

**Managerial Sales Decision in E-commerce Application through
Customer Data Analysis**

BY

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of
Master of Science in Management Information Systems (MIS)

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APPROVAL

This Project titled “**Managerial Sales Decision in E-commerce Application Through Customer Data Analysis**”, submitted by **Md Abarul Islam**, ID No: 211-17-449 and 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 Master of Science (MS) Program in Management Information Systems (MIS) and approved as to its style and contents. The presentation has been held on 20-01-2022.

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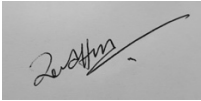
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I would like to thank my entire course mates in Daffodil International University, who took part in this discussion while completing the course work.

Finally, I must acknowledge with due respect the constant support and patients of my parents.

ABSTRACT

This project “**Managerial Sales Decision Making in E-commerce Application Through Customer Data Analysis**” is a system to assist enthusiast online-based startups to manage their business. It's not obvious that their business should be selling tea online. E-commerce is a rapidly growing terrain as an accepted and used business paradigm. More and more business houses are implementing internet sites and providing the ability to do business online. Online shopping methods are becoming more common. The purpose of this project is to develop a universal e-commerce store where you can buy products (books, CDs, computers, mobile phones, electronic products, home appliances, etc.) from the comfort of your home over the Internet. However, for implementation purposes, this document is related to the web tea shop. A web store can be a virtual web store that allows customers to browse catalogs and select products of interest. Selected items can also be collected by wheelbarrow. On the checkout page, the contents of the wheelbarrow will be displayed as an order. At this point, more information is needed to complete the transaction. Customers are typically asked to provide or select payment information such as billing address, shipping address, shipping options, and MasterCard number. An email notification will be sent to the customer when the order is completed. It is often any product. To develop this project the foremost essential tool is JetBrains PhpStorm for HTML, CSS, PHP, and JavaScript coding, WordPress, WooCommerce, Zoho CRM, and XAMPP server. I also need a phpMyAdmin administration tool for handling the MySQL database.

After implementing all of the functions, we tested the system in several stages and it is working successfully as a prototype.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Online Shopping is a web-based computer application made for online retailers. The main purpose of this application is to make it interactive and easy to use. Consumer behavior drives the decision-making process in purchasing. The decision-making process consists of five phases: (i) problem finding, (ii) information retrieval, (iii) alternative evaluation, (iv) purchase decision, and (v) post-purchase action. It's a solution approach. By analyzing all this data, my system produces exclusive reports that help owners/administrators make better decisions to grow their business.

Easily find view and select products. It contains a classic program that allows users to find the product that suits their needs. This program provides a simple and convenient product search that allows users to search for products interactively. Therefore, the program narrows down the available products and supports user input. The user can then view the full specifications for each product. They also look at product reviews and write their reviews as well.

1.2 Motivation

It is proven that humans cannot function like computers. So, 99.99% can let the manual system continue, there will be some problems and problems with the system. I have even seen problems in the above systems which can be categorized into three parts. This is 01) General problem a) Need more time to search for old files. b) To prepare a proper report, it has to work with 4/5 files at a time to get the required information, which also takes more time. c) The productivity of human resources is often increased several times if this manual system often becomes a computerized system. d) It is difficult to write a sales invoice if the customer buys many small things. 02) Technical problems a) It needs an anchor to store old files. b) Sometimes files can also be destroyed by cockroaches or others. c) It is not safe. d) There is no strict inventory control. 03) Financial transactions

1.3 Objectives

The purpose of the system is to cover all events related to the online store. Features, intended to be included in this system, are:

- ✓ All kinds of text & graphical reports
- ✓ Making decision easier
- ✓ Centralize all data
- ✓ The stock of each product
- ✓ Auto invoicing system

1.4 Expected Outcome

The expected outcome of this project is a system that can be used for knowing the requirement of the business from the collected data of day to operate. Another expectation is to get a quick overview and details of the business as per requirement.

1.5 Report Layout

In the very first chapter of this report, we have discussed what motivates us for this project and from where we get inspiration to work on this as well as the objectives of this project and the outcome we expect to get from this project.

In the second chapter of this report, we have focused on the background of E-commerce and decision making, discussed some similar works, compare the activities and challenges we faced through the project work.

In the third chapter, we have discussed the business process model, use case model, ER model, design requirement, and requirement collection.

In the fourth chapter, we have focused on the front end, back-end design specifications, and requirements for implementing the project.

In the fifth chapter, we have shown the project implementation phase, like database, front end, testing, and test results implementations.

In the sixth chapter, we have concluded our discussion with further development ideas we have in our minds.

CHAPTER 2

BACKGROUND

2.1 Introduction

In Bangladesh, the online concept comes with the primary online of Bangladesh “Daraz”. People become curious about this idea then another company show interest in this area. “Meena Bazar” in Dhanmondi, “PQS” (Price - Quality of Service) in Uttara - Shantinagar, and Dhanmondi, “Nandan” in Gulshan, “Pacific” in Kakril are the results. All of this comes with disproportionate investment in the market. They all have a large established store. But there are supercenters in each area that aren't as large as the next. They cannot invest like that. But that does not mean that they will maintain a more manual system. For example, "Upayan" in Siddheswari. they are not as big as the following supermarkets, but not as small as other regular stationery stores. they were interested in getting a bit of a foothold in a computerized point of sale system as they faced many problems maintaining a manual system. I chose to buy this one example to find problems in a manual system. My system is now hosted on www.abarulislam.com for live demonstration.

2.2 Related Works

Some online systems related to my works are given below with their main features:

Adagio Tea

Adagio Tea focuses on a variety of teas and loose tableware. They source directly from the craft manufacturer. The teas are always fresh and have a distinctive taste. You'll find almost every tea, from herbal tea blends to fine teas, in their Masters Collection.

Adagio relies heavily on customer reviews, which are helpful when purchasing their tea. They also include information about the origin of the tea they sell and instructions on how to make the tea. a Jersey-based surrogate company owned by a parent-child group. International shipping [1]. Figure 2.2.1 shows the home page of Adagio Tea.

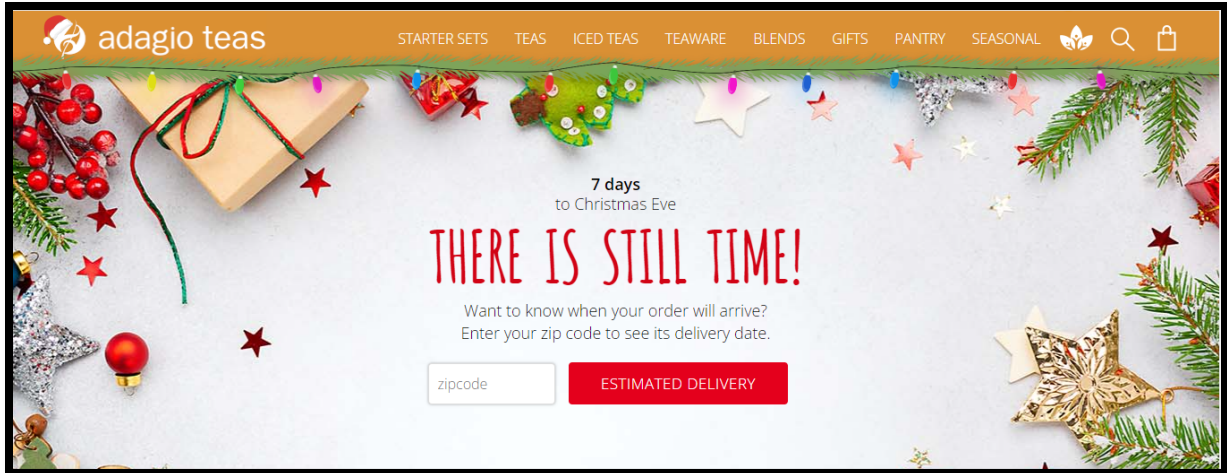


Figure 2.2.1: Adagio Tea

The Tea Spot

Tea Spot is an online tea retailer and commercial establishment selling innovative craft teas and tableware. Tea Spot offers some of the simplest teas on the internet, specializing in homemade gourmet leaf teas, exclusive blends, and unique whole leaf teas. You can find unique tea blends with a disproportionate emphasis on health on their tea website. Tea Spot offers loose tea samplers for all samplers. Tea Spot was founded in 2004 by Maria Uspenskaya, a woman recovering from cancer, who was fascinated by the health benefits of whole leaf tea during her recovery [2]. Figure 2.2.2 shows the home page of The Tea Spot.



Figure 2.2.2: The Tea Spot

Matcha Source

Matcha Source sells several types of tea. Alyssa White is the founder of Matcha Source, an online retailer of premium matcha and specialty tableware for organizing and enjoying matcha. This one-of-a-kind teahouse specializes in ceremonial to kitchen level and everything in between. [3]. Figure 2.2.3 shows the home page of Matcha Source.



Figure 2.2.3: Matcha Source

Vahdam

Vahdam Tea specializes in garden-grown Indian teas. Vahdam is one of my favorite places to buy teas online. All their teas are sourced directly from farms and tea plantations within 2448 hours of production, freshly packaged, and shipped directly from India. [4]. Figure 2.2.4 shows the home page of Vahdam.

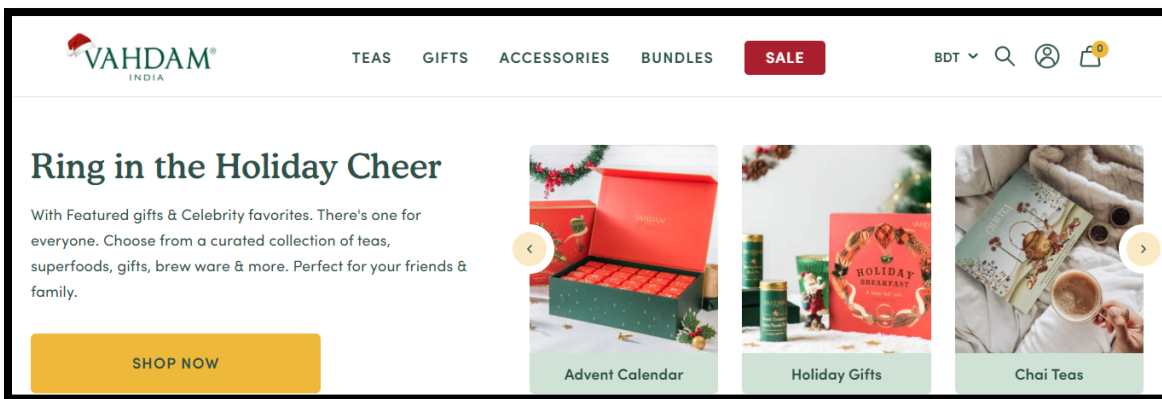


Figure 2.2.4: Vahdam

Teatulia

Teatulia specializes in Indian teas. Co-founded by Dr. Kazi Anis and Linda Appel Lipsius, the Denver-based tea company focuses exclusively on sustainable development. Teatulia is one of the few 100% organic tea brands produced by Bangladeshi women. Teatulia tea is a single garden tea that is hand-harvested and grown in the beautiful tea fields of Kazi & Kazi tea plantations in northern Bangladesh and delivered to customers. [5]. Figure 2.2.5 shows the home page of Teatulia.



Figure 2.2.5: Teatulia

2.3 Comparative Studies

Some systems are related to my work but most of the systems are just selling you tea according to the selection. But in my system, the user has the facility that they can search for any tea. I tried a lot to make my system more user-friendly so that users and admin both can easily use the system without any inconvenience. The main strength of my system is that it has built-in business analysis tools for the owner.

2.4 Challenges

During working on this project, I faced some challenges and here I listed some of them:

- Huge data collection
- Database handling
- Generating algorithm according to needs of various customers
- Calculating the requirements of the user according to their previous purchase, searches, etc.
- Generating multiple kinds of reports for the business owner would help take the quick and progressive report as well as grow the business.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

Process modeling is becoming an increasingly important task not only for software development but for many other purposes besides the software itself. Therefore, it is necessary to evaluate the standards of the process model from various perspectives. This is even more important as information models become more complex with the availability of different end-users, different goals, and different modeling techniques and modeling tools. [6]. Figure 3.3.1 shows the business process modeling of my project.

