**Automobile Equipment’s Dedicated E-commerce and Automobile Services (AutoLab)**

A Project Report Submitted to the

Department of Computer Science and Engineering, Hajee Mohammad Danesh Science and Technology University in partial fulfillment of the requirements for the degree of

B.Sc. (Engineering) in Computer Science and Engineering.

Submitted By

Md. Abu Hasan

Student ID : 1702069

Level: 4 Semester: II

Session : 2017

Md. Aminul Islam

Student ID : 1602031

Level: 4 Semester: II

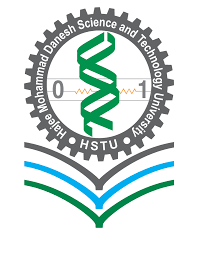
Session : 2016

H.M. Mehedi Hasan

Student ID : 1702070

Level: 4 Semester: II

Session : 2017



Department of Computer Science and Engineering

Faculty of Computer Science and Engineering

Hajee Mohammad Danesh Science and Technology University,

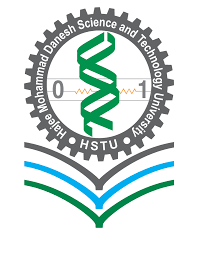
Dinajpur-5200

Department of Computer Science and Engineering

Faculty of Computer Science and Engineering

Hajee Mohammad Danesh Science and Technology University

Dinajpur-5200, Bangladesh



**DECLARATION**

The work entitled “**Dedicated Automobile Equipment E-commerce and Automobile Service (AutoLab)**” has been carried out in the Department of Computer Science and Engineering, Hajee Mohammad Danesh Science and Technology University is original and conforms the regulations of this University.

We understand the University’s policy on plagiarism and declare that no part of this project has been copied from other sources or been previously submitted elsewhere for the award of any degree or diploma.

……………..

Md. Abu Hasan

Student ID : 1702069

Level: 4 Semester: II

Session : 2017

……………………

Md. Aminul Islam

Student ID : 1602031

Level: 4 Semester: II

Session : 2016

……………………

H.M. Mehedi Hasan

Student ID :1702070

Level: 4 Semester: II

Session :2017

Table of Contents

[Chapter 1 Introduction 1](#_Toc116778702)

[1.1 Background 2](#_Toc116778703)

[1.2 Problem Statement 2](#_Toc116778704)

[1.3 Motivation 2](#_Toc116778705)

[1.4 Objective 3](#_Toc116778706)

[1.5 Feature of This Project 3](#_Toc116778707)

[1.5 Automobile services 3](#_Toc116778708)

[Chapter 2 Existing system Analysis 5](#_Toc116778709)

[2.1 Overview 6](#_Toc116778710)

[2.2 Available Systems 6](#_Toc116778711)

[2.3 E-commerce Website 6](#_Toc116778712)

[2.3.1 Star-tech 6](#_Toc116778713)

[2.3.2 Rokomary (Suggest anything else than this!!) 7](#_Toc116778714)

[2.4 Automobile Service Platform 7](#_Toc116778715)

[2.4.1 Pitstop 7](#_Toc116778716)

[Chapter 3 Proposed System 8](#_Toc116778717)

[3.1 Overview 9](#_Toc116778718)

[3.2 Description of Proposed System 9](#_Toc116778719)

[3.2.1 Advantages of Proposed System 10](#_Toc116778720)

[3.3 Feasibility Study of This project 10](#_Toc116778721)

[3.3.2 Economic Feasibility 11](#_Toc116778722)

[3.4 Summary 12](#_Toc116778723)

[Chapter 4 System Design 13](#_Toc116778724)

[Chapter 5 Implementation 15](#_Toc116778725)

[Chapter 6 Testing 26](#_Toc116778726)

[Chapter 2 Conclusion 28](#_Toc116778727)

[7.1 Conclusion 29](#_Toc116778728)

[7.2 Future Plan 29](#_Toc116778729)

[Chapter 8 references 30](#_Toc116778730)

**Abstract**

In today’s world, selling or buying products online has become much more demanding than traditional hand-to-hand selling or buying and it is increasing day by day. But not every individual can afford having an e-commerce site of their own or any software to manage their businesses even if they wish to digitalize their businesses. There are many individual renowned e-commerce websites and many individual companies who create and produce software solution for managing businesses. But this project is a platform where both the e-commerce site and software solutions (Business Associate) are combined together so that individuals or organizations can meet up for the purpose of business needs. This will create some opportunities for local or small online-based organizations as well as established organizations. Business associates will provide some features to maintain and manage businesses. The users will be able to find different organizations that can provide for their needs. In short, this system will work as an online shopping complex where different shops will have different e-commerce websites and software solutions in order to provide and manage any kinds of buyer’s requirements.

# Chapter 1 Introduction

## Background

“Dedicated e-commerce and automobile services (AutoLab)” is an e-commerce website for selling dedicated automobile parts and equipment and also, it provides a platform for automobile (mainly car and motorcycle servicing and repairing) systems for running businesses. It brings together a marketplace (online) and a servicing center. Automobile services are an important and emerging issue for all travelers across the country. We will provide reliable products/parts and authentic services which is a very important issue for a user. The project presented here was developed after visiting various e-commerce site and their features. An effective and real-time system based on the MVC method is introduced in the project [1].

## Problem Statement

The E-commerce site has been widely developed for several decades. A lot of work has been done to handle related problems under different attributes, but there are a lot of scopes to upgrade it. Now most e-commerce websites, mostly rely on selling finished products and selling traditionally. We will provide all the updated price and servicing cost info and the buyer can easily pay and verify the product and service on the website.

## Motivation

The main motivation that works behind the development of this project is that we will be able to improve our skills and learn many new skills which will be beneficial for us in the future. We have gone through many different project ideas and have selected this “Dedicated e-commerce and automobile services” project after analyzing thoroughly. In the analysis part of this project, at the time of analyzing existing systems, we have found some drawbacks that we have faced personally.

Another thing is that each existing e-commerce site has its platform for doing business. So as a buyer, we have to enter each site to browse products of interest. We don’t know any e-commerce site in our country that provides automobile parts and services at the time like Ryans, or Star-Tech for computers. This led us to the need for a single platform for different types of e-commerce sites for automobile parts and services at a time.

## Objective

Our main objective is to minimize the drawbacks of existing systems and provide some features to manage a business through our system. Another objective is to make one platform where a seller can run his business in both online and traditional ways, and also make the shipment faster, and payment faster. There will be no middleman between buyer and seller. Another objective is to make a reliable online shop of automobile parts and an authentic service provider.

## 1.5 Feature of This Project

This web system will be capable of handling the full business. For that, the system is divided into two sub-systems.

**1.5.1 Dedicated e-commerce**

This is a conventional and dedicated e-commerce site. Some core Features of this system are,

* Login system for customers and guest purchase option
* A clean and decent homepage for a customer to purchase a product
* Dedicated Wishlist for the product for future purchases.
* Dashboard to check order status, purchase history, Wishlist items, etc.
* Decent Checkout and the Cart option
* Variety of payment gateway options
* Shipping and Taxes include which create a clear and legal transaction.
* Feedback and rating option to enable them to contribute proper feedback on purchase.

## Automobile services

Some core Features of Automobile services:

* Service category
* Genuine and valid pricing
* Preferred timeline booking
* Accurate timeline
* Fast delivery and Professional finished work
* Customer membership plan for both sides’ extra benefits

**1. 6 Organization of this project (incomplete)**

During the development of this project we have used System Development Life Cycle model (**SDLC)**, among the available models for developing a project. Here we organized our project in the following pattern,

* **Chapter 1** includes the introduction and features of the proposed system.
* **Chapter 2** includes the analysis of existing systems and their working principles.
* **Chapter 3** includes the details and advantage of the proposed system and feasibility study.
* **Chapter 4** describes about the system methodology and its principles that have used in system design phase.
* **Chapter 5** includes the tools, methods and techniques, GUI that have played important roles in system implementation phase.
* **Chapter 6** includes the various testing of the system such as unit testing, system testing etc.
* **Chapter 7** includes the conclusion and gives suggestion for further expanding the proposed system in near future.

