

# Online Shopping Cart (OSC)

## **Submitted By**

Student Name: Hossain Mohammad Hero

ID: 132-35-501

Department of Software Engineering

Daffodil International University

## **Submitted To**

Project Supervisor: Mr. Md. Shohel Arman

Lecturer, Department of Software Engineering

Daffodil International University

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**Daffodil International University**  
**Dhaka, Bangladesh**

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# 1 Introduction

## 1.1 Overview

Online Shopping Cart (OSC) is a web based application by which customers can directly purchase various goods. They do not need to go to shop to buy their desire product. This project is an attempt to provide the advantages of online shopping to customers of a real shop. It helps buying the products in the shop anywhere through internet.

This project contains the model for the Online Shopping Cart system, including all the models used to specify and realize the IT system. This model addresses the development of an online shopping cart system that allows suppliers to sell their products directly online to customers.

Online shopping system is a virtual store on Internet where customer can browse the product and select the product of interest. The selected product may be collected in shopping cart. At checkout time the items in the shopping care will be presented as an order. At that time shipping information and payment method have to select to the customer. Finally by confirming the order have to complete the shopping and the product will deliver to customer via currier, post office or by direct agent of company.

## 1.2 Objectives:

The objective of the Shopping systems is to increase the point of customer choice, reduce time used in shopping and efficiency in buying product.

- ✓ To develop an easy way to use web based interface where users can search for product view the details of the product and order it without going to market.
- ✓ The searching product can be done by product category, manufacturer as well as latest product, view it purchase it become a convenient way for customer.
- ✓ Customer can add product to cart to purchase, delete the product from cart before selecting the final submission.
- ✓ A user can view the complete specification of the product with various images and also view the customer review the product.
- ✓ It minimize the shopping time of customer, increase the point of choice.
- ✓ It also facilitate the service provider to know the current stats of market and take decision which product are selling more nowadays and have to keep in store.

## 1.3 Scope

Following are the scope of the developed systems:

***For Customer:***

**Online registration:** Customer have to register to buy product online.

**View Product:** Customer can view product according to category, manufacturer and latest product. Select the items to cart, also can delete from cart before final submission, he can also view product details, shipping info and price that means all in invoice.

**Shipping Information:** Customer have to give the product delivery location.

***For Admin:***

**Category:** admin can add category, view, publish, edit and delete category.

**Manufacturer:** admin can add manufacturer, view, publish, unpublished, edit manufacturer and delete manufacturer.

**Product:** admin can add product, view, publish, unpublished, edit manufacturer and delete product.

## **1.4 Benefits & Beneficiaries:**

Following are the benefit from the administrative view:

- Helps to efficient management of the company
- Easy to manage the whole system
- Time consuming and give better services.
- Admin can publish or unpublished the category as a result it will not show from customer end for those product category not available, and published the product those available.
- Same application can be used for different online shopping purpose.

## **2 Requirement Analysis**

### **2.1 Requirement Analysis**

As the goal of the application is ease of use and to provide an interactive interface, extensive research has been done to gain an insight into the needs and behaviors of various users. The working of the application is made convenient and easy to use for the end user. In online web based shopping systems there are two party who interact with the system, one of them are customer who wants to buy product and other the system admin manage the system. A good web based online shopping system should present the following factors to the customers for better usability.

#### **2.1.1 Customer requirements:**

- Knowing when an item have to save or not to save in the shopping cart.
- Returning the different parts of the site after adding an item to the shopping cart.
- Easy scanning and selecting items in the list.
- Effective categorical organization of the products.
- Simple navigation from home page to information and order links for specific products.
- Obvious shopping links or buttons.
- Consistent layout of product information.
- A well-organized web interface to work as admin so that he can handle all the parts of the system properly

#### **2.1.2 Data Requirements:**

- A customer can view the product properly but to buy he has to add the product in shopping cart, for this he has to register or has to login if he is an existing user
- To launch the system, admin have to select the category of product, company or manufacturer of product will remain in the system for customer view and he can select those from his panel
- From user part or customer part when a customer order from his part can manage the order of the product
- Admin can add manufacturer of product, view manufacturer, delete manufacturer, update manufacturer and its status those are not available in shop as unpublished.
- Admin can add product, view product, delete product, update product and its status those are not available in shop as unpublished. Admin can add category of product, delete, view, update product and its status those are not available in shop or stop to sell or not to show to customer.

- Another important factor in the design of the software that the feedback. The interactive cycle between a use and website in not complete until the responds to a command by the user.

### 2.1.3 Process Requirements

To perform any systems have some specific authentication functionality. The following process requirements are identified for the better performance of the system:

- A valid admin user is needed to access the information of the system for the admin
- A valid customer ID is need to the customer to buy the product
- Admin login to the system can view, edit, delete and update category, manufacturer and product related information. Also he can update the order information
- Customer can add product to cart only when he is a register user to the system, as well as have to login to the system otherwise not able to add product to cart

## 2.2 Use Case Diagram

A use case is a methodology used in system analysis to identify, clarify, and organize system requirements. The use case is made up of a set of possible sequences of interactions between systems and users in a particular environment and related to a particular goal. It consists of a group of elements (for example, classes and interfaces) that can be used together in a way that will have an effect larger than the sum of the separate elements combined.

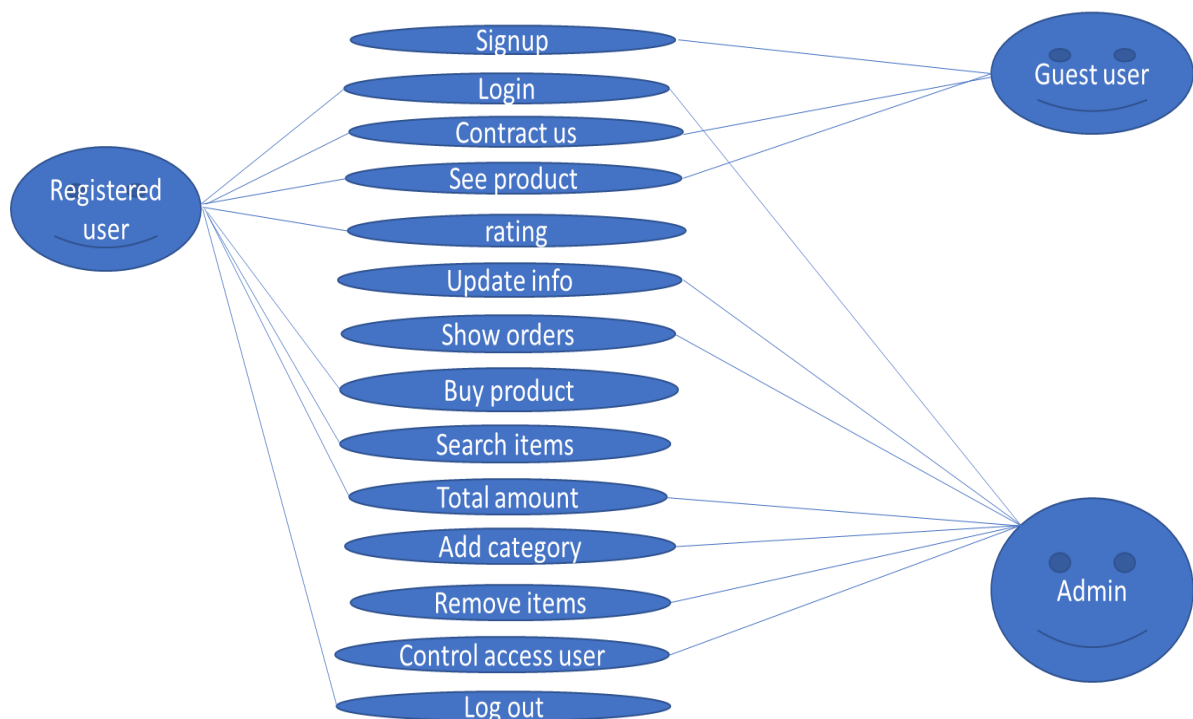


Figure 1: Use Case

## 2.3 Data Flow Diagram (DFD)

A data flow diagram (DFD) is a graphical representation of the "flow" of data through an information system, modelling its process aspects. A DFD is often used as a preliminary step to create an overview of the system, which can later be elaborated

### 2.3.1 Context Level Diagram:

Context level diagram just show the task happening in the whole system, it's actually shows the input and what is the output for the input.



