



# **Software Requirements Specification For SMARTSHOP**

**---Online Shopping Made Easy**

**Version 1.2 approved**

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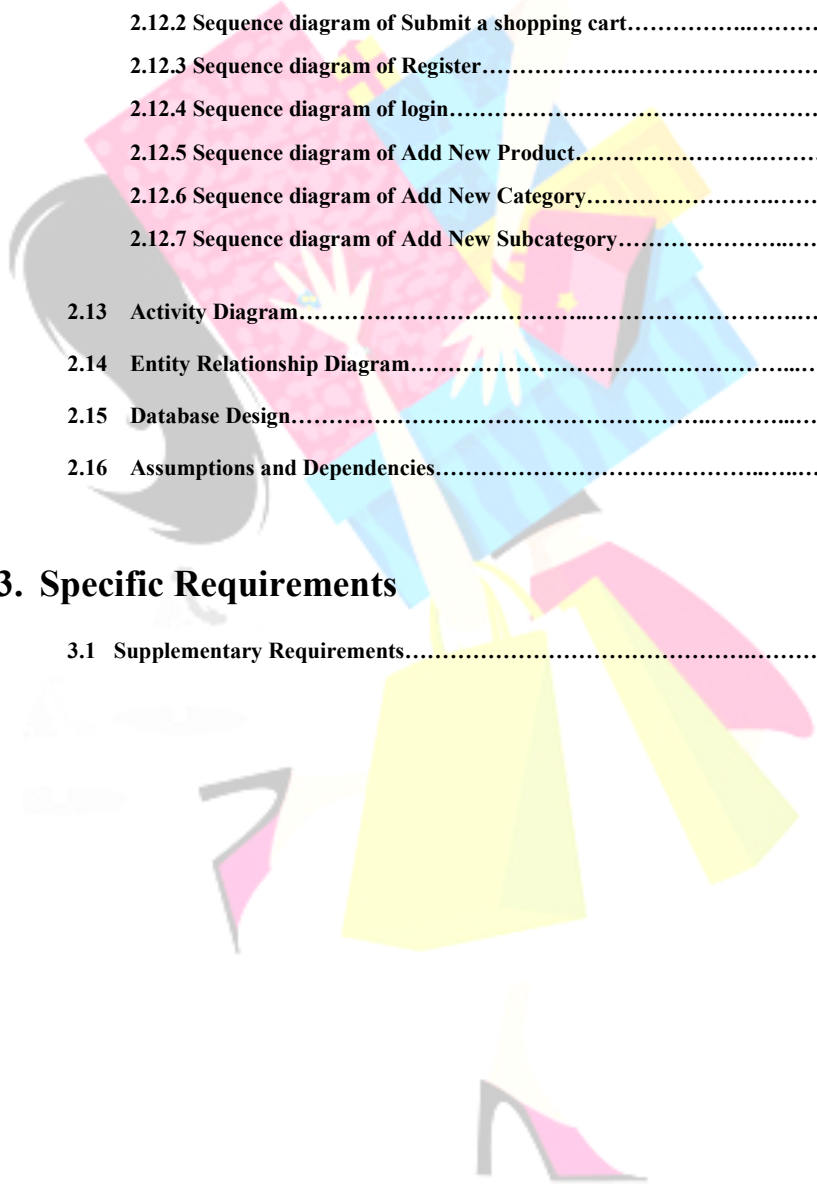
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## **Revision History**

<b>Date</b>	<b>Version</b>	<b>Description</b>	<b>Author</b>
5 July 2010	1.0	First draft	Sashi Terli, EVN Bhargav
10 July 2010	1.1	Second variant, added additional Sequence	Sashi Terli, Nagaraju
14 July 2010	1.2	Minor use-cases changes	EVN Bhargav, Nagaraju

## **1.0 INTRODUCTION**

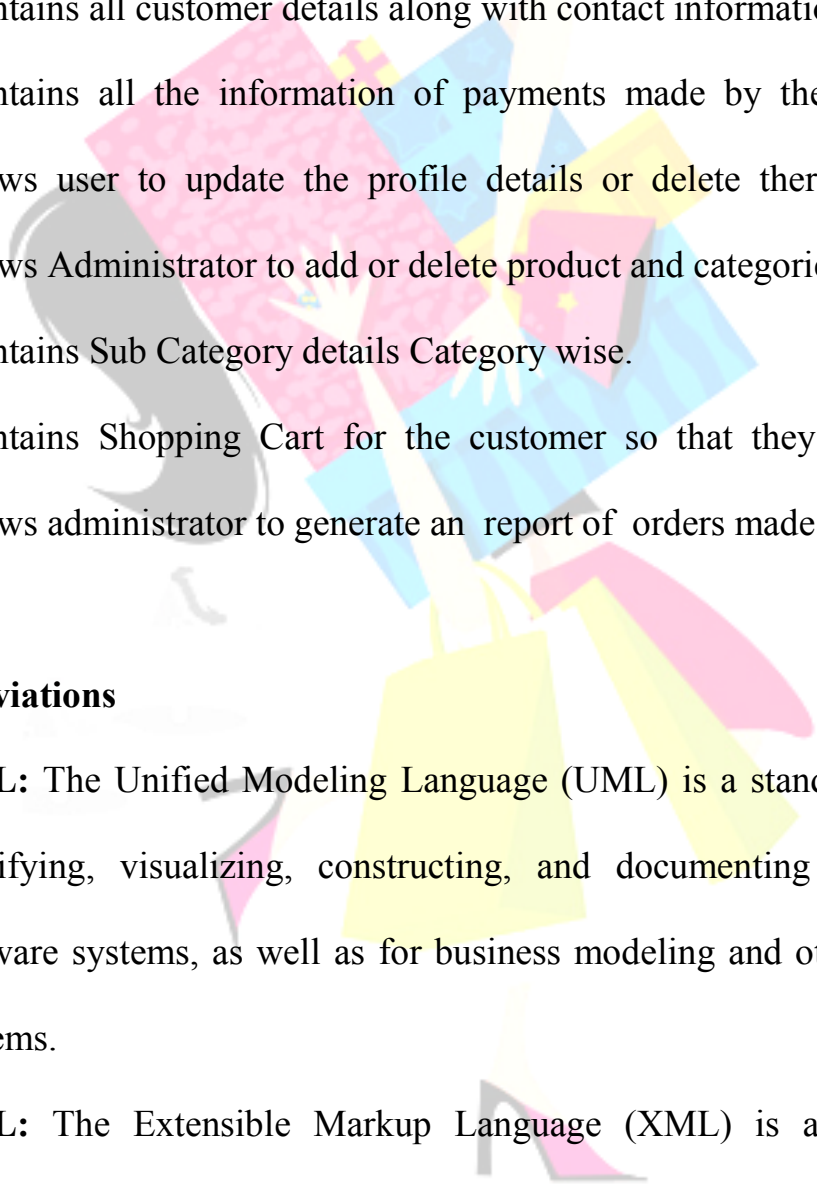
### **1.1 Purpose**

The online shopping is the process consumers go through to purchase products or services over the Internet. The Online Shopping System is to maintain the products and allow the customers to purchase them online without visiting the shop physically by providing their details and paying through Master Card/Visa Credit card. The Centralized Database System helps the management to have a track of all the customers and the products all the time.

### **1.2 Scope**

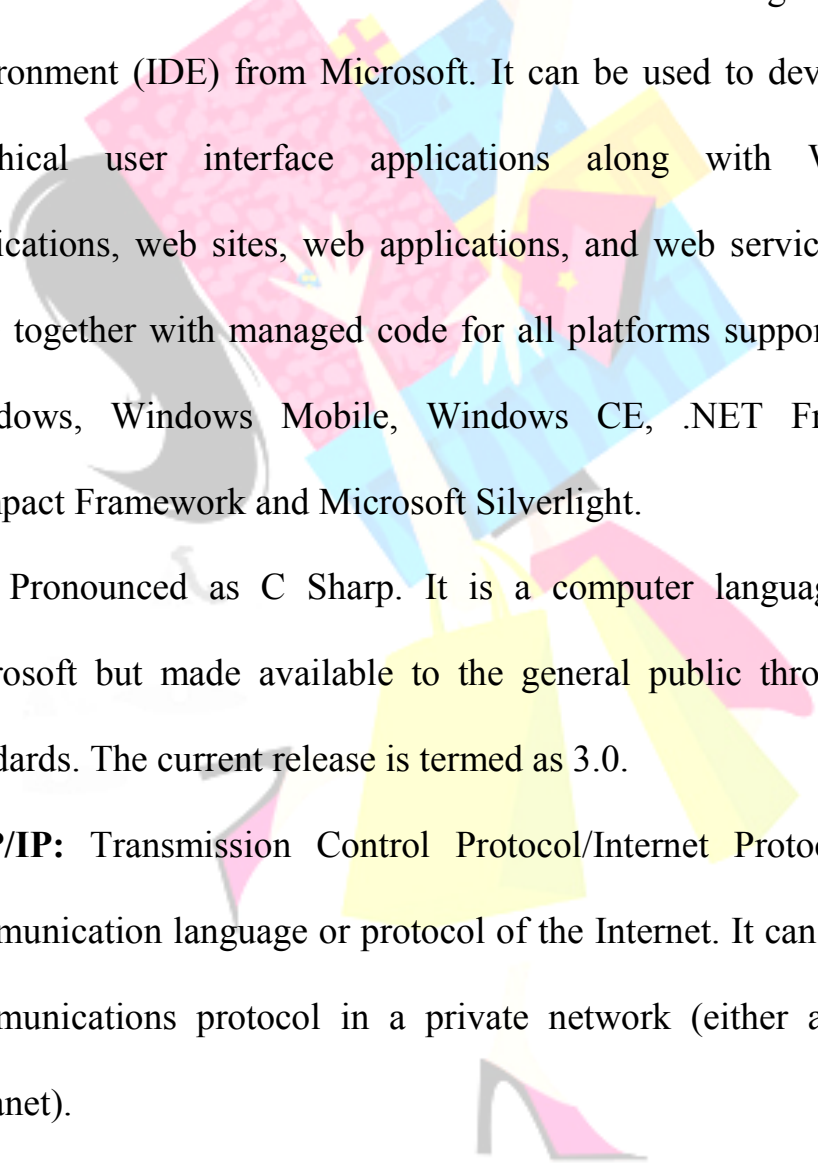
- ✓ Create Different Customer ID for each user or Customer.
- ✓ Verifies the user and depending on verification gives different permissions to the user.
- ✓ Maintains a product details.