# Chapter 2 Existing system Analysis

## 2.1 Overview

The systems that exist today are not similar to ours. As we can see there are lots of e-commerce websites and lots of different servicing websites worldwide to run their company online, but from the perspective of our country, we haven't found any dedicated solution for solving the issue and making a generalized platform for all automobile owners and drivers. So, we can see there is so much hassle to get genuine products and authenticated service at very reasonable prices. This leads us to the making of our system which will merge all the different systems into one platform.

## 2.2 Available Systems

As we see our system is a combination of two systems and there are no exact systems as our system so we study about two different types of system.

* E-commerce Website
* Automobile Service Platform

## 2.3 E-commerce Website

The core motivation that works behind the development of this project is that we will be able to improve our skills and learn many new skills which will be beneficial for us in the future. There are thousands of e-commerce systems running on the internet. Each of them has different working strategies, methods and platforms. We will now go through some of the existing systems available. Here the list of some existing systems.

* Star-tech
* Rokomary

## 2.3.1 Star-tech

Star-tech is one of the leading business websites for selling computers and digital accessories in Bangladesh. This website is owned and run by star-tech. They have an IT specialist group to look after the system. The concept of their business is to source digital products through giant Tech Hardware companies in their warehouses and sell locally at wholesale and retail prices. The system works fine and performs most of their requirement. But it cost them a lot because of a dedicated team working on that.

## 2.3.2 Rokomary (Suggest anything else than this!!)

Rokomary is also a leading business website trending in Bangladesh. It is a single platform only for buying and selling books. On this site, there is no issue with the quality of products however it only focuses on a single selling item which is books. Here the buyers also need to visit the above site/individual platform to buy books.

## 2.4 Automobile Service Platform

One of the main feature of our system is the Automobile service providing. Basically there a few website in our locality which deal with the onsite work to get a solution in online. A few companies worldwide for this service solution online efficiently. An example of a company that provide the solution by a similar website.

* Pitstop

## 2.4.1 Pitstop

Pitstop is one of the few automobile service websites for providing car service and repair to India. Pitstop is an online vehicle repair platform that allows consumers to arrange car maintenance at a convenient time. It started in 2015 in the city Bengaluru at Karnataka state in India. Their total funding amount till 2021 is $9,702,517 in number of funding rounds: 5.

They have 12 quite pleasant number of investors.

# Chapter 3 Proposed System

## 3.1 Overview

Analyzing the existing systems, we decided that the existing systems are not effective and efficient enough for the demand and satisfaction of running a business in both traditional way and digital ways (online platforms). They have some drawbacks and also contain fewer features that make them behind. The drawbacks of present systems are listed below:

* Scattered shop and services. Most companies haven’t an online platform for products and services.
* High pricing for authorized shops and the local shop is not reliable.
* Need a lot of employees to run the system.
* Sellers do not get money instant after shipment.
* Marketing mainly gets the system. Sellers mostly do not get any marketing.
* Most of the products are finished goods. Raw things sold less.

Therefore, keeping these drawbacks in mind, we have been trying to develop a system that is intended to solve these problems. We proposed a website where all the functionality will be done in one single platform.

## 3.2 Description of Proposed System

The proposed system is designed to overcome the drawbacks of existing systems. Our proposed system can be divided into two segments.

* Online Market Place
* Services

In the first segment, we are describing that our system will work as a single marketplace where different types of products from different companies will be available. This will emerge some opportunities for small business individuals as well as established ones. Our system will make sure that the shops that are doing business through our system maintain reliability and efficiency. This will help the buyers to get to know other online-based organizations which can provide their needs and which are more reliable than the knowing ones. It will help a local businessman in advertising their business methodologies as well as becoming trustworthy. As we mentioned earlier, our system will merge with all kinds of different business organizations, this will help the users to cross-check the different prices of the same products on different sites. Our system will have some conditions that will allow the business owners to maintain reliability and effectiveness by keeping up competitive rivalry against one another.

In the second segment, we are describing the services related to the products which make our system different and unique from all other existing ones. The system will have professional mechanics who can give the best services and can help in maintaining the business. Buyers can book the service online, each service has individual pricing, and the Buyer can register as a member for a certain period (month, year) for regular services as a member.

## 3.2.1 Advantages of Proposed System

The proposed system will provide some advantages over the existing system that will make it more effective and useful according to the need and demand of people and organization:

The proposed system will merge different singular platform-based business organizations into one massive single platform.

* It will maintain the reliability and efficiency of organizations.
* It will help the buyers to find all kinds of products on one single platform.
* The buyer will be able to check same product price on different sites.
* Small or local organizations will have a platform to boost up their business.
* Service membership is an new era and buyer can be stress free for any kind of technical problem of his vehicle.
* It will combine the traditional business methodologies with the modern digital online based business methodologies.

## 3.3 Feasibility Study of This project

Feasibility studies aim to objectively and rationally uncover the strengths and weaknesses of an existing business or proposed system, opportunities and threats present in the environment, the resources required to carry through, and ultimately the prospects for success. It focuses on these major questions:

* What are the user’s demonstrable needs and how does a candidate system meet them?
* What resources are available for the candidate system?
* What are the likely impacts on the candidate system?
* Whether it solves the problem or not?

During feasibility analysis for this project, the following primary areas of interest are to be considered. In the feasibility study of the system these terms have to be considered:

* Technical Feasibility
* Economic Feasibility
* Schedule Feasibility

**3.3.1 Technical Feasibility**

Technical feasibility involves the evaluation of the hardware, software, and other technical requirements of the proposed system. For this system hardware requirement is a Personal Computer, software requirements are text editors, local apache server, and a browser. As a text editor for this system, Notepad++, Visual Studio Code is used. As local apache servers Xampp is used with PHP 7.4.6 and for database it supports MySQL 5.2.0, for browser Google Chrome and Mozilla Firefox developer edition is used.

## 3.3.2 Economic Feasibility

Economic justification is generally the “Bottom Line” consideration for most systems. Economic justification includes a broad range of concerns with cost-benefit analysis. In this case, we weigh the cost and the benefits associated with the candidate system and check if it suits the basic purpose of the e-commerce system. The project is economically feasible as it requires a PC though it is now in a development stage. As soon as the beta testing overcomes above 90%, we will launch an app version that will make the system more economically feasible. The customer will have to pay the amount which they are seeking for. The users need to connect to the internet.

**3.3.3 Schedule Feasibility**

A project will fail if it takes too long to be completed before it is useful. Typically, this means estimating how long the system will take to develop and if it can be completed in a given period using some methods like a payback period. Schedule feasibility is a measure of how reasonable the project timetable is. Given some technical expertise, this project timeline is not more than one and a half years.

## 3.4 Summary

The objective of our project is to build an e-commerce site and automobile servicing platform where all kinds of spare parts, rare parts and accessories will be sold along with some professional and trained mechanics will serve the automobile services in their workshop but connect through our system directly to the vehicle operators who need the service for their vehicles. Our project is a combination of e-commerce sites and automobile servicing platform. The e-commerce site will create a single platform for all automobile spares and accessories which will maintain reliability and trustworthiness. And the automobile servicing will help to get the proper servicing with the reasonable price. To bring back the faith in online-based shopping systems, overcoming the drawbacks of existing systems that makes our system more efficient and unique than the others.