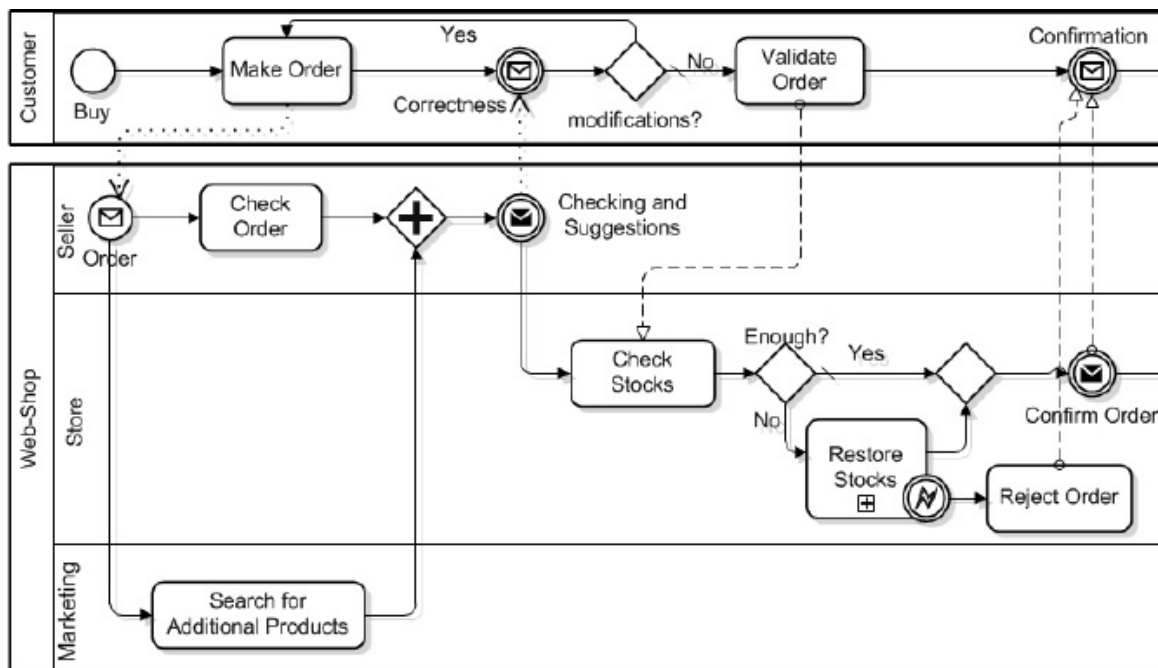


Figure 3.1.1: BPMN

3.2 Requirement Collection and Analysis

An analysis is a detailed study of the different types of operations performed by a system and their interrelationships inside and outside the desired system. This includes gathering information and using structured analysis tools. Collecting information is also known as requirement collection.

To simplify the analysis, it is recommended to group requirements into four categories [7].

- **Functional requirements:** Define how the project should behave from the end user's point of view. Describes the features and capabilities that end-users will interact with directly. In my project, the end-user interacts with the project by selecting a car and purchasing the required quantity. And owners/managers can generate on-demand sales reports and other data.
- **Operational requirements:** Define what activities must be performed in the background to keep the project running for a specified period. For operational requirements, you need to collect and add different types of cars to work within stages.
- **Technical Requirements:** Defines the technical issues that must be addressed for a successful project. This project requires a valid internet connection and server.
- **Transition Requirements:** These are the steps necessary for a smooth implementation of the new project.

In my project, the main requirement is tea collection, selling, and generating reports to make decisions easier. For this, I have to visit so many websites as well as physical shops to collect data from there and generate ideas on how to design the most useful and convenient reports for a business.

3.3 Use Case Modeling and Description

3.3.1 Use Case Model

Figure 3.3.1 shows the use case model of my project.

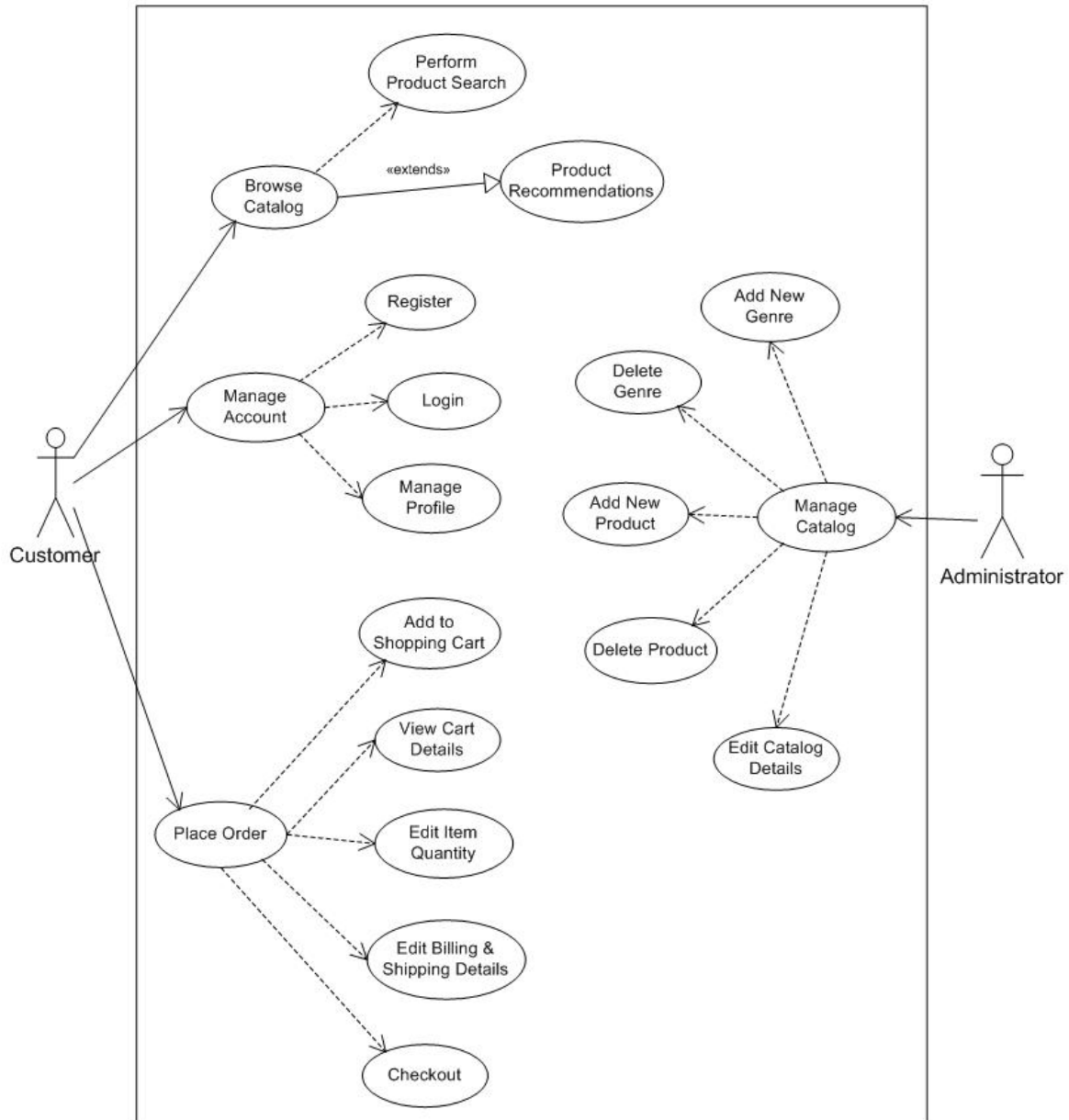


Figure 3.3.1: Use Case Model

3.3.2 Use Case Description

Use Case 01: Create an account

Primary Actor: User

Precondition: Internet connection

Secondary Actor: Null

Main Success Scenario: User will create, login and manage his/her account

Exception Scenario: User will continue without an account

Use Case 02: Place order

Primary Actor: User

Precondition: Internet connection

Secondary Actor: Null

Main Success Scenario: User will select their required items by browsing

Exception Scenario: Internet or server connection problem

Use Case 03: Use without an account

Primary Actor: User

Precondition: Internet connection

Secondary Actor: Null

Main Success Scenario: User will input all required details for purchasing tea

Exception Scenario: User will create an account

Use Case 04: Manage genre

Primary Actor: Administrator

Precondition: Account with administrative privilege

Secondary Actor: Null

Main Success Scenario: Add, remove or edit genre

Exception Scenario: Internet or server connection problem

Use Case 05: Forgot Password

Primary Actor: User

Precondition: Must have an account

Secondary Actor: Null

Main Success Scenario: Recover password by email

Exception Scenario: Internet or server connection problem

Use Case 06: Register new admin

Primary Actor: Admin

Precondition: must have logged in for registering another admin

Secondary Actor: Null

Main Success Scenario: Input all details of new admin and register them as a new admin

Exception Scenario: Internet or server connection problem

Use Case 07: Add a new item

Primary Actor: Admin

Precondition: Must have logged in

Secondary Actor: Null

Main Success Scenario: Input all details of a new item to add them

Exception Scenario: Internet or server connection problem

Use Case 08: Delete an item

Primary Actor: Admin

Precondition: Must have logged in

Secondary Actor: Null

Main Success Scenario: Delete an item by clicking on the delete button

Exception Scenario: Internet or server connection problem

Use Case 09: Edit an item

Primary Actor: Admin

Precondition: Must have logged in

Secondary Actor: Null

Main Success Scenario: Input the details of items to edit them

Exception Scenario: Internet or server connection problem

3.4 Logical Data Model

Figure 3.4.1 shows the logical data model or ER diagram of my project.

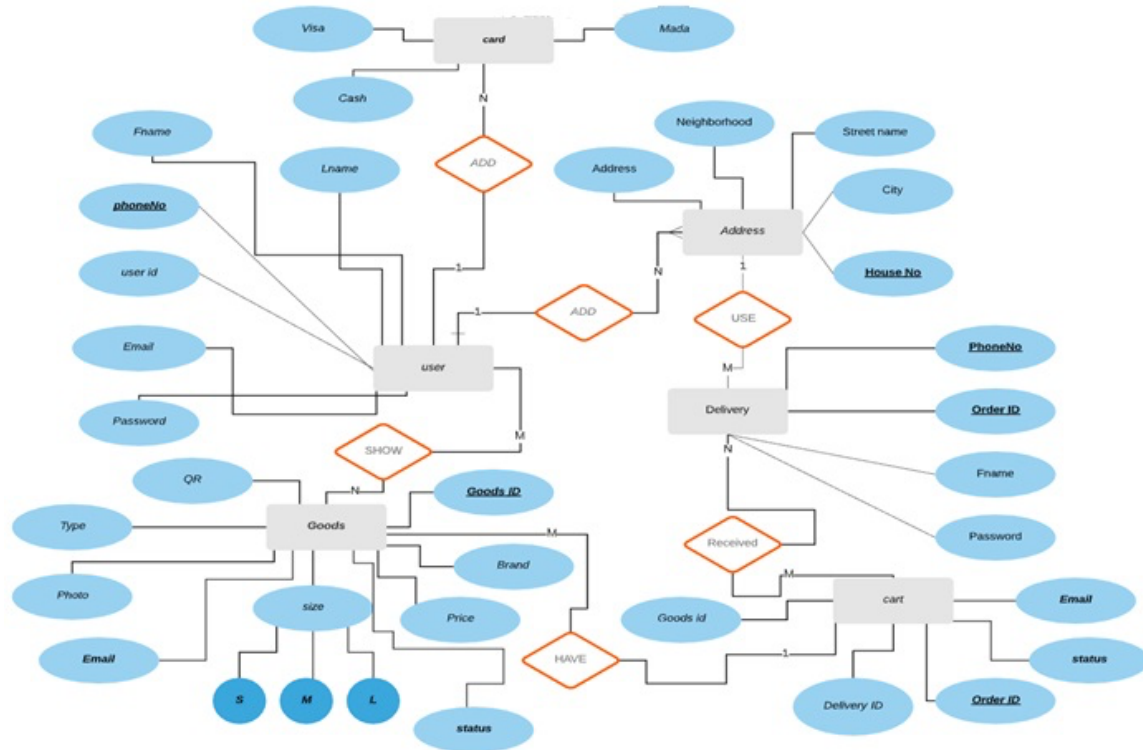


Figure 3.4.1: ER Diagram

3.5 Design Requirements

Design requirements define important characteristics that a project must meet to be successful [8]. Some design requirements I planned for my project are given below:

- The system should be very user friendly
- There will be two actors in my project one is used and another is admin
- Users can use the system by logging in to their account or continuing without an account
- User can choose their tea by selecting from the available teas.
- Admin can register someone else as an admin after logging in to their account
- Admin can add, delete or edit any tea details, etc.

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-End Design

The front-end design of this project is done by using HTML, CSS, WordPress, and Bootstrap coding. For some designs like button action, I also need to use PHP and JavaScript coding here.

On the home page of my project, there is a navigation bar that contains 7 options they are Home, Shop, About, Contact, My Account, Cart & Search. There is also a hidden admin panel option that can be only accessed by specific URLs and credentials. By clicking on the 'Shop' button user can start browsing varieties of tea from the shop and choose their required flavors, brands and quantity. As in my project, I have two actors i.e., user and admin, I will discuss the interaction parts of this project later for individual actors. Anyone can access this option without logging in or signing up.

In the about option, we included a description and details about the shop as well as tea. There is also some eye-soothing photo collection of the tea garden.

Contact option provides the contact details of us and there is a direct mailing system to the owner for any query.

My account option provides all the account management facilities. From here a user can manage his/her orders, downloads, addresses, account details, etc.

From the cart, the options user can check the current status of the cart and also can delete or change the item quantity.

At last, here comes the search option. It can be used for searching for any kind of tea which is available in the system.