*Figure 2: Context Level Diagram*

### 2.3.2 First Level DFD:

First level DFD shows the major steps that have to complete to buy a product. Initially customer visit the website, search the product by category, manufacturer and top selling, show the details of the product, select payment method, finally the product delivered by the company agent.

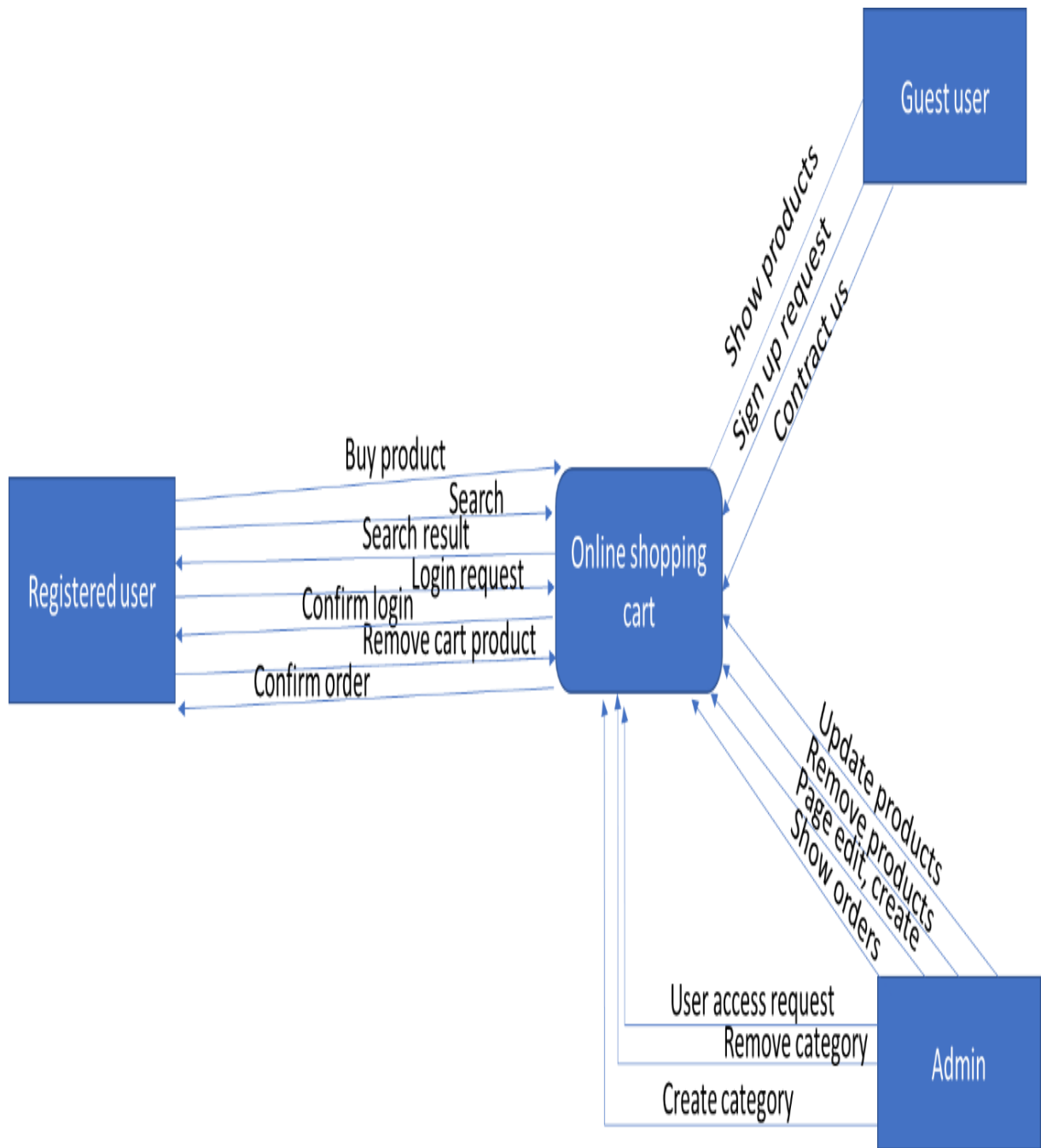


Figure 3: Level 1 DFD

## 2.4 ER Diagram

In the ER diagram of Online Shopping the relationship between the customer to product is one to many as same customer can buy multiple product, also for category to product is one to many as for a single category have different product. Also here mentioned the relationship between the tables, mention the primary key of the table. Here another important part is that its mention all the entities of the table.

Online Shopping System ER diagram give below:

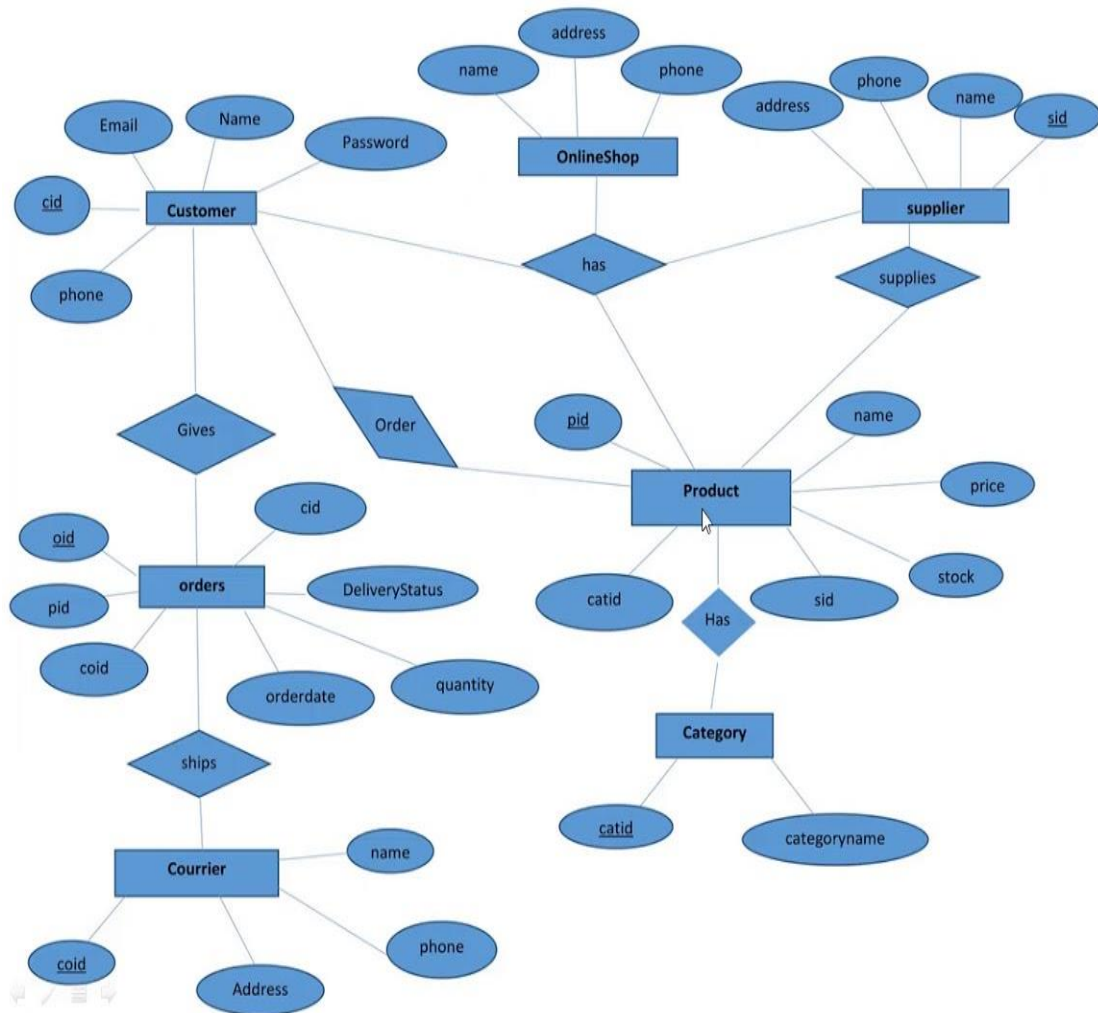


Figure 4: ER Diagram

## 2.5 Activity Diagram

Client need to enter their email & password to enter the system. If they successfully logged in then they are able to browse the system otherwise again enter their login details to enter the system.