# Chapter 4 System Design

# Chapter 5 Implementation

**5.1 Overview**

This is the most important phase to build a project. The project takes shape during the implementation phase. This phase involves the construction of the actual project based on analysis and design. Programmers are occupied with encoding, designers are involved in developing the graphic materials, contractors are building, the actual reorganization takes place. The implementation is the construction of the actual project.

**5.2 Tools and Technologies**

Tools and technologies are the most important part to develop a project. The tools denote the components that are used to create the environments for the programmers.

Technology is the collection of techniques, skills, methods, and processes used in the production of goods or services or in the accomplishment of objectives, such as scientific investigation. Technology can be the knowledge of techniques, processes, etc. or it can be embedded in machines, computers, devices, and factories, which can be operated by individuals without detailed knowledge of the workings of such things. The technology describes the way to code a particular project. In the implementation of this project the following tools and technology are used:

**Language**: HTML, PHP, CSS, MYSQL, BOOTSTRAP, JAVASCRIPT, JQUERY

**Framework**: LARAVEL

**Environment**: Windows 8 and above, GitHub

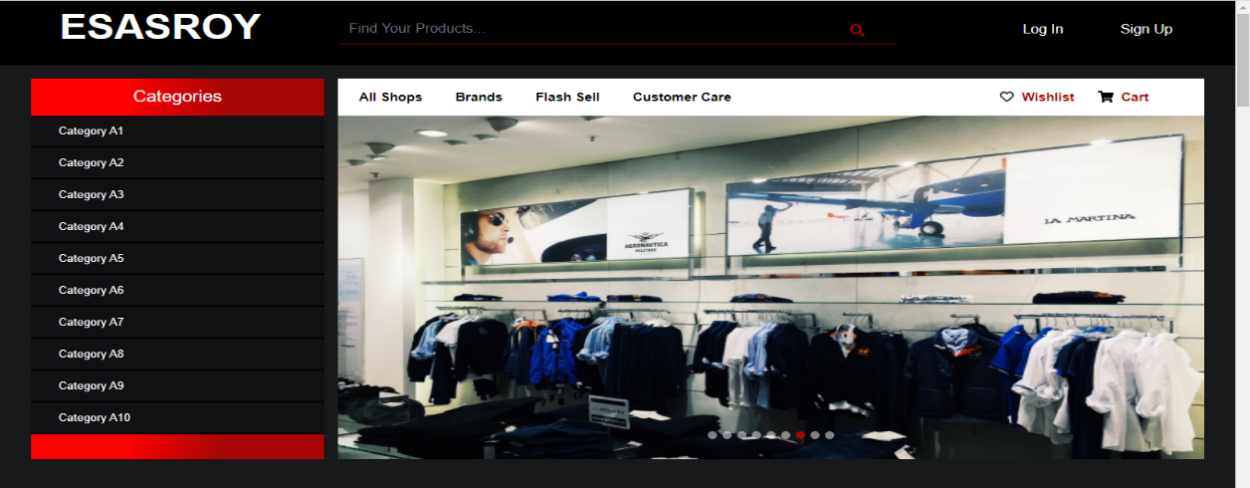
**Tools:**

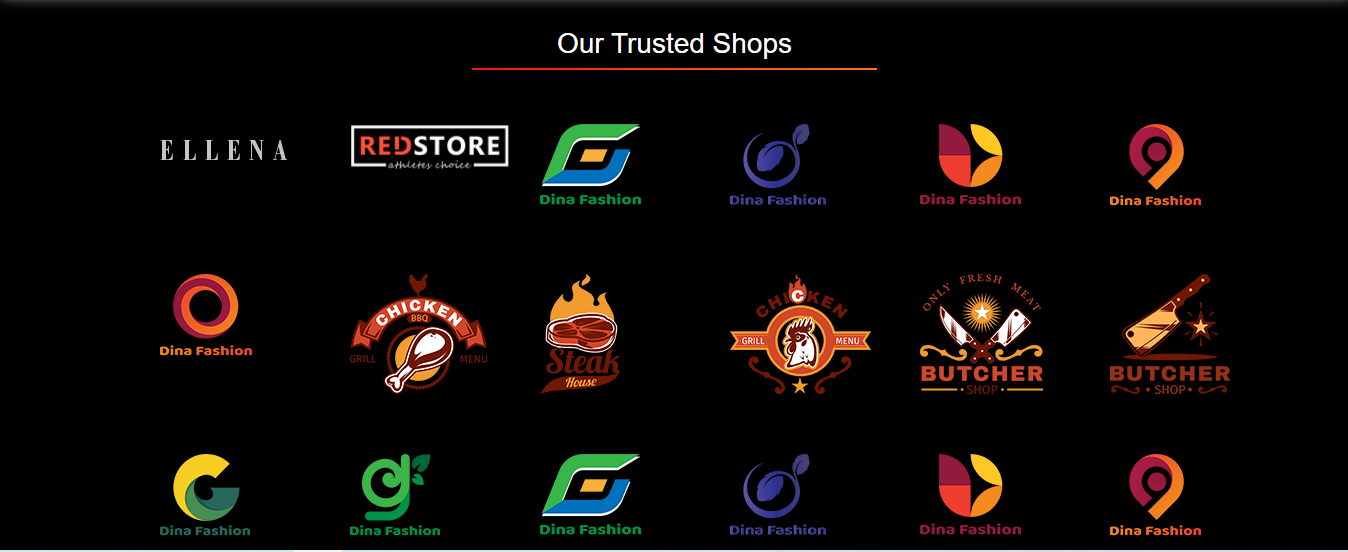
* Apache Server
* Visual Studio Code
* Composer
* GitBash (version control)

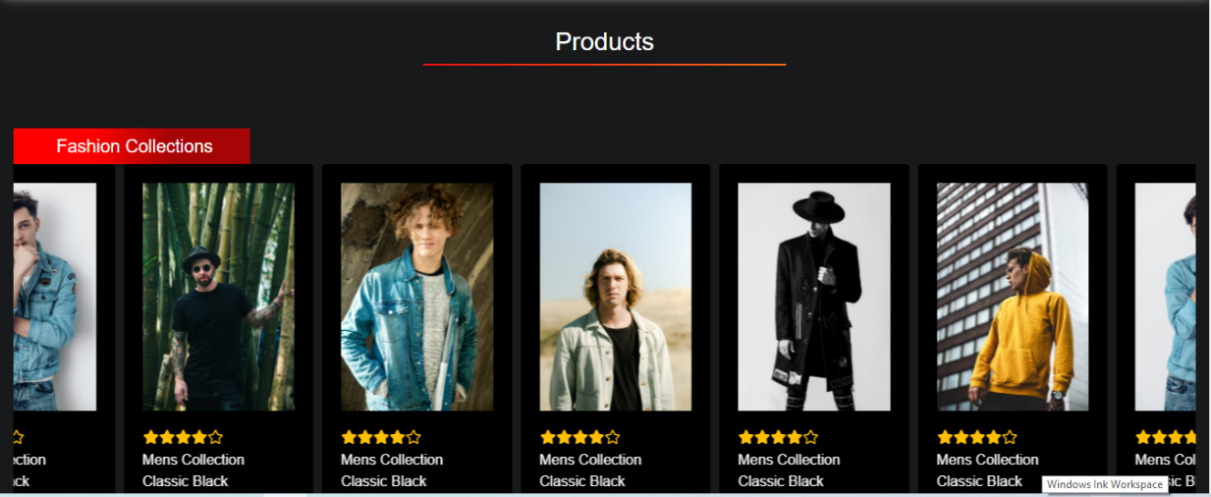
**5.3 User Interface (UI) for User**

Graphical User Interface (GUI) is the way to connect the user to this system. It is a very important element for a system. Good GUI always attracts more people to the system.

