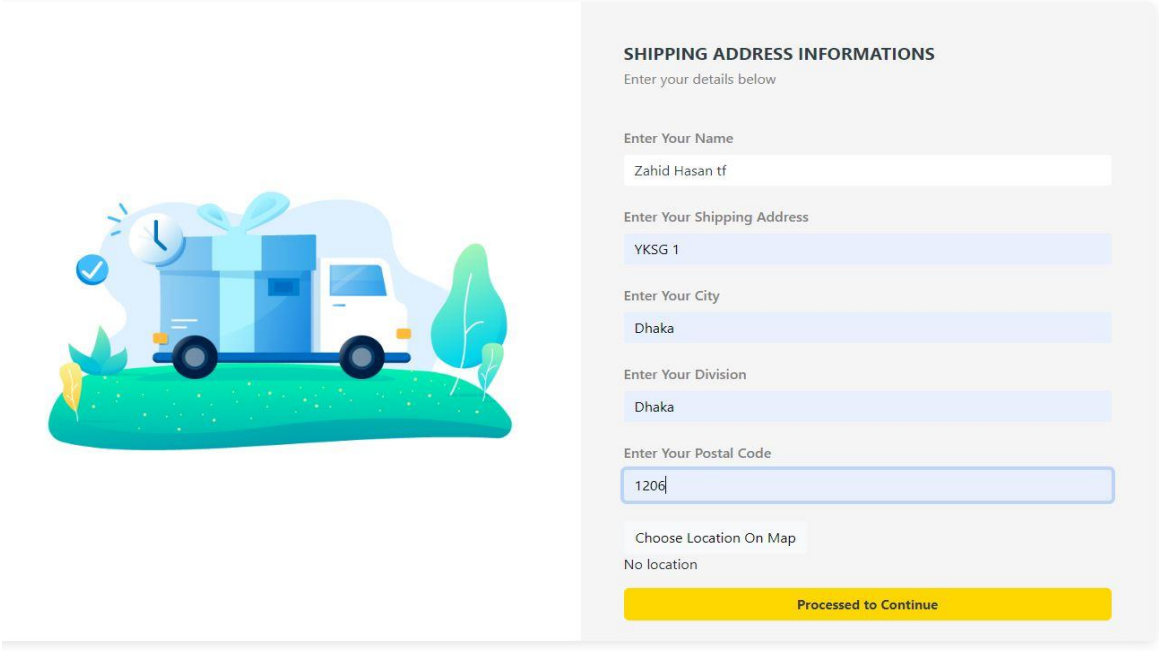


Fig 4.11: Shipping Page of this project