4.2 Back-End Design

Back-end design is completed by using WordPress plugins, PHP, and JavaScript coding. I also use the XAMPP server. As for this project I need a huge collection of data, I use MySQL database and phpMyAdmin administration tools for handling those data.

I have used 87 database tables for working on this project. All the tables are required to function in this system. And the tables have consisted of multiple attributes that store all required properties of every admin, user, product, transactions, report, etc.

I have also used WooCommerce for business analysis and reporting. WooCommerce is a flexible, open-source commerce solution built for WordPress. Founded in 2008 as WooThemes and rebranded in 2017, WooCommerce has decided to focus exclusively on its e-commerce business.

Today, WooCommerce is used by small businesses to create exactly the stores they need and sell online. Their legacy as a completely isolated company continues, from three founders in Norway, England, and South Africa to over 150 team members in 32 countries [9].

I also used Zoho CRM to generate exclusive and customized reports which would be a game-changer in decision making. Zoho CRM can be effective for the reasons below [10].

- ✓ Make taking business decisions easier with real-time analytics
- ✓ Measuring and managing territory-wise sales performance
- ✓ Track the key performance indicators(KPI), current trends, and forecasts
- ✓ Filter reports

4.3 Interaction Design and UX

As I already said in my project, I have two actors so I need to make my system interact with two actors properly.

At first, I am discussing the user interaction part. Users need to log in or sign up if they don't have an account for using this system on the regular basis. If a user wants to use the system without any account, then they can also do that but they need to enter all the details every time they visit. So, using an account is a better approach if they don't want to input

all the details every time. After logging in to the system user need to select the teas, order them and the items will be delivered to his/her address. They can also choose an item by searching their name and adding them to the cart. Here, user can see their total value and the item quantities. After adding items in the cart, by clicking on the 'Proceed to checkout' user will be directed to the checkout page where he/she has to fill up a form. The form includes the user name, address, and other required information to process the order. All the data provided by the user is directly stored in the server and remains confidential from other users. If the user is registered before in this site, then previously stored data will be filled automatically in the form and the user can change the data if required.

Implementation Requirements

For implementing this project, I need to use the XAMPP server and JetBrains PhpStorm tool for HTML, CSS, Bootstrap, PHP, and JavaScript coding. I also use the phpMyAdmin administration tool for handling the MySQL database. I need to learn advanced HTML, CSS, Bootstrap, PHP, and JavaScript coding to work on this project. Also learned to work with database handling. I need to collect a lot of data for teas to enrich my systems database.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

5.1.1 Tables in the database

There are a total of 87 databases and a few are included in the figure below. Figure 5.1.1 shows the tables I used in my database.

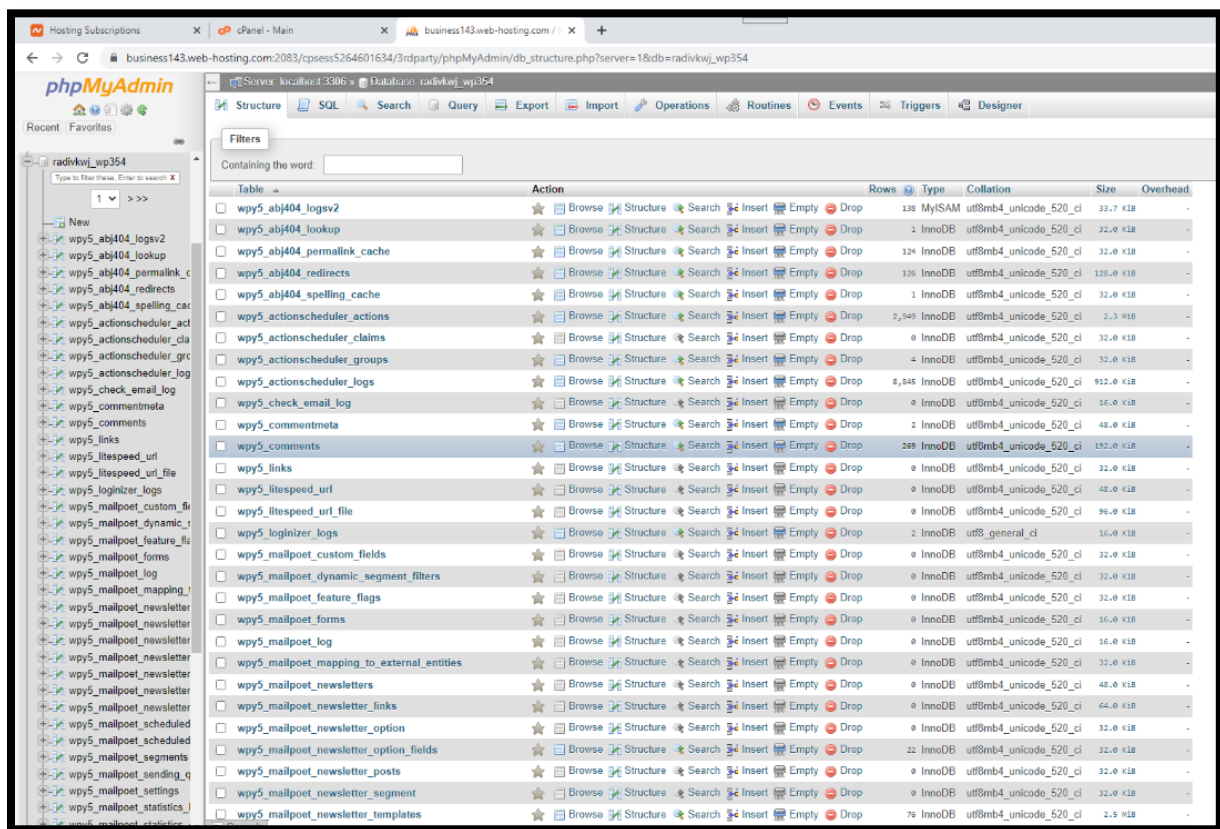
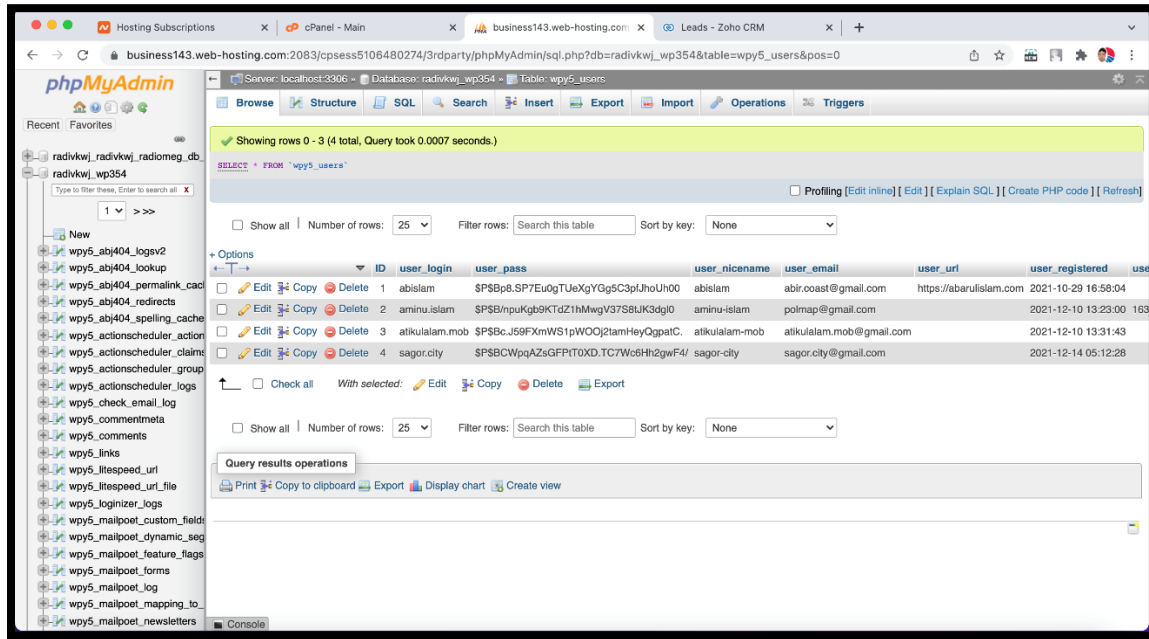


Figure 5.1.1: Tables in the Database

5.1.2 Table for Users

Figure 5.1.2 shows the table for users registered in my system.



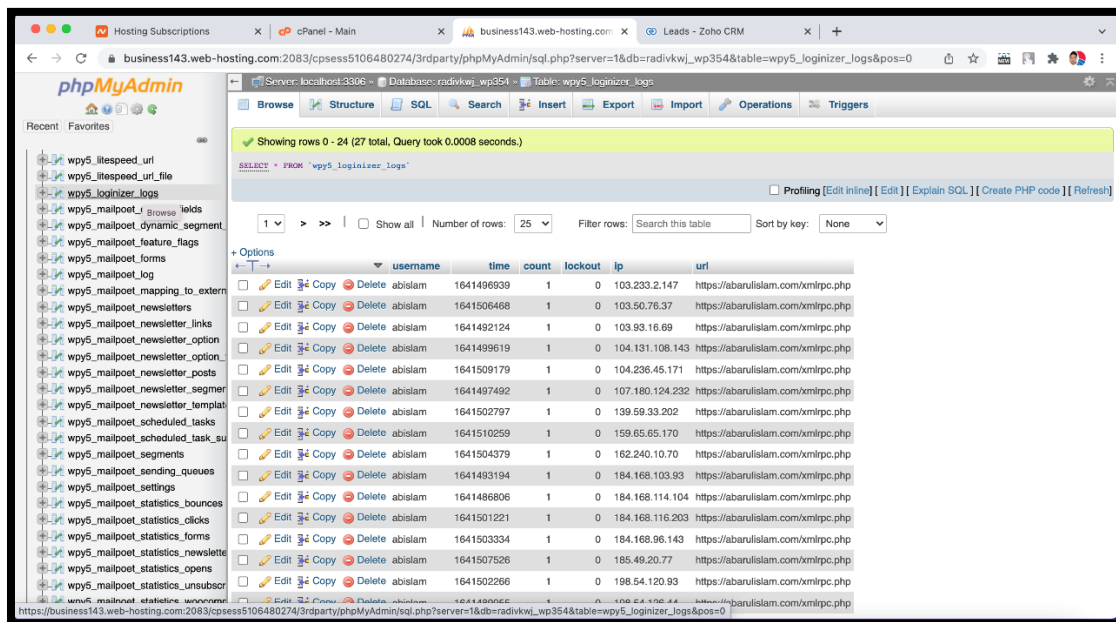
The screenshot shows the phpMyAdmin interface for the 'wp5_users' table. The table contains the following data:

ID	user_login	user_pass	user_nicename	user_email	user_url	user_registered
1	abislam	\$P\$Bp8.SP7Eu0gTUeXgYGg5C3pJhoU00	abislam	abir.coast@gmail.com	https://abarulislam.com	2021-10-29 16:58:04
2	aminu.islam	\$P\$B/npuKgb9KTdZ1hMwgV37S8UJK3dgI0	aminu-islam	polimap@gmail.com		2021-12-10 13:23:00
3	atikulalam.mob	\$P\$Bc.J59FXmWS1pWOCj2tamHeyQqatC.	atikulalam-mob	atikulalam.mob@gmail.com		2021-12-10 13:31:43
4	sagor.city	\$P\$BCWpqAZsGFPT0XD.TC7W6hH2gwF4/	sagor-city	sagor.city@gmail.com		2021-12-14 05:12:28

Figure 5.1.2: Table for users

5.1.3 Table for login logs

This can help find security issues. Figure 5.1.3 shows the table for login logs.



The screenshot shows the phpMyAdmin interface for the 'wp5_loginizer_logs' table. The table contains the following data:

username	time	count	lockout	ip	url
abislam	1641496639	1	0	103.233.2.147	https://abarulislam.com/xmirpc.php
abislam	1641506468	1	0	103.50.76.37	https://abarulislam.com/xmirpc.php
abislam	1641492124	1	0	103.93.16.69	https://abarulislam.com/xmirpc.php
abislam	1641499619	1	0	104.131.108.143	https://abarulislam.com/xmirpc.php
abislam	1641509179	1	0	104.236.45.171	https://abarulislam.com/xmirpc.php
abislam	1641497492	1	0	107.180.124.232	https://abarulislam.com/xmirpc.php
abislam	1641502797	1	0	139.59.33.202	https://abarulislam.com/xmirpc.php
abislam	1641510259	1	0	159.65.65.170	https://abarulislam.com/xmirpc.php
abislam	1641504379	1	0	162.240.10.70	https://abarulislam.com/xmirpc.php
abislam	1641493194	1	0	184.168.103.93	https://abarulislam.com/xmirpc.php
abislam	1641486806	1	0	184.168.114.104	https://abarulislam.com/xmirpc.php
abislam	1641501221	1	0	184.168.116.203	https://abarulislam.com/xmirpc.php
abislam	1641503334	1	0	184.168.96.143	https://abarulislam.com/xmirpc.php
abislam	1641507526	1	0	185.49.20.77	https://abarulislam.com/xmirpc.php
abislam	1641502266	1	0	198.54.120.93	https://abarulislam.com/xmirpc.php

Figure 5.1.3: Table for login logs

5.1.4 Table for order items

Figure 5.1.4 shows the table for order items.