**5.3.1 Homepage**

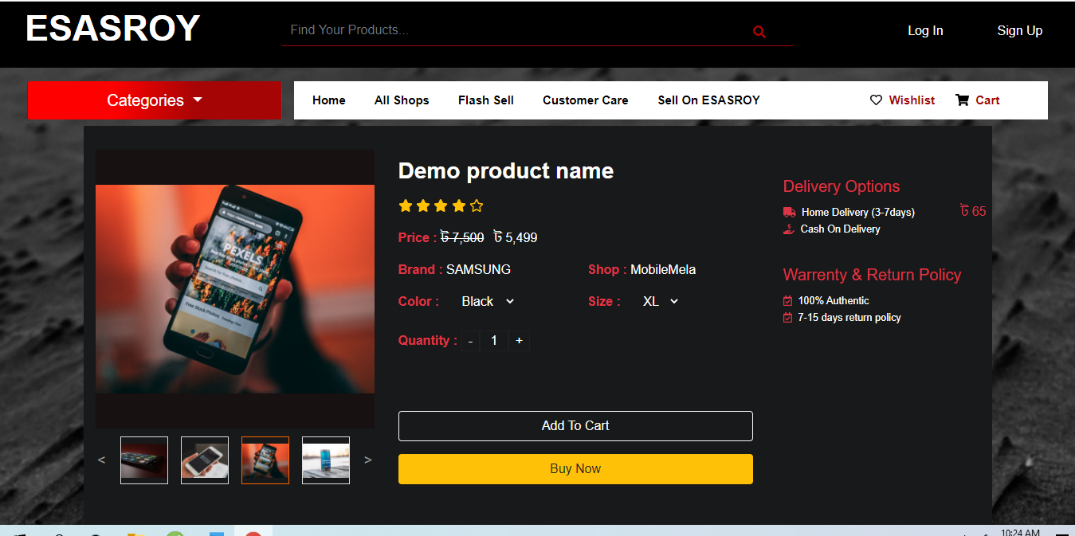






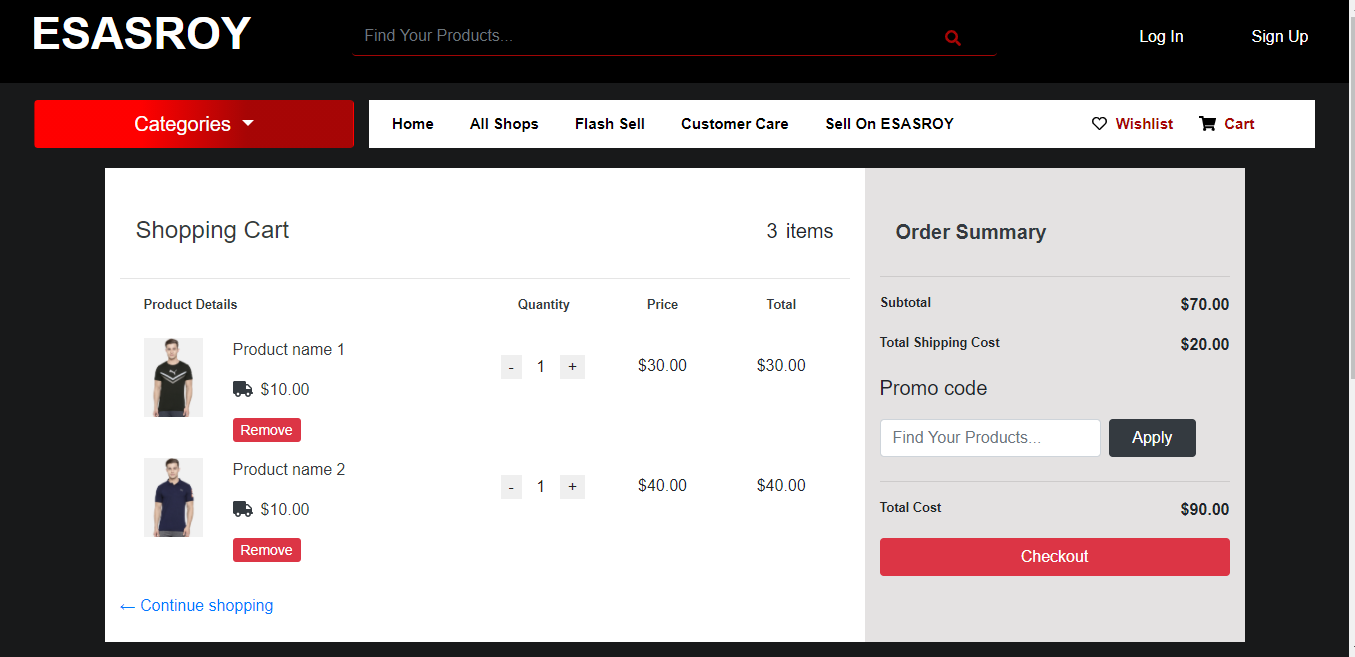
This is the Homepage of this system. Everyone can see this page when they will visit this system. It is a dynamic web-page. Where all data comes from Database, no static data used in this system. Users can see the product directly after visiting the system, User do not need to register to view a product from this system, but to order users just need to Sign up in the system.

**5.3.2 Product Specification**



A single product specification is shown here. Here a customer can buy a product directly and also add a product to the cart and buy later(till the cache expires and session ended). Delivery address and payment method are also shown here.

**5.3.3 Shopping Cart**



Shopping Cart is a web-page where products are store when a user wants to buy a product. It is mostly used to buy and handle when multiple products buy at a time. The Total amount (summation of product price, taxes, and delivery charge) and quantity of product are shown here. They can checkout there and make payment using different payment gateways like Bkash, Nagad, Rocket, Card and Cash on Delivery.