Google Map

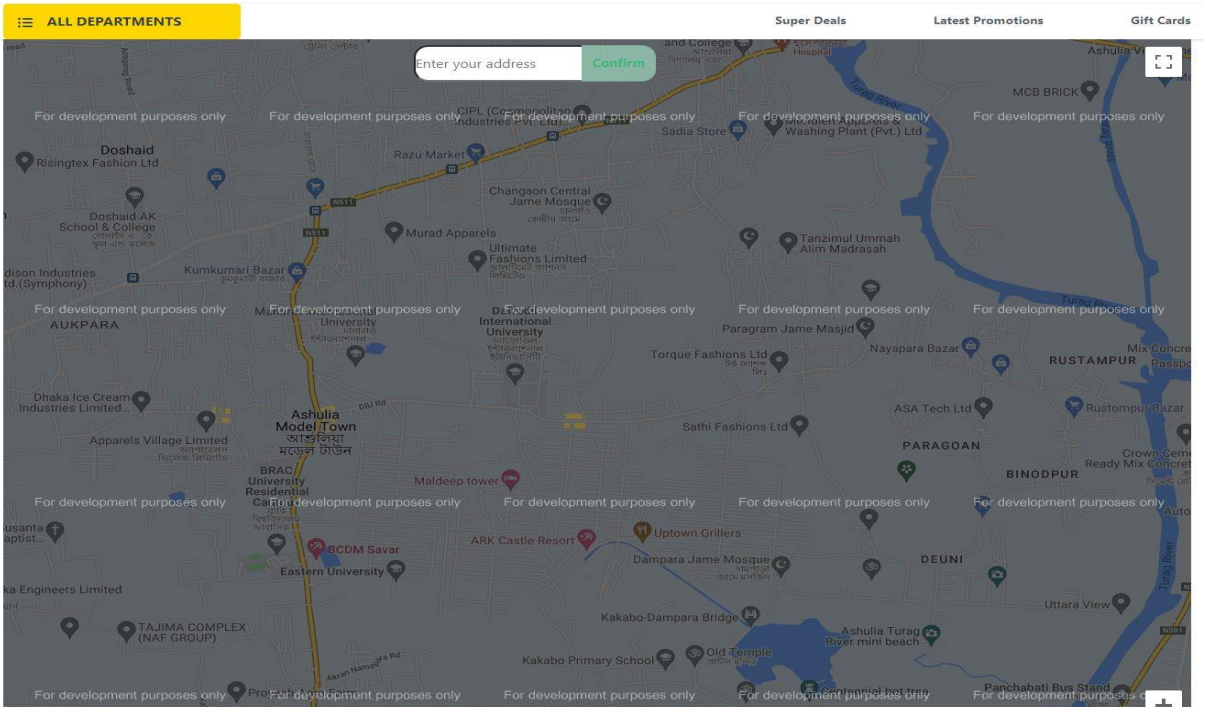
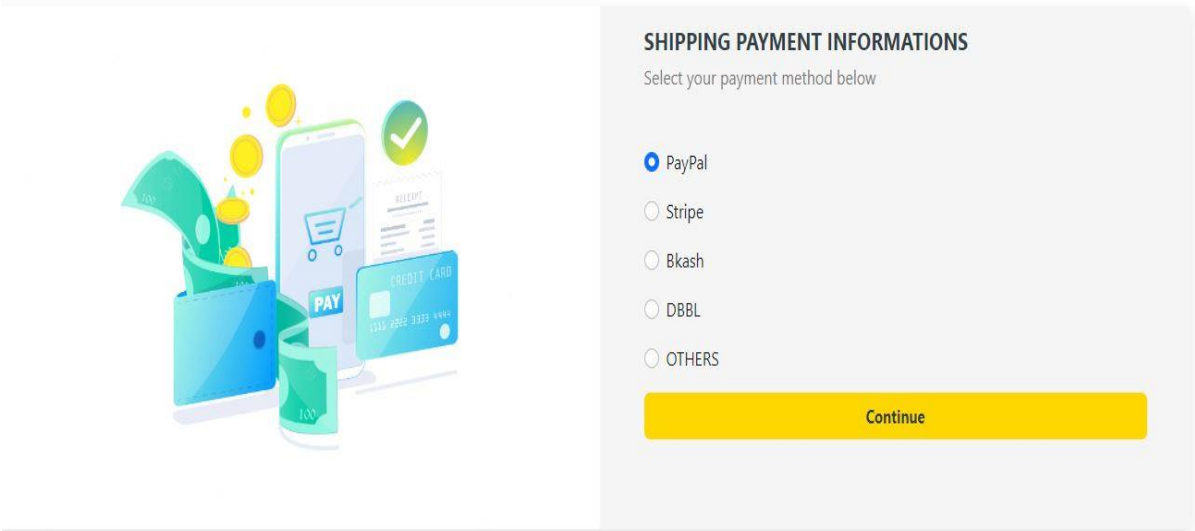