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- ✓ Allows administrator to view the reports of sales made.
  - ✓ Maintains Customers details like Full Name, Email Address, etc.
  - ✓ Customers can review the product along with their Email Address.
  - ✓ Maintains all customer details along with contact information.
  - ✓ Maintains all the information of payments made by the customers.
  - ✓ Allows user to update the profile details or delete there profile.
  - ✓ Allows Administrator to add or delete product and categories.
  - ✓ Maintains Sub Category details Category wise.
  - ✓ Maintains Shopping Cart for the customer so that they can shop.
  - ✓ Allows administrator to generate an report of orders made for the day.

### 1.3 Abbreviations

- ✓ **UML:** The Unified Modeling Language (UML) is a standard language for specifying, visualizing, constructing, and documenting the artifacts of software systems, as well as for business modeling and other non-software systems.
- ✓ **XML:** The Extensible Markup Language (XML) is a general-purpose specification for creating custom markup languages. It is classified as an extensible language because it allows its users to define their own elements.

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- ✓ **MICROSOFT SQL SERVER:** It is a relational model database server produced by Microsoft. Its primary query languages are T-SQL and ANSI SQL.
  - ✓ **MICROSOFT VISUAL STUDIO:** It is an integrated development environment (IDE) from Microsoft. It can be used to develop console and graphical user interface applications along with Windows Forms applications, web sites, web applications, and web services in both native code together with managed code for all platforms supported by Microsoft Windows, Windows Mobile, Windows CE, .NET Framework, .NET Compact Framework and Microsoft Silverlight.
  - ✓ **C#:** Pronounced as C Sharp. It is a computer language developed by Microsoft but made available to the general public through international standards. The current release is termed as 3.0.
  - ✓ **TCP/IP:** Transmission Control Protocol/Internet Protocol is the basic communication language or protocol of the Internet. It can also be used as a communications protocol in a private network (either an intranet or an extranet).
  - ✓ **FTP:** File Transfer Protocol is the simplest and most secure way to exchange files over the Internet.

- ✓ **WEB SERVICES:** Web services are automated information services that are conducted over the Internet, using standardized technologies and formats/protocols that simplify the exchange and integration of large amounts of data over the Internet.
- ✓ **GLIFFY:** It is an online diagramming service that helps users communicate with a combination of shapes, text, and lines. Using this online tool we draw object-oriented Unified Modeling Language (UML) diagrams, Sequence diagrams and many more. It is intended for visual modeling and component construction of enterprise-level software applications.
- ✓ **ERWIN DATA MODELER:** is a software tool for data modeling (data requirements analysis, database design etc) of custom developed information systems, including databases of transactional systems and data marts. ERwin's data modeling engine is based upon the IDEF1X method, although it now supports diagrams displayed with information engineering notation as well.
- ✓ **CATEGORY:** A group, often named or numbered, to which items are assigned based on similarity or defined criteria.
- ✓ **SUBCATEGORY:** A subdivision that has common differentiating characteristics within a larger category.
- ✓ **SHIPPING:** The commercial enterprise of moving goods and materials.

- ✓ **TRANSACTION:** Any event that causes a change in an organization's financial position or net worth, resulting from normal activity.

## 1.4 References

- ✓ IEEE SRS Format
- ✓ Problem definition (provided by Microsoft)
- ✓ UML in 24 Hours
- ✓ Web Services and Introduction by B.V. Kumar (TMH)
- ✓ The Microsoft Data Warehouse Toolkit: With SQL Server2005 and the Microsoft Business Intelligence Toolset by Joy Mundy, Warren Thomthwaite, Ralph Kimball
- ✓ Mastering XML by Ann Navarro (BPB)

## 1.5 Technologies

C#.Net: Application Architecture

SQL SERVER 2005: Database

.Net Frame Work 2.0: Development Tool

IIS 7.0: Web Server

EXPRESSION BLEND: Design Tool

AJAX: Support Tool

## 1.6 Requirement Engineering Process

Rational Unified Process (RUP) implements software development best practices and is a use case driven, architecture centric and iterative development process. It provides a framework that can be customized to suit the size, complexity and other characteristics of the project.

## 1.7 Overview

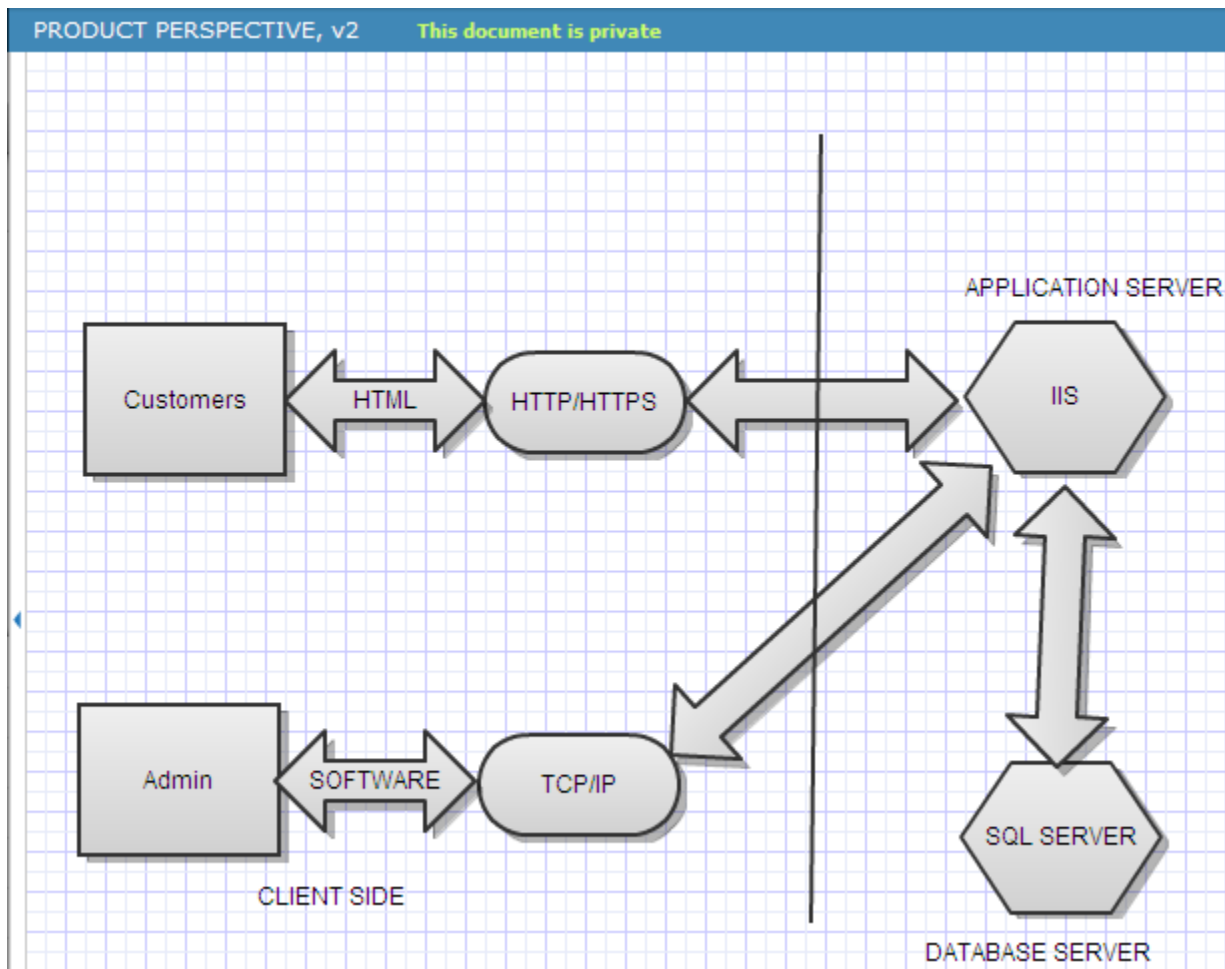
This SRS include two sections. The overall description and Specific requirements

- ✓ The Overall Description describes major components of a system and interconnection between them.
- ✓ The Specific Requirements describes the functions and role of the actors and constraints

## 2.0 The Overall Description

This section gives general idea about the product, which will effect the behavior of the product.

## 2.1 Product Perspective:



- ✓ The web pages provides user interface on customer client side. The communication between the Server and the customer is provided through HTTP/HTTPS.
- ✓ The software provides the interface to communicate with the server and for this it uses TCP/IP protocol
- ✓ On the server side client connects to web server. Web server is for IIS 7.0 and database server is for storing the information.

