1. INTRODUCTION

* 1. Aim

The main aim of the project on Supply chain management is to manage the details of Customer, Product, Product Company, Order Shipment. It manages all the information about Customer, Delivery, Shipment, Customer. The project is totally built at administrative end and thus only the administrator is guaranteed the access. The purpose of the project is to build an application program to reduce the manual work for managing the Customer, Product, Delivery, Product Company. It tracks all the details about the Product Company, Order Shipment.

Functionalities provided by supply chain management system as follows:

* Provides the searching facilities based on various factors. Such as customer, product company, order, shipment.
* Supply chain management system also manage the delivery details online for order details, shipment details, customer.
* It tracks all the information of product, delivery, order etc.
* Manage the information of product.
* Shows the information and description of the customer, product company.
* To increase efficiency of managing the customer, product.
* It deals with monitoring the information and transactions of order.
* Manage the information of customer.
* Editing, adding and updating of records is improved which results in proper resource management of customer data.
* Managing the information of order.
* Integration of all records of shipment.
  1. Introduction
* Supply Chain Management is a set of synchronized decision and activities, utilized to effectively integrate suppliers, manufacturers, transporters, warehouses, retailers and customers so that the right product or service is distributed at the right quantities, to minimize system wide costs while satisfying customer service level requirements.
* Supply Chain Management software applications provide real-time analytical systems that manage the flow of network. They are designed to enhance supply chain management operations such as supplier sourcing, production planning, inventory planning, transportation planning, demand planning.

1.3 Objectives Of Supply Chain Management

* One of the most crucial objectives of Supply Chain Management is efficiency. Efficiency is synonymous with waste minimisation.
* To achieve a competitive edge in the market while simultaneously lowering operating expenses, quality management in the [supply chain](https://stockarea.io/blogs/what-is-a-supply-chain/) is essential.
* SCM enables you to optimise transportation and logistics activities with any vendors or purchasers with whom you do business. Orders are automatically entered into a system, which notifies other facilities that additional resources are required to fulfil this request. This makes the entire process very smooth and seamless.
* It is the [goal of Supply Chain Management](https://stockarea.io/blogs/6-goals-of-supply-chain-management/) to reduce a company’s operating expenses. It lowers the cost of all types of business expenses, such as the cost of purchasing, manufacturing, and delivering goods, by establishing an optimised supply chain.
* Having high-performing operations also helps you to meet or exceed your customers’ expectations for product delivery. Providing your customers with what they want, when they want it, and at the lowest price possible is critical to maintaining their satisfaction.
* Supply Chain Management enables businesses to reduce overhead costs while also delivering items more quickly. As a result, the entire distribution system is improved, allowing for the delivery of products at the appropriate time and location.
* Supply Chain Management strives to improve coordination between the business’s various stakeholders. A channel is established, allowing employees, customers, and suppliers to communicate with the company efficiently.

**2. LITERATURE SURVEY**

2.1 Existing system

Today consumers have higher expectations than ever before. They want products to match these expectations. They also want accurate, up-to-date and useful information about what they buy and above all they need quality.

The importance of supply chain management comes into picture if there is sharp focus on the loss due to the absence of an effective supply chain strategy and/or the benefit due to an effective supply chain for any firm.

The importance of supply chain management is to:

* Reduce inventories along the chain.
* Share better information among the partners.
* Plan in consultation rather than in isolation.

2.2 Proposed system

* In particular, an effective supply chain can help companies to avoid problems such as lost or damaged shipments, delayed orders and over-production.
* It can also help them to manage risk and mitigate damage caused by natural disasters or other unexpected events.

For example, it can help them to plan ahead in the event of a disruption in any part of their system.

* Another important aspect of a successful supply chain is transparency. This helps everyone involved to understand how their operations are affecting their environment and each other. It also allows everyone involved to take action when they need to.

2.3 Limitations

* Complex of activities: Supply Chain management process involves number of activities and participants.
* Increased chances of error: As there are number of activities and participants involved in a supply chain, chances of error increase.
* Dependence on outside consultants: There is process of many outside agencies for specialized jobs such as material handling logistics, design companies, packing consultants, marketing and advertising companies.
* Heavy investment of resources: It requires large investments of time, money and resources. The small producers and business sometimes find it beyond their financial capacity to implement the same.

2.4 Advantages

* Better ability to predict needs and meet customer’s demand.
* Better supply chain visibility, risk management and predictive capabilities.
* Less process inefficiencies and less product waste.
* Enhancements in quality.
* Increased sustainability, both from a societal and an environmental standpoint.
* Lower overhead.
* Improvements in cash flow.
* More efficient logistics.

3. SYSTEM ANALYSIS

Manufacturers

Retailers

Purchase Order Order

Shipment details

Delivery Delivery information

Distributors

information

Delivery Details

order

inventory levels

4. HARDWARE AND SOFTWARE TECHNOLOGY USED

# 4.1 Hardware and Software Requirements

4.1.1 Software Requirements

* Operating system : Windows7/8/10
* Front end : HTML, Java script
* Back end : PHP, MySQL
* Server : Xamp

4.1.2 Hardware Requirements:

* Processor : AMD Ryzen 3 3250U with Radeon.
* RAM : 2GB
* Hard disk : 128GB

4.2 Technologies used

4.2.1 Front end: HTML (Hypertext markup language)

Hypertext markup language is the standard markup language for document designed to be displayed in a web browser. It can be technologies such as Cascading style sheet and scripting language such as java script.

Web browser receive HTML document from the web server or from local storage and render the document into multimedia web pages.

HTML describe the structure of web page semantically and include the appearance of the document.

What makes up HTML?

An element is a fundamental component of the structure of the text document. Some examples of elements are head, tables, paragraph, and lists. Think of it this way. You use HTML tags to marks the elements of the file for your browser. Elements can contain plain text, other elements, or both.

To denote the various elements in an HTML document, you use tags. HTML tags consist of a left angle bracket (<), a tag name, and a right angle bracket (>). Tags are usually paired to start and end the tag instruction. The end tag looks the stat tag except a slash precedes the next within the brackets.

Some elements may include an attribute, which is additional information that is include inside the start tag. For example, you can specify the alignment of images by including the appropriate attributes with the image source HTML code.

4.2.2 Back end: PHP

PHP is an open source and server-side scripting language which is mainly used for developing web application,

PHP is most widely used programming language for the development of the web application. In some areas it is best like for developing small application and for the developer having financial issues. They can use this language which is most efficient to develop application based on the requirements.