Fig 4.12: Google map of this project

Payment Method



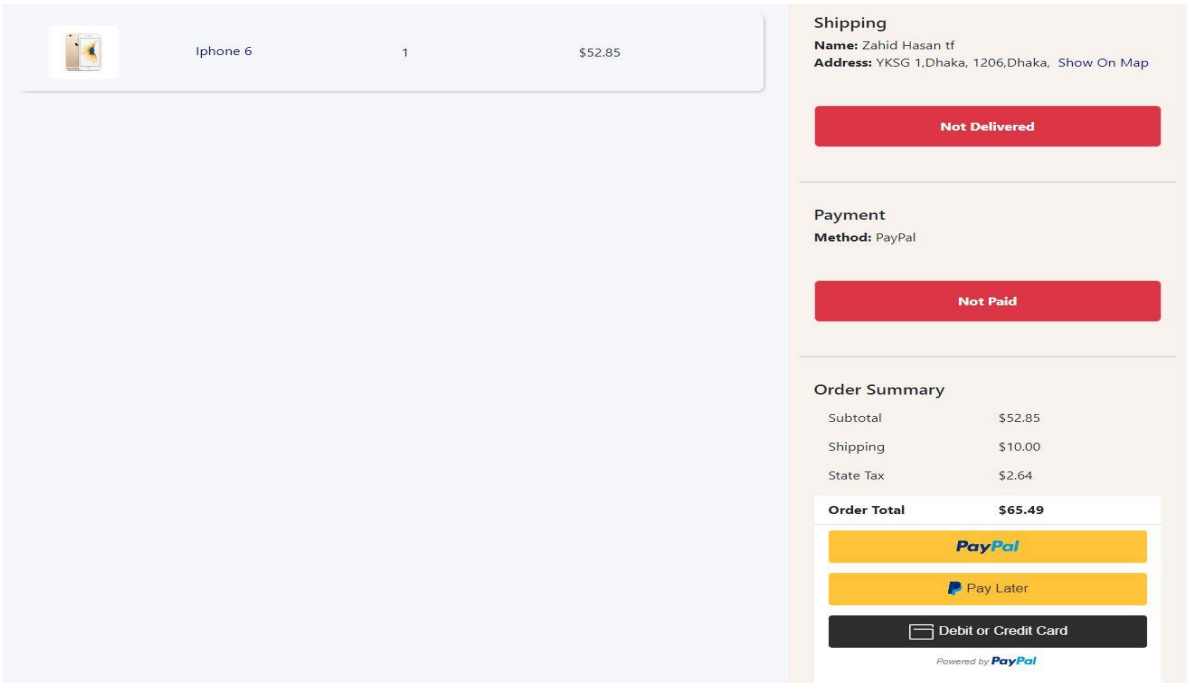


Fig 4.13: Payment method of this project

Preview Page

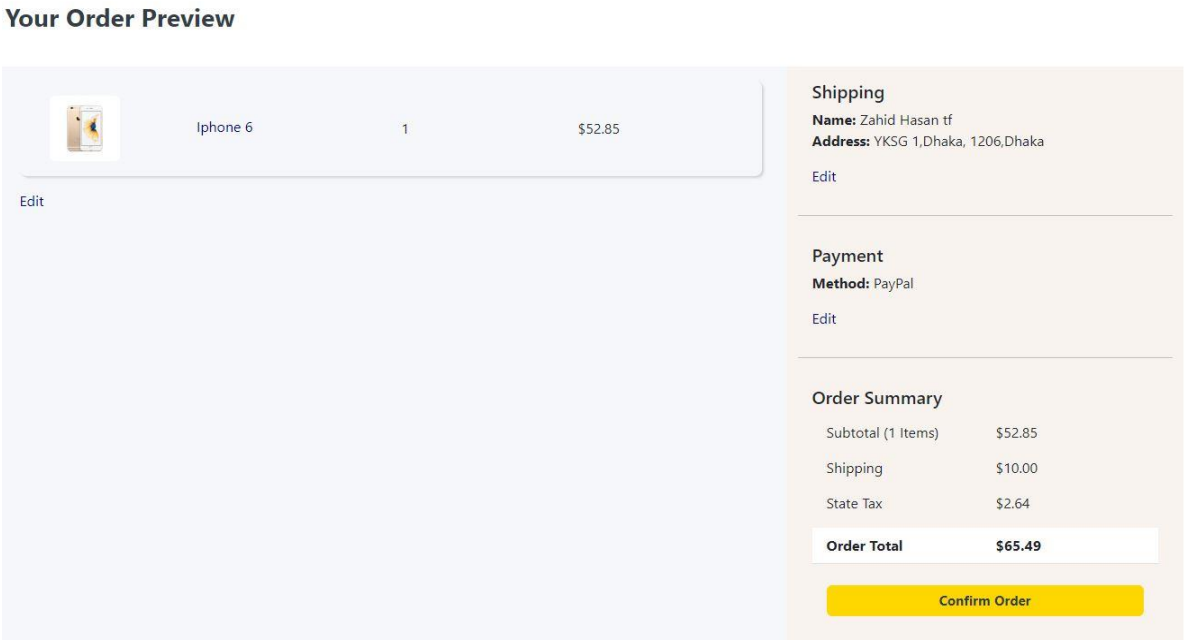