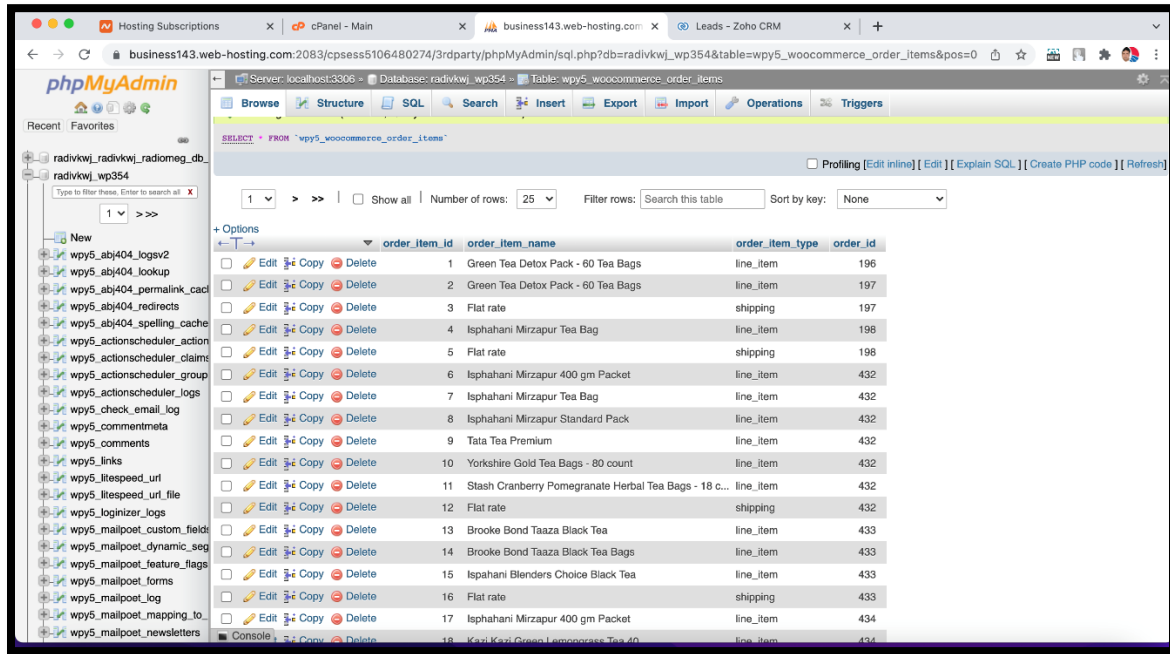


Figure 5.1.4: Table for order items

5.1.5 Table for action schedule

Figure 5.1.5 shows the table for the action schedule

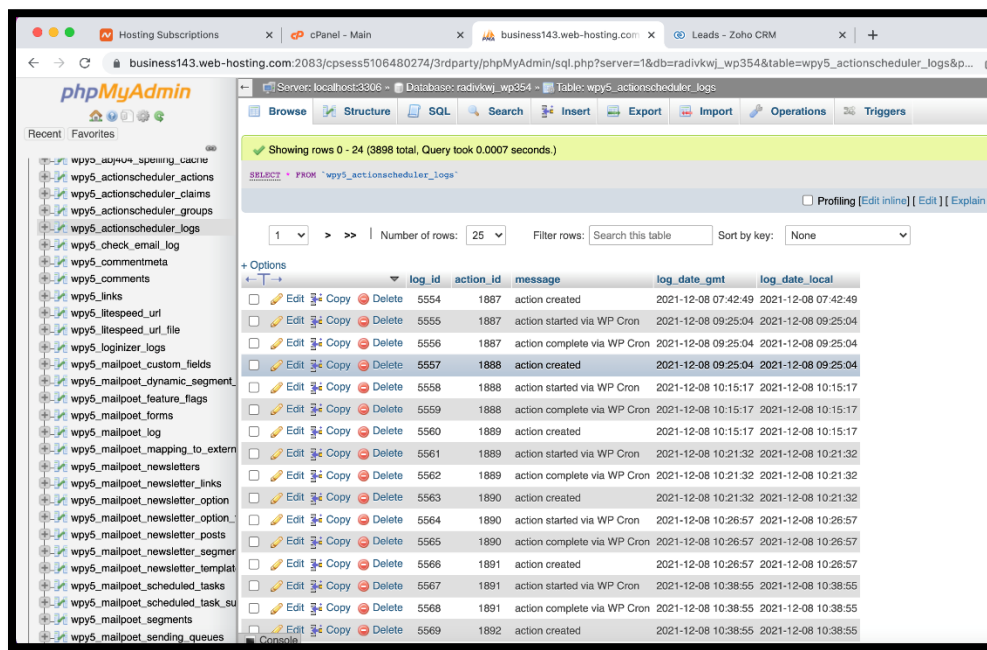
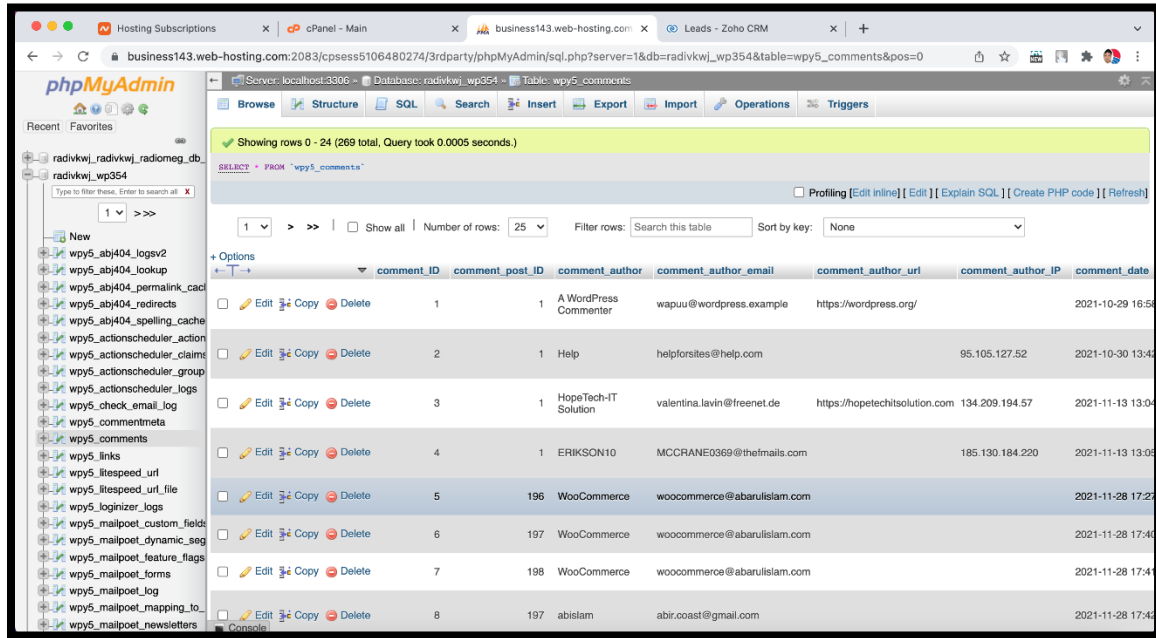


Figure 5.1.5: Table for action schedule

5.1.6 Table for user comments

User feedback is important for every business. Figure 5.1.6 shows the table for user comments.



The screenshot shows the phpMyAdmin interface for a database named 'radivkwj_wp354'. The table 'wp5_comments' is selected, and its structure and data are displayed. The table has 8 columns: comment_ID, comment_post_ID, comment_author, comment_author_email, comment_author_url, comment_author_IP, and comment_date. The data shows 8 rows of user comments.

comment_ID	comment_post_ID	comment_author	comment_author_email	comment_author_url	comment_author_IP	comment_date
1	1	A WordPress Commenter	wapuu@wordpress.example	https://wordpress.org/		2021-10-29 16:58
2	1	Help	helpforsites@help.com		95.105.127.52	2021-10-30 13:44
3	1	HopeTech-IT Solution	valentina.lavin@freenet.de	https://hopetechitsolution.com	134.209.194.57	2021-11-13 13:04
4	1	ERIKSON10	MCCRANE0369@thefmails.com		185.130.184.220	2021-11-13 13:04
5	196	WooCommerce	woocommerce@abarulislam.com			2021-11-28 17:27
6	197	WooCommerce	woocommerce@abarulislam.com			2021-11-28 17:44
7	198	WooCommerce	woocommerce@abarulislam.com			2021-11-28 17:44
8	197	abislam	abir.coast@gmail.com			2021-11-28 17:44

Figure 5.1.6: Table for user comments

5.2 Implementation of Front-End Design

5.2.1 Home Page

Figure 5.2.1 shows the home page of my project.

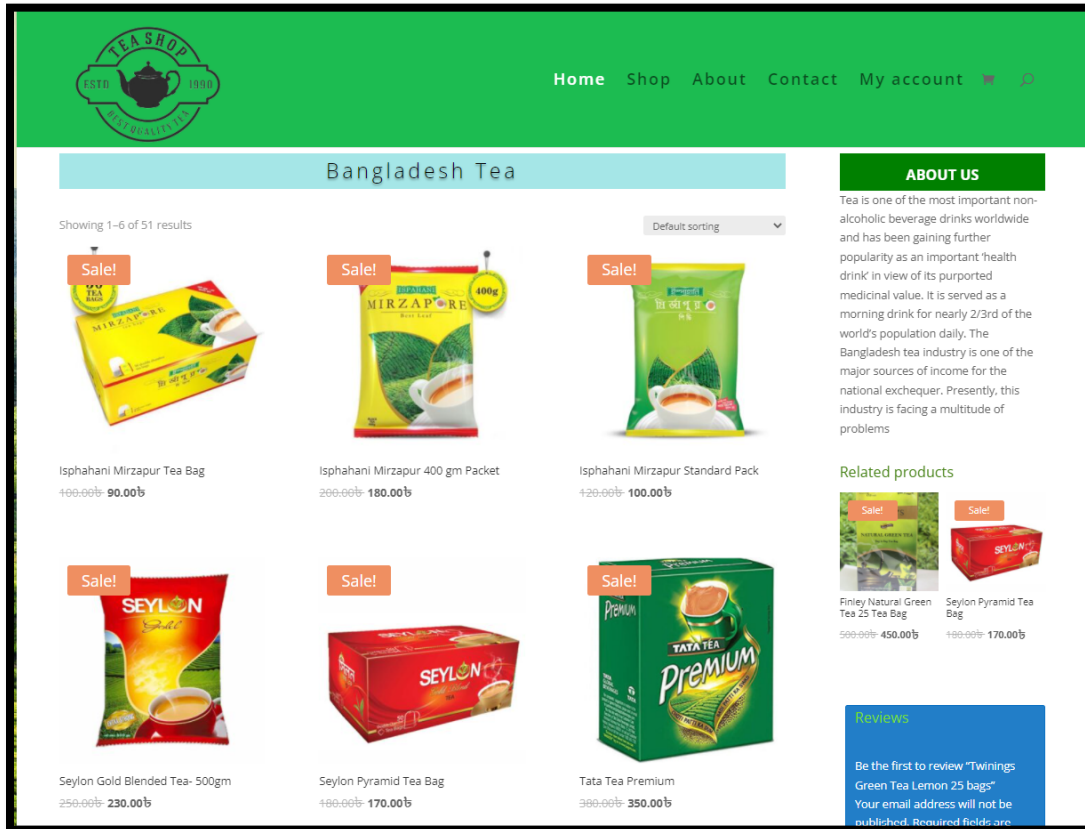


Figure 5.2.1: Home page

5.2.2 My Account

Figure 5.2.2 shows my account page information.

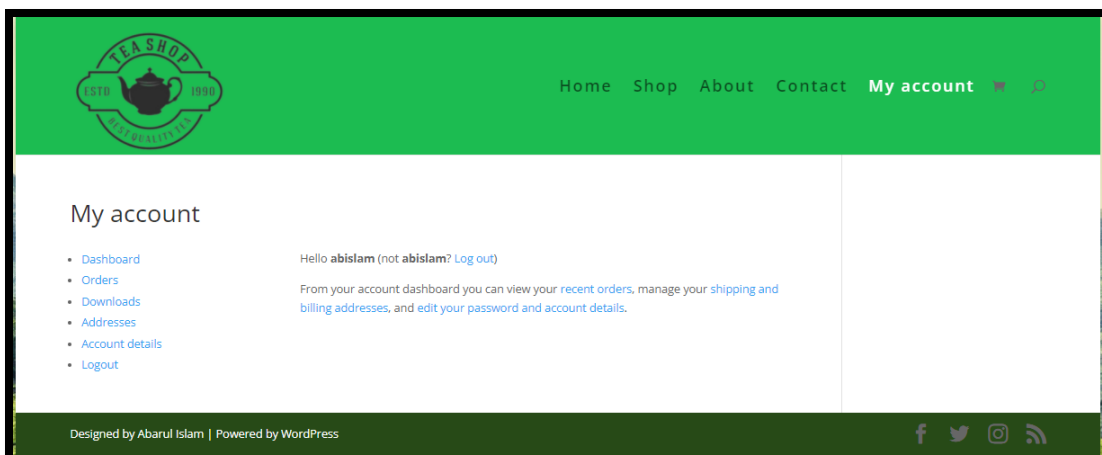


Figure 5.2.2: My Account

5.2.3 Orders Page

Figure 5.2.3 shows the orders page of a registered user.