PHP Hypertext Pre-processor) is known as a general -purpose scripting languages that can be utilized to create intuitive and dynamic websites. It was among the pioneer server-side language that can be integrated into HTML, making it easier to include functionally to web pages without requiring to call external data.

The demand of PHP is evident from the fact that the world’s top websites, like Facebook, Google, Wikipedia, and YouTube, are using PHP scripts at the backend. Before going towards the step-by-step guid on how write PHP scripts, I will give you general overview of PHP.

What is PHP?

PHP is an open-source, server-side general scripting languages that has now become a de—facto coding standard in the web development industry. It can be learned easily, and if one is from a coding background, he (or she) will find it very simple. This is way many are using PHP to polish up their entry-level coding skills.

PHP runs different operating system, like Windows, UNIX, Linux and supports different database like MySQL, Microsoft Access, and Oracle, PHP can not only collect form data, but it can also create, read, write, delete, and close files on the server.

It can be easily embedded in HTML code is embedded in HTML with tags <?PHP?>.

4.2.3 Style: CSS

Cascading Style Sheets (CSS) is a style sheet languages used for describing the presentation of a document written in a markup language such as HTML.

CSS is designed to enable the separation of presentation and content, including layout, colours, and fonts. This separations can improve content accessibility; provide more flexibility and control in the specification of presentation characteristics.

CSS is among the core languages of the open web and is standardized across Web browsers according to W3C specifications. Previously, the development of varios parts of CSS specification was done synchronously, which allowed the versioning of the latest recommendations. You might have heart about CSS1, CSS2.1, or ever CSS3. There will never be a CSS3 or a CSS4; rather, everything is now CSS without a version number.

What is CSS?

Like HTML, CSS is not a programming language. It’s not a markup language either. CSS is a style sheet language. CSS is what you use to selectively style HTML elements.

4.2.4 MYSQL

MYSQL is a relational database management system (RDBMS). A database is a structured collection of data. It may be anything from a simple shopping list to a picture gallery or a place to hold the vast amounts of information in a corporate network. It is a software product whose primary function is to store and retrieve data as requested by other software application, be it those on the same computer or those running an another computer across a network.

There are at least a dozen different editions of SQL server aimed at different audiences and for different workloads.

Its primary query language is T-SQL and ANSI SQL

Some important features of SQL are:

1.Enhanced Office Integration

SQL server enhanced integration enables user to create database enabled reports directly from either Microsoft office word or excel. These reports can then be published and shared by using Microsoft office share point server.

2.Language Integration Query

LINQ is Microsoft’s latest application data access technology. It enables visual basic and C# application to use set oriented queries that are developed in the native languages, rather then requiring that the queries be written in T-SQL, LINQ uses the native lets developers create strongly types queries.

3.Transparent failover

Database mirroring in SQL server enables client to automatically redirect to a mirrored server in the event of a failure in the principal database. However, it require special client configuration to specify the mirror server. SQL server will allow clients to automatically fails over to a mirrored server without requiring any configuration on the client.

4.Log Stream Compression

SQL server new support for log stream compression enhance the performance of database mirroring by automatically compressing the log stream that’s sent between the database mirroring participants, This minimizes network bandwidth use.

5.Data Compression

SQL server data compression enables you to compress data stored in the database. This reduces storage requirements and can actually improve the performance of workloads that have high I/O requirements, SQL server also supports compression backups.

6.File Stream Data

Its back originally slated as part of SQL server, the new file stream objects allows large binary objects to be stored in the file system. The system maintains links between the database objects

and the file system objects, insuring they have transactional consistency similar to a native database yet providing the performance of native file system storage.

4.2.5 Java script

Java script is a dynamic computer programming language. It is lightweight and most commonly used as a [art of web pages, whose implementations allow client-side script to intercat with the user and make dynamic pages. It is an interpreted programming languages with object-oriented capabilities.

Client-side Java script is the most common form of the languages. The scripts should be included in or referenced by an HTML document for the code to be interpreted by the browse.

It means that a web page need not to be a static HTML, but can include programs that interact with the user, control the browser, and dynamically create HTML

Content.

The Java script client-side mechanism provides many advantages over traditional CGI server-side scripts. For example, you might use Java script to check if the user has entered a valid e-mail address in a form field.

The Java script code is executed when the user submit the form, and only if all the entries are valid, they would be submitted to the web server.

Java script can be used to trap user-initiated events such as button clicks, links navigations , and other actions that the user initiates explicitly or implicitly.

Advantages of Java script

The merits of using Java scripts are:

1.Less server interaction: You can validate user input before sending the page off to the server. This saves server traffic, which means less load on your server.

2.Immediate feedback to the visitors**:** They don’t have to wait for a pages reload to see if they have forgotten to enter something.

3.Increased interactivity**:** You can create interfaces that react when the user hovers over them with a mouse or activates them via the keyboard.

4.Richer interface:You can use Java script to include such items as drag-and-drop components and sliders to give a Rich Interface to your site visitors.

5.SYSTEM DESIGN

5.1 Modules

The “Supply Chain Management System” consists of three main modules.

       They are

1.  Admin Module

2.  Client Module

3.  Dealer Module

5.1.1 Admin module

 In this module Administrator can checks the availability of the product, the new launched product information.  It also checks the delivery of product to the clients request and filters the products which are not being ordered by the clients. When ever the Admin log’s in into the system, it first checks the client requirements and then contacts the various dealers depending upon the requirements specified by the client.

It also keeps the record of various Dealers related to the system. Admin also gets the feed back given by the client after the delivery of the product. The Admin transfers the feed back related to the product to particular dealer. It also checks the delivery of product to the clients request and filters the products which are not being ordered by the clients.

 5.1.2 Client Module

It consists of registration and regulations for the client. It also consists of the information about the product. The main function of the Client is that-it first gets registered into the system if it is not registered. The Client then Specifies the requirements in order to get the product build. The is intimated when the product is completely built according to the specified requirements and is ready for the delivery. The Client then gives the feed back with respect to the services provided and the functionality of the product.

5.1.3 Dealer Module

The Dealer module consists of the entire information about the dealers. It consists of the list of Dealer associated with the system. The dealers maintain the record of items and generate the list of items when needed. The dealer also updates the list of items. The dealer gets the feed back related to the product functionality and the quality from the Admin.