Fig 4.14: Preview Page of this project

User Order History

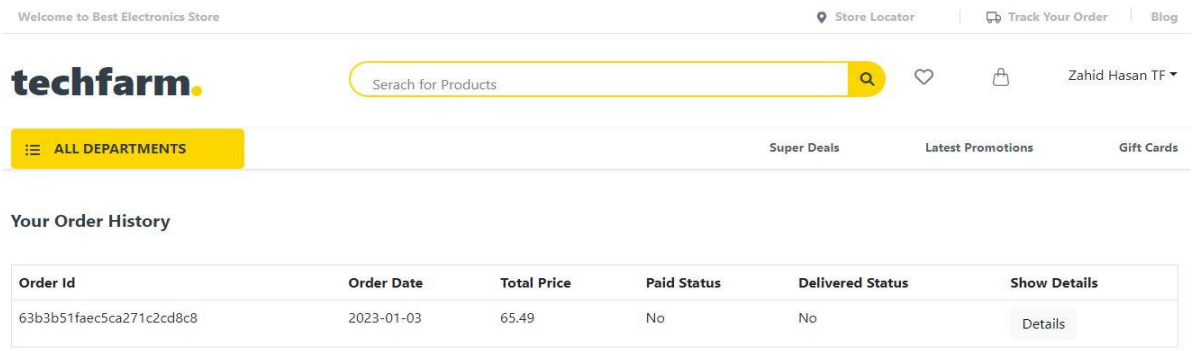
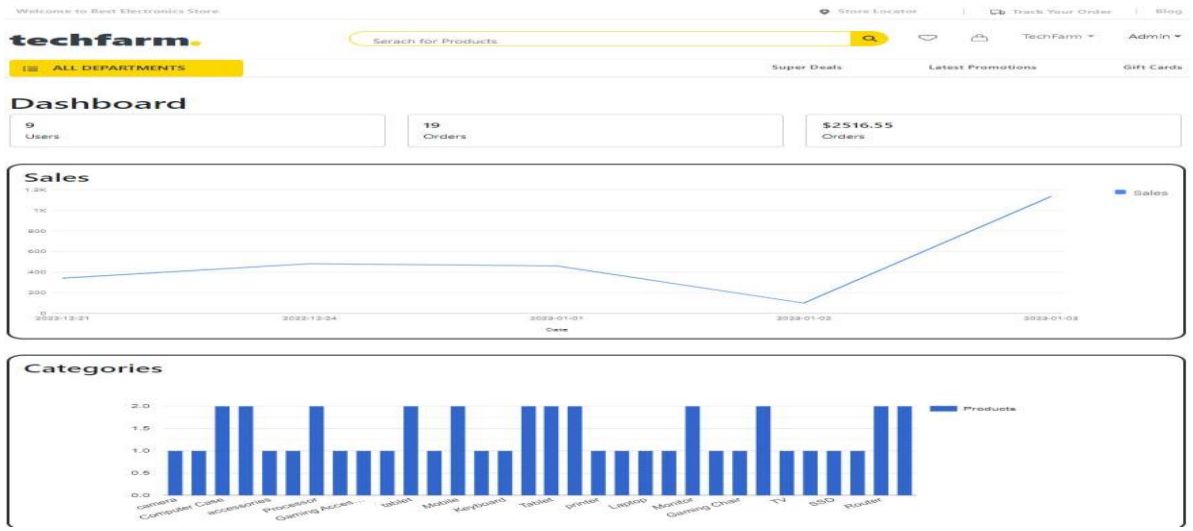
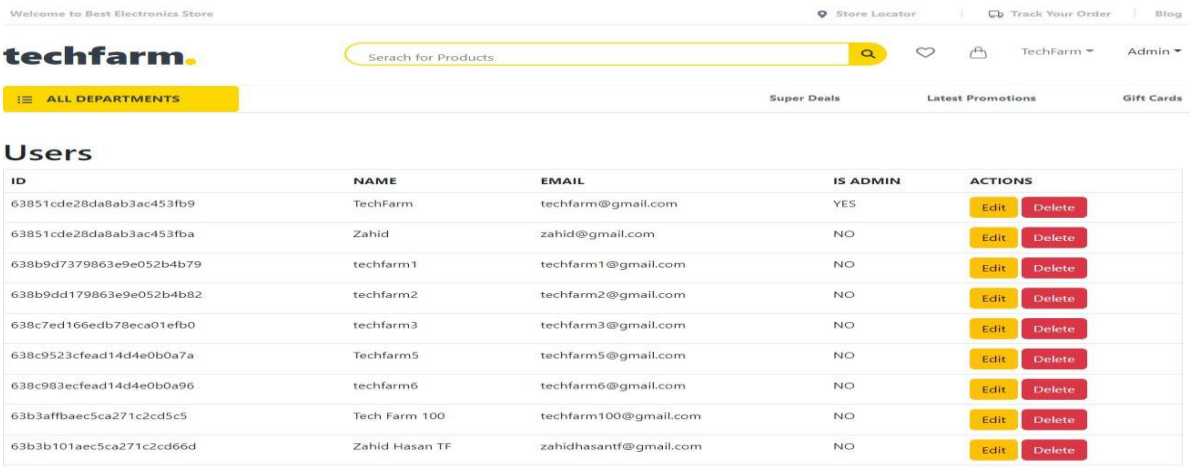