## 2.2 Project Description

It is a web based e-commerce site developed for users who visit a typical shopping site for online buying.

### Normal features:

Common users can browse the site, get the items, put in the shopping cart and when they finished shopping check out and finalize the sale.

### Value Added Features:

The Authenticated users can also take advantage of a component that allows them to track the order status through web services. The user can recommend a product to a friend by emailing him the product details.

The administrator (owner) of the site will have special privileges of adding new categories, images, products, etc.

Other features such as accessing web services and credit card validation.

## 2.3 Software Interface

User: Any Operating System, Any Browser, Client Software

Database Server: Any Operating System, SQL SERVER 2005 or higher

Development: Windows 7 Operating System, C#.Net, HTML, XML, Gliffy, SQL SERVER 2005, VISUAL STUDIO 2005

## 2.4 Hardware Interface

### 2.4.1 Customer/User:

- ✓ Should have Pentium IV or higher.
- ✓ Minimum 1GB of RAM.
- ✓ Minimum 500 MB of Disk Space.
- ✓ Modem or LAN to get connected to Internet.

### 2.4.2 Sql Server:

- ✓ Should have Pentium IV or higher.
- ✓ Minimum 1GB MB of RAM.
- ✓ Minimum 2GB of Disk Space excluding the Data size.

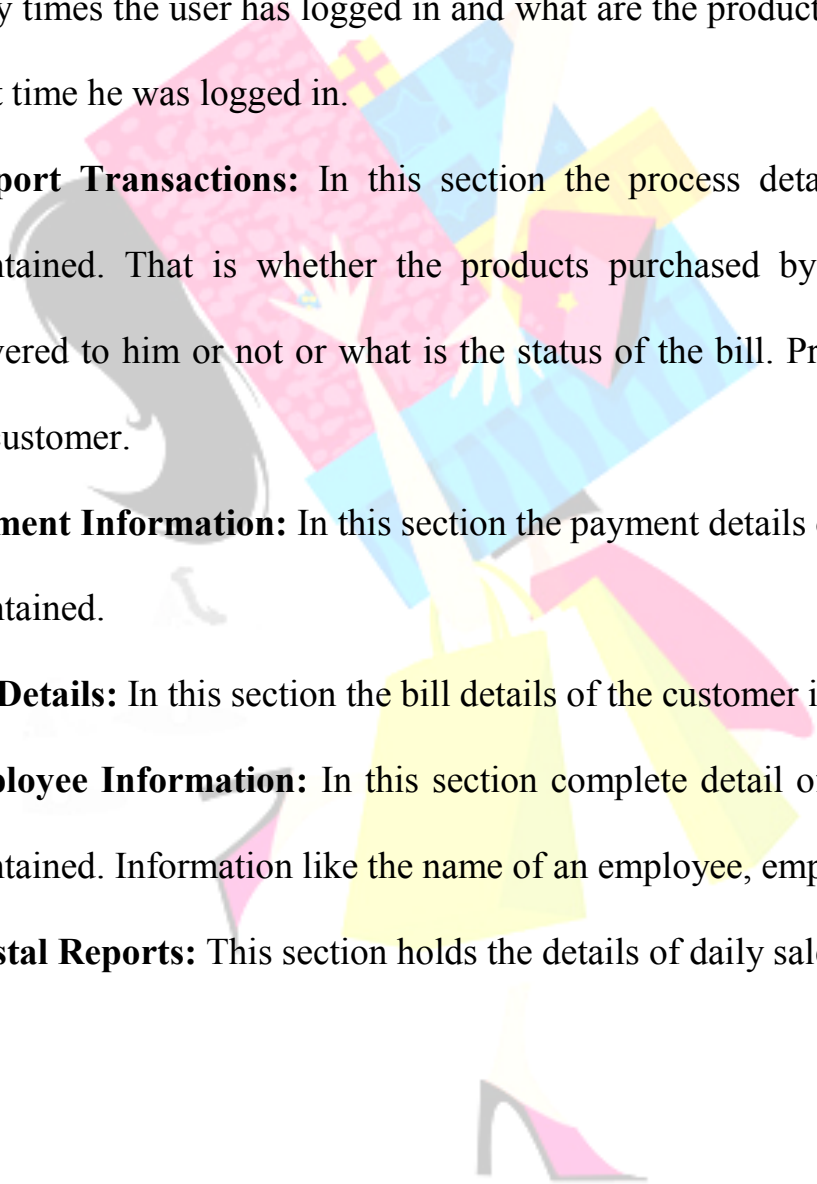
## 2.5 Communication Interface

- ✓ HTTP / HTTPS Protocol.
- ✓ TCP/IP Protocol.

## 2.6 Product Function

- ✓ **Customer/User Information:** It maintains personal information of the user like their name, Email Address etc.



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- ✓ **Product Information:** This maintains the information about the product like description of the product, Product Image, etc
  - ✓ **Customer/User Logs:** It maintains the details of the user log that is how many times the user has logged in and what are the products he purchased, it what time he was logged in.
  - ✓ **Support Transactions:** In this section the process details of the bill is maintained. That is whether the products purchased by the customer is delivered to him or not or what is the status of the bill. Provides support to the customer.
  - ✓ **Payment Information:** In this section the payment details of the customer is maintained.
  - ✓ **Bill Details:** In this section the bill details of the customer is maintained.
  - ✓ **Employee Information:** In this section complete detail of the employee is maintained. Information like the name of an employee, employee ID, etc.
  - ✓ **Crystal Reports:** This section holds the details of daily sales

## 2.7 Customer Characteristics

This section assumes the following characteristic about the User of a system:

- ✓ User knows how to use a computer.
- ✓ User knows how to use internet.
- ✓ User is comfortable with English.

## 2.8 Constraints

- ✓ Login and password is used for the Identification of the Customer.
- ✓ Guest can view the site with certain restriction.
- ✓ The system is working on a single server.
- ✓ GUI is only in English.

## 2.9 Actors

**2.9.1 Customer:** A customer, also called client, buyer, or purchaser, is usually used to refer to a current or potential buyer or user of the products of an individual or organization, called the supplier, seller, or vendor. This is typically through purchasing or renting goods or services.

**2.9.2 Administrator:** Someone who administers a business

## **2.10 Functionality**

### **2.10.1 Portal**

- ✓ Allows the customer to view the different categories and further to different Products along with their images.
- ✓ Allows the customer to shop online saving time and cost of customer.

### **2.10.2 Customer**

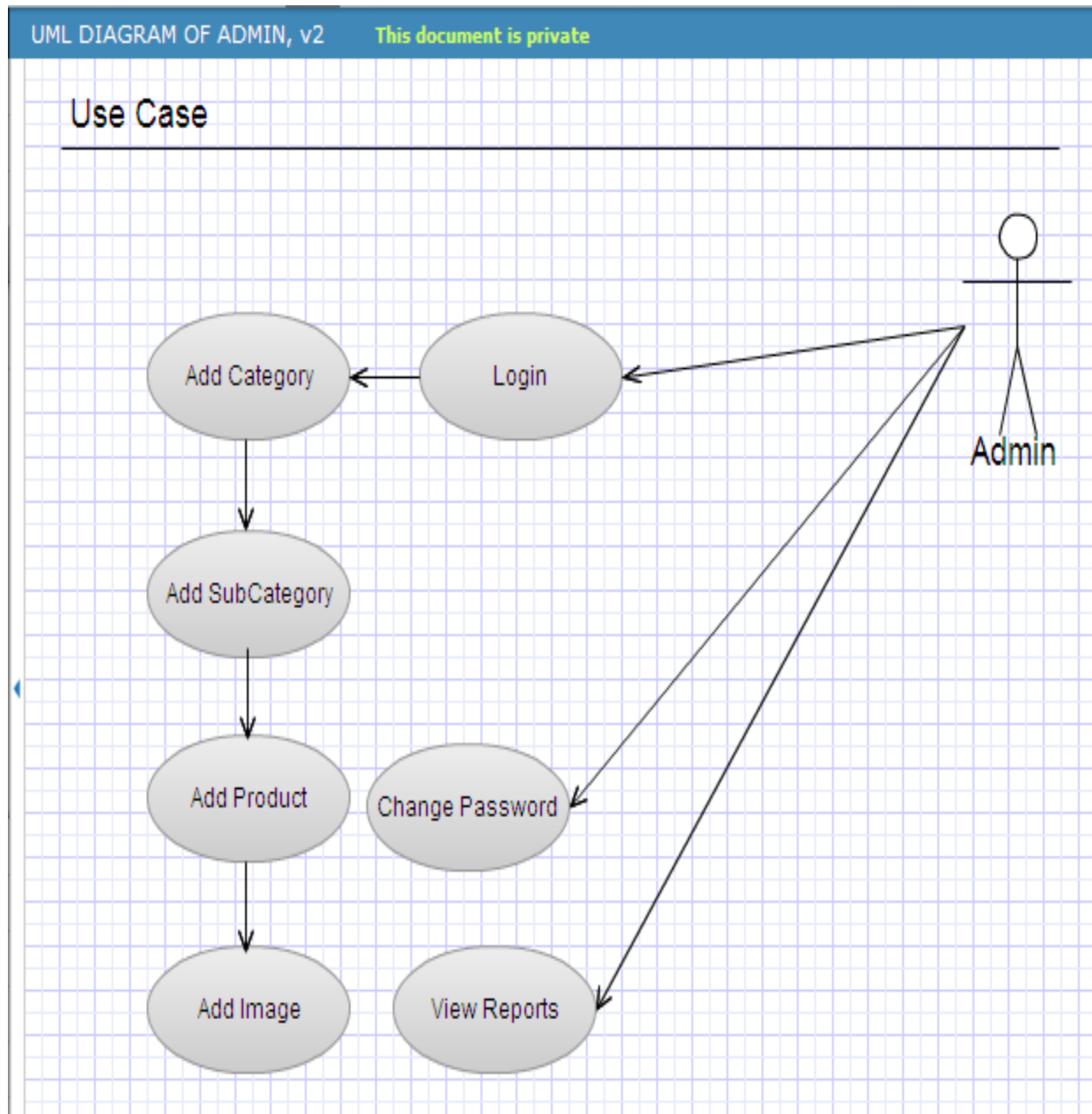
- ✓ Customers when enter the site and view the various products in different category.
- ✓ Authentication of the customer is done for the payment of the shopping done
- ✓ Customer can browses through the products available in the shop, can select some of them and put into the shopping cart.
- ✓ Customer can anytime change the items in the cart either by adding new items or by removing existing items. Customer proceeds towards the payment counter (Check out). Finalize product list of items he finally wish to buy and make the final payment.

