

# **Software Requirements Specification**

## **for**

# **E-Grocery System**

### **Technical Story Card**

### **Revision History**

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## Glossary

Abbreviation	Description
BSC	Business Story Card
TSC	Technical Story Card
EGS	E – Grocery Store
JAVA EE	Java Enterprise Edition 5
HTTP	Hypertext Transfer Protocol
HTTPS	Secure Hypertext Transfer Protocol
TCP/IP	Transmission Control Protocol/Internet Protocol

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## **1 Introduction**

### **1.1 Purpose**

The E-Grocery store (EGS) web application is intended to provide complete solutions for vendors as well as customers through a single gateway using the internet as the sole medium. It will enable vendors to setup E-Groceries (Vegetables, Fruits etc.), customer to browse through the shop and purchase them online without having to visit the shop physically. The administration module will enable a system administrator to approve and reject requests for new shops and maintain various lists of shop category. The purpose of this document is to present a detailed description of the E- Grocery Management System. It will explain the purpose and features of the system, the interfaces of the system and what the system will do. This document is intended to be used by the members of the project team that will implement and verify the correct functioning of the system.

### **1.2 Scope**

EGS has a lot of scope in the commercial field. Since everything is now available online and demand is also increasing day by day, so we can say that this field is going to bloom in future. The purpose of the E- Grocery Management System is to easy Grocery management and to Create a convenient and easy-to-use application for consumers/customers, trying to buy grocery goods.

**Initial functional requirements will be: -**

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1. Secure registration and profile management facilities for Customers.
  2. Browsing through the e-store to see the items that are there in each category of products like vegetables & fruits, daily staples, beverages, dairy products, snacks etc.
  3. Adequate searching mechanisms for easy and quick access to particular products and services.
  4. Creating a Shopping cart so that customers can shop 'n' no. of items and checkout finally with the entire shopping carts. Customers can add or delete items in the cart.
  5. Regular updates to registered customers of the EGS about new arrivals.
  6. Uploading 'Most Purchased' Items, 'Best sellers' and 'Product comparison' in each category of products in the Store.
  7. Strategic data and graphs for Administrators and Sellers about the items that are popular in each category.
  8. Maintaining database of regular customers of different needs.
  9. Store employees are responsible for internal affairs like processing orders, assure home delivery, getting customer's delivery-time feedback, updating order's status and answering client's queries online.
  10. Feedback mechanism, so that customers can give feedback for the product or service which they have purchased. Also facility rating of individual products by relevant customers.
  11. Adequate payment mechanism and gateway for all popular credit cards, cheques and other relevant payment options, as available from time to time.

**Initial non- functional requirements will be: -**

1. Secure access of confidential data (user's details).
2. 24 X 7 availability for all 365 days.
3. Better component design to get better performance at peak time.
4. Advertisement space where it will effectively catch the customer's attention and as a source of revenue.
5. In addition to the above mentioned points, the following are planned to be delivered if deemed necessary:

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6. Warehousing within the very ambits of the project
  7. More payment gateways.
  8. Dynamic price model by which prices can be changed based on demand and supply.
  9. This list is by no means, a final one. The final list will be dictated by implementation constraints, market forces and most importantly, by end user demands.

## **1.3 Audience, Definitions, Acronyms and Abbreviations**

### **1.3.1 Audience Definitions**

The intended readers of this document are the developers of the site, testers, website owners, managers and coordinators.

### **1.3.2 Acronyms and Abbreviations**

<b>Acronym</b>	<b>Meaning</b>
SRS	Software Requirement Specification
EGS	E- Grocery Store
JAVA EE	Java Enterprise Edition 5
HTTP	Hypertext Transfer Protocol
HTTPS	Secure Hypertext Transfer Protocol
TCP/IP	Transmission Control Protocol/Internet Protocol
SQL	Structured Query Language
ER	Entity Relationship Diagram

## **1.4 References**

**IEEE 830-1998 standard for writing SRS document**

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## **1.5 Technologies to be used**

### **Programming languages:**

- **JAVA EE:** Java Enterprise Edition is a programming platform— part of the Java Platform-for developing and running distributed multi-tier architecture Java applications, based largely on modular software components running on an application server.
- **HTML, XML:** Hyper Text Markup Language and Extensible markup Language are the predominant markup languages for web pages. It provides a means to describe the structure of text-based information in a document and to supplement that text with interactive forms, embedded images, and other objects.
- **JavaScript:** A client side scripting language used to create dynamic web content and user interface

- **Tools & Development Environment**

- **Apache Tomcat 6.0.18 Server:** Apache Tomcat is a Servlet container developed by the Apache Software Foundation (ASF). Tomcat implements the Java Servlet and the Java Server Pages (JSP) specifications from Sun Microsystems, and provides a "pure Java" HTTP web server environment for Java code to run.
- **ECLIPSE J2EE:** Eclipse is a toolkit which is designed for the creation of complex projects, providing fully dynamic web application utilizing EJB's. This consist of EJB tools, CMP, data mapping tools & a universal test client that is designed to aid testing of EJB's.