**5.3.4 Log-in and Sign-up Form**

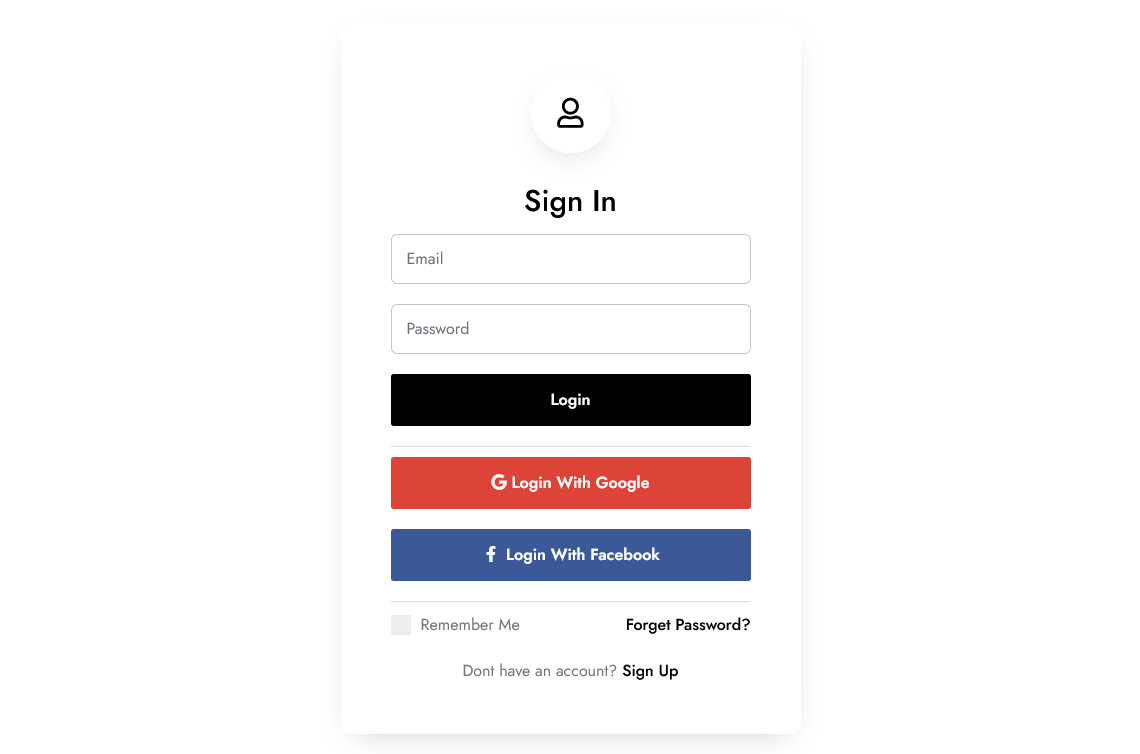


Figure 5.1: Customer login form for user end

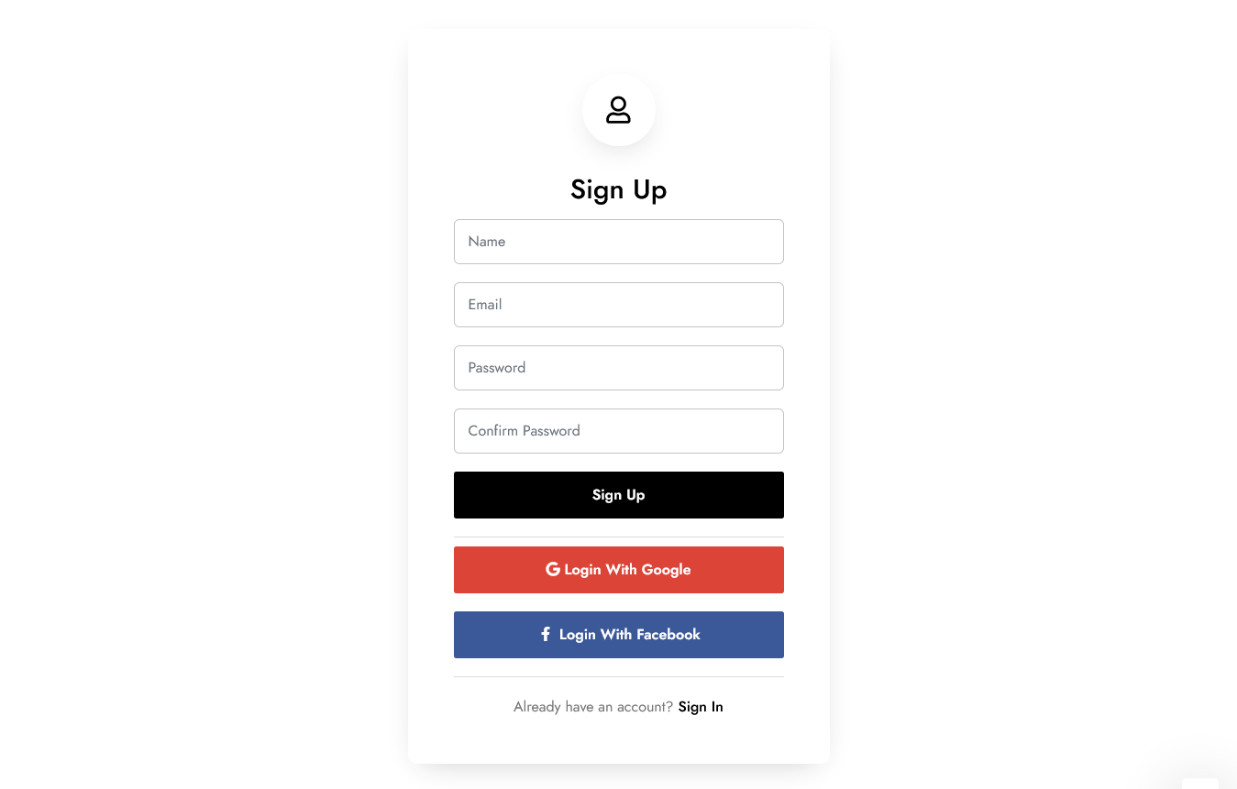


Figure 5.2 Customer Signup form for user end

This is customer’s sign-up and log-in form. Everyone can join this system through this page. If anyone forgets his password, he can recover it through this page.

**5.4 User Interface (UI) for Business Admin**

This section describes how a Business Admin can run his Business is this system. Basically the business admin are the assigned staff by the owner to manage the various part of the business. It is the UI for Super Admin. The log-in page, admin dashboard, product stock, product specification pages are here.

**5.4.1 Business admin and Super Admin Log-in Form**

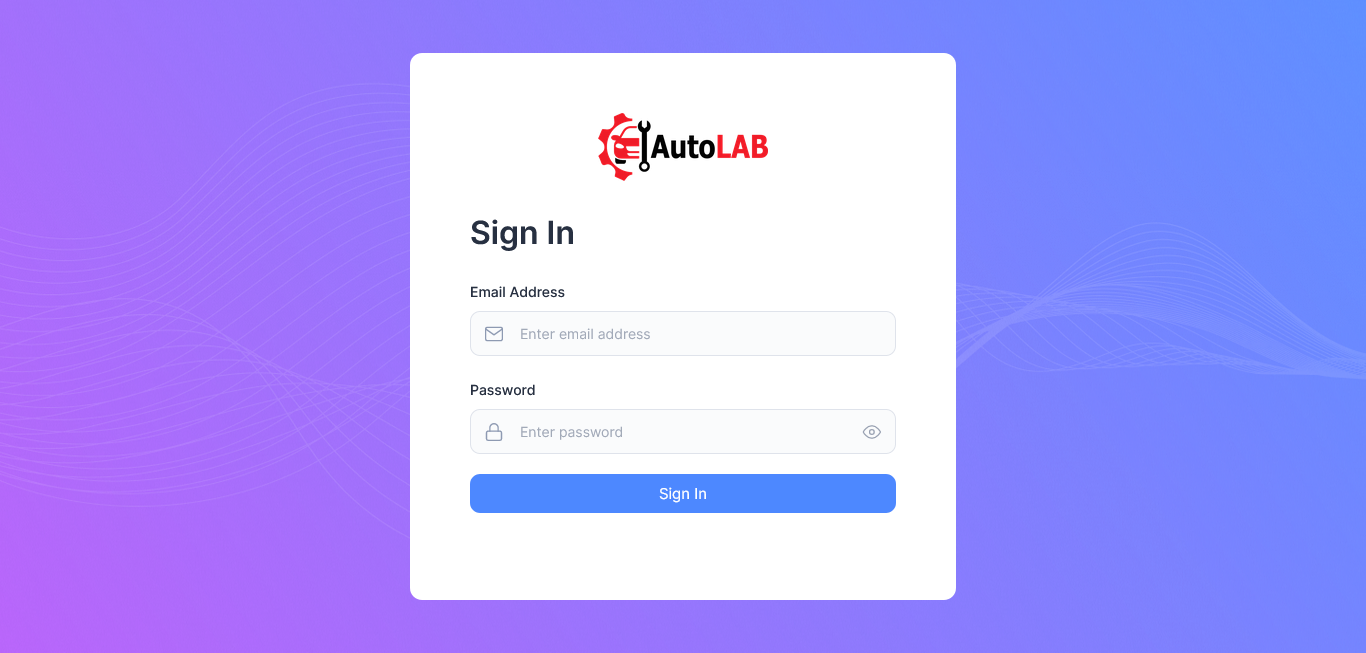


Figure 2Business admin and Super Admin Log-in Form

This is a registration form for Business Super Admin. When a business super admin wants to join with this project, they need to fill up this form and send a request through this form. After verification check, the System super admin can provide an account or not.