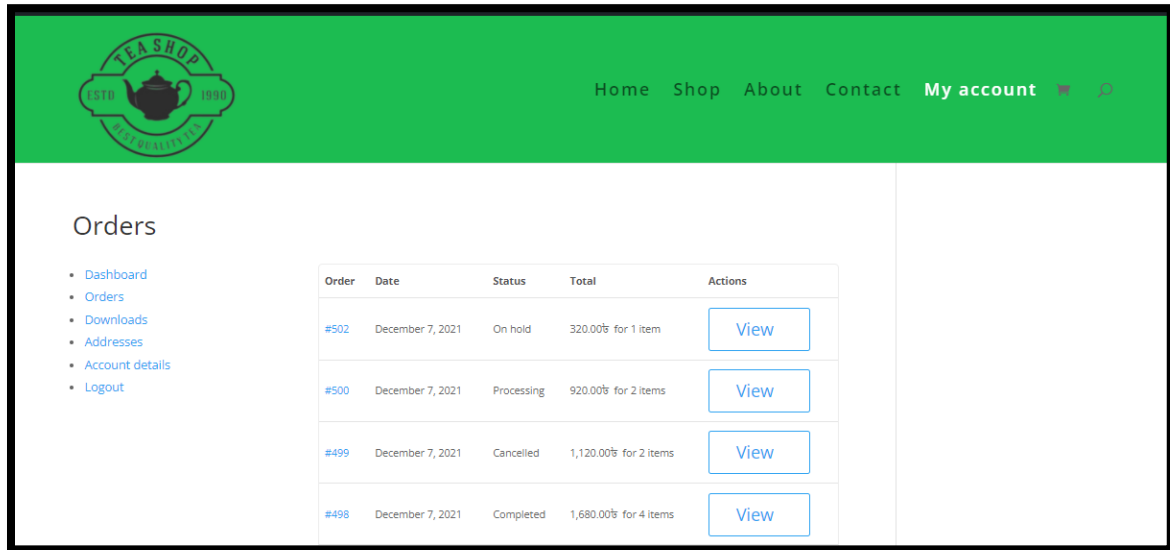


Figure 5.2.3: Orders Page

5.2.4 Contact Page

Figure 5.2.4 shows my contact details of me.

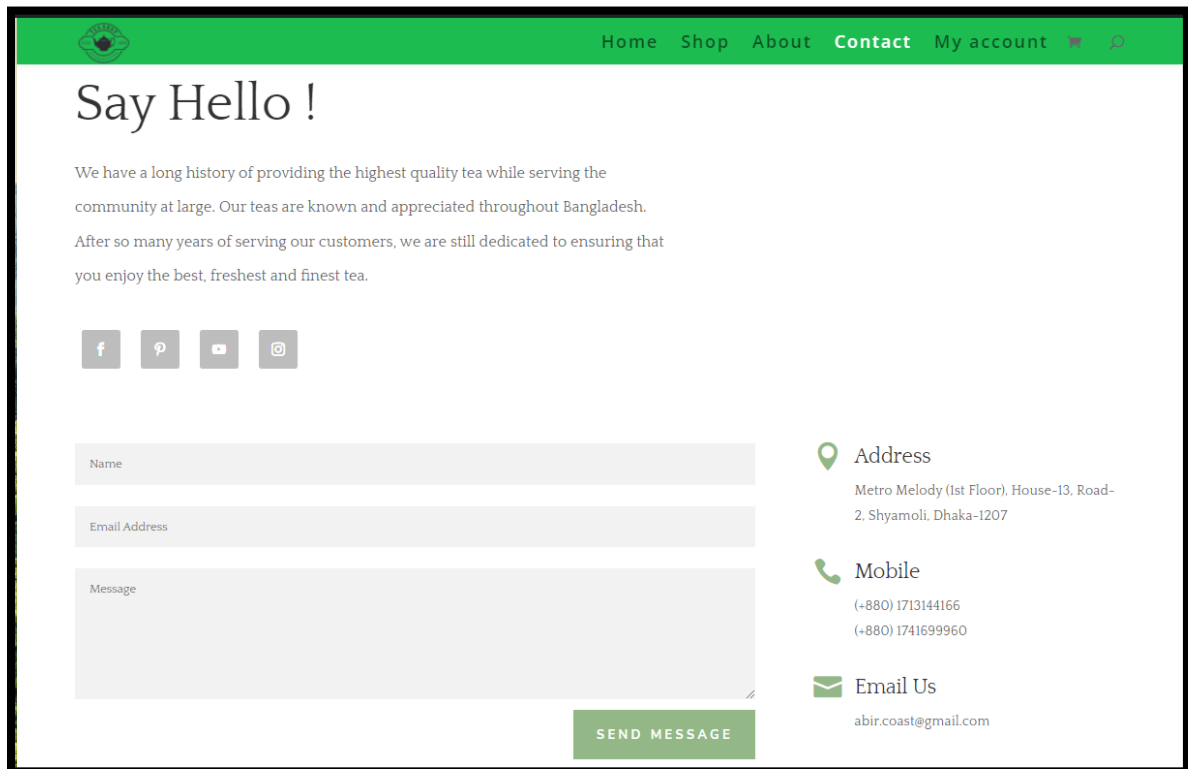


Figure 5.2.4: Contact page

5.2.5 Intelligent Search Bot

This bot uses customers' inputs and analyzes them to provide the desired result. The system also stores the data and prepares a report for further improvement of the system. Figure 5.2.5 shows a demo search result in an intelligent search bot.

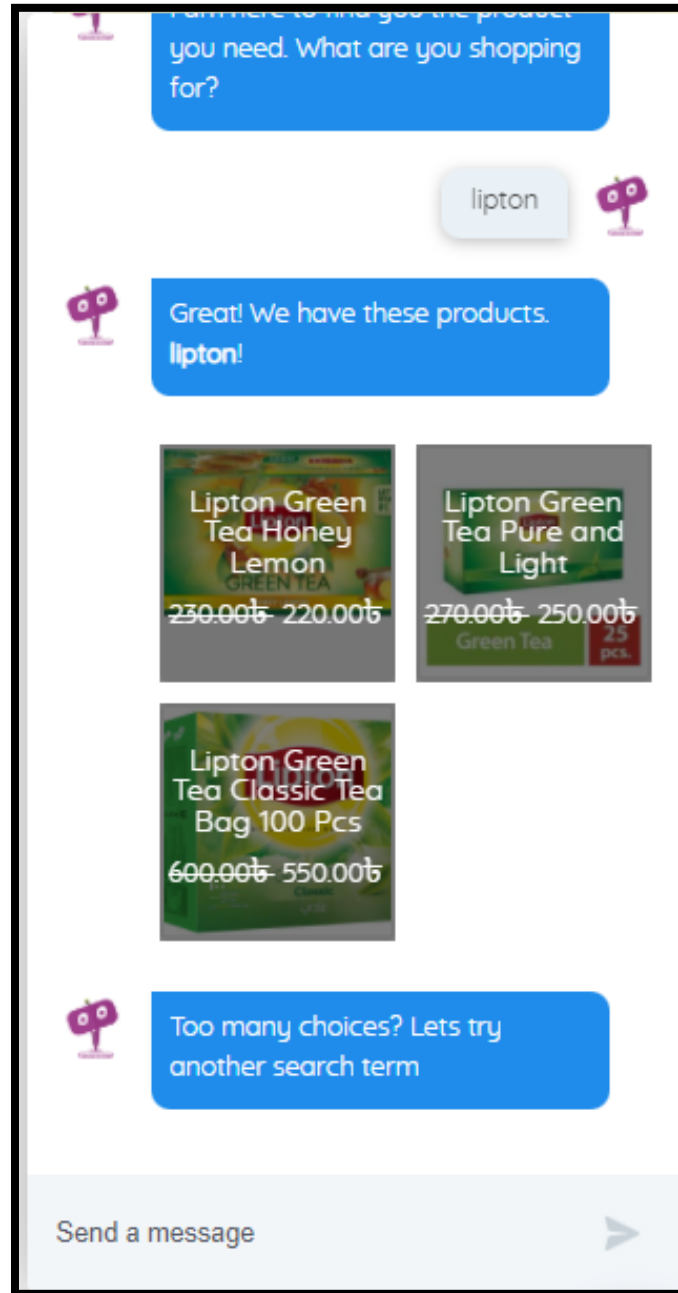


Figure 5.2.5: Intelligent Search Bot

5.3 Implementation of Interactions

5.3.1 Implementation of admin interactions

5.3.1.1 Products add, edit and delete

From this page, admins can change products details, add or delete products. Figure 5.3.1 shows the product add, edit & delete page for admins.

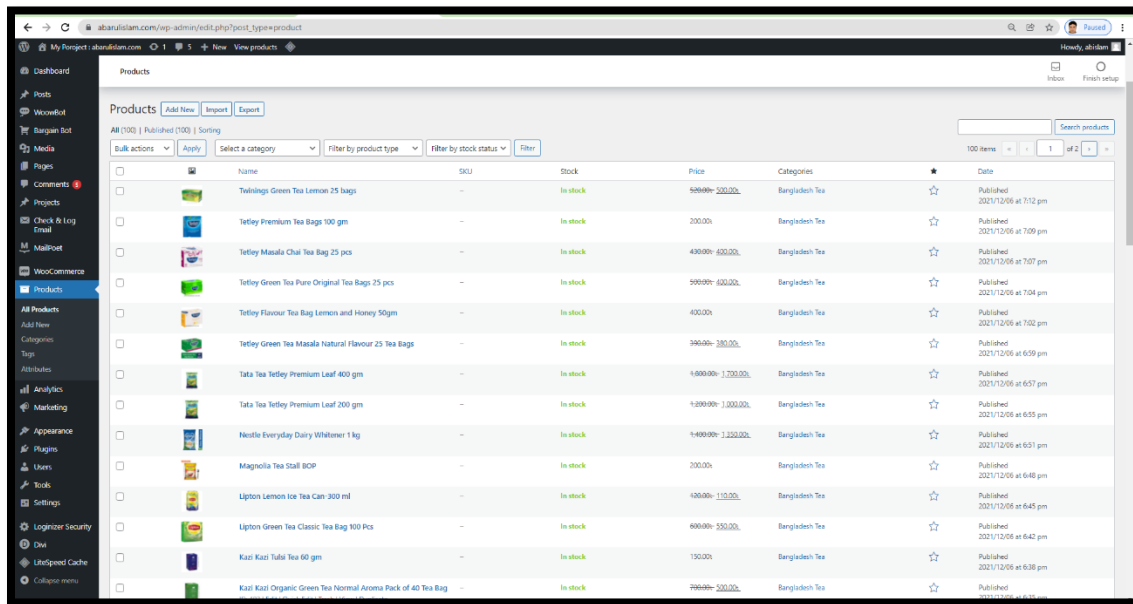


Figure 5.3.1: Products customization

5.3.1.2 Orders processing

Figure 5.3.2 shows the orders page for admin for managing.

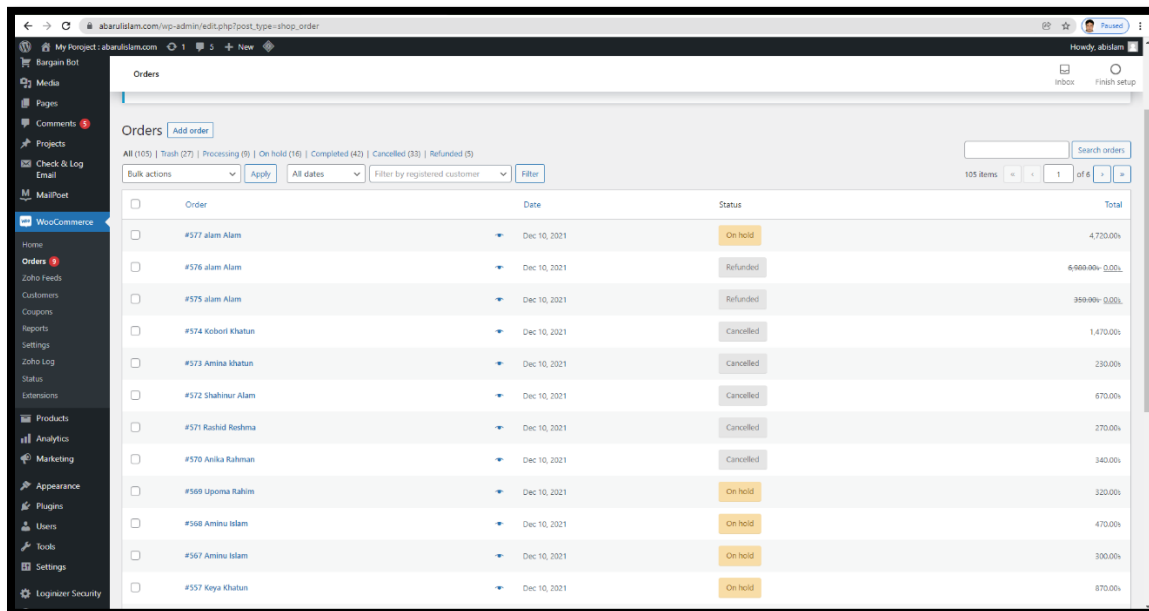


Figure 5.3.2: Sign up or Log in

5.3.1.3 Categories

Figure 5.3.1.3 shows the categories management page for the admins.