## **1.6 Overview**

This system will provide an easy solution for customers to buy the product without going to the shop and also to shop owner to sale the product. This proposed system can be used by any users and it does not require any educational level, experience or technical expertise in computer. The system is based on a relational database with its grocery management and delivery functions. The system is also designed to allow an admin to manage and check the stocks of goods in the grocery. The software will facilitate communication between admins, clerks, buyers (retailers and wholesalers) and the IT

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professional via app or E-mail. Preformatted reply forms are used in every transactions or Inquiry of customers through the system.

## **2 Overall Description**

### **2.1 Product Perspective:**

This product aimed toward a person who don't want to visit the shop as he might don't get time for that or might not interested in visiting there and dealing with lot of formalities. EGS should be user friendly, quick to learn and reliable software for the above purpose. It is intended to be a stand-alone product and should not depend on the availability of other software. It should run on both Unix and Windows base platform.

### **2.2 Product Functions:**

#### **User: Administrator**

Function: The Administrator is the super user and has complete control over all the activities that can be performed. An Administrator can able to see the site and operate the whole content in site. The application notifies the administrator of all shop creation requests, and the administrator can then approve or reject them. The administrator also manages the list of available product categories. The administrator can also view and delete entries in the guestbook E.g. manage the customer database, Add the items in the site, approve the orders, rejects the orders, and he shipping the orders.

#### **User: Shop owners**

Function: Any user can submit a shop creation request through the application. When the request is approved by the Administrator, the requester is notified, and from there on is given the role of Shop Owner. The Shop Owner is responsible for setting up the shop and maintaining it. The job involves managing the sub-categories of the items in the shop. Also, the shop owner can add or remove items from his shop. The Shop Owner can view different reports that give details of the sales and orders specific to his shop. The Shop Owner can also decide to close shop and remove it from the website.

#### **User: Customers**

Function: A user can create an account and manage their personal details. After the login with their credentials they can able to visit the browse. Then he makes an order with their desirable products. If he doesn't want the product they will able to cancel the order according a systems instruction.



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A Customer can browse through the shops and choose products to place in a virtual shopping cart. The shopping cart details can be viewed and items can be removed from the cart. To proceed with the purchase, the customer is prompted to login. Also, the customer can modify personal profile information (such as phone number and shipping address) stored by the application. The customer can also view the status of any previous orders, and cancel any order that has not been shipped yet.

### **2.3 User Characteristics:**

There are 2 kinds of users for the proposed system.

- Administrators: Administrators are the ones who adds or administers the products.
- End Users/Customers: The end user will be the one who visits the website and buys products online from the ones added by the administrator.

### **2.4 Constrains:**

- Spoiled inventory management.
- Boosting storage and delivery cost.
- Inability for efficient deliveries.
- The freshness of edible.
- Customer's loyalty and satisfaction.
- User interface and user experience glitch.
- Cyber threats can spoil the business.
- Limited to HTTP/HTTPS
- No multilingual support.

### **2.5 Operating environment:**

The order details are received by the fulfillment center where the pick-up, packing and shipping functions are performed. Next, the orders are delivered using the services of the delivery partners.

Challenge: The challenge here is to intuitively manage the functioning of the grocery e-Commerce marketplace.

### **2.6 Assumptions and Dependencies: -**

Administrator is created in the system already. The manager cannot be a customer. Any user cannot edit their account information. The details related to the product, customer payment and service transaction is provided manually. Roles and tasks are predefined

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## 3 Specific Requirements

### 3.1 Functional Requirements:

This section provides requirement overview of the system

- Ease of registration and login for the user
- Delivery in the quickest possible time
- Booking from nearby and Trustworthy stores based on location
- Ease of Payment through various gateways
- Usable on all smart device.

#### 1. Administrator:

- **Database Management:** Control the database and keep track of all records of customers and employee details.
- **Contact and Giving Permission to Vendors:** Contact with the vendors and give permission to sell their product under the site after testing the product's quality.
- **View all details:** View the details of all employees and control the whole site.
- **Advertising the Site:** Responsible for making advertisements for the site.