**5.4.2 Business Admin Dashboard and Report**

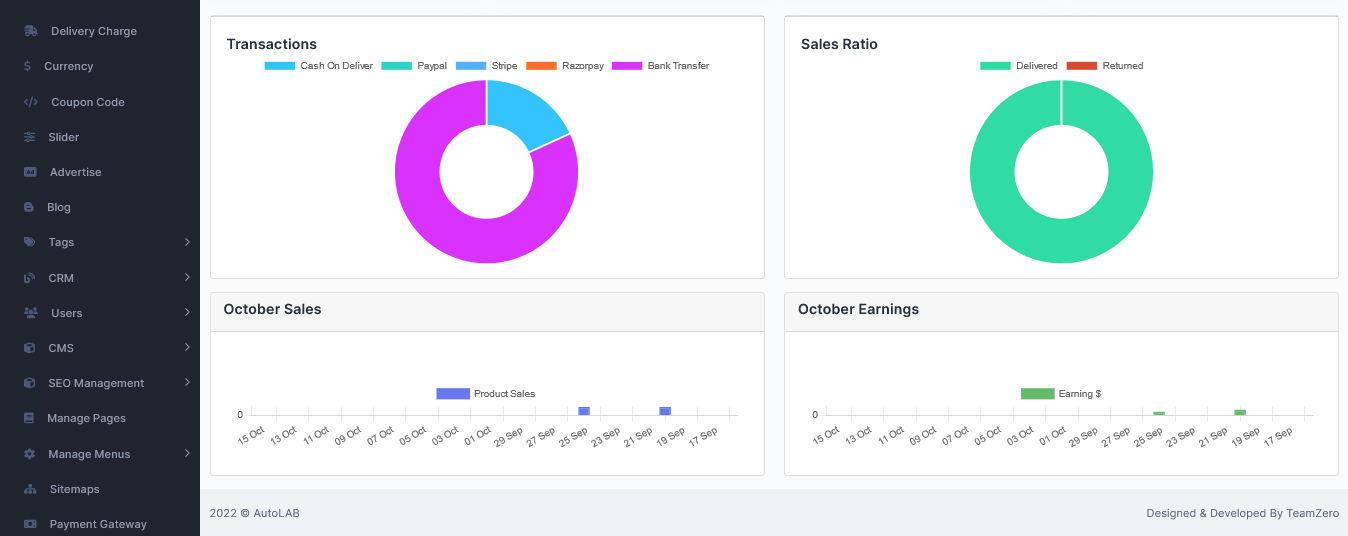
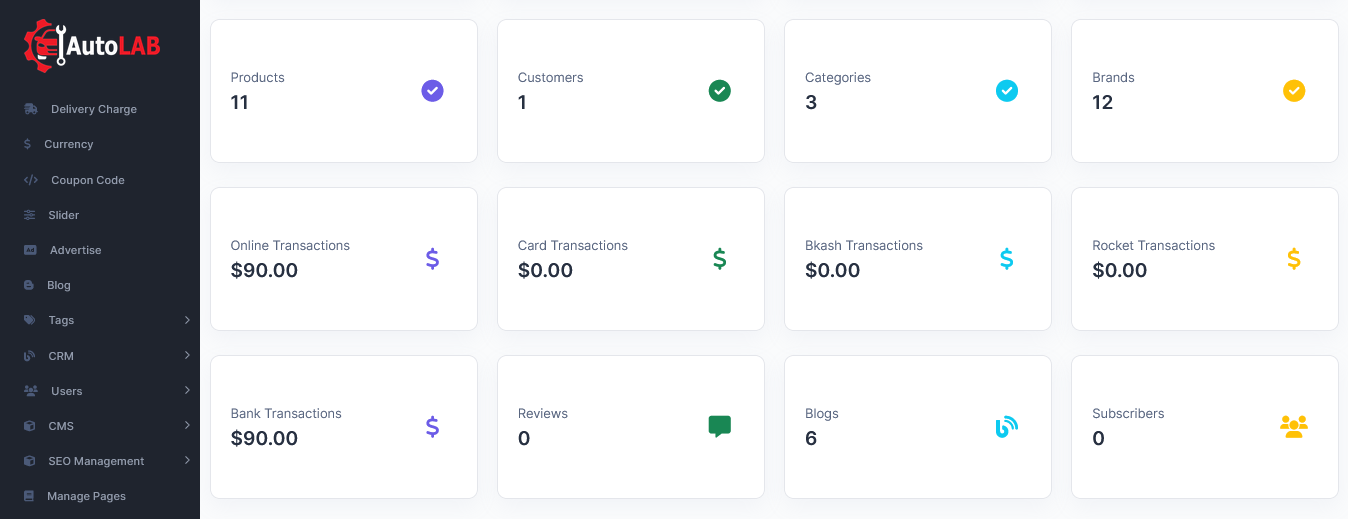
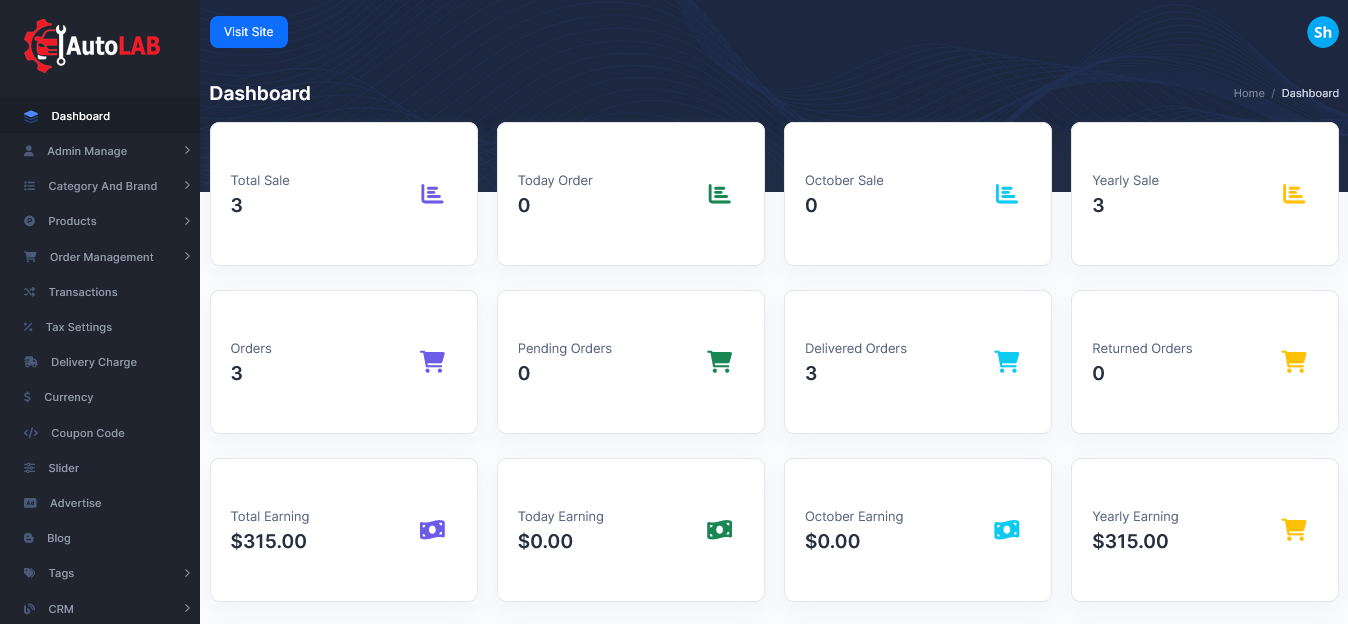
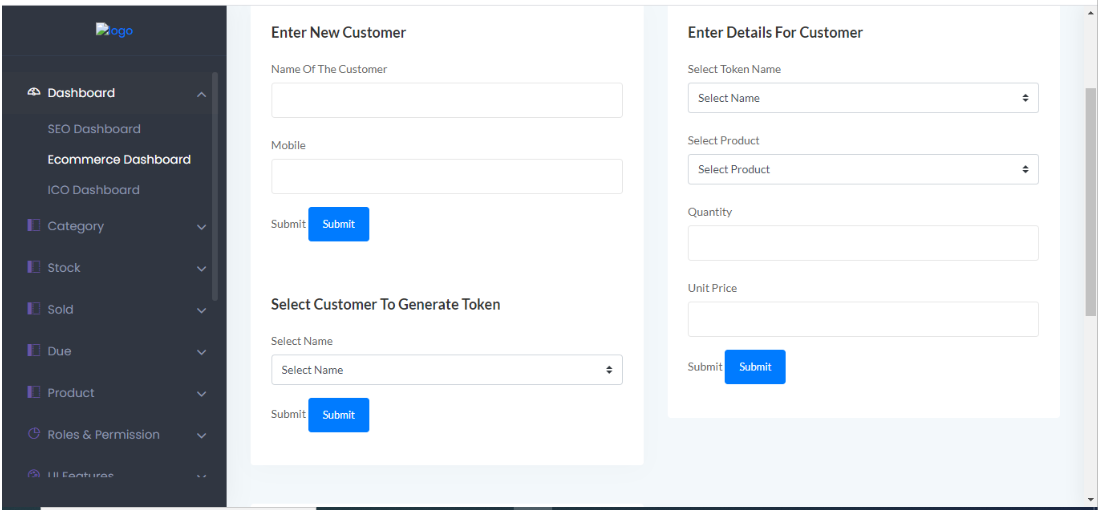