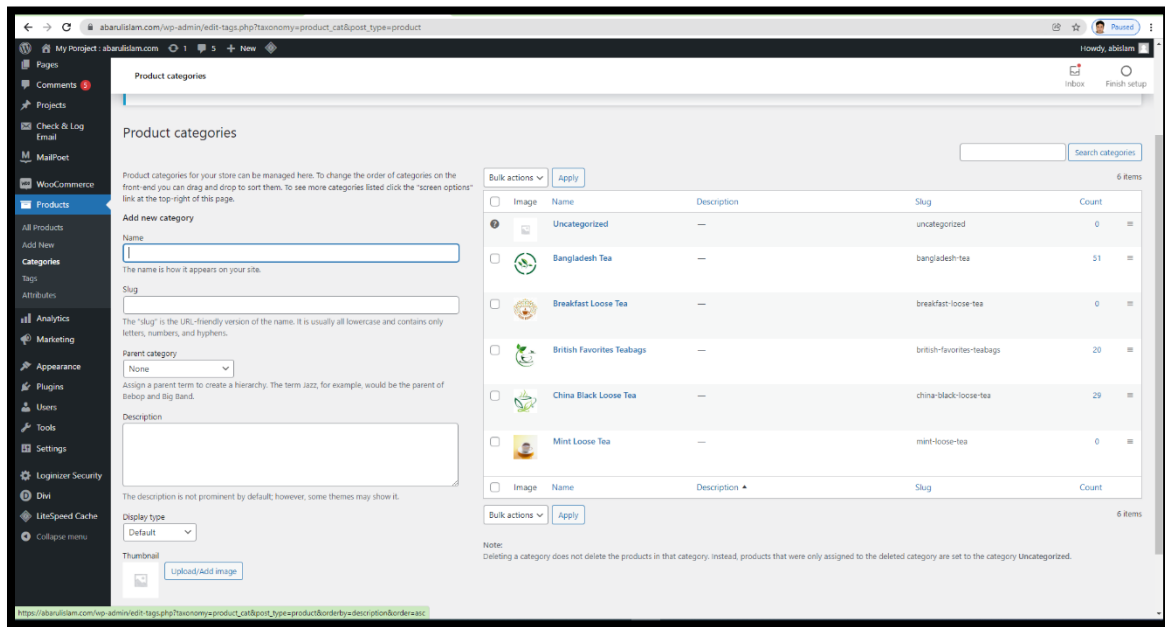


Figure 5.3.3: Categories Management

5.3.1.4 Product Analytics

Product analytics report helps to find out the sales volume of an individual product.

Figure 5.3.4 shows the page analytics of products.

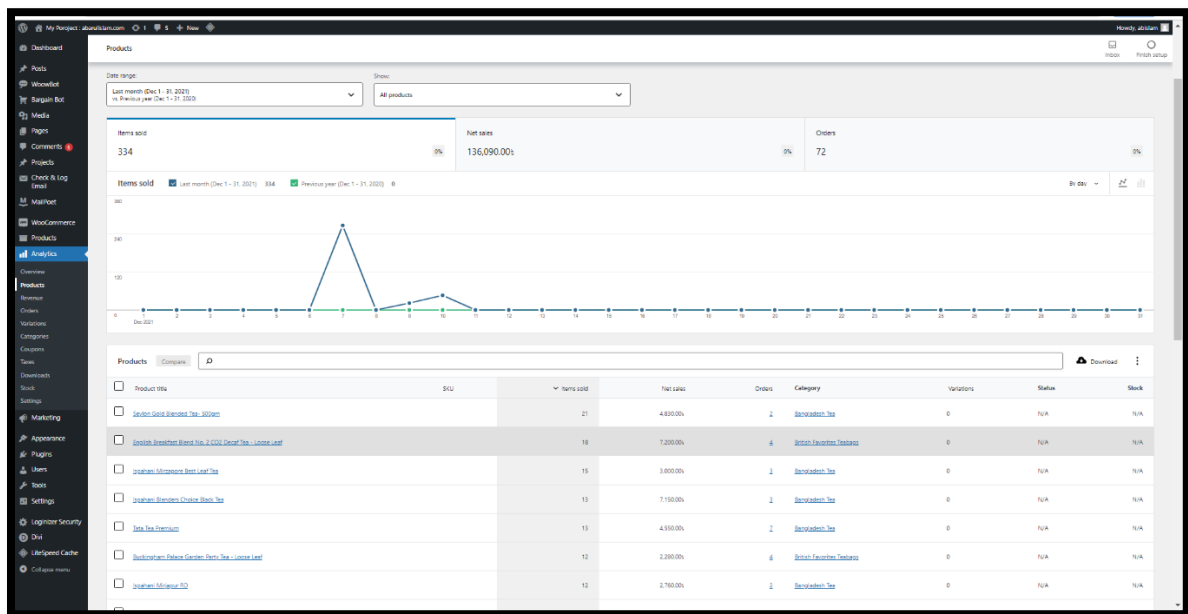


Figure 5.3.4: Products analytics

5.3.1.5 Order Analytics

Figure 5.3.5 shows the page of order analytics

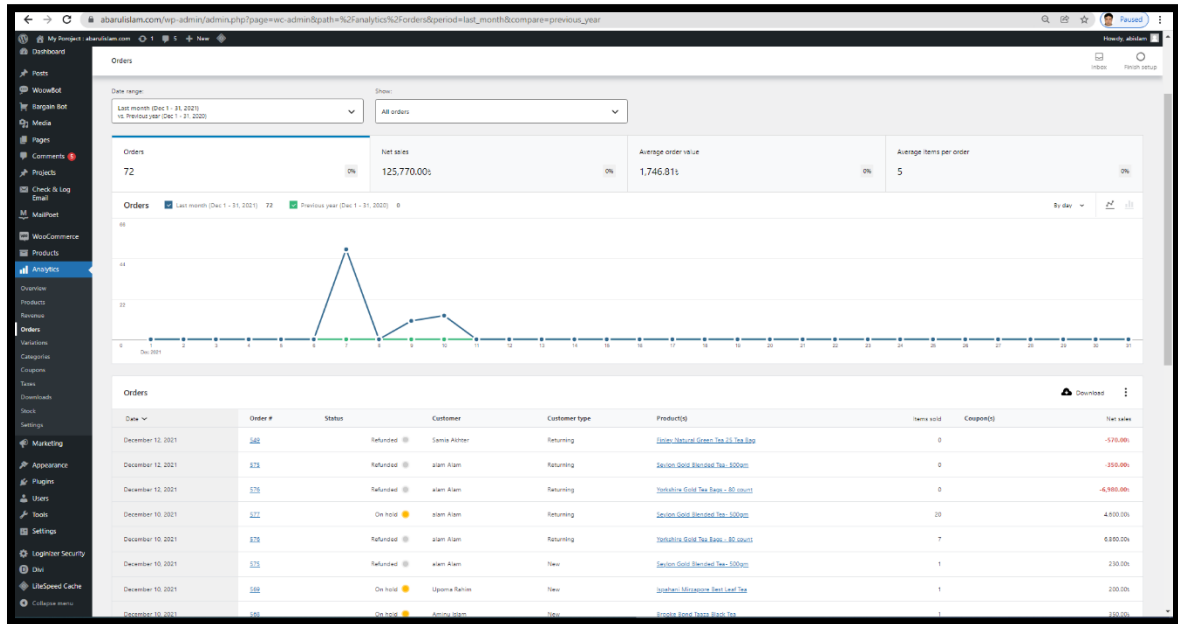


Figure 5.3.5: Order Analytics

5.3.1.6 Revenue Analytics

Figure 5.3.6 shows the revenue analytics for my project.

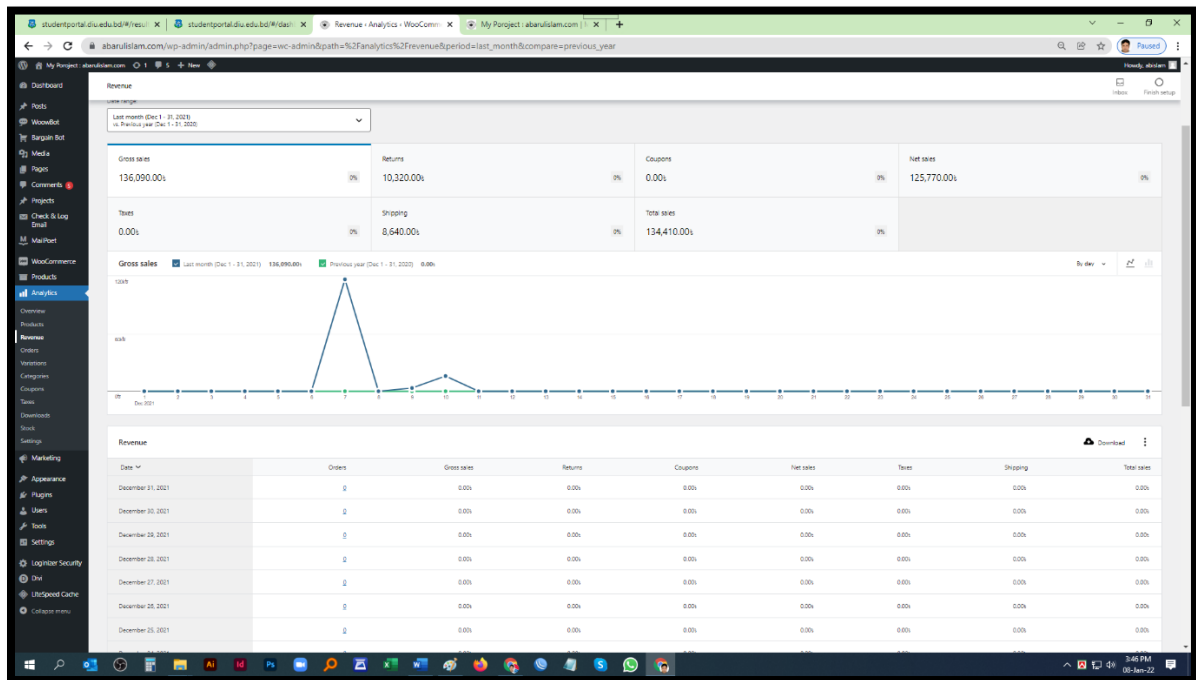


Figure 5.3.6: Revenue Analytics

5.3.1.7 Campaign report

In the campaign report effect of a campaign can be found in detail. Figure 5.3.7 shows the campaign report.

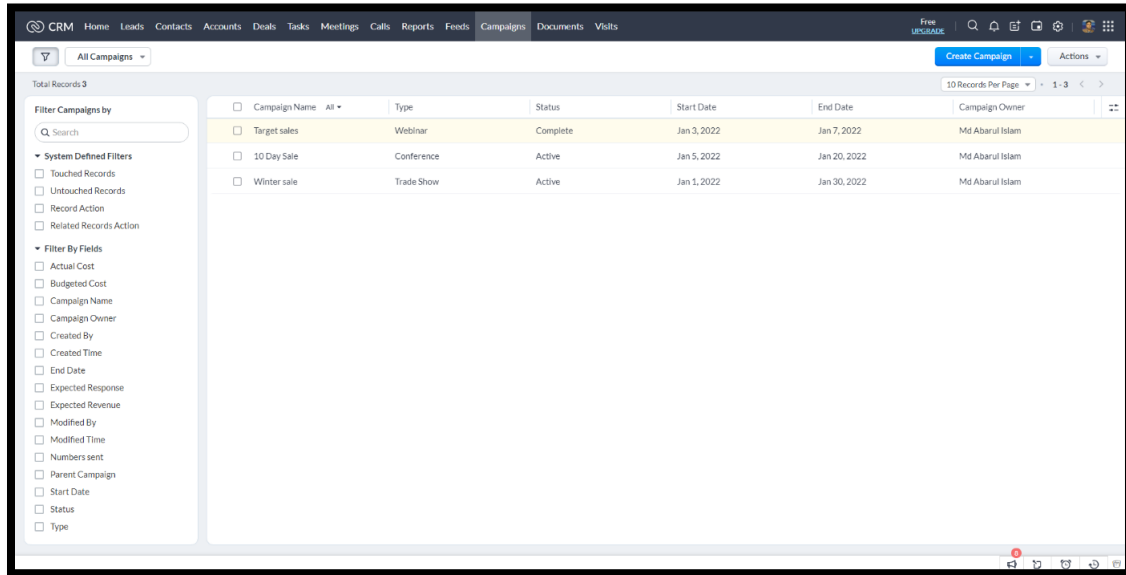


Figure 5.3.7: Campaign Report

5.3.1.8 Deals report & graph

This report helps the manager to acknowledge the current scenario of the deals. The graph shows the overall situation and the table below shows the status of every deal individually. Figure 5.3.8 shows the deals report and graph.