### **2.10.3 Administrator**

- ✓ Updates the details of the different category, subcategory, products etc.
- ✓ Verifies the customer card details and records the details for shipment of goods.
- ✓ Can reset the password.

## 2.11 Use Case Model Survey:

### 2.11.1 USE CASE DIAGRAM OF AN ADMINISTRATOR

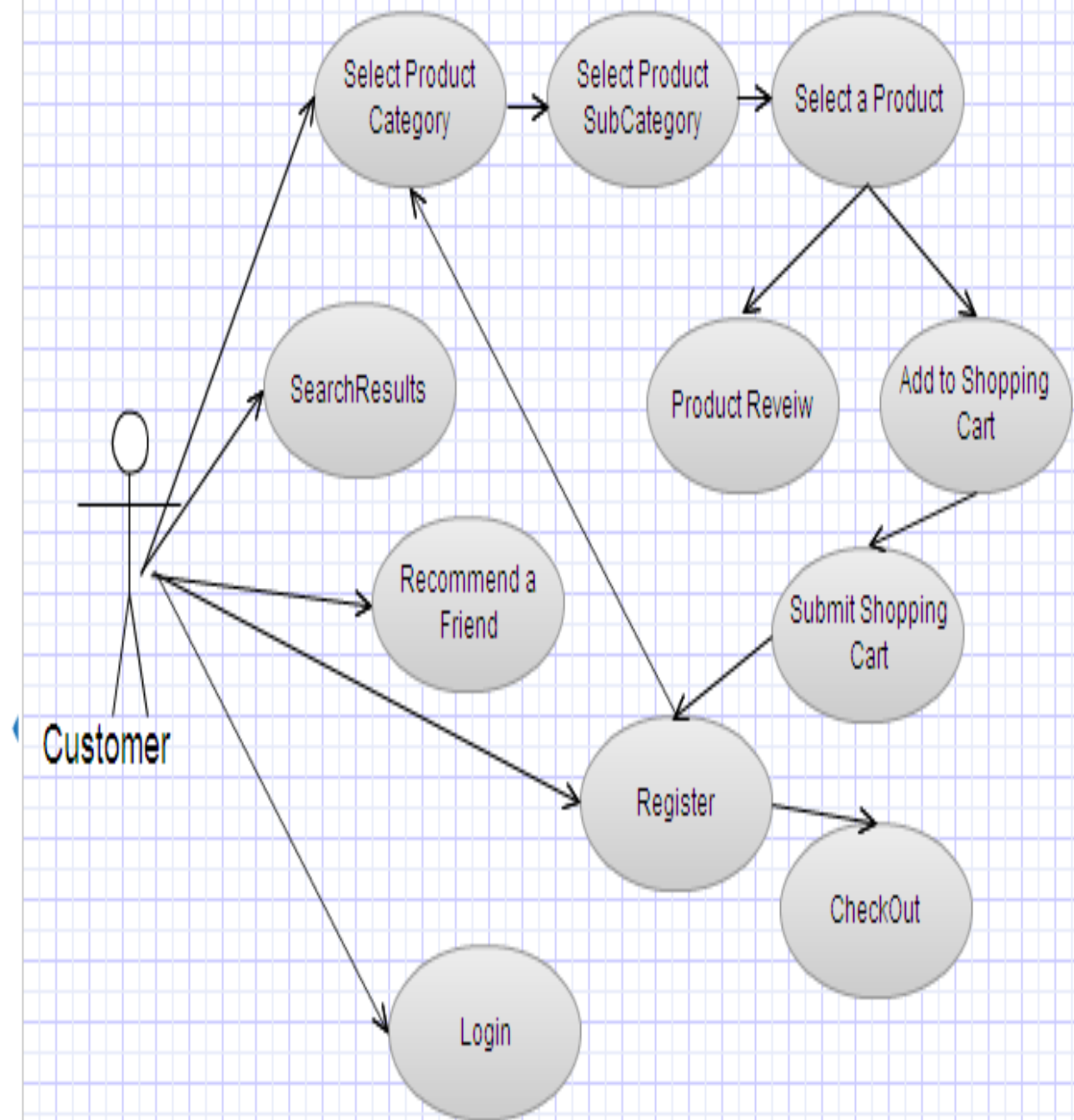


## 2.11.2 USE CASE DIAGRAM OF A CUSTOMER

UML DIAGRAM OF CUSTOMER, v3

This document is private

### Use Case Diagram



**Administrator:** Admin is responsible for resetting the password, Manage Categories, sub categories, products and viewing reports.

**Manage Category:** The Administrator can add, update, and delete a Product Category as and when needed. He will have all the authorities to manage the product category.

**View Reports:** The administrator can view all sets of report and based on that he will plan how to improve the shop.

**Customer:** Customer can register before checking out the product or after login. Customer can browse the categories, sub categories, product details. Also, customer can add the selected products to the shopping cart, review a particular product, search results and send recommendation to a friend about the product

**Login:** The Customers can login and can register themselves or browse the products.

**Register:** After login, the Customers can register themselves if they want to become a registered user and can enter for shopping or can register before the checkout.

**SearchResults:** Customers can search the results through the website.

Check Order Details: The user can check there order details by providing a bill number.

Categories/Subcategories/Products: Customer can select a particular category and then subcategory and finally the product.

Add to shopping cart: Customer can add the selected product to the cart.

Product Review: After selecting the product, Customer can either add it to the cart or can write a review about it.

Submit the Cart: After adding to the cart, if the customers are registered customers then they can checkout the product or they should register and then checkout the product.

CheckOut: Finally customers can check out the product.

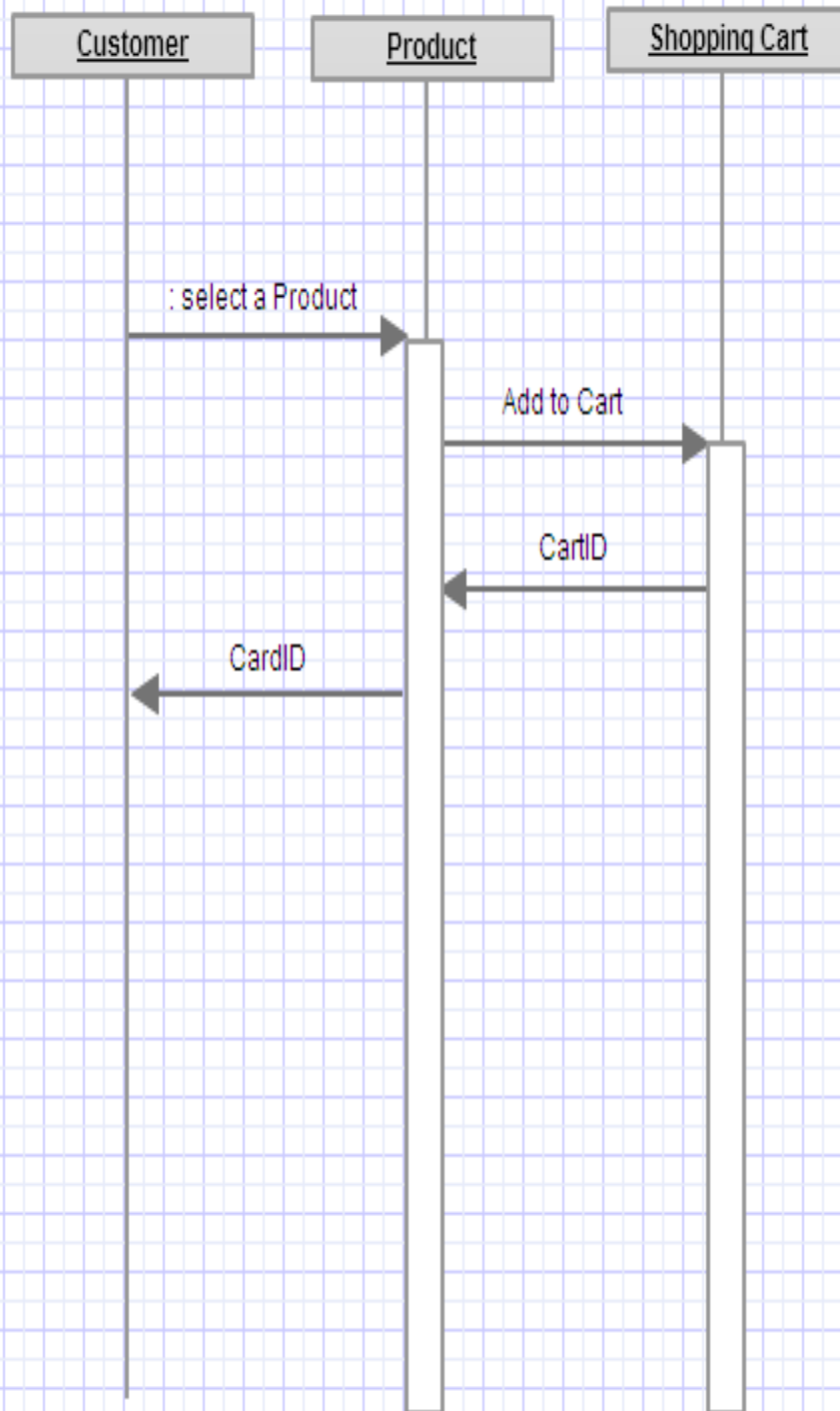
## **2.12 Sequence Diagrams**

### **2.12.1 Sequence diagram of Add to Shopping Cart**

Customer entering the website will be allocated a shopping cart. On entering the site he/she will be presented with the list of items available at the shop.