Figure 5.3Dashboard for business admin

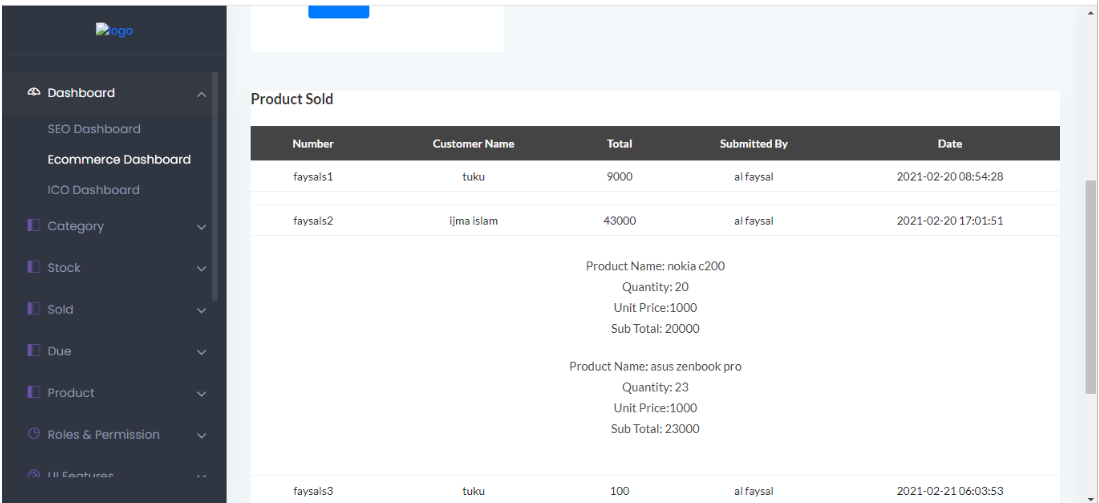
This is a Dashboard for Business Super Admin and Business Admin. Here Business super admin can use Product section, Order management, Shipment, Taxes, Coupon management all related to e-commerce section in this system. In product specification they need to upload price, short and long description, image, etc.

**5.4.3 Business Admin Dashboard and On-store Sale**

****

This is a part of the Dashboard for Business Super Admin and Business Admin. Business admin creates new customers and saves their information in it.

**5.4.4 Business Admin Dashboard and Product Specifications**

****

This is a part of the Dashboard for Business Super Admin and Business Admin. Here Business Super Admin and Business Admin can see the report about sales between any two dates.

**5.5 User Interface (UI) for System Admin**

This section is how to a system admin run system. As this is only single vendor e-commerce with service platform which is own by a single organization this is why there is option to limit the working field of the other assigned staffs to their different role and give them selected permission in this website. This is the UI for System Admin has full authority over this system. They have access to any information in this system. They can see it, modify it needed. Although they have the complete control over the system but mainly here is shown the core functionality of a super admin which other admins can’t perform.

**5.5.1 System Admin Dashboard (Admin List Management)**

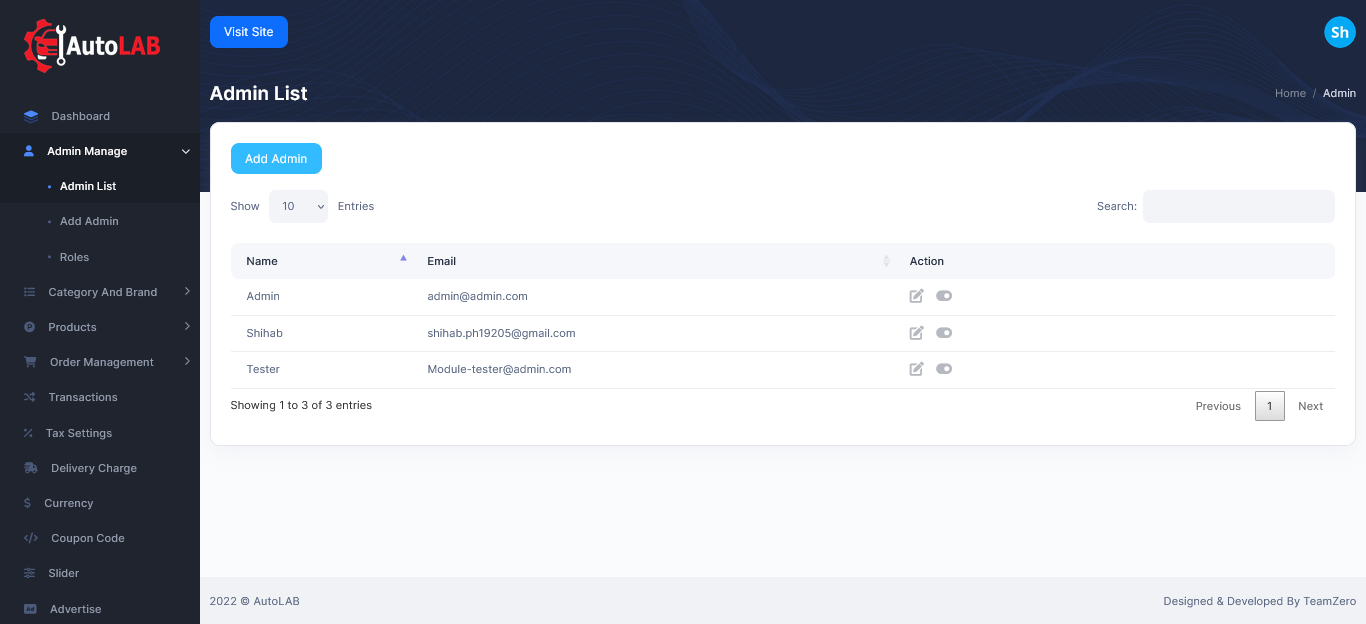


Figure 3 Business Admin List Management by Super Admin

When a business admin will be assigned on the project to perform specific action or play a role then the super Assign a user using their email addresses and their basic information. We’ve tried to make simple user creation to remove complexity and increase efficiency. Although the business admin are being selected by the owner so all information are being kept to the owner as they are being hired to work on the system.