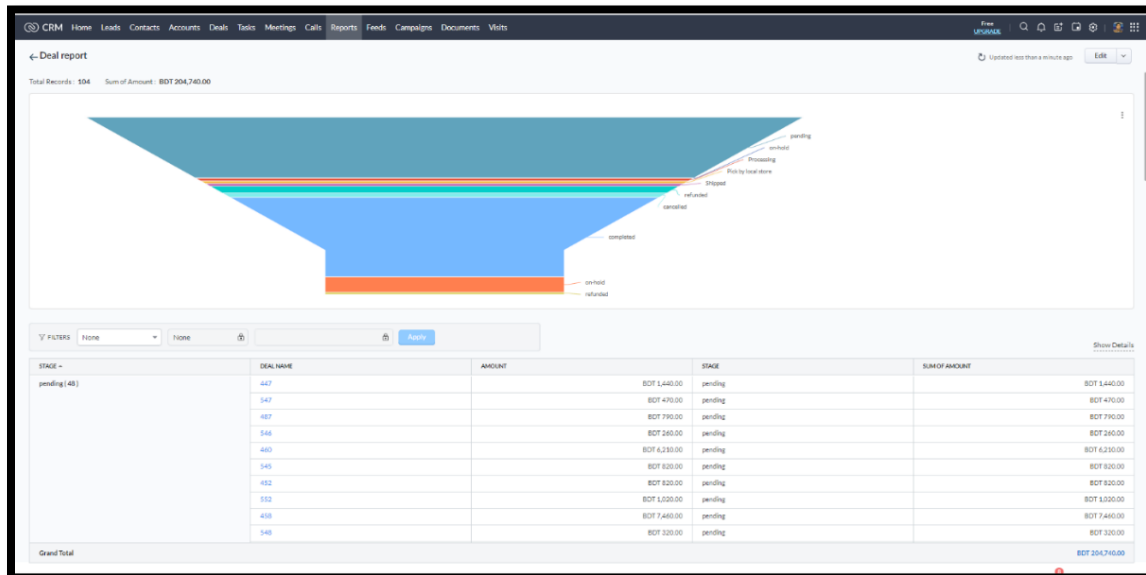


Figure 5.3.8: Deals report & graph

5.3.1.9 City wise sales report

City-wise data segregation can be an effective report for every business. By analyzing this report owner can decide which areas need more emphasis. Figure 5.3.9 shows the city-wise sales report.

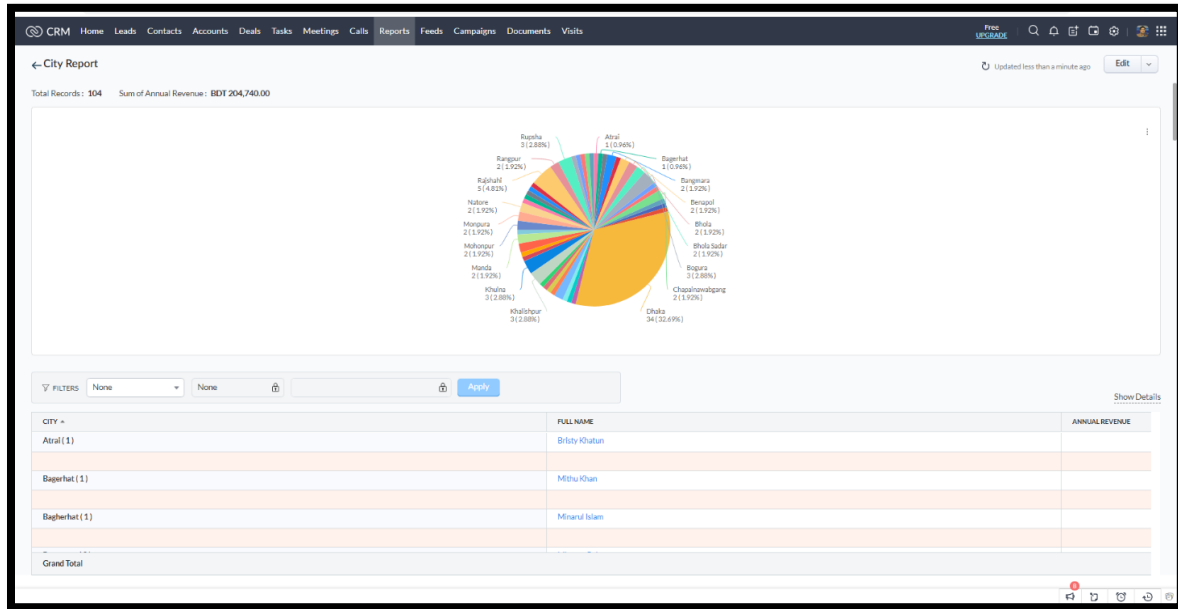


Figure 5.3.9: City-wise sales report

5.3.1.10 Deals Summary

Figure 5.3.10 shows the page of the summary of the deals.

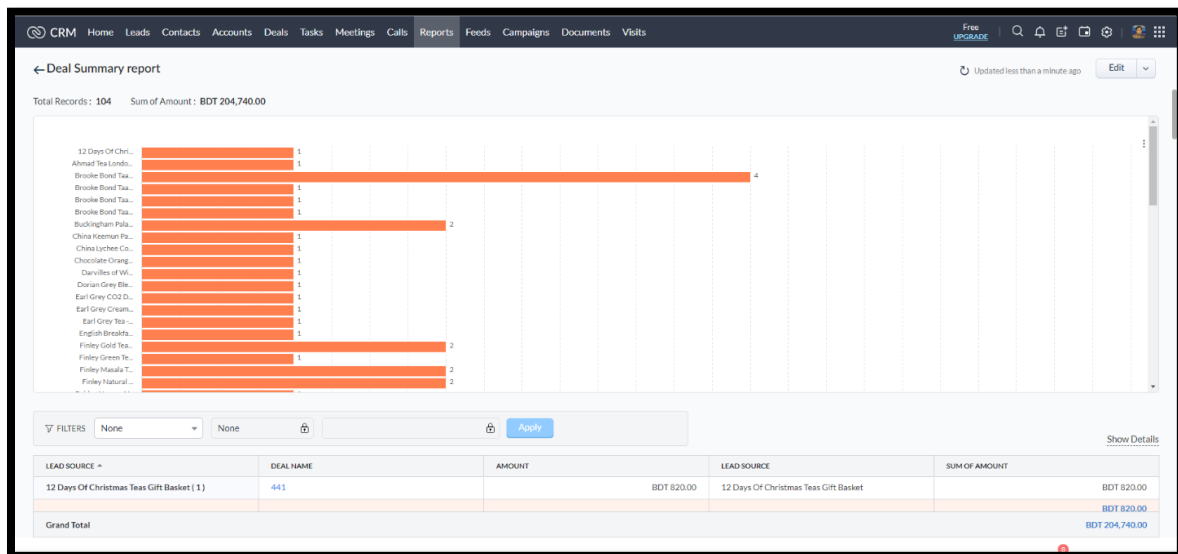


Figure 5.3.10: Deals summary

5.3.1.11 Order hold

Figure 5.3.11 shows the page of the order hold report.

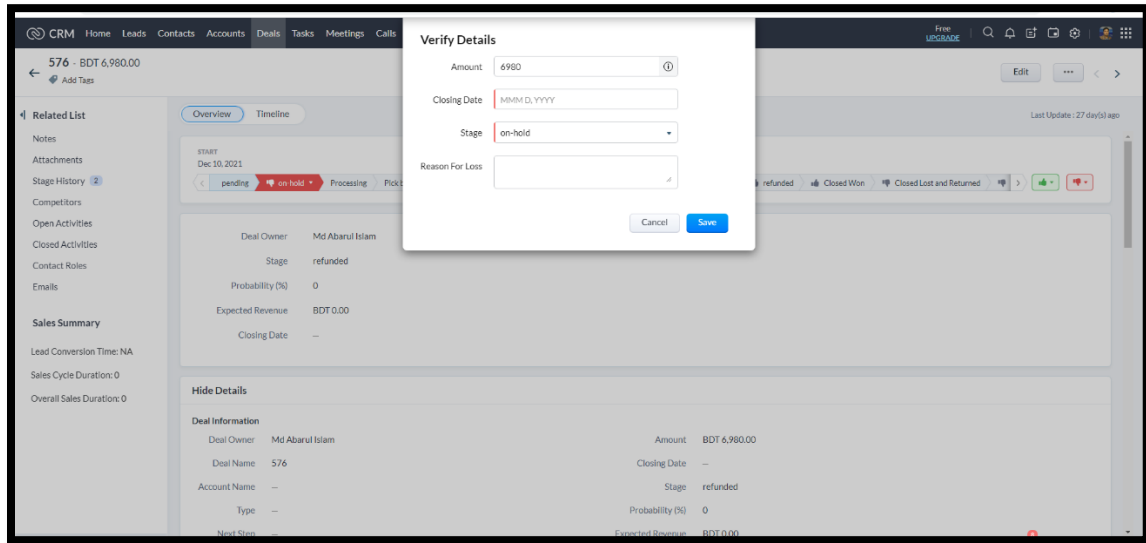


Figure 5.3.11: Hold Order

5.3.1.12 Customer Report

A loyal customer is a good sign for every business and so it is very important to identify them and the ratio. Figure 5.3.12 shows the customer report.

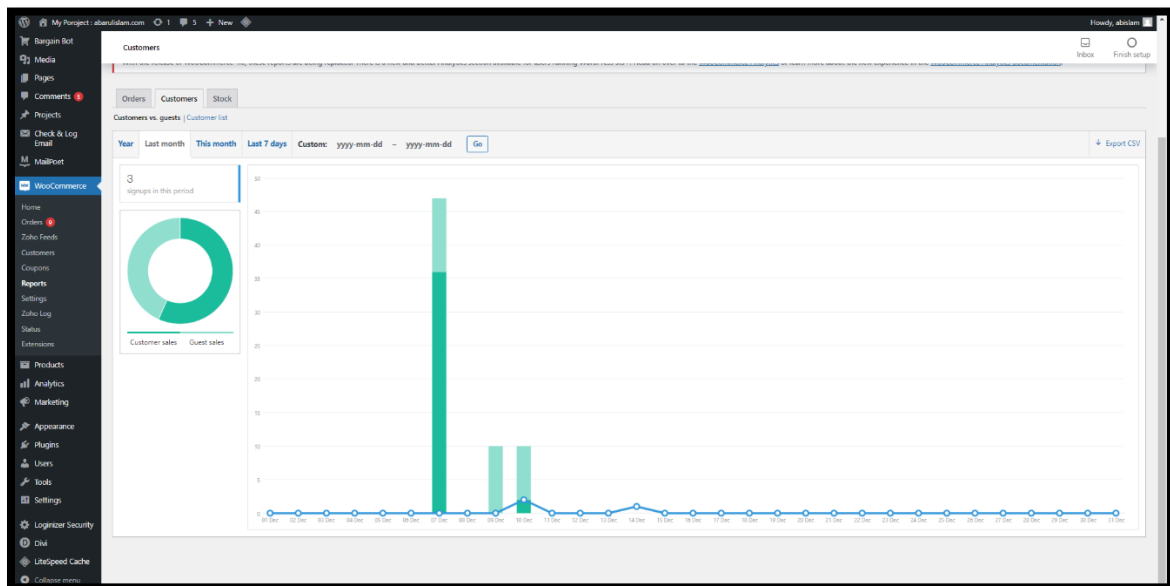


Figure 5.3.12: Customer Report

5.3.2 Implementation of User interactions

5.3.2.1 Add to Cart

Figure 5.3.13 shows how to add a product to the cart.