This whole sequence has been captured by following sequence diagram.

## Add to Shopping Cart



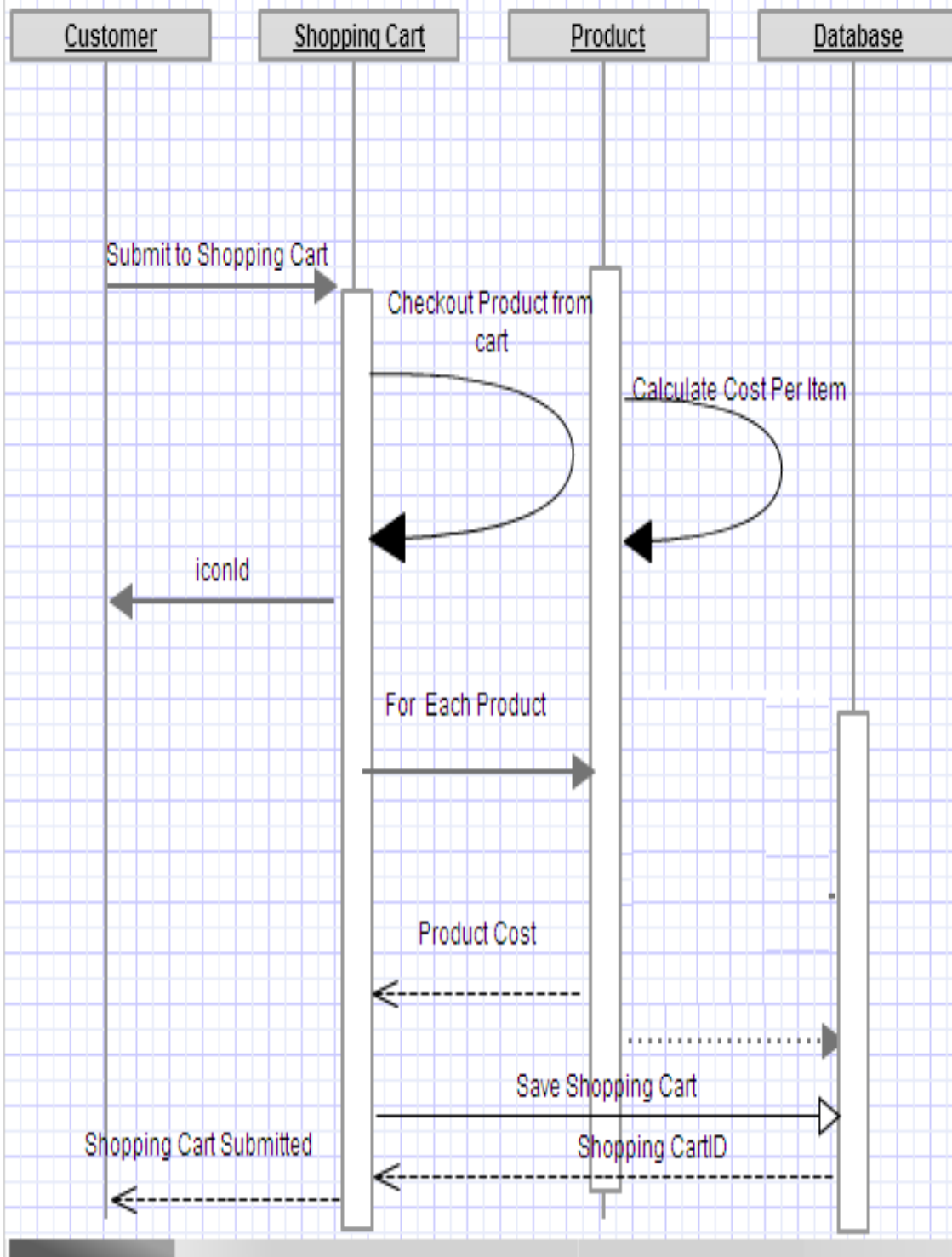


### 2.12.2 Sequence diagram of Submit a Shopping Cart

Below sequence diagram shows that after customer buying the product, will be added to the shopping the cart and then that product details will be fetched out from the database.



## Submit a Shopping Cart

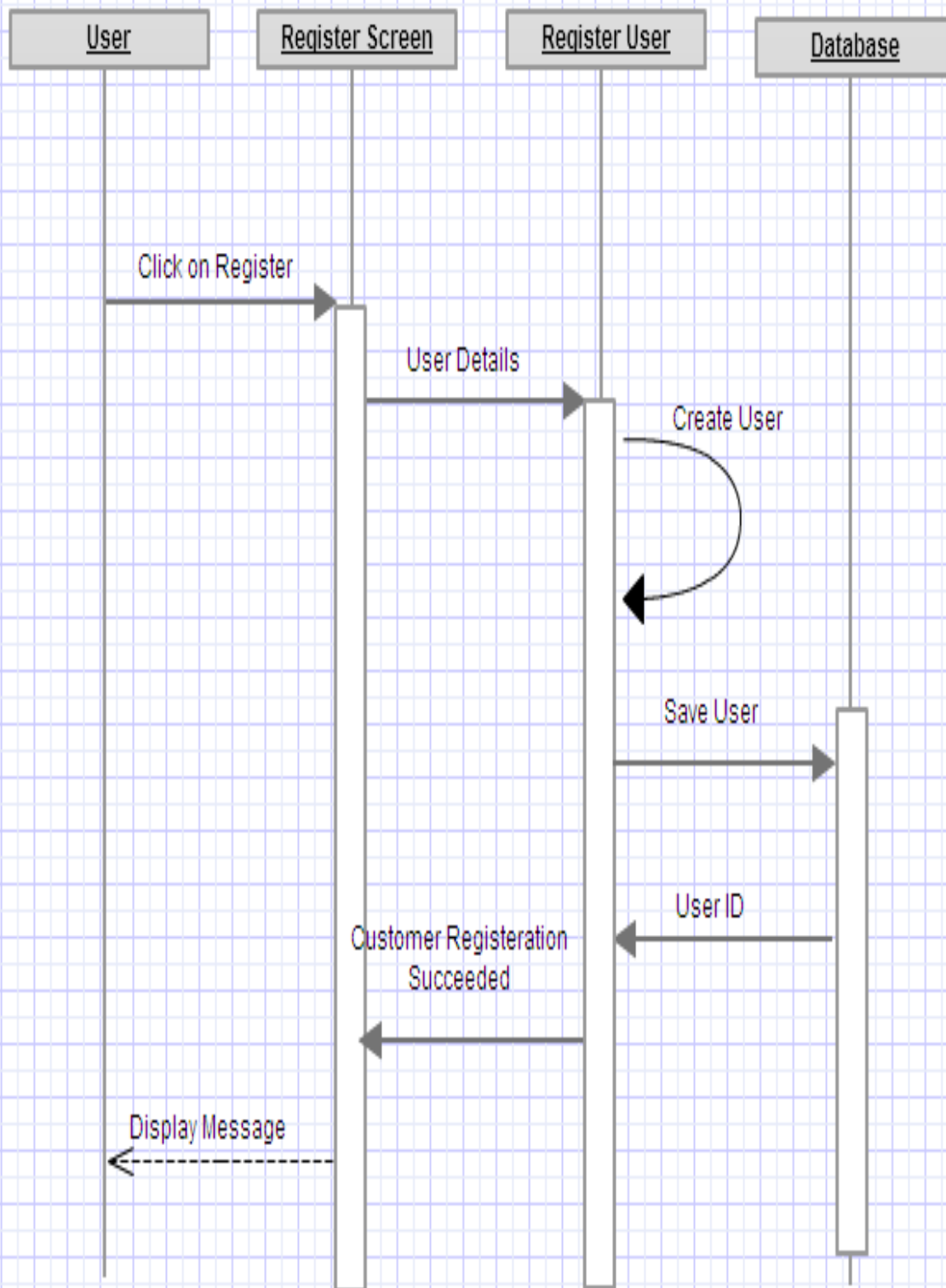


### 2.12.3 Sequence diagram of Register

Below sequence diagram will show the registration process of the user. The user will give his/her details and the user ID will be created and saved in the database.