#### 2. Customers:

- **Registration:** If customer wants to buy the product then he/she must be registered and can create new user id, unregistered user can't go to the shopping cart.
- **Login:** Customers must have a valid login id to enter into the site.
- **View and edit Own Details:** Can view/edit his personal details, payment details, and details about services provided.
- **Choosing and comparing products:** Can view all available products and can compare them and make a choice for purchasing products.
- **Changes to cart:** Changes to cart means the customer after login or registration can make order or cancel order of the product from the shopping cart.

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- **Payment:** In this system we are dealing the mode of payment by Cash and credit card, debit card etc.
  - **Report Generation:** After ordering for the product, the system will send one copy of the bill to the customer's Email-address and another one for the system data base.
  - **Giving Feedback to Customer Care:** Can give feedback to the 24X7 Customer Care Service centre about their impression for the site and services.
  - **Logout:** Customer must logout of the site after purchasing products.

### **3. Visitors:**

- **Visiting the Site:** Can only visit the site without registration.

### **4. Shop Owner:**

- **Taking Permission from Administrator:** Vendors must take permission from the Administrator for selling their products under the site. Administrator will test product's quality according to its market price to permit vendor for selling purpose.
- **Consulting with Administrator:** Can consult with the Administrator regarding product's quality and advertisements.
- **Advertising Vendor's Own Products:** Responsible for making advertisements of his products, but the site will not be responsible for any kind of advertisements about products.

### **5. Sales Manager:**

- **View customer details:** View the personal details of the customer.
- **Managing Sales to Customers:** Responsible for properly allocating the selected product according to the customer's choice and delivering product to the customer.
- **View Product Stocks:** Keep track of each product item's stocks for selling purpose.

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- **Contacting with Administrator:** Responsible for informing administrator when any product item's stock goes under the minimum level.

## **6. Purchase Manager:**

- **Consulting with Administrator:** Taking permission from the Administrator for the product to be purchased from vendor.
- **Product Stock Management:** Responsible for managing stocks of each product items.

## **7. Accounts Manager:**

- **Regulating Payments:** Keep track of all the payment transactions made by the customers and update the payment information.
- **Consulting with Banks:** Responsible for contacting the banks for the validation of the a/c number provided by the customer while purchasing and make the transaction from the given a/c.
- **Consulting with Administrator:** Consult with the Administrator about the payment details of the customers for the updating of the database.

## **8. Customer Care:**

- **Getting Feedback from the Customers:** Responsible for receiving complaints, queries and feedback from the customers.
- **Providing Solutions to Customers:** Provide feasible solutions to the customers on their complaints and queries.

## **3.1 Non-Functional Requirements:**

Following Non-Functional Requirements will be there in the insurance to the internet:

- (i) Secure access to consumer's confidential data.
- (ii) 24X7 availability.
- (iii) Better component design to get better performance at peak time.
- (iv) Flexible service based architecture will be highly desirable for future extension.
- (v) Non-Functional Requirements define system properties and constraints.

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### 3.2.1 Performance requirements:

- Maximum possible quick response to the orders is required, also should provide fast updating of records. The changes if any made should be reflected automatically in the next screens.
- In order to maintain an acceptable speed at maximum number of uploads allowed from a particular customer as any number of users can access to the system at any time. Also, the connections to the servers will be based on the attributes of the user like his location and server will be working 24X7 times.

### 3.2.2 Safety Requirements:

- The application is password protected and also any updating of new product entries and order processing is done by only privileged users.

### 3.2.3 Security Requirements:

- System will use secured database.
- Normal users can just read information but they cannot edit or modify anything except their personal and some other information.
- System will have different types of users and every user has access to constraints.

### 3.2.4 Error Handling:

- EGS shall handle expected and non – expected errors in ways that prevent loss in information and long downtime period.

### 3.2.5 Software Quality Attributes:

The necessary qualities of software products are:

➤ **Security:**

The application is password protected and also any updating of new product entries and order processing is done by only privileged users.

➤ **Maintainability:**

The application is to be designed so that it is easily maintained. Also, it should allow incorporating new requirements in any module of system.

➤ **Reliability:**

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The application will be able to handle two orders. When a user confirms his/her order the database will be updated immediately and the next user will not face problems in ordering.

➤ **Portability**

The application will be easily portable on any window-based system.

## **4 Interface Requirements**

Various interfaces for the product could be: -

- 1). Login Page
- 2). Registration Form
- 3). There will be a screen displaying information about product that the shop having.
- 4). If the customers, select the buy button then another screen of shopping cart will be opened.
- 5). After ordering for the product, the system will have sent one copy of the bill to the customer's Email address.