5.2 Use Case Diagram

ADMIN

Login

Retailer

Manufacturer

Distributors

Products

Orders

Invoice

Add Products

Add Retailers

Add Distributer

Manage Unit

Add Manufacturer

Manage Category

Manage Area

Admin

## MANUFACTURE

HOME

RETAILERS

DISTRIBUTORS

MANUFACTURER

PRODUCTS

INVOICE

ORDERS

EDIT PROFILE

ADD PRODUCT

MANAGE UNIT

MANAGE STOCK

MANAGE CATEGORY

## RETAILER

HOME

RETAILER

PRODUCT

MY ORDER

MY INVOICE

NEW ORDER

EDIT PROFILE

5.3 Database Tables

Admin Users Table

|  |  |
| --- | --- |
| Column Name | Data Type |
| id | int(11) |
| username | varchar(20) |
| password | varchar(20) |

Distributor table

|  |  |
| --- | --- |
| Column Name | Data Type |
| dist\_id | int(11) |
| dist\_name | varchar(25) |
| dist\_email | varchar(50) |
| dist\_phone | varchar(10) |
| dist\_address | varchar(200) |

Retailer Table

|  |  |
| --- | --- |
| Coloum Name | Data Type |
| retailer\_id | int(11) |
| username | varchar(25) |
| password | varchar(25) |
| address | varchar(200) |
| area\_id | int(11) |
| phone | varchar(10) |
| email | varchar(50) |

Manufacturer Table

|  |  |
| --- | --- |
| Coloum Name | Data Type |
| min\_id | int(11) |
| min\_name | varchar(25) |
| min\_email | varchar(50) |
| min\_phone | varchar(10) |
| username | varchar(20) |

6. SYSTEM IMPLEMENTATION

The process of putting the development system to actual use is called system implementation. It includes all activities that place to use the new system. Once the planning has been completed, the major effort in the department is to ensure that the programs in the system are working properly. The system implementation phase follows the test phase.

The implementation phase of software development involves translation of design specification into source code by using required platform and other tools. The entire software is implemented using the PHP and html, databases My-Sql connection.

In the implementation phase, the project reaches its finishing stage. After the implementation phase, the project reaches its finishing. Development phase of the SDLC(System Development Life Cycle) is complete, the system is implemented. The software, which was designed in design phase and programmed in development phase of the SDLC, was installed on PC’s that required it. The person making use of it is trained during the phase of the SDLC. Moreover, both the hardware and software are tested. The problems that we were unable to simulate were solved by the users. These were the main activities performed by us in the course of the project, which lead to its proper completion.

6.1 Coding

Login page

<?php

include('includes/config.php');

$reqErr = $loginErr = "";

if($\_SERVER['REQUEST\_METHOD'] == "POST") {

if(!empty($\_POST['txtUsername']) && !empty($\_POST['txtPassword']) && isset($\_POST['login\_type'])){

session\_start();

$username = $\_POST['txtUsername'];

$password = $\_POST['txtPassword'];

$\_SESSION['sessLogin\_type'] = $\_POST['login\_type'];

if($\_SESSION['sessLogin\_type'] == "retailer") {

//if selected type is retailer than check for valid retailer.

$query\_selectRetailer = "SELECT retailer\_id,username,password FROM retailer WHERE username='$username' AND password='$password'";

$result = mysqli\_query($con,$query\_selectRetailer);

$row = mysqli\_fetch\_array($result);

if($row) {

$\_SESSION['retailer\_id'] = $row['retailer\_id'];

$\_SESSION['sessUsername'] = $\_POST['txtUsername'];

$\_SESSION['sessPassword'] = $\_POST['txtPassword'];

$\_SESSION['retailer\_login'] = true;

header('Location:retailer/index.php');

}

else {

$loginErr = "\* Username or Password is incorrect.";

}

}

else if($\_SESSION['sessLogin\_type'] == "manufacturer") {

//if selected type is manufacturer than check for valid manufacturer.

$query\_selectManufacturer = "SELECT man\_id,username,password FROM manufacturer WHERE username='$username' AND password='$password'";

$result = mysqli\_query($con,$query\_selectManufacturer);

$row = mysqli\_fetch\_array($result);

if($row) {

$\_SESSION['manufacturer\_id'] = $row['man\_id'];

$\_SESSION['sessUsername'] = $\_POST['txtUsername'];

$\_SESSION['sessPassword'] = $\_POST['txtPassword'];

$\_SESSION['manufacturer\_login'] = true;

header('Location:manufacturer/index.php');

}

else {

$loginErr = "\* Username or Password is incorrect.";

}

}

else if($\_SESSION['sessLogin\_type'] == "admin") {

$query\_selectAdmin = "SELECT username,password FROM admin WHERE username='$username' AND password='$password'";

$result = mysqli\_query($con,$query\_selectAdmin);

$row = mysqli\_fetch\_array($result);

if($row) {

$\_SESSION['admin\_login'] = true;

$\_SESSION['sessUsername'] = $\_POST['txtUsername'];

$\_SESSION['sessPassword'] = $\_POST['txtPassword'];

header('Location:admin/index.php');

}

else {

$loginErr = "\* Username or Password is incorrect.";

}

}

}

else {

$reqErr = "\* All fields are required.";

}

}

?>

<!DOCTYPE html>

<html>

<head>

<title> Login </title>

<link rel="stylesheet" href="includes/main\_style.css" >

</head>

<body class="login-box">

<h1>LOGIN</h1>

<form action="" method="POST" class="login-form">

<ul class="form-list">

<li>

<div class="label-block"> <label for="login:username">Username</label> </div>

<div class="input-box"> <input type="text" id="login:username" name="txtUsername" placeholder="Username" /> </div>

</li>

<li>

<div class="label-block"> <label for="login:password">Password</label> </div>

<div class="input-box"> <input type="password" id="login:password" name="txtPassword" placeholder="Password" /> </div>

</li>

<li>

<div class="label-block"> <label for="login:type">Login Type</label> </div>

<div class="input-box">

<select name="login\_type" id="login:type">

<option value="" disabled selected>-- Select Type --</option>

<option value="retailer">Retailer</option>

<option value="manufacturer">Manufacturer</option>

<option value="admin">Admin</option>

</select>

</div>

</li>

<li>

<input type="submit" value="Login" class="submit\_button" /> <span class="error\_message"> <?php echo $loginErr; echo $reqErr; ?> </span>

</li>

</ul>

</form>

</body>

</html>

7. SYSTEM TESTING

Systems should not be tested as a single, monolithic unit. The testing process should there to are proceed in stages where testing is carried out incrementally in conjunction with system implementation. Errors in program components may come to light at a later stage at the testing process. The process is therefore an iterative one with information being feed back from later stages to earlier parts of the process. The various strategies that were used in testing this software were as follows:

* Unit testing
* Integration testing
* System testing
* Acceptance testing

Unit testing

As the name itself says, this type of testing is done on small units of the system. A part of the system is considered as a unit and its testing is done. If as an example, login page considered, the user or the admin can enter into their respective home pages only after giving the valid username and password. This part of validating a system, by considering login as a unit can be said as a unit testing.