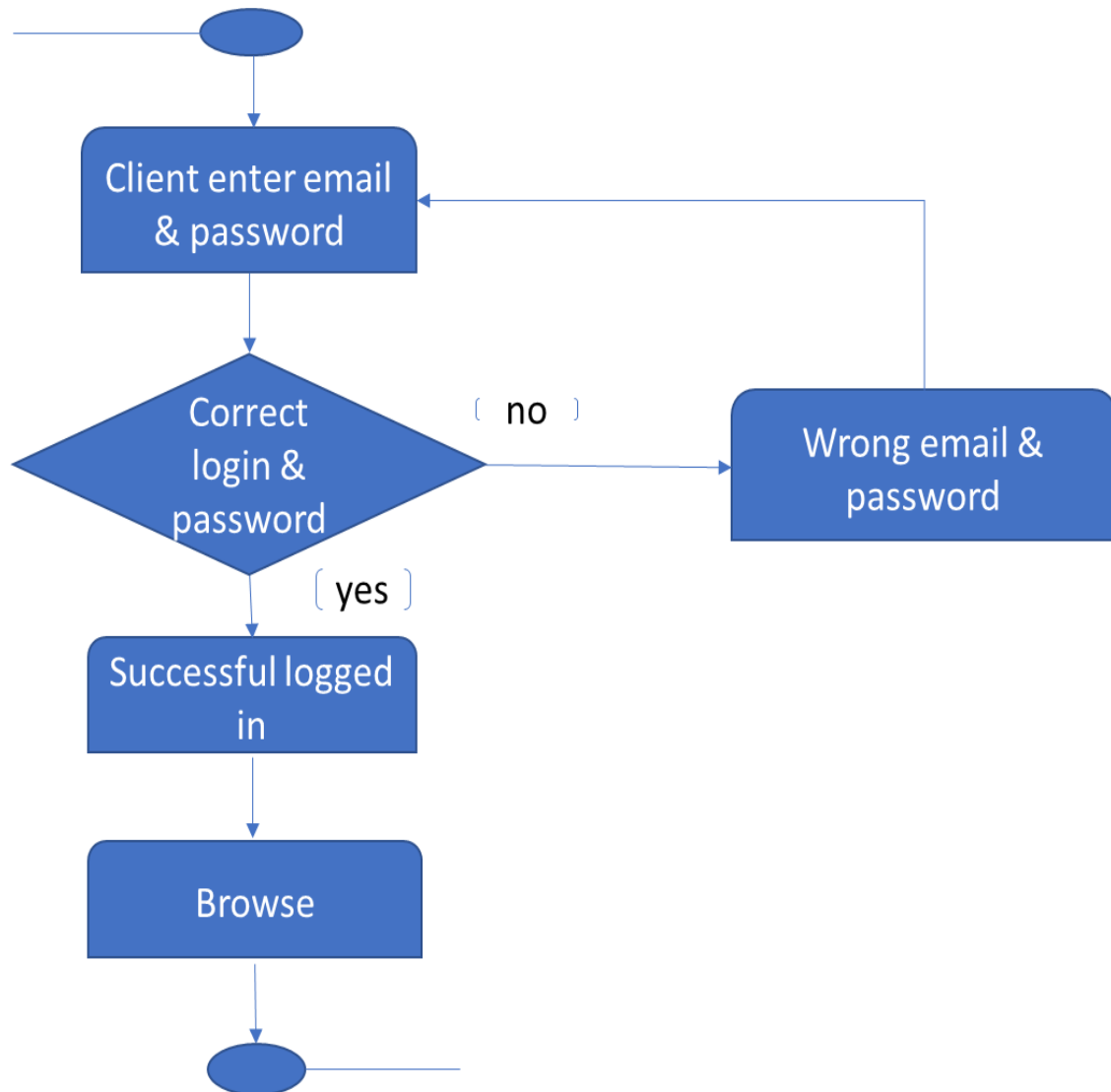


Figure 5: Activity Diagram 1

## 2.6 Activity Diagram 2

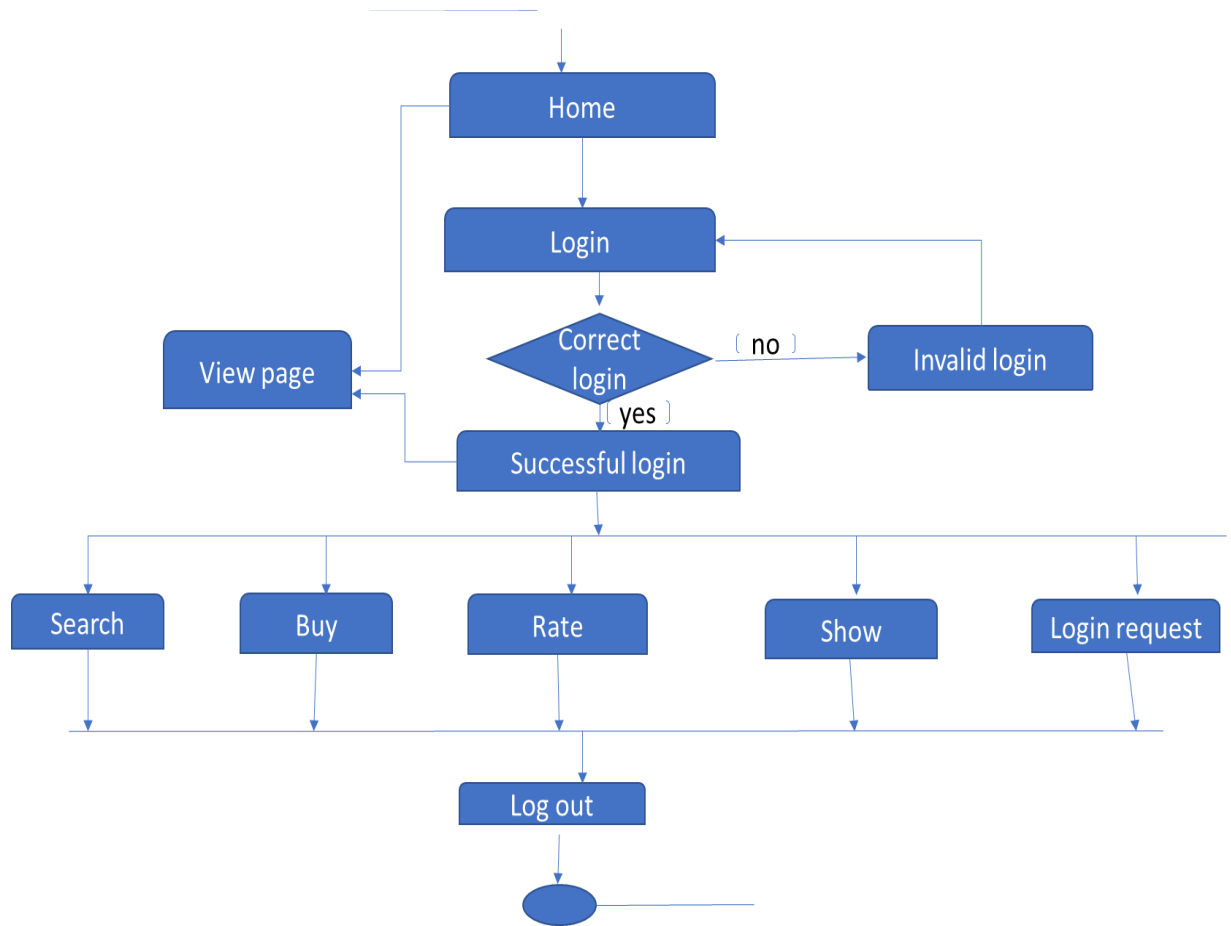


Figure 6: Activity Diagram 2

## 3 Design Specification

### 3.1 Customer Interface

#### 3.1.1 Home page

A home page is a webpage that serves as the starting point of website. It is the default webpage that loads when visit a web. The home page is located in the root directory of a website. Most web server allow the home page to have one of several different filenames. The default filename of a website's home page can be customized on both Apache and IIS servers. Since the home page file is loaded automatically from the root directory, the home page URL does not need to include the filename. There is no standard home page layout, but most home pages include a navigation bar that provides links to different sections within the website. Other common elements found on a home page include a search bar, information about the website, and recent news or updates. Some websites include information that changes every day. For example, the Tech Terms home page includes a daily quiz and tech term of the day. Home page of shopping system include so many part of the system those are below.

**Top Selling:** Top of the home page showing top selling of the product.

**Menu:** Home page include menus according to category of product, and customer can search the product according to category of product the customer needed.

**Cart:** Customer can see the products he added in his cart.

**Create Account:** The customer has no account can register from this page.

**Latest product:** that added recently showing in the home page right part also the middle of the home page.

- In footer of the home page customer can view the product according to the manufacturer.
- In the middle part of the home page showing the current promotion or offer running.
- Bottom of the page showing Account, Help and Popular menu. Popular menu will show the latest product, Help for contact and Account for register or existing user login.

Home Page view is shown in figure below:



Figure 7: Home Page

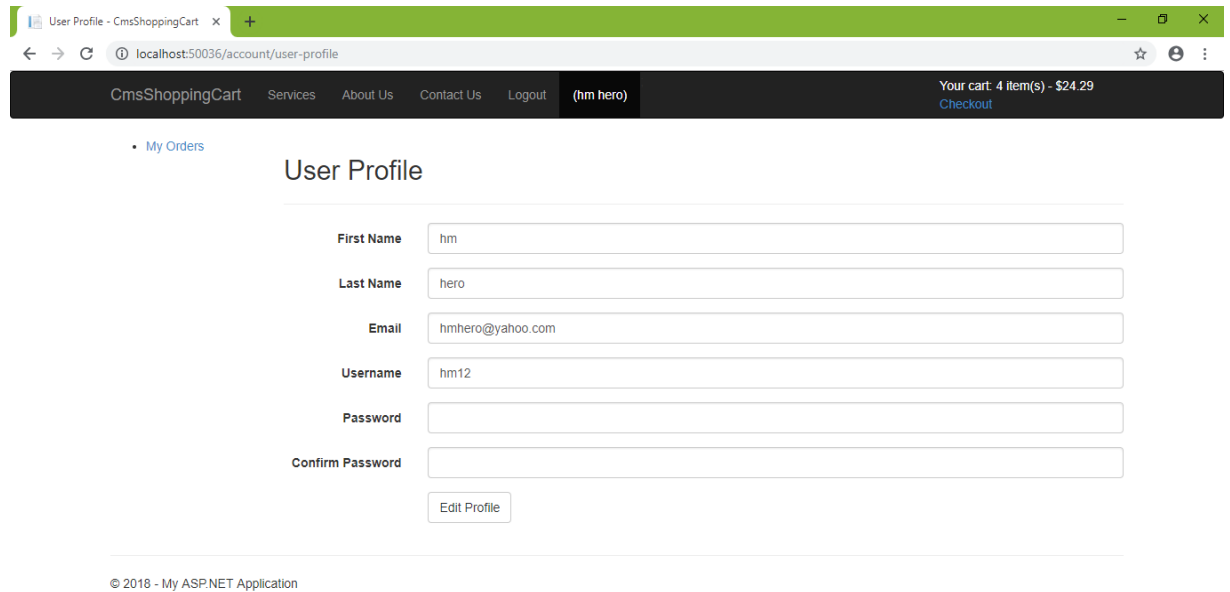
### 3.1.2 Customer login and registration page

Customer have to login before adding product in cart. In this page existing customer can login to buy product and new user can create an account for buying the product. Figure of user login and registration page given below:

Figure 8: User Registration

### 3.1.3 Update Profile

User can also update their profile by just clicking this tap

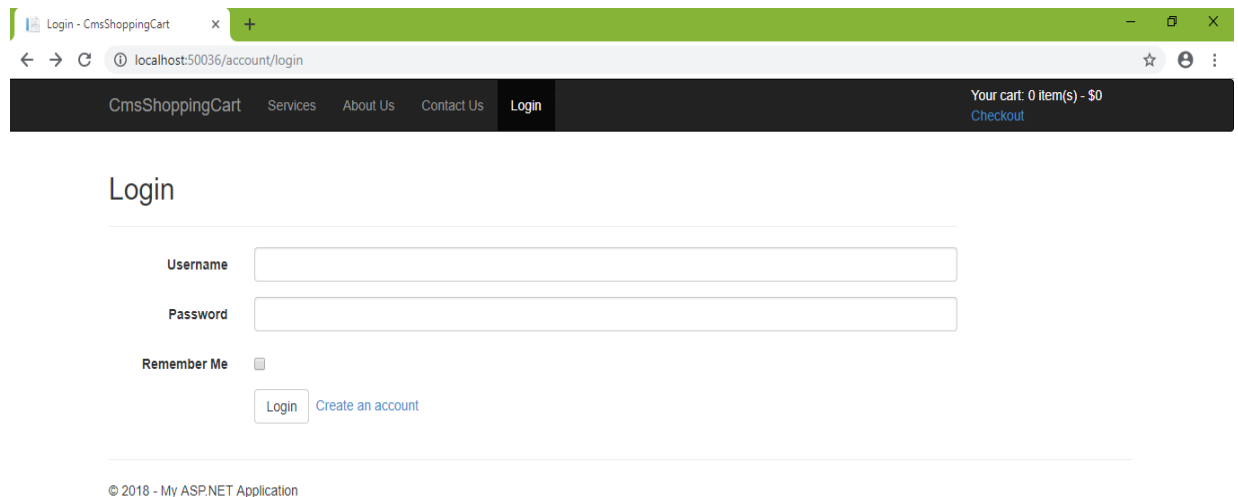


The screenshot shows a web browser window with the title 'User Profile - CmsShoppingCart'. The address bar shows 'localhost:50036/account/user-profile'. The navigation bar includes 'CmsShoppingCart', 'Services', 'About Us', 'Contact Us', 'Logout', and '(hm hero)'. The cart status is 'Your cart: 4 item(s) - \$24.29' with a 'Checkout' link. The main content area is titled 'User Profile' and contains a form with the following fields: 'First Name' (hm), 'Last Name' (hero), 'Email' (hmhero@yahoo.com), 'Username' (hm12), 'Password', and 'Confirm Password'. There is an 'Edit Profile' button at the bottom of the form. The footer shows '© 2018 - My ASP.NET Application'.

Figure 9: Update Profile

### 3.1.4 Login

After registration user have to login to their profile to purchases any goods.



The screenshot shows a web browser window with the title 'Login - CmsShoppingCart'. The address bar shows 'localhost:50036/account/login'. The navigation bar includes 'CmsShoppingCart', 'Services', 'About Us', 'Contact Us', and 'Login'. The cart status is 'Your cart: 0 item(s) - \$0' with a 'Checkout' link. The main content area is titled 'Login' and contains a form with the following fields: 'Username', 'Password', and 'Remember Me' (checkbox). There are 'Login' and 'Create an account' buttons at the bottom of the form. The footer shows '© 2018 - My ASP.NET Application'.

Figure 10: Login

### 3.1.5 Add to Cart Page

To buy a product the customer have to add product to cart. Also customer can view the product details, as well as large view by putting the cursor over the product image. The figure of adding product to cart given below:

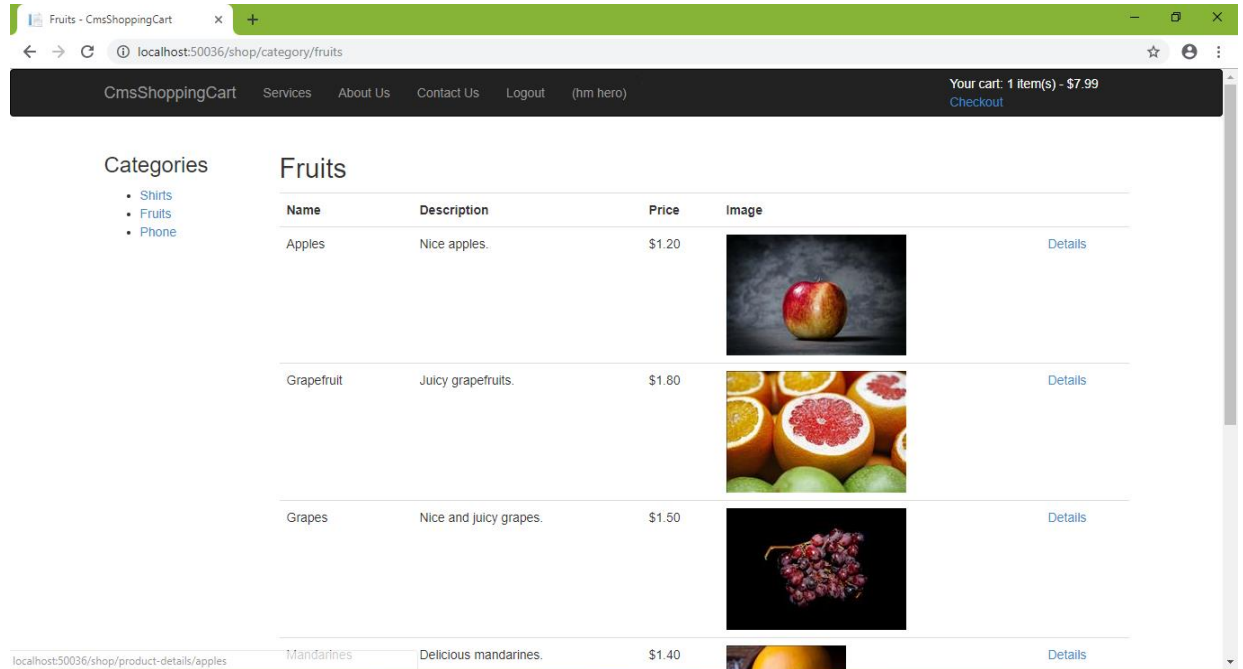


Figure 11: Fruits Item

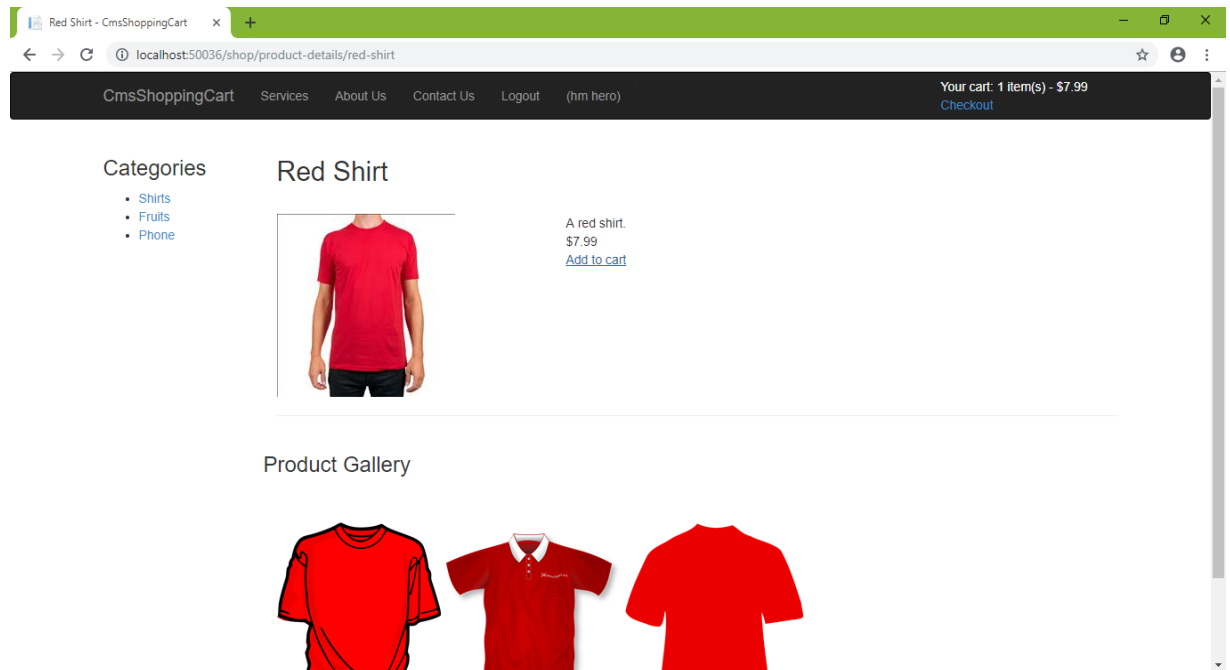


Figure 12: Shirt Item

### 3.1.6 Cart Product before check out

The customer can view the product, update number of product, delete product from cart and send request to check out and given figure below:

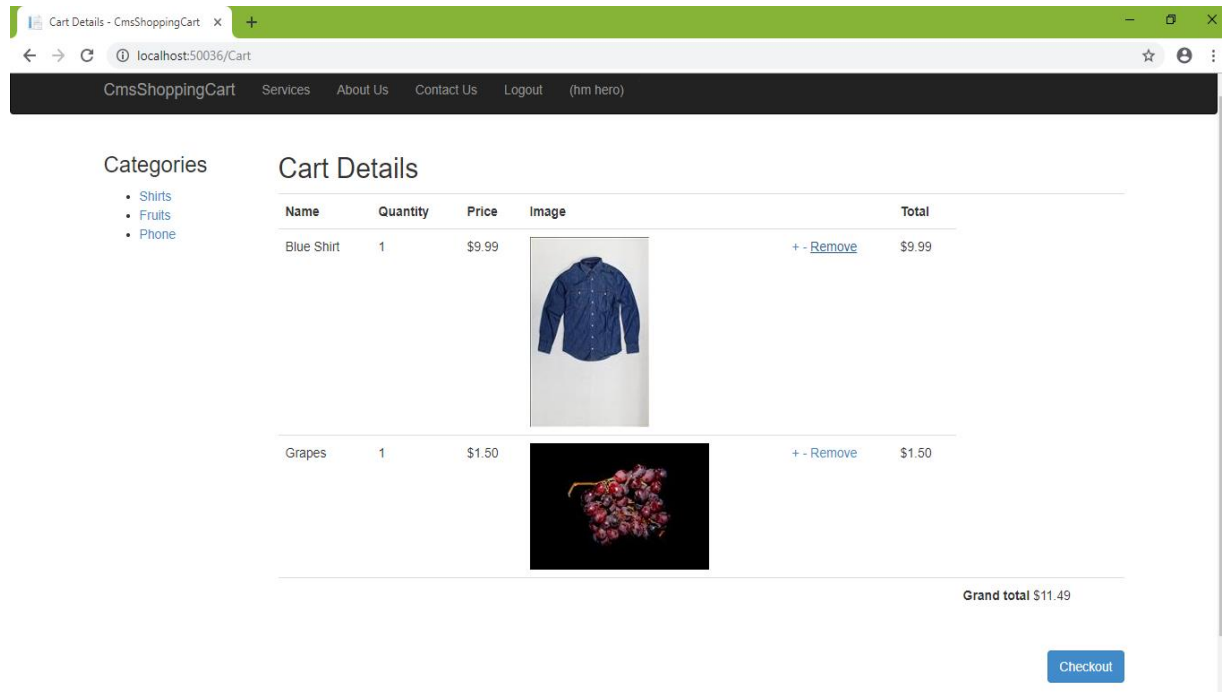


Figure 13: Check Out

## 3.2 Admin Interface

### 3.2.1 Admin Panel

From here admin can view the products edit the products & also delete the products