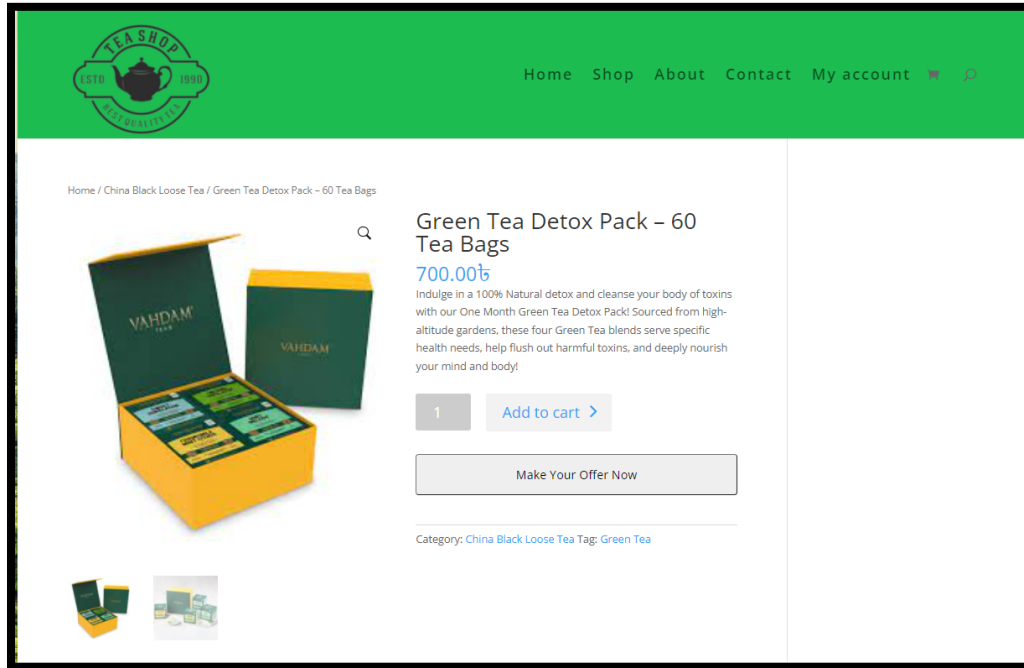


Figure 5.3.13: Add to cart

5.3.2.2 Sign up or log in

Figure 5.3.14 shows the signup or login page for user login or registration.

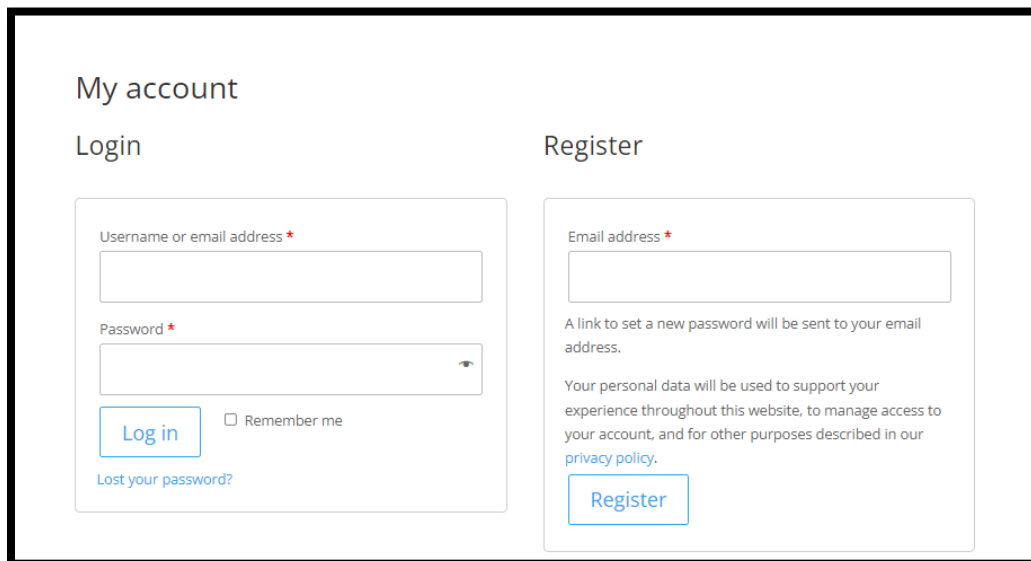


Figure 5.3.14: Sign up or log in

5.3.2.3 Checkout

Figure 5.3.15 shows the page for checking out the product already added to the cart.

TEA SHOP
ESTD 1999
TEA HEALTHY

Home Shop About Contact My account

Checkout

Have a coupon? [Click here to enter your code](#)

Ship to a different address?

Order notes (optional)
Notes about your order, e.g. special notes for delivery.

First name *

Last name *

Company name (optional)

Country / Region *
Bangladesh

Street address *
House number and street name

Apartment, suite, unit, etc. (optional)

Town / City *

District *
Dhaka

Email address *

Create an account?

Your order

Product	Subtotal
Seylon Pyramid Tea Bag × 1	170.00৳
Darvilles of Windsor English Breakfast Caddy - Loose Leaf × 1	700.00৳
Subtotal	870.00৳
Shipping	Flat rate: 120.00৳
Total	990.00৳

Cash on delivery
Pay with cash upon delivery.

I would like to receive exclusive emails with discounts and product information (optional)

Your personal data will be used to process your order, support your experience throughout this website, and for other purposes described in our [privacy policy](#).

[Place order](#)

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f t i r

Figure 5.3.15: Checkout

5.3.2.4 View Order details

Figure 5.3.16 shows the detailed view of an order.

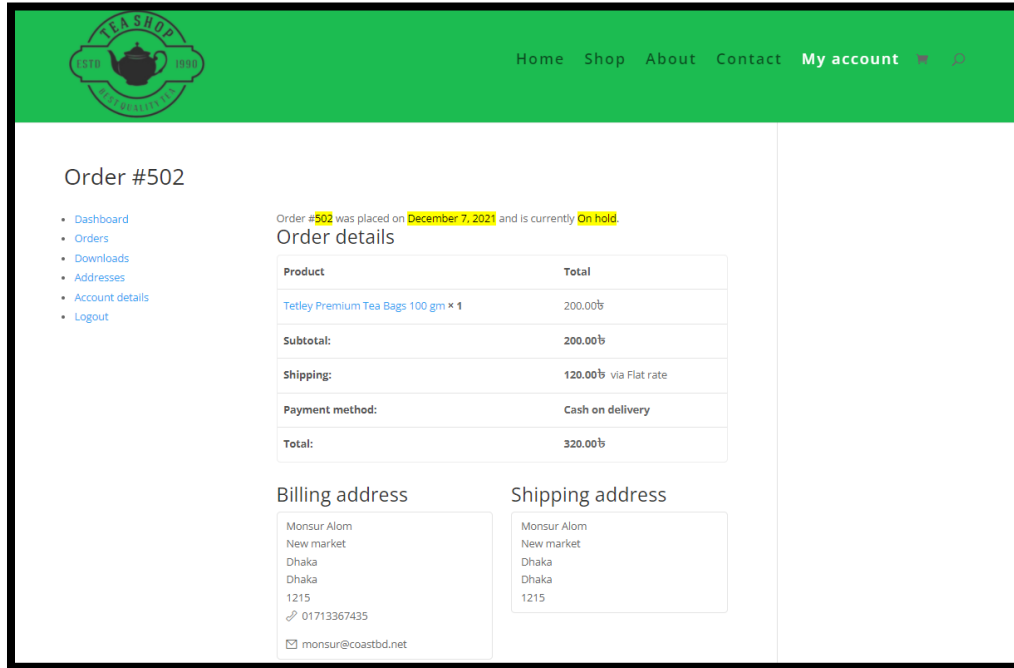


Figure 5.3.16: Order details

5.3.2.5 User Account details

Figure 5.3.17 shows the page for user accounts details and the details can be edited.

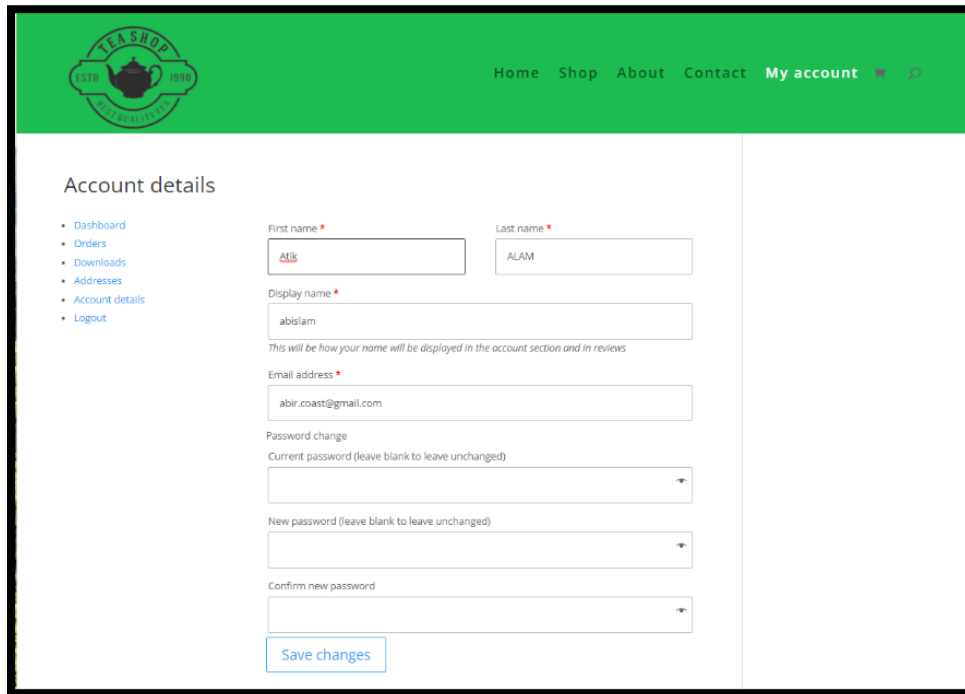


Figure 5.3.17: Edit item

5.4 Testing Implementation

Project name: Sales Decision Making in E-commerce Application Through Customer Data Analysis

Test designed by: Admin

Test executed by: Admin

Table 5.4-1: Test Case for Sales Decision Making in E-commerce Application Through Customer Data Analysis

TC No.	Test Case Name	Pre-Condition	Test Input	Expected Output	Actual Output	Status	Test Executed Date
1.	User Registration	Provide all required information	Input all information	Successfully register a new user	Successfully registered	Pass	28-12-2017
2.	User Login	Get registered	Input email and password	Successfully login	Logged in successfully	Pass	28-12-2021
3.	Browse Teas	Internet connection	Access the website	Show the items	Items showed correctly	Pass	28-12-2021
4.	Tea selection	Internet connection	Click on the required tea	Show details of the tea	Details of the tea showed	Pass	28-12-2021
5.	Continue without account	Provide all required information	Input all information	Placing order	Order placed without an account	Pass	28-12-2021
6.	Admin Login	Provide valid email and password	Input email and password	Successfully login	Logged in successfully	Pass	30-12-2021
7.	New admin registration	Admin must be logged in the system	Input all information about new admin	Successfully register a new admin	Registered new admin successfully	Pass	30-12-2021
8.	Add new tea	Admin must be logged in	Input all information about tea	Successfully add a new food item	New tea added successfully	Pass	30-12-2021

9.	Delete a tea item	Admin must be logged in the system	Click on the delete button	Successfully delete a tea	A tea deleted successfully	Pass	30-12-2021
10.	Edit a tea item	Admin must be logged in the system	Input the information of tea to edit	Successfully edit the details of a tea	A tea details edited successfully	Pass	30-12-2021

5.5 Test Results and Reports

Test reports are needed to reflect test results formally, this allows for rapid estimation of test results. This is a document that records data obtained from an evaluation test in an organized manner, describes environmental or operating conditions, and shows a comparison of test results with objectives.

In chapter 5.4 I showed all test case test inputs, expected output, actual output, and finally, I found my result and test result quite successful. My application is satisfied by users. The usability test tests the following characteristics of my application.

- ❖ Is it easy to use the app?
- ❖ Is the application easy to learn?
- ❖ How convenient is the application for the end-user?

So, at the end of development, I can carry the benefit of usability testing to the end-users or learners.

- Easier to use
- Friendly to all kinds of users including admins
- Better UI for interaction
- Help to maintain a great shopping experience with excellent reporting for admins.

It can be expected that this system will be a better online shopping system for Bangladesh.

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Discussion and Conclusion

Web-Based shopping System “Sales Decision Making in E-commerce Application Through Customer Data Analysis” has been successfully implemented. I tried to design this system user-friendly and efficient enough to work with.

I have been encouraged to develop this type of online shopping system because in my country people can't be familiarized with online shopping due to various reasons like non-user-friendly interface, less collection of varieties and because of this reason growth of digitalization getting slower. For this reason, I try to give my people that flexibility to get the ultimate shopping experience.

This document is meant to describe all the features and procedures I followed while developing the system. This document specifically addresses the details of the project, how it was developed, the basic requirements, the various features of the project, and the procedures used to achieve the objectives of that project.

6.2 Scopes for Further Development

I want to expand my work in the future. So, I have planned some scopes for further development. They are mentioned below:

- Want to add more payment gateways for payment flexibility.
- Want to add tea recipes collected from all over the world.
- Want to add a blog section where tea enthusiasts can learn more about tea.
- Want to add preorder and tea requests.

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