**5.5.1 System Admin Dashboard (Admin Creation and Assigning Role)**

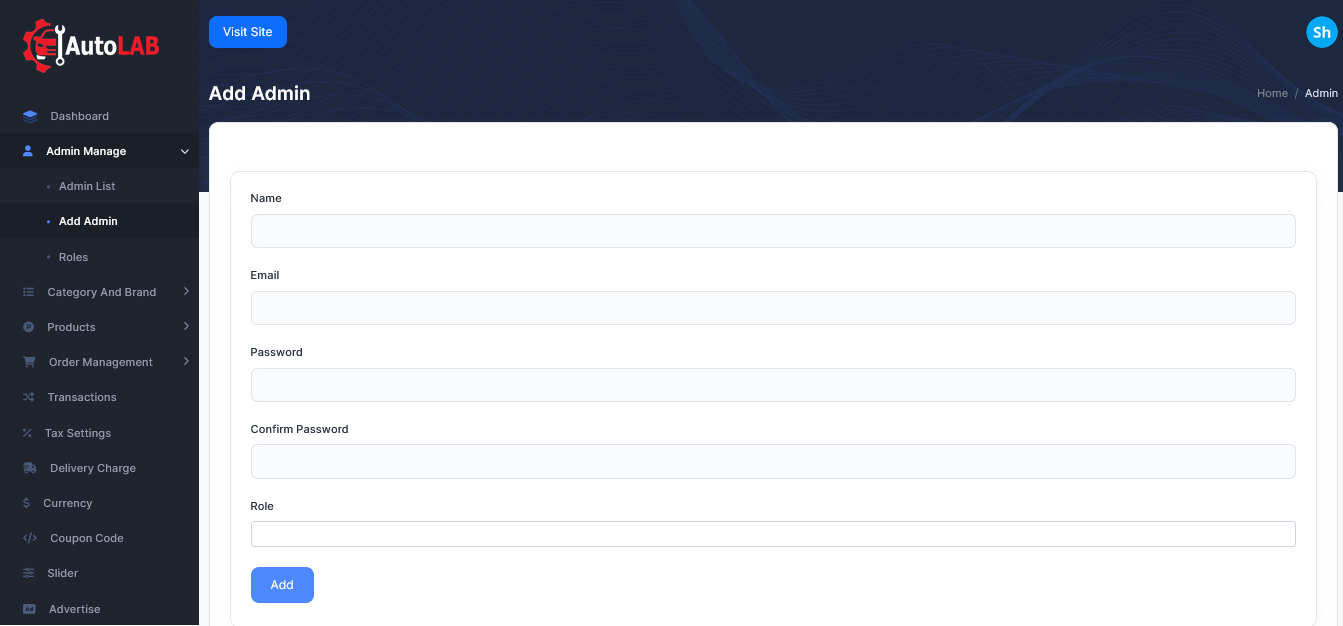


Figure 4 Business Admin Creation and Assigning Role by Super Admin

Basically here the super admin add a business admin account and assign them on a role to work as an employee of the organization.

**5.5.1 System Admin Dashboard (Admin Role Management)**

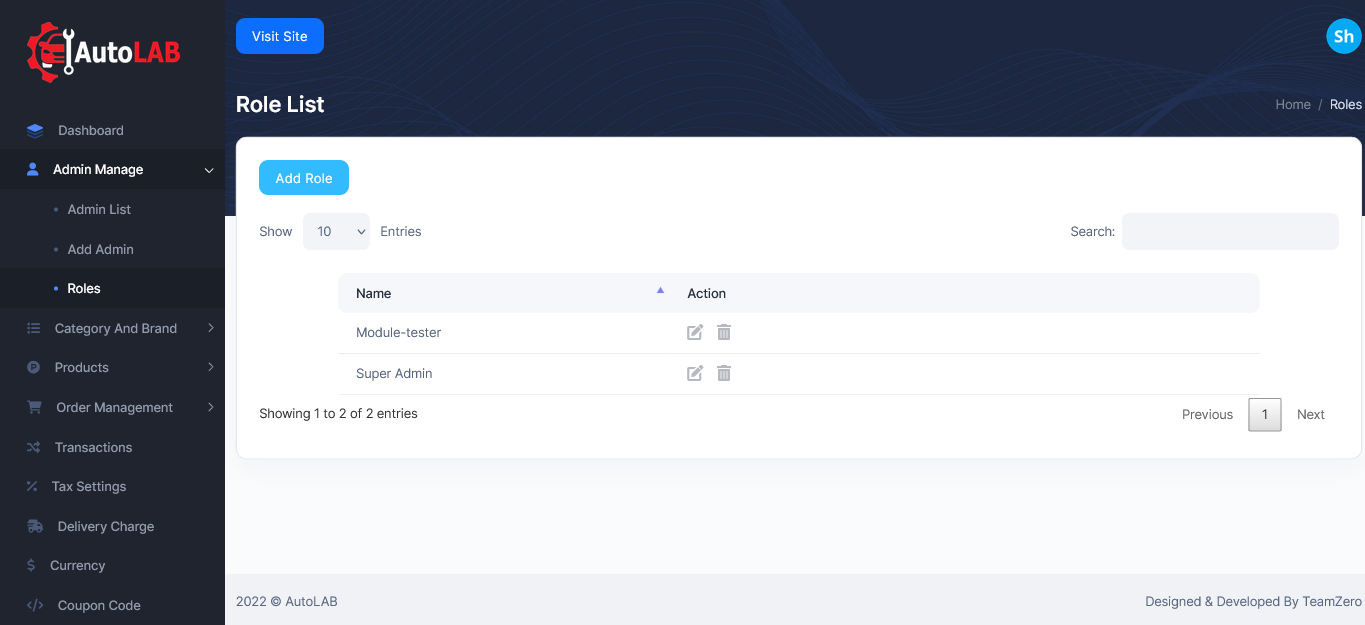


Figure 5 Business Admin’s Role and Permission Management

Here the admin role creation and give permission of the system which feature the business admin can access and manipulate. This is very strong feature which help the system so much secure and prevent them to access other features and menu which they are not permitted to be accessed.

**5.6 Conclusion**

This system will perform as only this system required to run both type of business both traditional way and digital way (online platform). After implementing the system, some drawback is solved by this proposed system and some of feature has been added. Like,

* Direct product shipment.
* Transaction will easier after shipment.
* Security issue of managing the whole business.

# Chapter 6 Testing

# Chapter 2 Conclusion

## 7.1 Conclusion

This project aims to overcome the complexities and drawbacks of the existing systems. This will surely ease the buyers of getting the genuine, authentic and desired product on a reliable site. And the local business owners or managers can manage their business through our system. This system implements authentication and optimization among the different types of business sites. This surely acquires the buyer’s trust and boosts up the business. Because the more trust the buyers will have in the individual business, the more business transaction will take place which is beneficial to both buyers and sellers. When authentic product and reliable service take place at a time in a system it will be more popular than the other system available in the market. So, more buyers will come into our system and we will be able to find them their desired products from a reliable business organization. This has been the basis for several other online-based e-commerce systems, where the technology itself works particularly very well and the user's perception of the system changes positively.

## 7.2 Future Plan

We are currently extending the system to deal with a range of aspects by introducing ARTIFICIAL INTELLIGENCE into the system. An intelligent system should have the ability to adapt over time. Using AI, the system should predict buyer’s requirements by learning from buyers' transactions, interests, wish-list, previous purchase history and show the predicted product at the top of the homepage of the system. It will help also our service system to find the problem easily with AI and to solve the problem easily. In service section membership will be added with category like Silver, Gold and Platinum. Which will help to more interaction with our consumer. We also want to provide a user interface where a buyer can post for products and sellers will bid for it as a response. Also, an emergency post option will be added to this interface for emergency products within a limited time-based. Buyers will order products from different shops and our verified delivery man will deliver the product to ensure the trust among seller and buyer.

# Chapter 8 references