## Register -- Sequence Diagram

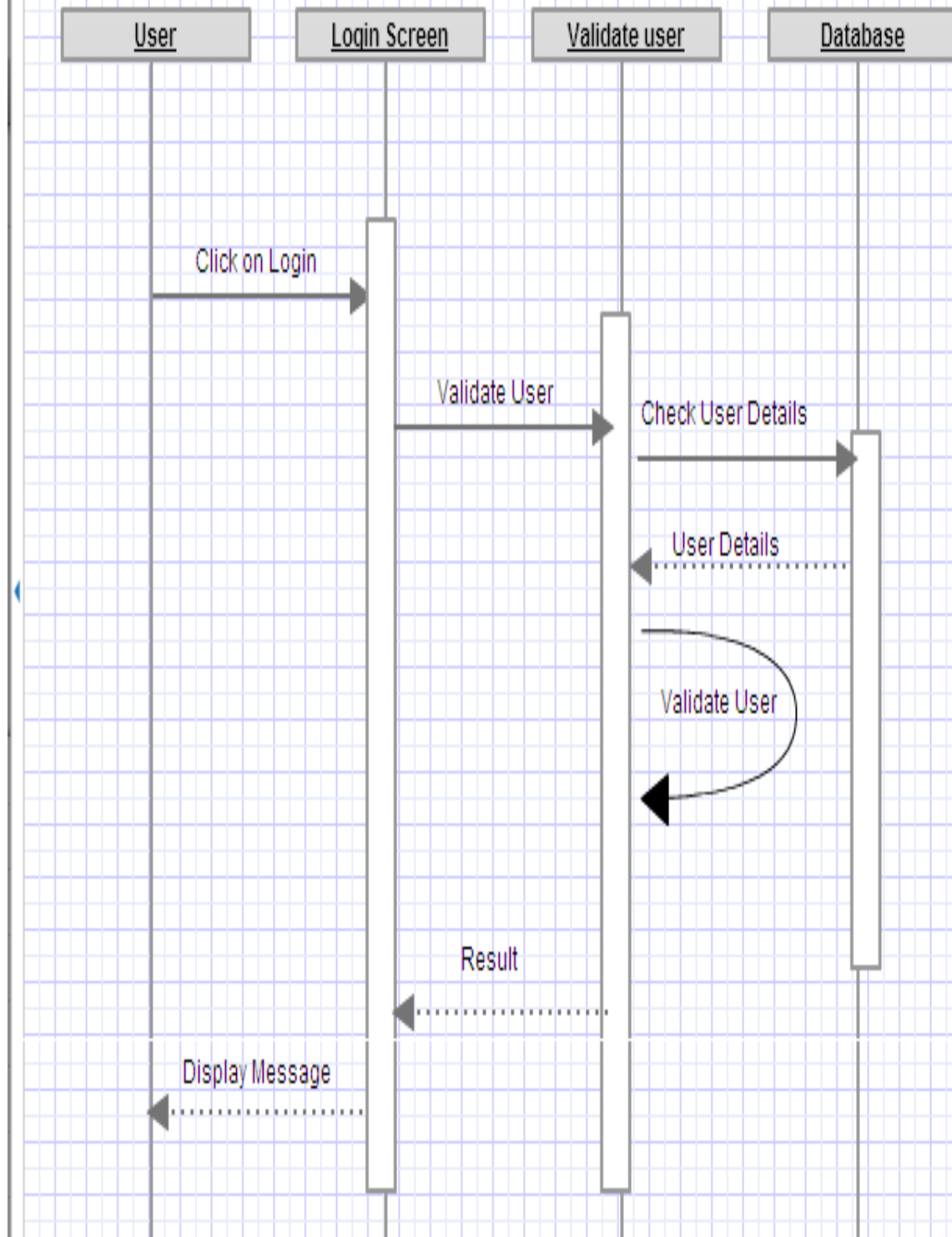


#### 2.12.4 Sequence diagram of Login

Customer entering the website gets authenticated and will be validated with the help of the database. This whole sequence has been captured by following sequence diagram.



## Login a Customer -- Sequence Diagram

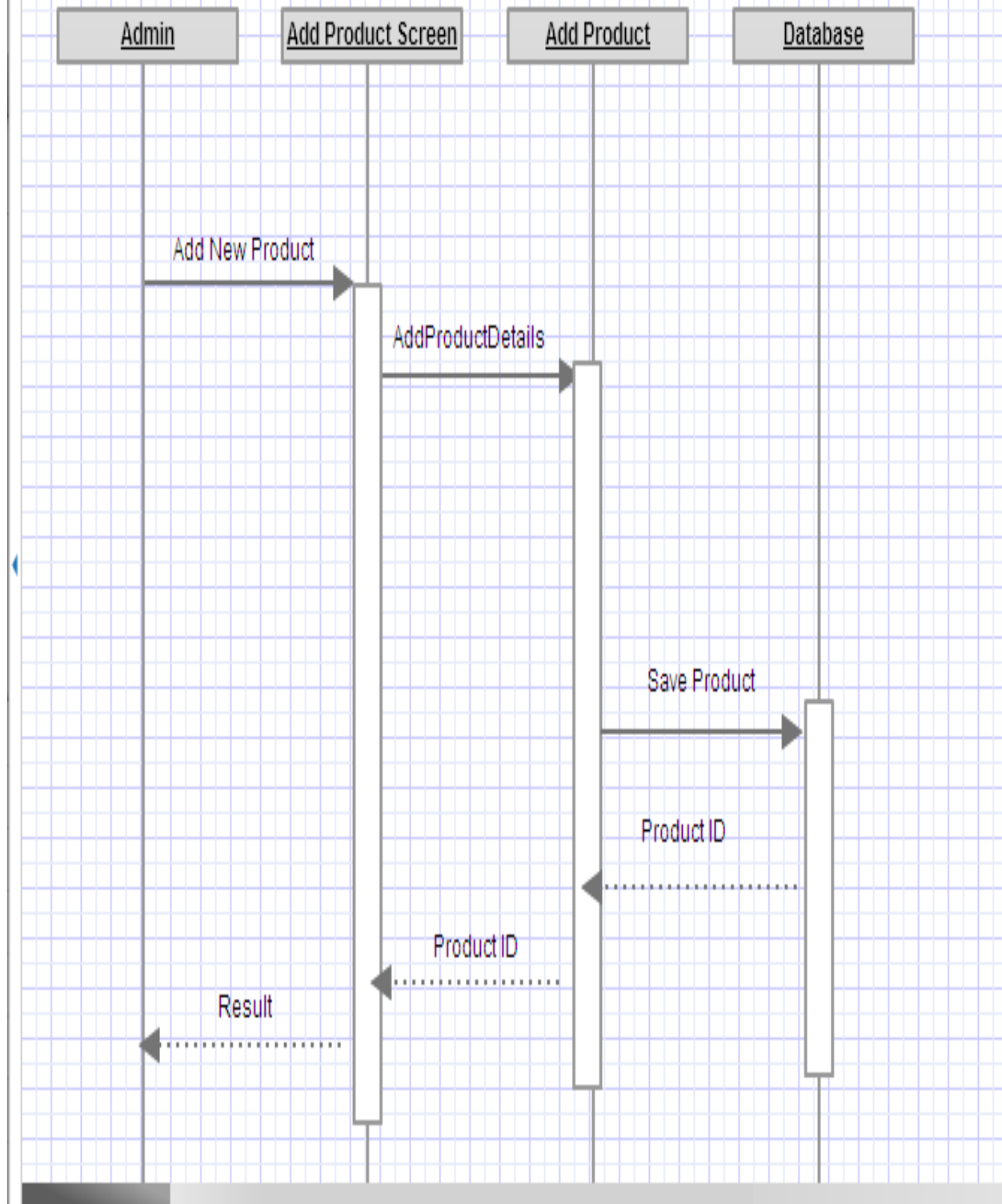


### 2.12.5 Sequence diagram of Add New Product

The admin can add product and its details to the database. Below sequence diagram will illustrate the process.