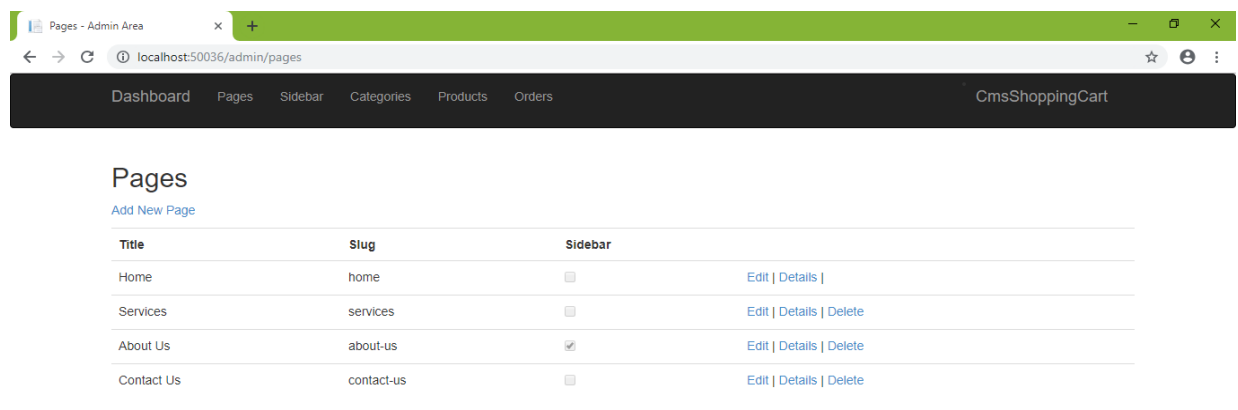


Figure 14: Admin Panel

### 3.2.2 Select Categories:

From here admin can select the products he wanted

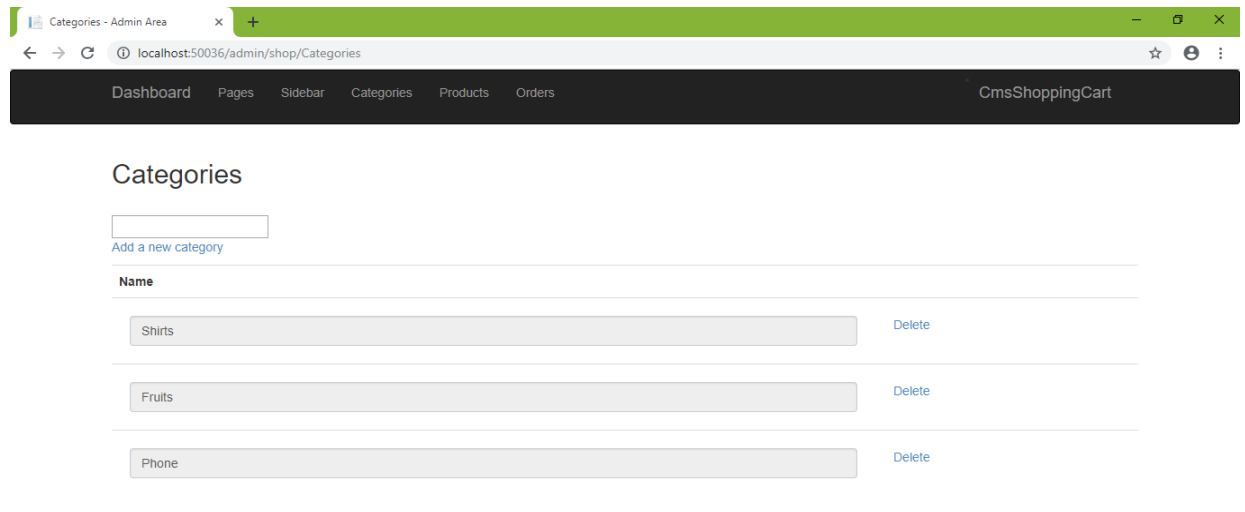


Figure 15: Select Products

### 3.2.3 View Products

From here admin can easily view or modify the product details

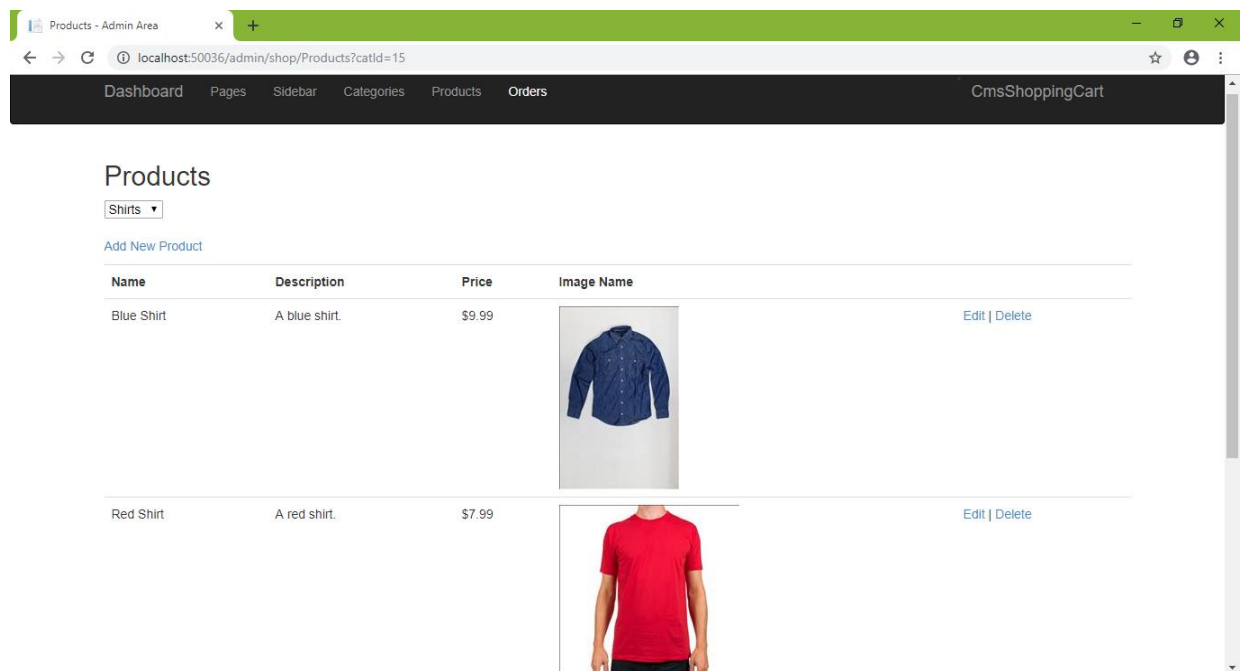
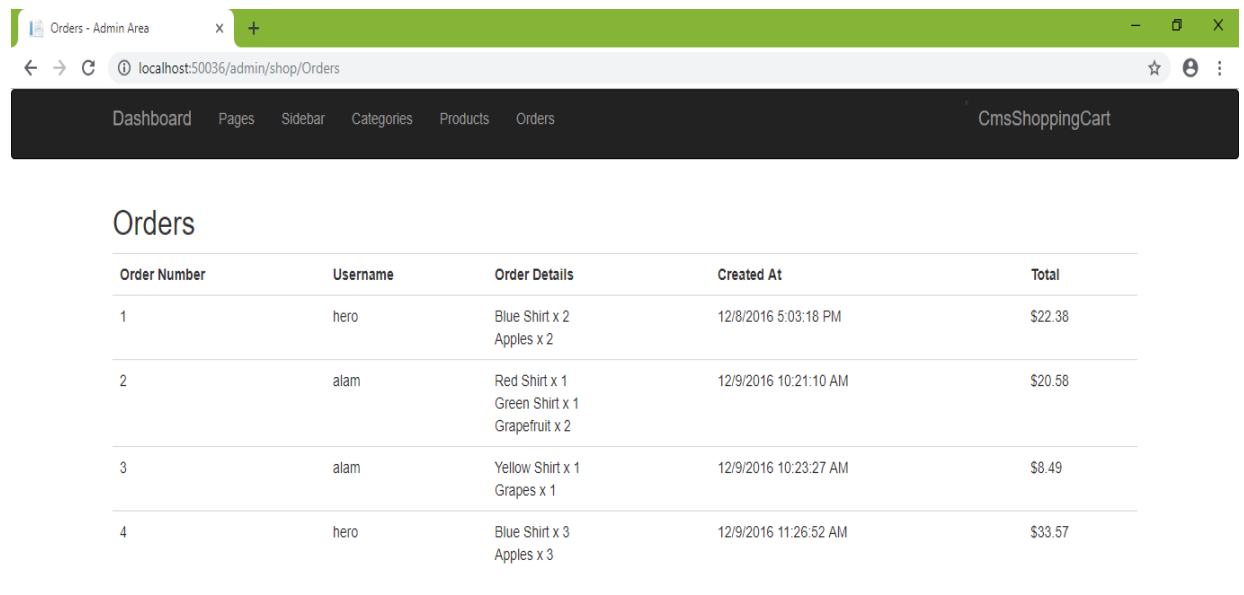


Figure 16: View Products

### 3.2.4 Order Details

Here every details are to be shown



Order Number	Username	Order Details	Created At	Total
1	hero	Blue Shirt x 2 Apples x 2	12/8/2016 5:03:18 PM	\$22.38
2	alam	Red Shirt x 1 Green Shirt x 1 Grapefruit x 2	12/9/2016 10:21:10 AM	\$20.58
3	alam	Yellow Shirt x 1 Grapes x 1	12/9/2016 10:23:27 AM	\$8.49
4	hero	Blue Shirt x 3 Apples x 3	12/9/2016 11:26:52 AM	\$33.57

## **4 Implementation**

### **4.1 Implementation**

While there are number of software tools to develop and implement the web based online shopping system, I have chosen those are open source, so that it will reduce the developing cost of the project. For designing the project MVC framework, Bootstrap & ESS framework for system dynamic. SQL as database server. All of the tools are open source.

#### **4.1.1 MVC framework**

MVC, or Model-View-Controller — later become the design pattern for the vast majority of web applications and the frameworks on which they are based.

Model–view–controller is an architectural pattern commonly used for developing user interfaces that divides an application into three interconnected parts. This is done to separate internal representations of information from the ways information is presented to and accepted from the user.

#### **4.1.2 Bootstrap**

Bootstrap is a free and open-source front-end framework for designing websites and web applications. It contains HTML- and CSS-based design templates for typography, forms, buttons, navigation and other interface components, as well as optional JavaScript extensions.