Fig 4.15: History Page of this project

Admin Control Panel





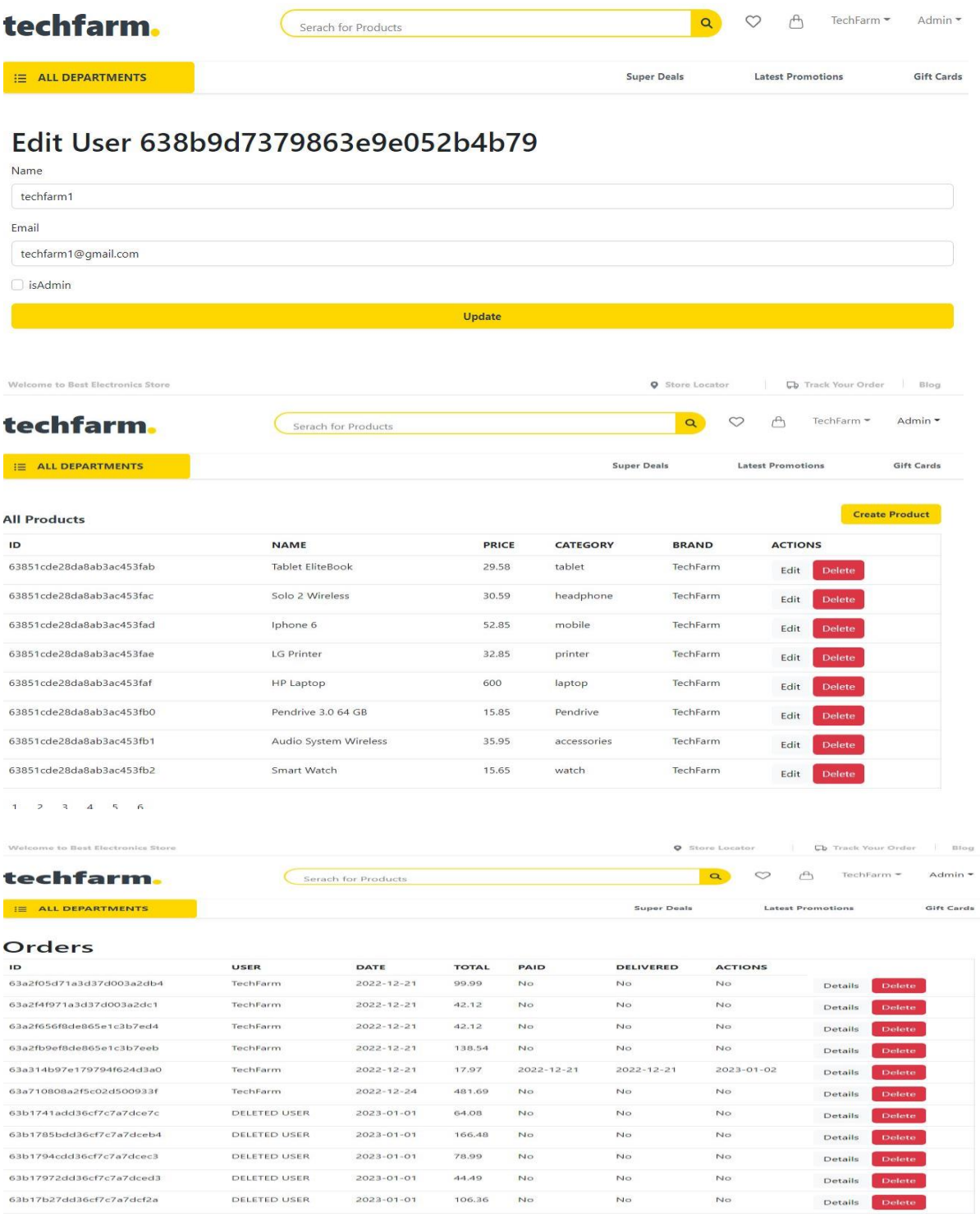


Fig 4.16: Admin's Page of this project

Live chat from user side

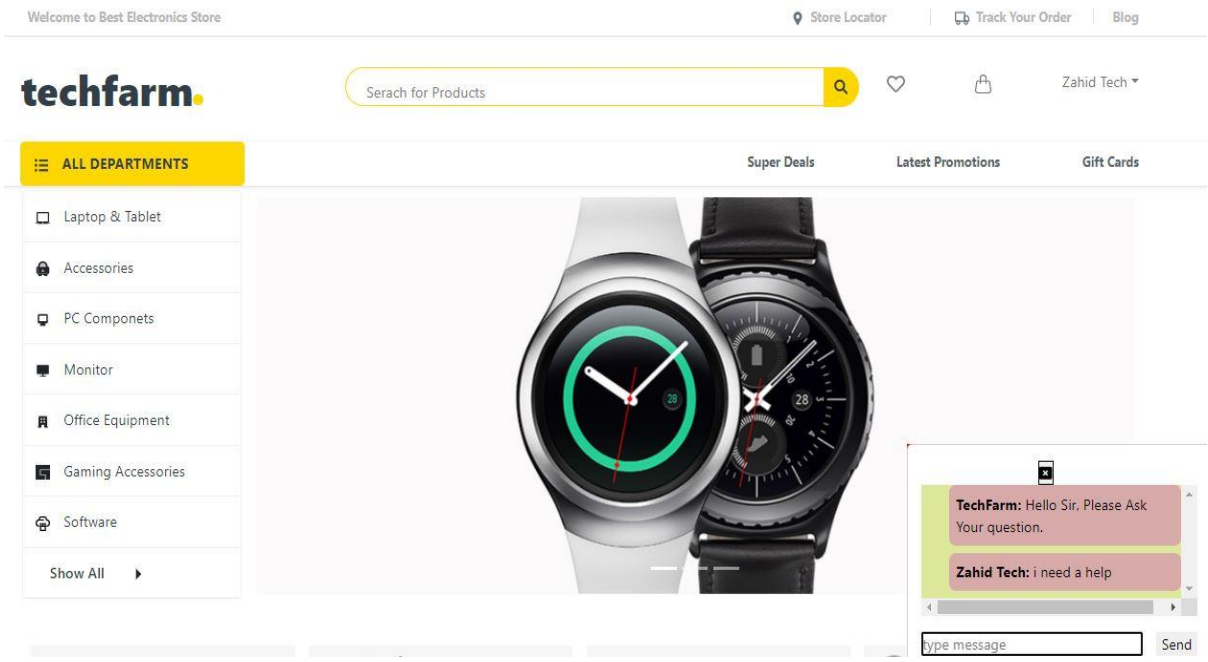


Fig 4.17: Live chat from user side

Live chat from admin side

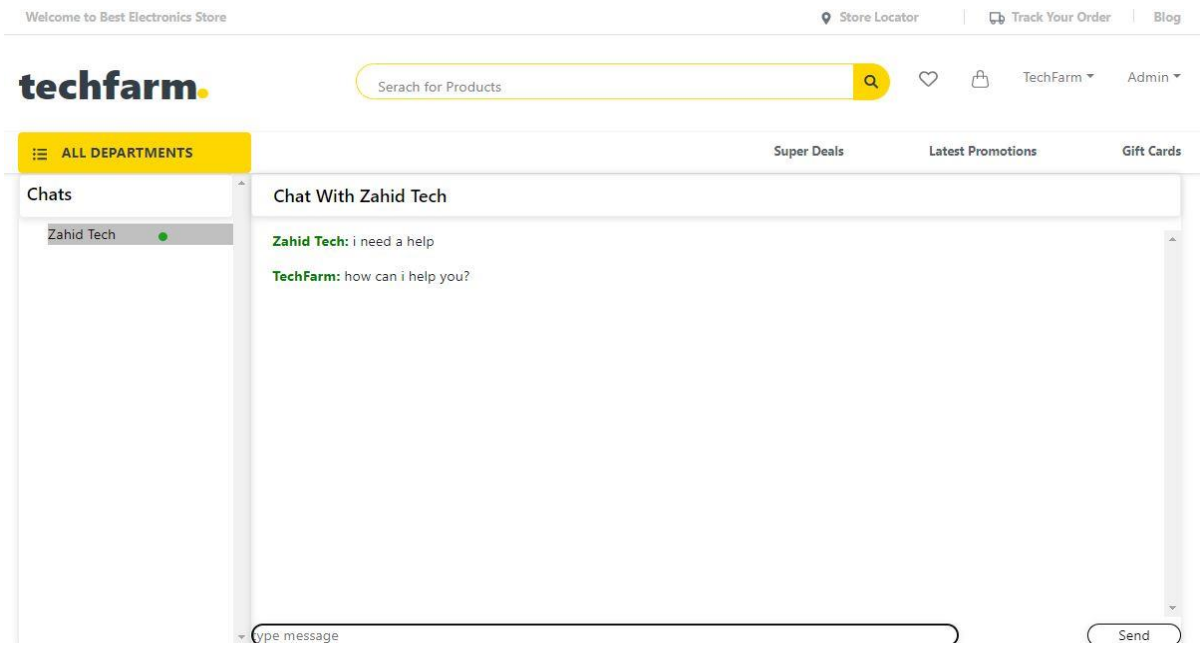


Fig 4.18: Live chat from admin side

4.2 Special feature

1. Live chat
2. Assure data accuracy
3. DBMS keeps records efficiently
4. Another aspect of DBMS is information security
5. This service is accessible to everyone with an internet connection worldwide
6. The user will get the desired search results
7. The user can add a profile to achieve their goals
8. The quickest turnaround time for various processing
9. Better Assistance
10. A mechanism for internal communications
11. The bare minimum time required
12. Offers that are customized

4.3 Use of Software Tools

The entire project worked on,

4.3.1 HTML

HTML is an acronym for HyperText Markup Language.To create web pages, It's common to used markup language.