Integration testing

This part of testing deals with the testing procedure. It involves testing of various integration of several units. It checks whether the system is functioning correctly when two or more units are integrated together. This part of testing gives information about order of arrangement of various units, integrating modules, system, sub-system and the entire system as a whole.

System testing

This testing technique deals with the process of testing the system as a whole. At the end of each project, all defects are removed and the interface error are uncovered in order to achieve the good functionality of the whole system. This testing technique can be called as the final part of whole testing process.

Acceptance testing

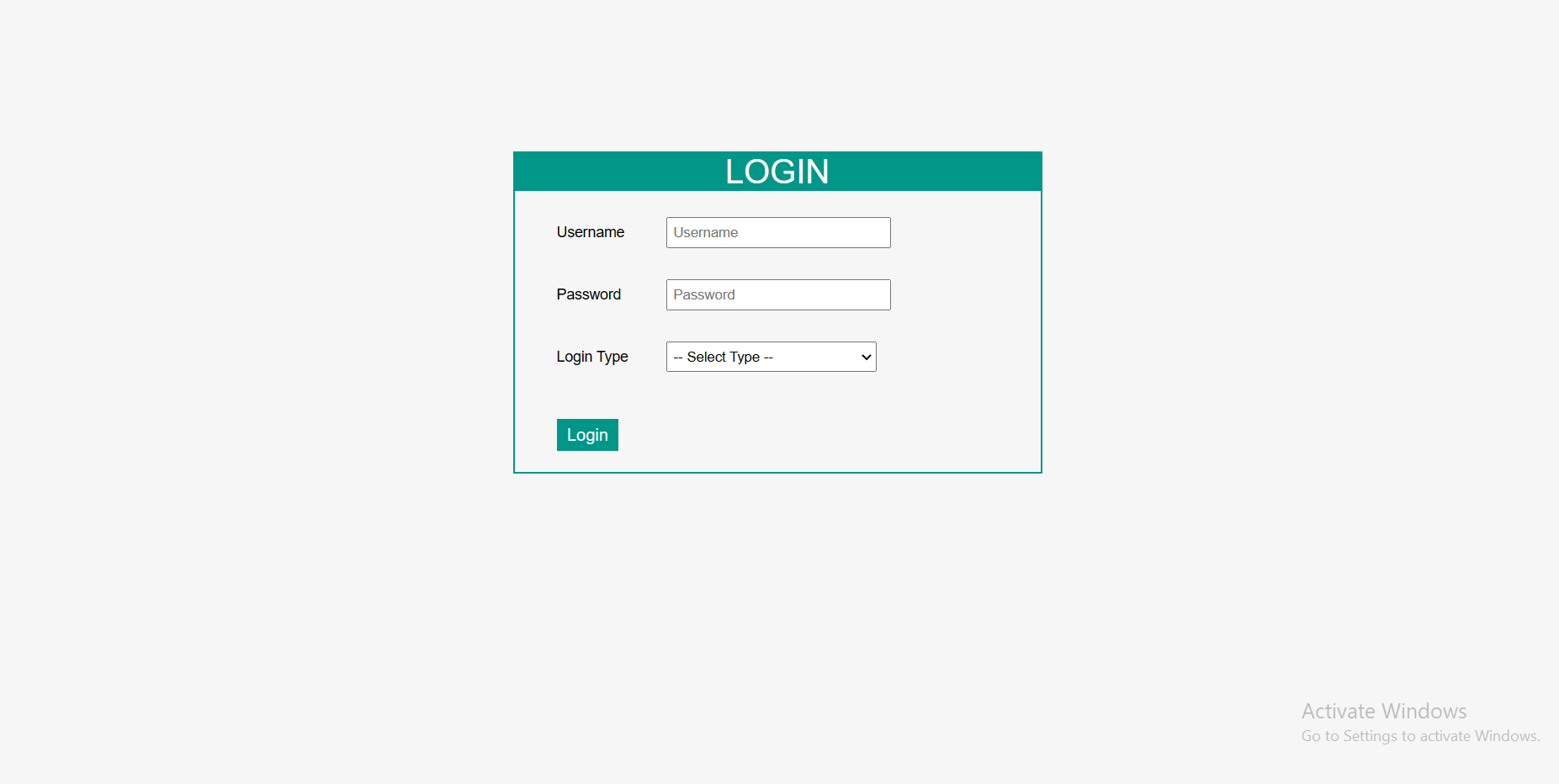
An acceptance test is performed by the client and verify whether the end to end the flow of the system is per the business requirement or not and if it is a per the needs of the end user. Client accepts the software only when all the features and functionalities work as expected. In the last phase of the testing, after which the software goes into production. This is also called user acceptance(UAT).

|  |  |  |
| --- | --- | --- |
| Input | Expected result | Actual result |
| Click on Login Button without entering username and password. | User-friendly required error message should be displayed to user. | Respective required error messages are displayed to users. |
| Click on Login Button with entering invalid username and password. | Error message should be displayed. | User-friendly error message is displayed. |
| Click on Login Button by providing valid username and password. | User should be show successful message and user should login into our application. | User is logged into our application Success. |