## Add New Product -- Sequence Diagram



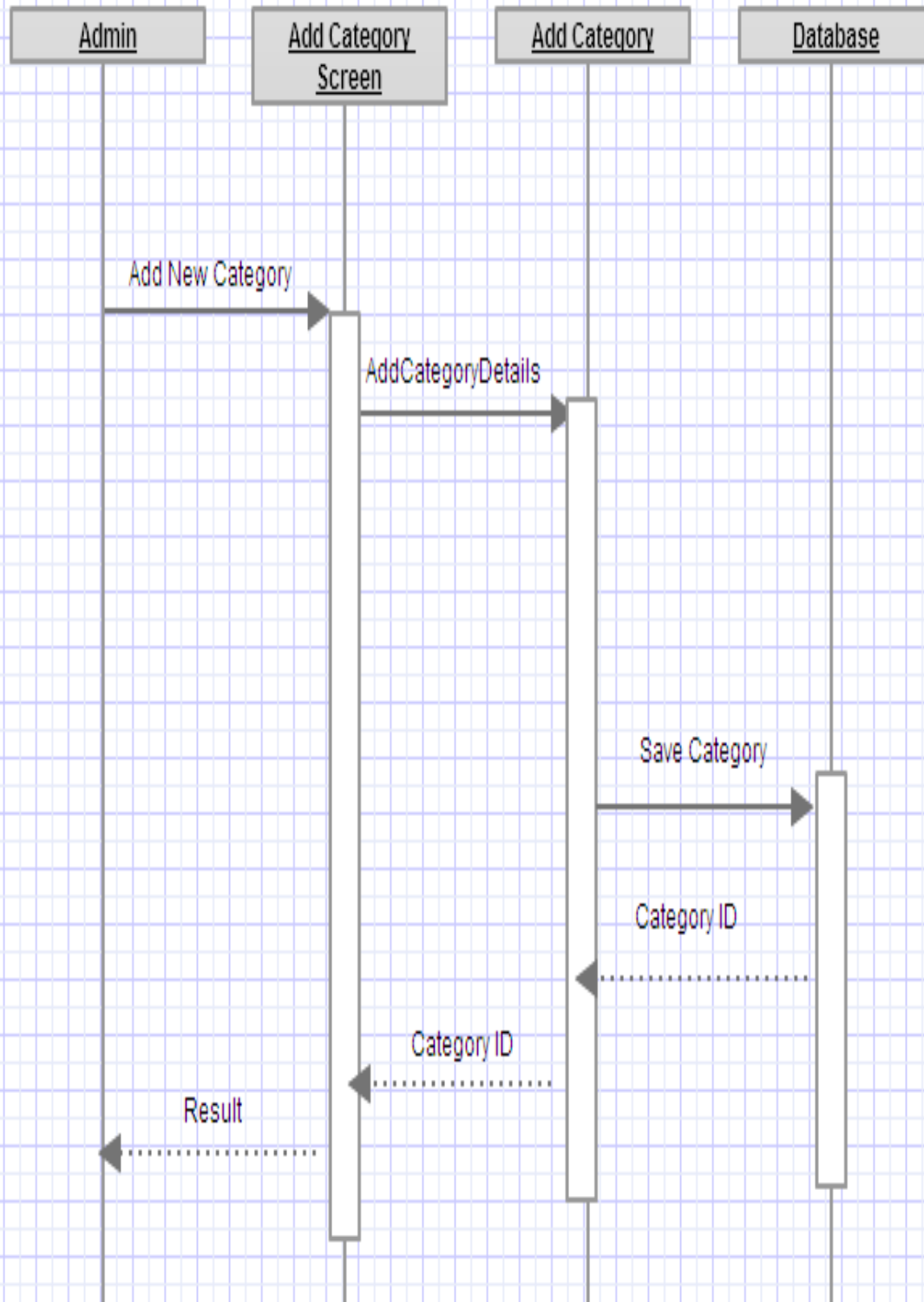


### 2.12.6 Sequence diagram of Add category

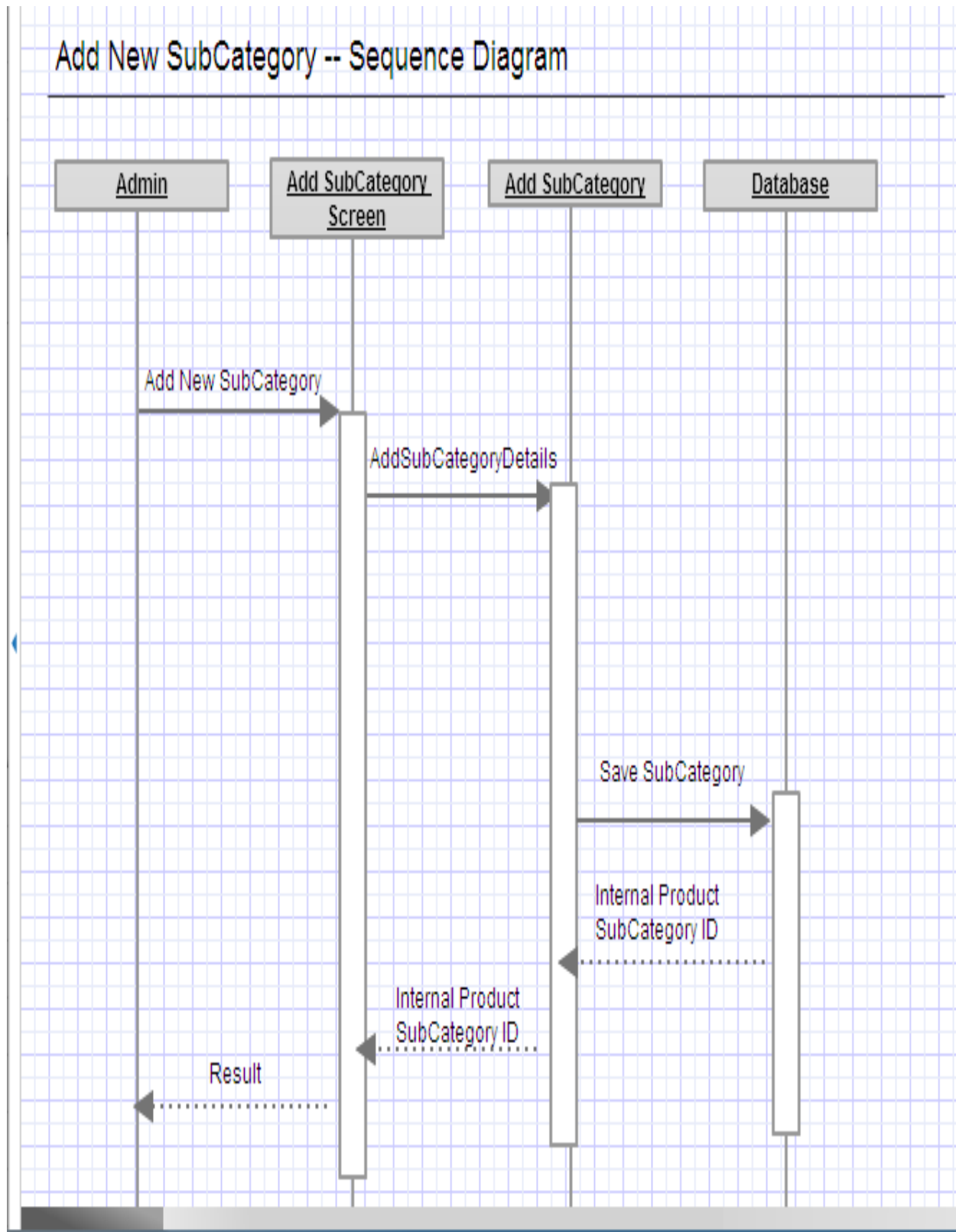
Similarly, Admin can add category and sub category to the database.