#### **4.1.3 ESS Framework**

ESS1 Assessment and Management of Environmental and Social Risks and Impacts sets out the Borrower's responsibilities for assessing, managing and monitoring environmental and social risks and impacts associated with each stage of a project supported by the Bank through Investment Project Financing (IPF), in order to achieve environmental and social outcomes consistent with the Environmental and Social Standards (ESSs).

#### **4.1.4 SQL Server**

SQL is a database system used for the web application and it runs that runs on a server. The reason of using SQL are:

- SQL is ideal for both small and large applications.
- SQL is very fast, reliable, and easy to use.
- SQL uses standard SQL.
- SQL compiles on a number of platforms.
- SQL is free to download and use

#### **4.1.5 XAMPP server**

XAMPP is a free and open source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages. XAMPP stands for Cross-Platform (X), Apache (A), MariaDB (M), PHP (P) and Perl (P). It is a simple, lightweight Apache distribution that makes it extremely easy for developers to create a local web server for testing purposes. Everything needed to set up a web server – server application (Apache), database (MariaDB), and scripting language (PHP) – is included in an extractable file. XAMPP is also cross-platform, which means it works equally well on Linux, Mac and Windows. Since most actual web server deployments use the same components as XAMPP, it makes transitioning from a local test server to a live server extremely easy as well.

## 5 Testing

Exhaustive testing for the project is not possible. Some testing strategies and stage designed manually. For this project Black box and White box testing are chosen. This two type testing applied different part of the project.

### 5.1 Testing Features

#### 5.1.1 Features to be tested:

The features which have been tested:

- i. Registration
- ii. Login
- iii. Contact Us
- iv. Purchase Product
- v. Add Category

#### 5.1.2 Features not to be tested:

The features which have not been tested:

- i. Rating
- ii. Remove Item

### 5.2 Testing Strategies

#### 5.2.1 Black Box Testing

Black Box Testing, also known as Behavioral Testing, is a software testing method in which the internal structure/ design/ implementation of the item being tested is not known to the tester.

These tests can be functional or non-functional, though usually functional. This method is named so because the

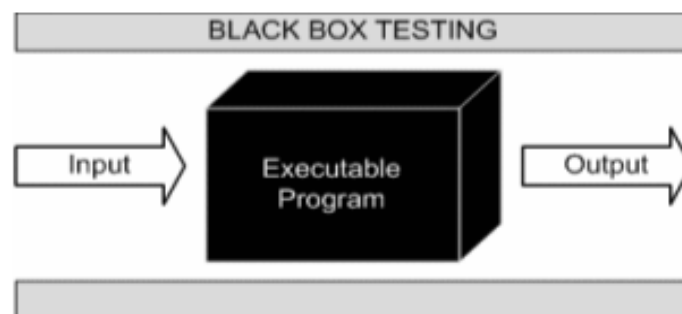


Figure 17: Black Box Testing

Software program, in the eyes of the tester, is like a black box; inside which one cannot see. This method attempts to find errors in the following categories:

- Incorrect or missing functions
- Interface errors
- Errors in data structures or external database access
- Behavior or performance errors
- Initialization and termination errors

### 5.2.2 White Box Testing

White Box Testing also known as Clear Box Testing, Open Box Testing, Glass Box Testing, Transparent Box Testing, Code-Based Testing or Structural Testing is a software testing method in which the internal structure/ design/ implementation of the item being tested is known to the tester. The tester chooses inputs to exercise paths through the code and determines the appropriate outputs. Programming know-how and the implementation knowledge is essential. White box testing is testing beyond the user interface. The white box testing perform normally in this project different part.

## 5.3 Test Cases

### 5.3.1 Module: A- Registration

**Test Case ID:** FR\_01

**Test Priority:** High

**Module Name:** Registration Screen

**Test Title:** Provide all important information

**Description:** Test the OAS Registration Page

**Test Design by:** HM Hero

**Test Design Date:** 28-11-18

**Test Execute by:** Md. Rabius Sani

**Test Execute Date:** 28-11-18

**Precondition:** User has valid Phone number.

<b>Step</b>	<b>Test Steps</b>	<b>Test Data</b>	<b>Expected Result</b>	<b>Actual Result</b>	<b>Status(Pass/Fail)</b>	<b>Notes</b>
<b>01</b>	Navigate To registration Page	Url- http://localhost/oas/index	Go To Signup Page	Successfully Entered	Pass	Ok
<b>02</b>	Create A Name	Hero	Take Name	Name Taken	Pass	Ok
<b>03</b>	Enter Mail Address	Hmhero3@gmail.com	Take Email	Email Taken	Pass	Ok
<b>04</b>	Enter a phone number	0178194963	Take phone number	phone number taken	Fail	Phone number should be 11 digit
<b>05</b>	Again enter a phone number	01781949631	Take phone number	phone number taken	Pass	Ok
<b>06</b>	Click to update information button	Click	Data saved on db	Successfully updated	Pass	Ok

### 5.3.2 Module: B- Login

<b>Step</b>	<b>Test Steps</b>	<b>Test Data</b>	<b>Expected Result</b>	<b>Actual Result</b>	<b>Status(Pass/Fail)</b>	<b>Notes</b>
<b>01</b>	Navigate to Login Page	Url- http://localhost/tdf/login	Go to login page	Successfully Entered	Pass	Ok
<b>02</b>	Provide mail	Hmhero3@gmail.com	Take mail	Mail taken	Pass	Ok

<b>03</b>	Provide password	44445	Take password	Password taken	Pass	Ok
<b>04</b>	Click to Login Button	Click	Enter user profile	Invalid mail/password	Fail	Check your mail/password
<b>05</b>	Reenter mail	Hmhero3@gmail.com	Take mail	Mail taken	Pass	Ok
<b>06</b>	Reenter password	4444	Take password	Password taken	Pass	Ok
<b>07</b>	Re-login	Click	Enter user profile	Successfully login	Pass	Ok

## **6 CONCLUSION**

### **6.1 Project Summary**

The Internet has become a major resource in modern business, thus online shopping has gained significance not only from the entrepreneur's but also from the customers point of view. For the entrepreneurs, online shopping generates a new business opportunities and for the customer, it makes the comparative shopping possible. A good shopping cart design must be accompanied with user-friendly shopping cart application logic. It should be convenient for the customer to view the contents of their cart and to be able to remove or add items to their cart. The shopping cart application described in this project provides a numbers of features that are designed to make the customer more comfortable. This project helps in understanding the creation of an interactive web page and technologies user to implement it. During the course of the project, we have across the wide variety of problems and difficulties. We have learned the appropriate intricate working behind the dynamic website, how tricky data manipulation can be occurred sometimes but we have done everything

### **6.2 Limitation**

The software we have developed have some limitations. We are trying to fulfill all requirements. But some tasks are not done here. Real time services like voice, chatting and video conferencing are not done here. The system is developed for only cash on delivery as payment method. Upcoming product will display only website but not added messaging service that when any product will come will send message to customer mobile that new product available.

### **6.3 Future Scope**

If its limitation can be solved then it would be more effective. In future we will try to develop our project so that we able to give these facilities and credit card validation is not done yet. The administrator of the website can be given more functionality, looking specific customer generate invoice from admin panel of customer till present for taking decision. Adding SMS gateway to confirm that customer order successfully submitted, and also the current stats of order that means any state change of order customer will get a notification.

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