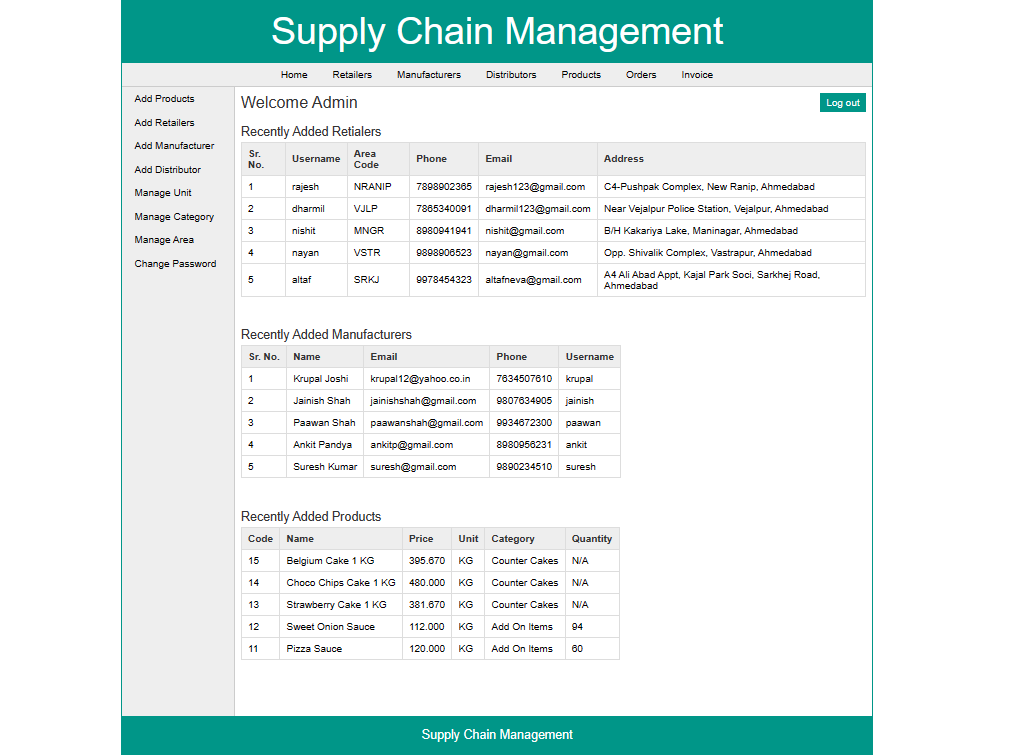
7.1 Test cases and Results

8. SNAPSHOTS

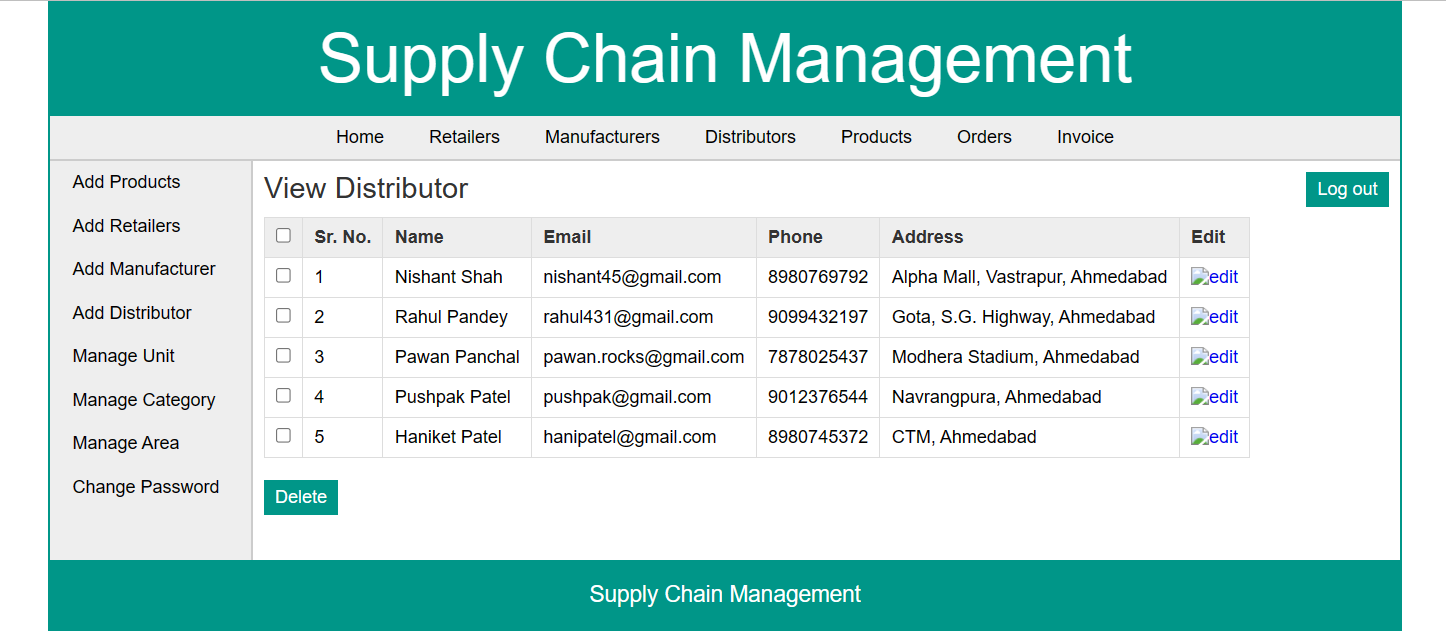
Login page



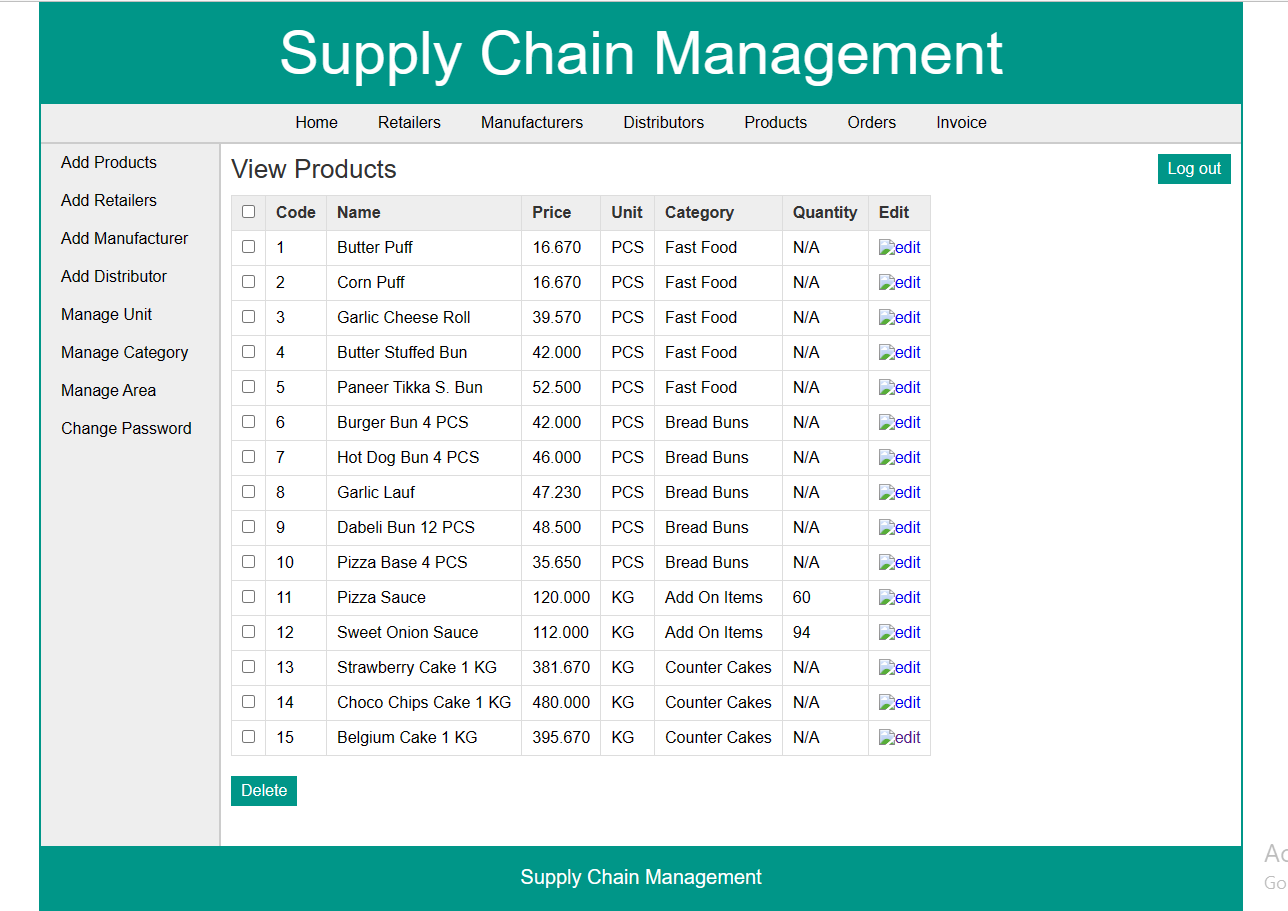
Admin home page



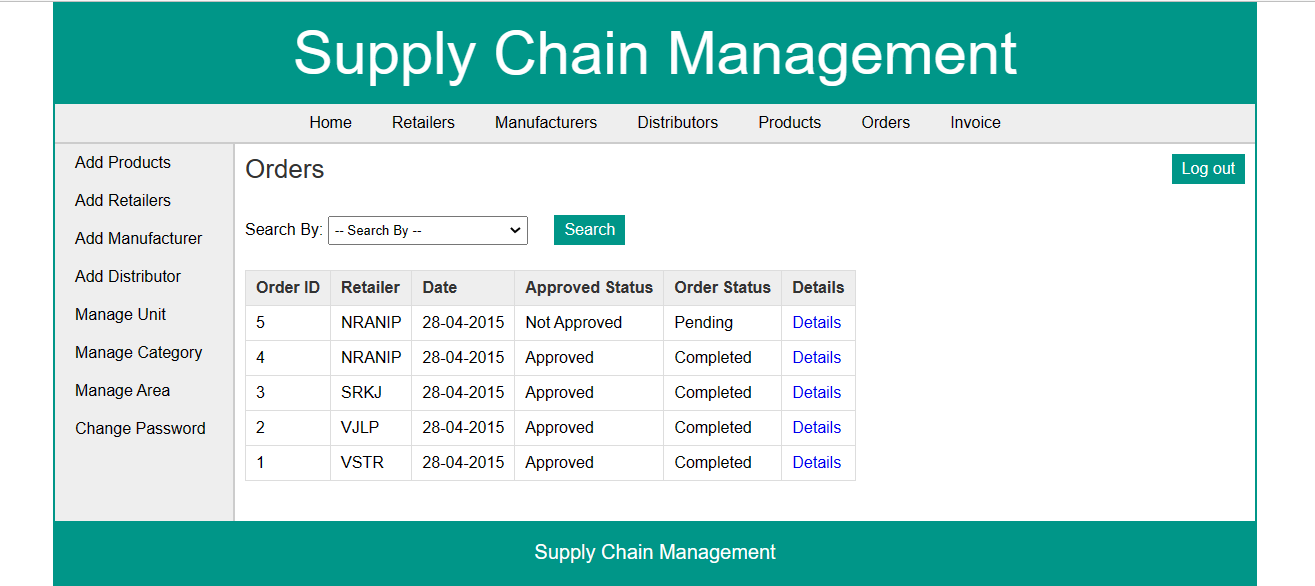
View distributor

****

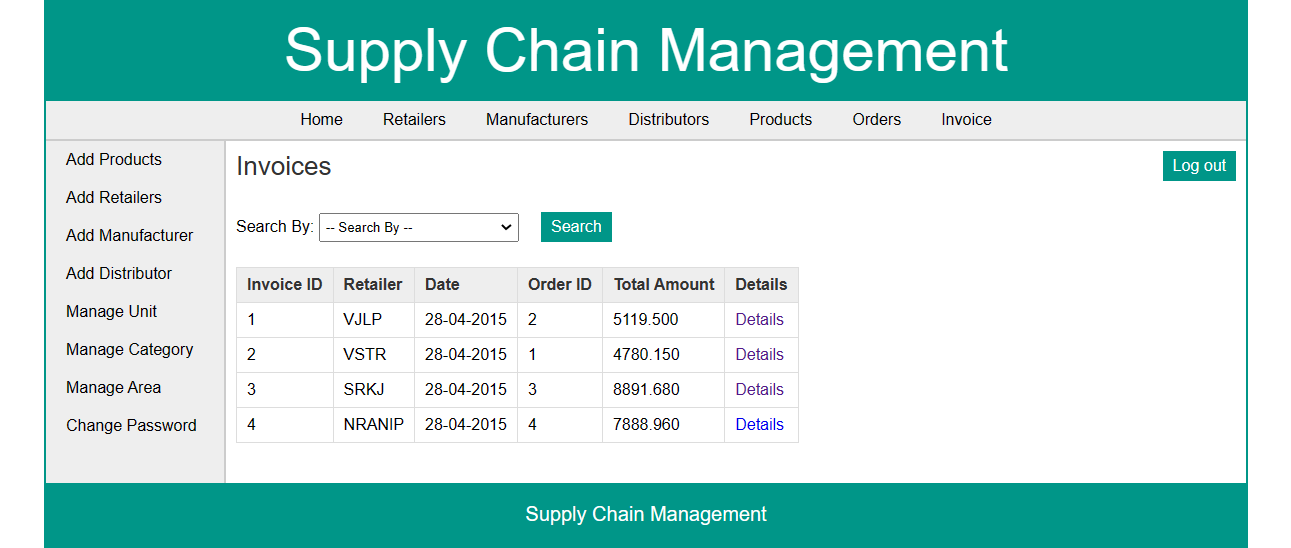
View products

****

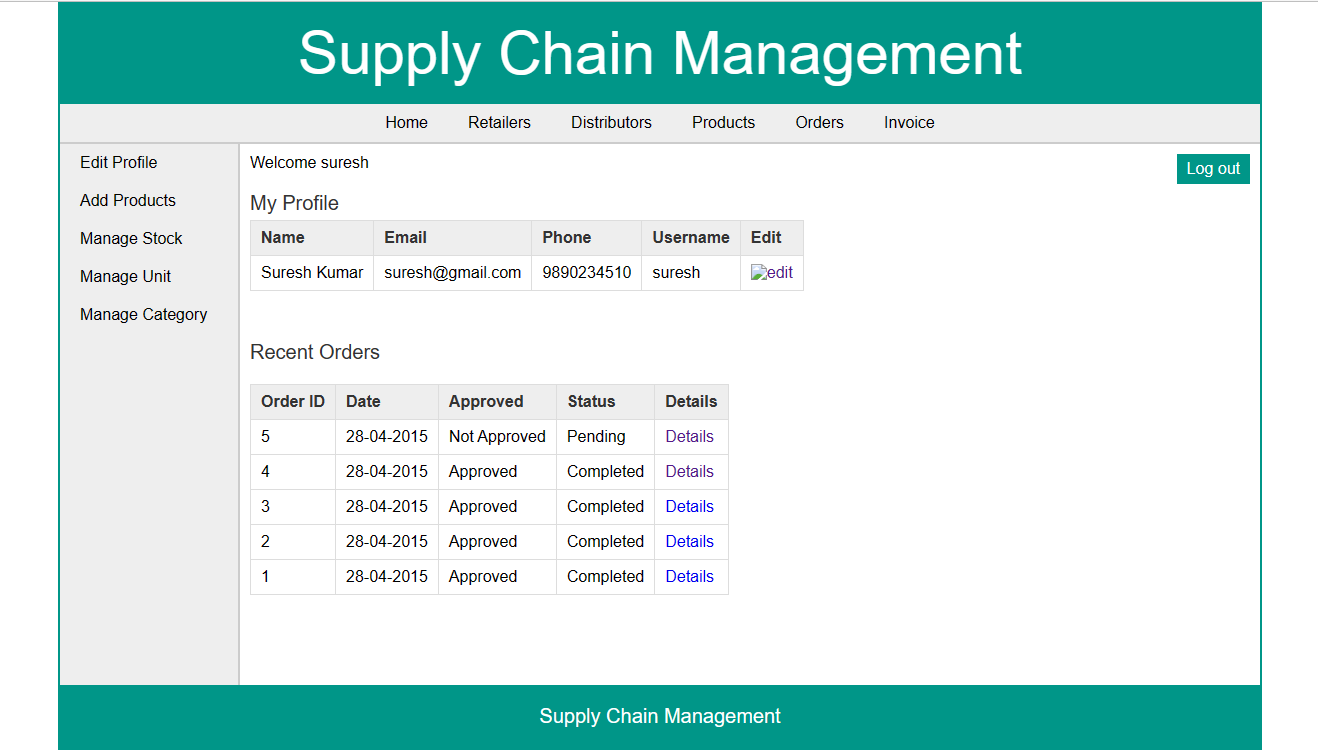
View orders

****

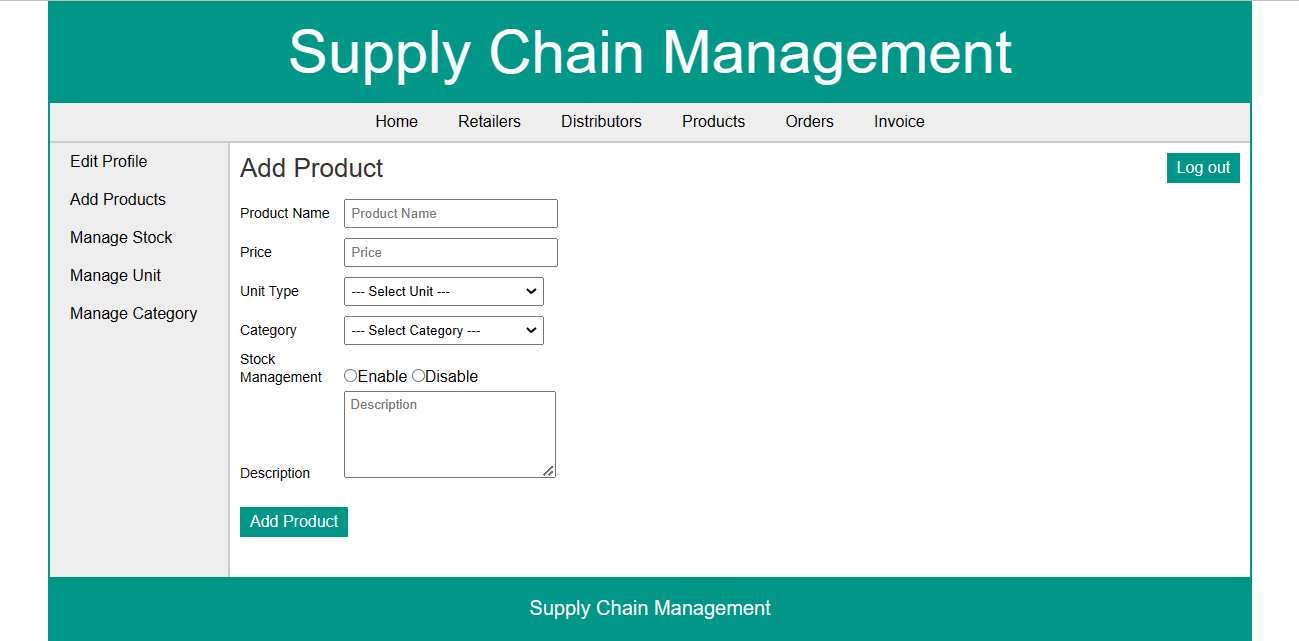
View invoice

****

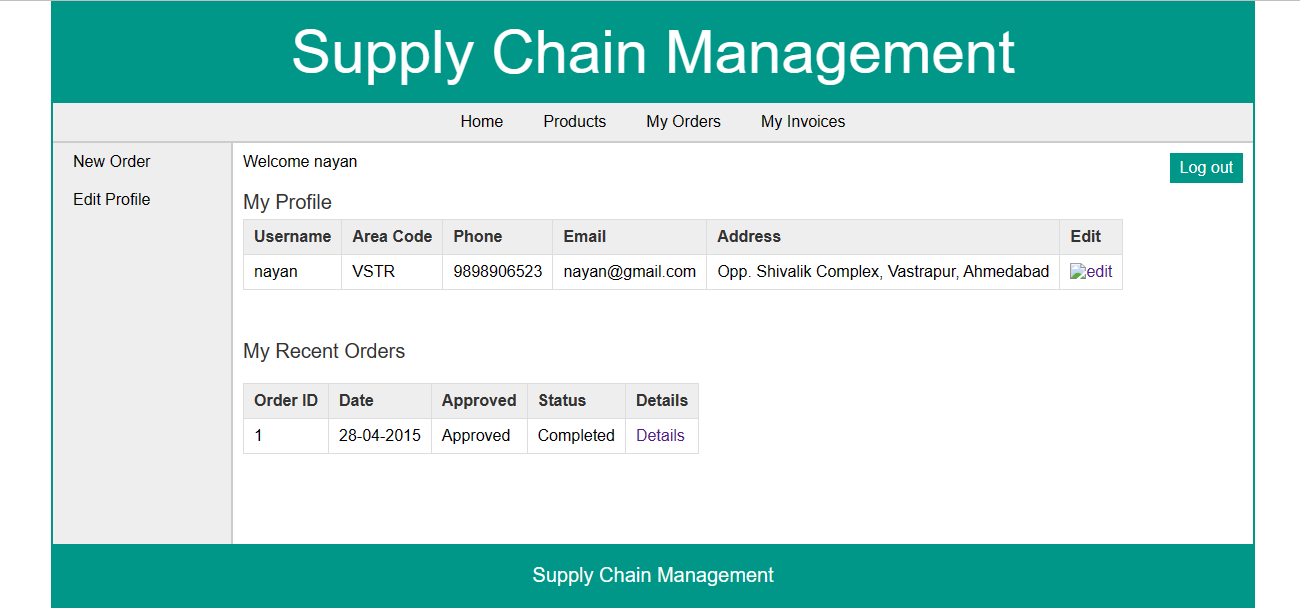
Manufacturer home page

****

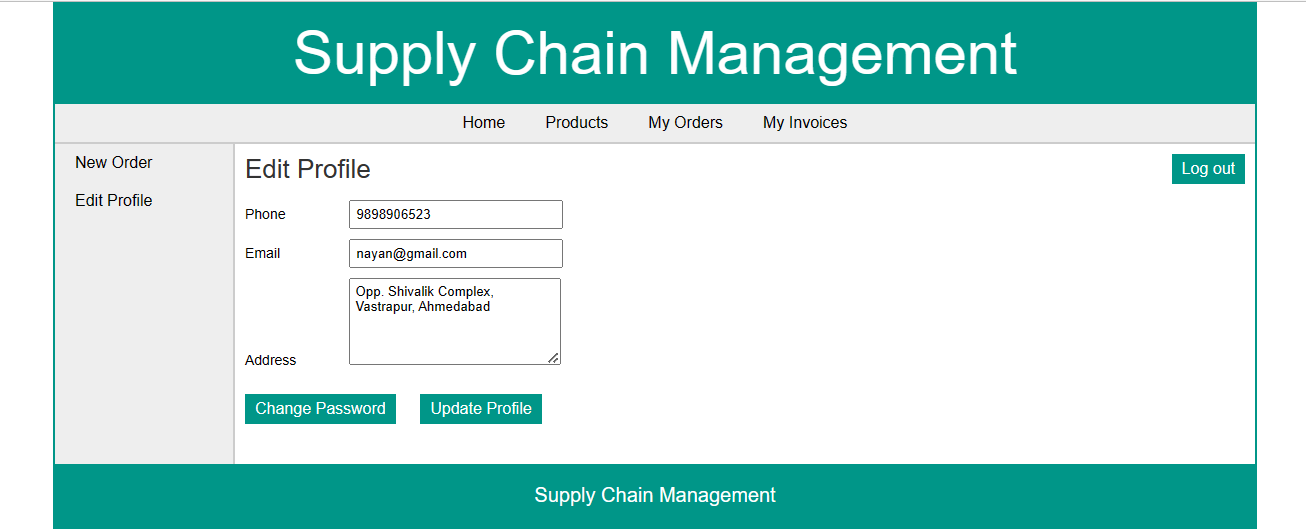
Add product



Retailers home page

****

Retailers edit profile page



9.CONCLUSION AND FUTURE SCOPE

9.1 Conclusion

We have shown that the goal of supply chain management is to steer the actors of one or several supply chains in order to optimize their performance and thus offer the creation of common value, especially for the customers.