4.3.2 CSS

CSS, or cascading style sheets, is an acronym. It is a language for creating style sheets that describe the layout and appearance of markup language documents.It's given HTML an on additional feature. It is primarily used for design.It can be used with any XML-based mark up language and is not reliant on HTML. For a number of reasons, my website uses CSS.

4.3.3 React.JS

React.js, also referred to as React, is a JavaScript library that is open-source and free. The Ideal way tocreate user interfaces is by assembling little pieces of code (components) into complete websites.

4.3.4 Node.JS

(Node.**J**ava**S**cript) A JavaScript-based development platform for creating server-side Web applications. An open-source server environment is Node.js. Free to use Node.js.Numerous platforms support Node.js (Windows, Linux, Unix, Mac OS X, etc.). J avaScript is used by Node.js on the server.

4.3.5 Express.JS

A web application framework for Node.js is called Express.js. It offers a number of living capabilities that speed up and simplify the creation of online applications.

CHAPTER 5

Implementation & Testing

5.1 Dataset setup

The foundation and core of this endeavor is a dataset.

Database

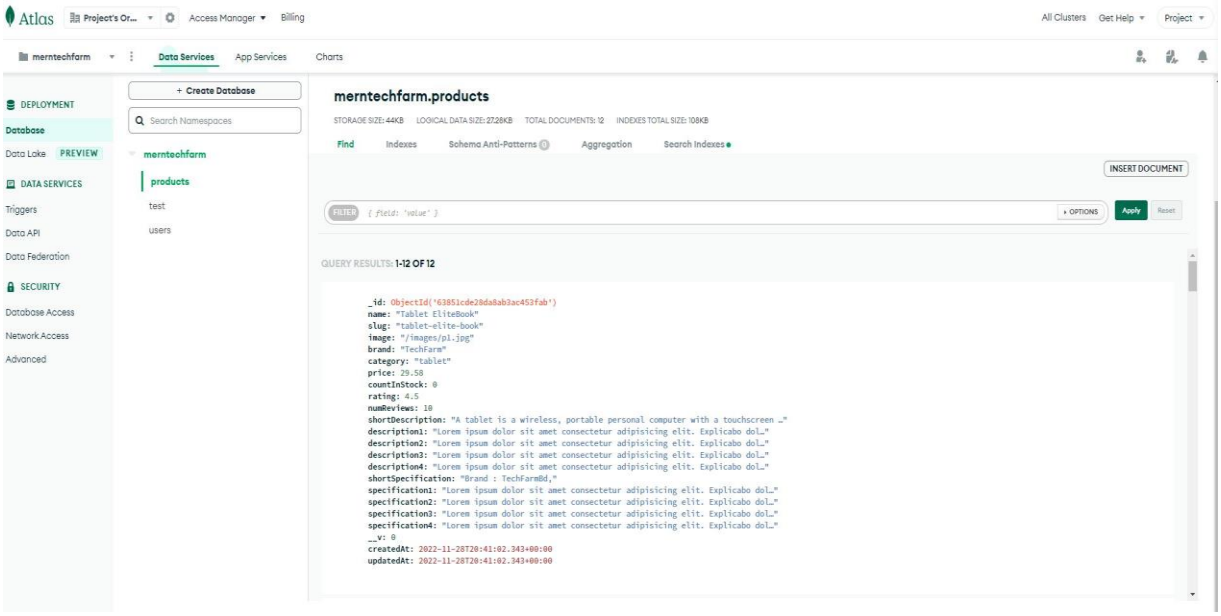


Fig 5.1: Database of products by MongoDB

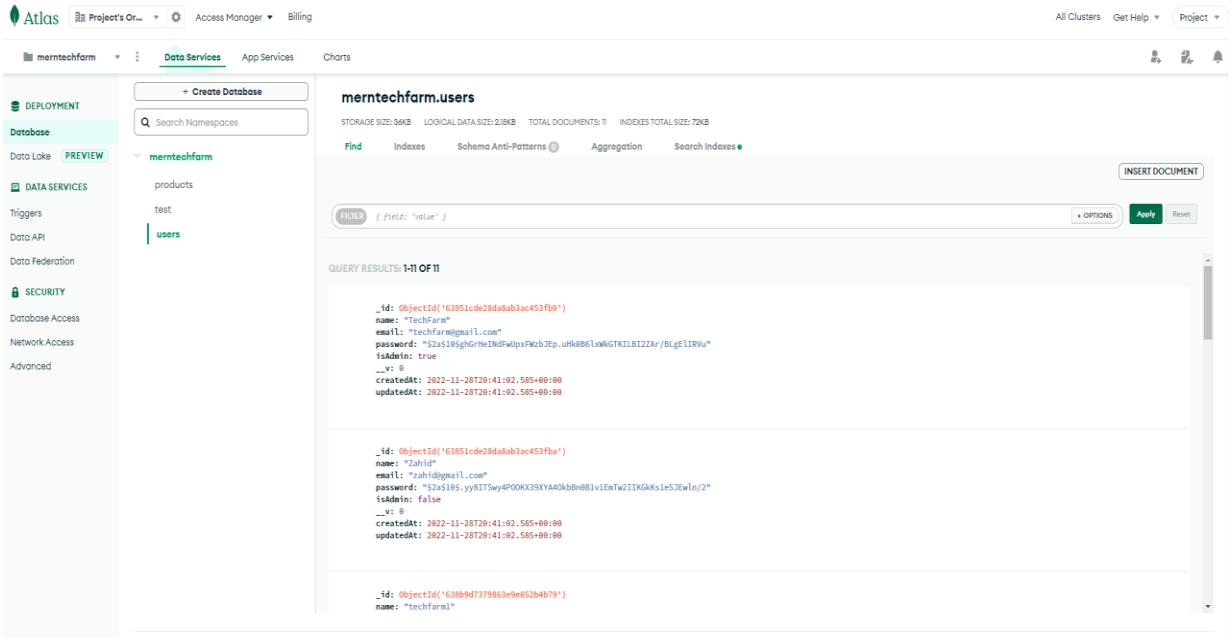


Fig 5.2: Database of users by MongoDB

5.2 Testing

Testing is the crucial part of my project. Without testing, the project will be vulnerable and unsafe.This is why testing is crucial.

Test Case of Sign in/Sign Up:

TABLE 4: use-case sign up

Test case	**Sign in/Sign Up:**
Testing input	Without Sign in/Sign Up:
Expected outcomes	Not allowed to checkout, cart and so on
Actual output	Please sign up now
Result	Passed
Tested on	20-11-2022

5.3 Result

This website,which is entirely powered by this technology,caters primarily to Bangladeshi users. It's a successful project, according to the test report. Since there were no intermediaries, it is sec ure and reliable. I've already tested a few specific pages, and the project's report cases passed. Thus, the project is usable,it may be said. As a result of the observation above,the following will occur:

1. The project makes people feel like they are in a tangible space
2. Their level of security is far higher than others
3. The website is reliable and secure
4. Website that is easier to use and faster order processing

CHAPTER 6

Impact on Society, Environment and Sustainability

6.1 Impact on Society:

Society will be always beside this site.This website can assist them in gaining flexibility, comfort, and authenticity. An e-commerce website will be a useful project that people will want to need in their everyday lives for their success,buying, and gifting to this pro ject. Those are the ways society will gain:

1. Saving of time
2. Verify website purchases
3. Beneficial product selection
4. Getting this is simple

6.2 Impact on Environmentally

The total population of our nation has been updated. They have a technological foundati on as a result.As a result, they utilize their home as a garage for a large private car. Beca use of the wasted fuel, traffic congestion,and other factors, that is environmentally disas trous for our nation. However, online shopping can enable them to conduct proper purch ases from the comfort of their own homes, which will reduce their time expenditure and benefit our country as well.

6.3 Ethical Aspects

An ethical foundation for justice, proper use of power and authority, and proper relation ships provided by the interaction between ethics and cultural meanings and social forces. In establishing sustainable societies, decisions and the correctness,& outcome context of each are all crucial from an ethical standpoint.

6.4 Sustainability Plan

A sustainability plan outlines strategies for sustaining programs,activities,& relationships and serves as a roadmap for accomplishing long-term objectives.Different aspects of sust ainability can be outlined, including the persistence of the ideals the project supports, the persistence of organizational connections, and the persistence of services. Early on in the planning & implementation phases, it is crucial to address sustainability as a program co mponent. The fundamentals of designing health initiatives in rural communities for sustai nability are covered in this session.

CHAPTER 7

Conclusion & Future Scope

Limitations

1. A high-speed internet connection is required because it cannot be used without one.
2. A genuine API is required for shopping cards and other payment methods on the original website.

Obstacles:

1. Time to develop was very limited.
2. Because I'm a rookie web developer, it took a long time, and I'm still learning new things all the time.

7.1 Discussion and Conclusion

The consumers would undoubtedly benefit from this being the finest e-commerce because it will make purchasing easier.

7.2 Scope for the further development

Future Work:

In the near future, I plan to include a few more fresh features that will differentiate my product from others. Provided after that point:

1. I will formally convert this project to an android app.
2. Utilize and download system offline alternatives.
3. Location will be automatically configured and recorded.
4. Products can be found by image and other descriptions.
5. Items with videos.

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