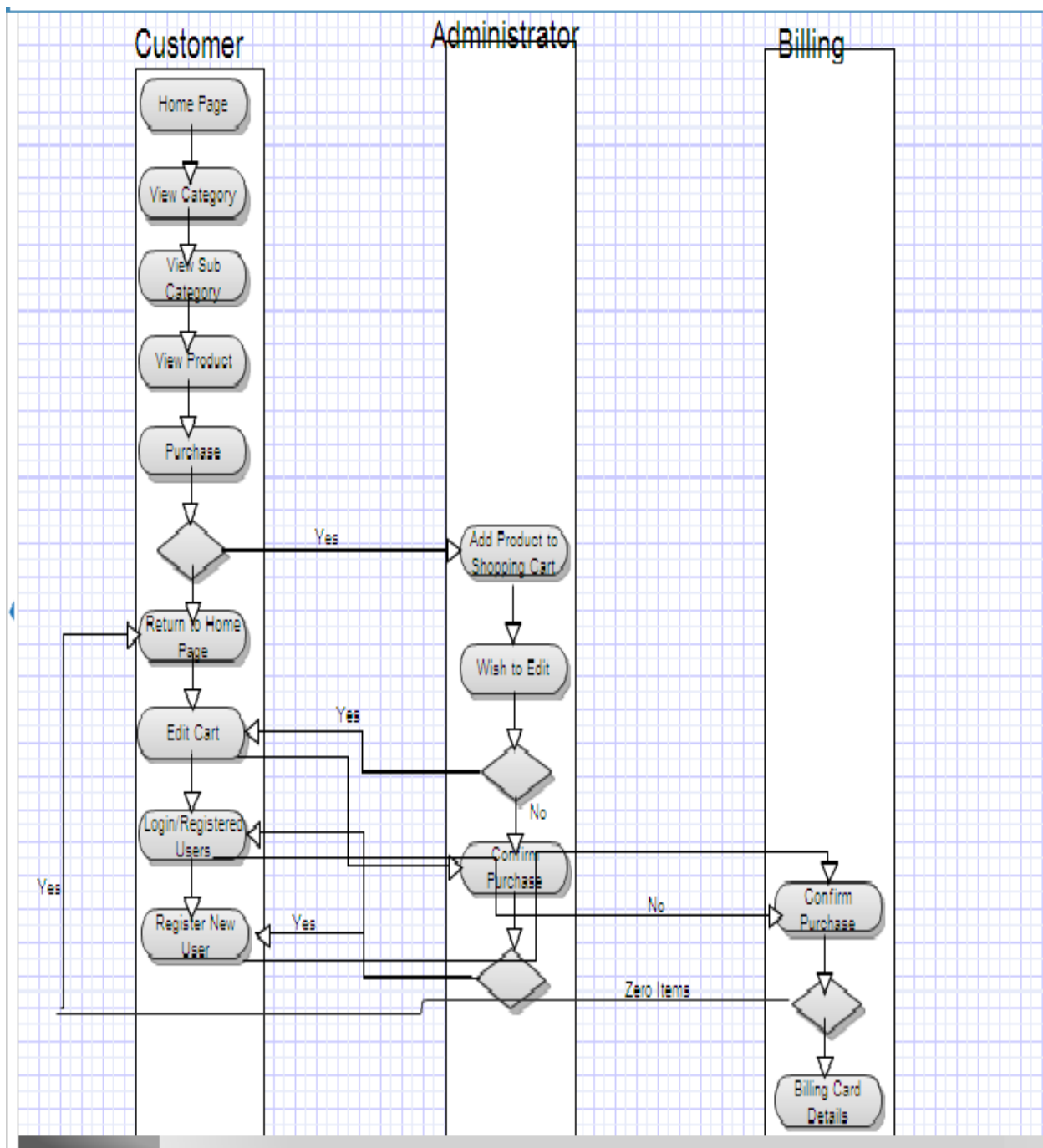
## Add New Category -- Sequence Diagram



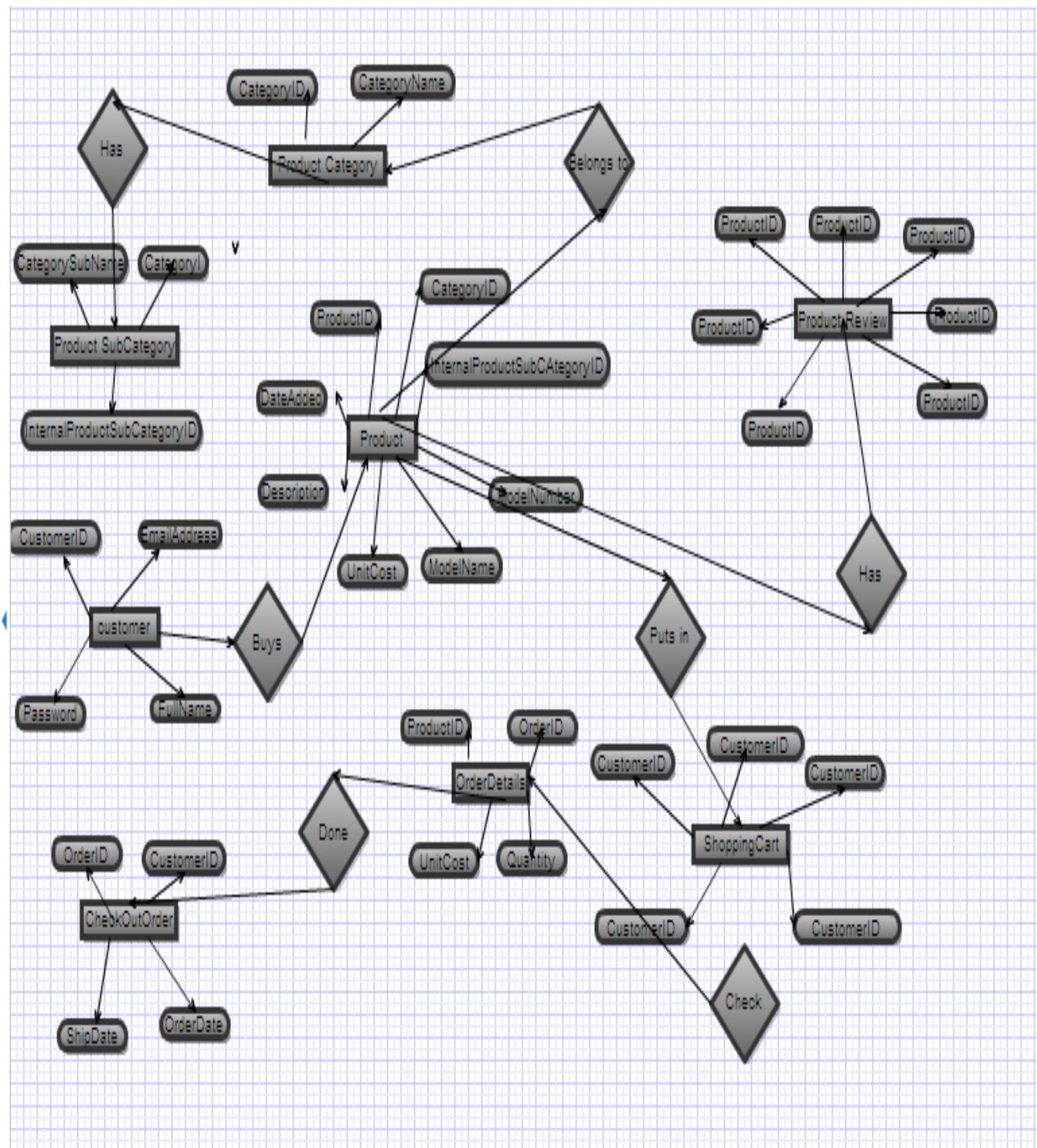
### 2.12.7 Sequence diagram of Add New Subcategory



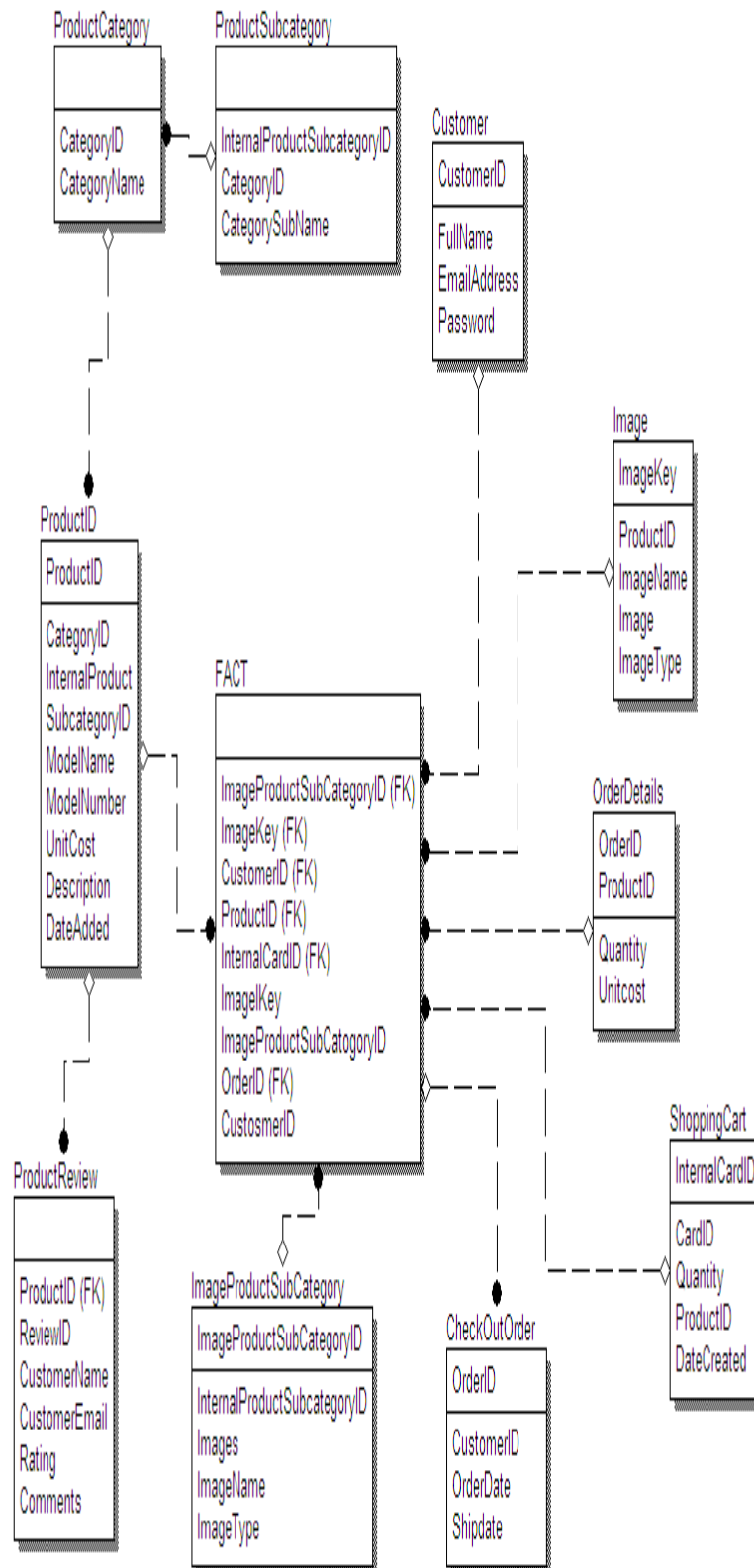
## 2.13 Activity Diagram



## 2.14 Entity Relationship Diagram



## 2.15 Database Design



## 2.16 Assumptions and Dependencies:

- ✓ Administrator has been provided with valid user ID and Password.
- ✓ The details of Products, Price, Customer, Service transaction is provided manually
- ✓ Roles and Task of all the End users are predefined.

## 3.0 Supplementary Requirements:

- ✓ 24 x 7 availability – The system will be available 24 X 7. The system has an automated process so that it can be available all the time. Now if the site is used around the world then staying open for 24 hours becomes very critical. They should have 24 X 7 UPS support and must be on the server side for at least 8 hours in case of power failure. The system will be closed for 2 hours for backup and restore process.
- ✓ Make the existing Web site more dynamic in nature - Many early Web implementations consisted of static HTML pages. This becomes very difficult to manage if the number of pages gets too large. An effective system should be largely dynamic taking advantage of technology that automates this process rather than relying on manual processes. Application

should serve dynamic user based customized web pages to its clients from server.

- ✓ Tie the existing Web site into existing enterprise systems – Any existing Web site that relies on the manual duplication of data from another system is one that can be improved. Most of the business data in the world today exists in enterprise servers that can be connected to the Web servers to make this process far more effective.
- ✓ Provide good performance and the ability to scale the server – The Web Application Server should provide good performance and the ability to manage performance with techniques, such as support for caching, clustering, and load balancing.
- ✓ Providing session management capability - Web application developers should not spend valuable time worrying about how to maintain sessions within the application. The Web Application Server should provide these services.