Supply chain management is important in retailing because it helps manage the demand and supply function. It is safe to say that many manufactures have not reacted well to innovations in the distribution chain, where consolidation has shifted power to the hands of big supermarket chains and discount stores, as well as a few mega-wholesalers. These retailers and wholesalers, not to mention consumers, have forced brand-name companies to reengineer their marketing and logistics in an effort to strip out costs and add more value.

9.2 Future Scope

Supply Chain Management includes, planning, design, control and implementation of all business processes related to procurement, manufacturing, distribution and sales order fulfillment functions of a business. Thus Supply Chain Management includes managing supply and demand, sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, distribution across all channels, and delivery to the customer.

Due to its wide scope, supply chain management must address complex interdependences, in effect creating an “extended enterprise” that reaches far beyond the factory doors.

All these activities involve multiple networks of vendors and service providers. These networks of suppliers and service providers have to be integrated and coordinated by the supply chain management experts in such a way that the raw material moves smoothly from various procurement points to the centers of production and the finished goods move smoothly from the centers of production to the various points of sale/ delivery to consumer, across the globe.

Logistics is the back bone on which the supply chains are driven. Logistics refers to the management of flow of goods and supplies involving information, data and documentation between two entities or points. Logistics plays an important role in the post procurement function of delivery of raw material and supplies from the supplier to the factory or production center and the dispatch of finished goods from the factory to the point of delivery to the customer.

When goods move from supplier to factory to point of sale they flow through a network of transportation by road, rail, ship or air. They may be stored in warehouses before being moved to forward locations. This entire activity involves various suppliers, agents and agencies including freight forwarders, packers, customs department, distributors and Logistics service providers etc.

Logistics therefore is an integral component of Supply Chain Management.

In many cases Supply chain is often referred to as Logistics and vice-versa. Though logistics and supply chain are intricately linked, both do not mean the same. Logistics is a sub component and extension of supply chain.

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