### **4.1 Customer's Interface:**

1. Operating System: Windows7 Ultimate which supports networking.
2. JAVA development toolkit.

### **4.2 Hardware Interface**

Hardware requirements for insurance on internet will be same for both parties which are as follows:

1. Processor: Dual Core
2. RAM:2 GB
3. Hard Disk:320 GB
4. NIC: For each party

### **4.2 Communication Interface**

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The two parties should be connected by LAN or WAN for the communication purpose.

## **5 Interface Possible Scenario's**

### **5.1 Customer's Interface:**

#### **5.1.1 Login:**

This interface will consist of two compulsory fields namely, "User Name" and "Password". There will also be options for "New User's Registration" which will redirect to "Registration" page and a "Forgot Password" option in case a user forgets the password. If the password entered is correct the Main User Interface opens up else an error message is displayed.

#### **5.1.2 Registration Interface**

The user will enter his personal details like Name, User Name, Password, Date of Birth, Address, Registration Type, etc.

Users will be warned about any mistakes on data format or any other constraints by validation notes and error messages.

When the button "save" button is clicked, the server will check if the username or email is already taken and alert the user.

If everything is entered correctly and saved a new user will be created.

#### **5.1.3 Personal Data Editing**

If any member wants to change his personal information he can enter his profile by clicking on his name at the top right of the main page and he will be directed to the personal details editing page.

#### **5.1.4. Search**

The customer can enter the type of item he is looking for and the specifications he is interested in them he can click on "Search". User can also use advanced search for more options and also they can sort the product display according to their wish (relevance, price in ascending or descending, popularity)

#### **5.1.5 Add as favorites**

The user can shortlist his/her favorite item as a list for future reference.

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### **5.1.6 Cart**

This will be a space for the customer where he/she can store the items he/she wishes to buy. The user can also remove items from cart prior to checkout. Once the user decides to buy the items in cart, the user is directed to the payment page for making payment.

### **5.1.7 Payment**

The user is given options with various modes of payment (online payment through credit/debit cards, via net or mobile banking or cash on delivery) out of which he chooses one. The chosen mode of transaction is carried out by proper verification and authentication of bank details.

### **5.1.8 Support**

The user can contact with the customer care via phone call or via messages. User can ask for an assistance or can give feedback on a particular aspect.

## **5.2 Interface for Shop owner**

The shop owner will have a different login id using which he can access his account that contains a control panel that allows him to contact the administrator, set up/ maintain shop etc.

This control panel will allow the shop owner to do the following things:

- Request the admin for a permission to set up a shop.
- Set up the catalog for his shop and upload it so that the admin can make it visible in the website.
- Add/Remove items. The corresponding changes will be done in the database by the Admin.
- Create advertisements for his products.
- Generate a sales report.
- Discontinue the shop.

## **5.3 Interface for Administrator**

The administrator will have a different login id using which he can access his account that contains a control panel that allows him to contact each and every aspect of the system.

This control panel will allow the administrator to do the following things:

- Access and view the customer database.
- Access and view the database of vendors, go through their requests for shop creation and reply them back with acceptance /dismissal of their request.



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- Access and view the employee database and manage them.
  - Can view ratings and feedback.

## **5.4 Interface for Sales Manager**

The sales manager will have a different login id using which he can access his account that contains a control panel that allows him to contact the administrator and manage sales.

This control panel will allow the sales manager to do the following things:

- Maintain the product database so that the same or different kinds of products are properly maintained with their unique id, so that when a customer orders a product, the same product gets allocated without causing any inconsistency to the database.
- Generate current order shipping status and upload it time to time and provide an expected delivery date. In case a user cancels a particular order, the same is taken care of by the sales manager and proper order status is changed and reflected back.
- Promote sales by associating products with offers and discounts.
- Contact the admin.

## **5.5 Interface for Purchase manager**

The Purchase manager will have a different login id using which he can access his account that contains a control panel that allows him to contact the administrator and manage various purchases for the warehouse.

This control panel will allow the Purchase manager to do the following things:

- Whenever the stocks in warehouse goes under a critical value, the system alerts the purchase manager about it and he contacts the administrator seeking permission to make a purchase from a particular vendor.
- Contact a vendor for making a purchase.

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## **5.6 Interface for Account manager**

The Accounts manager will have a different login id using which he can access his account that contains a control panel that allows him to contact the administrator and manage various transactions and accounts.

This control panel will allow the Accounts manager to do the following things:

- Keep track of payment transactions differentiated by their unique id and associated with corresponding user and update payment information.
- Contact the bank for account validation.
- Contact Administrator.

## **5.7 Interface for customer care**

A customer care employee will have a different login id using which he can access his account that contains a control panel that allows him to contact the administrator and manage various queries and feedbacks from the customer.

This control panel will allow a customer care employee to do the following things:

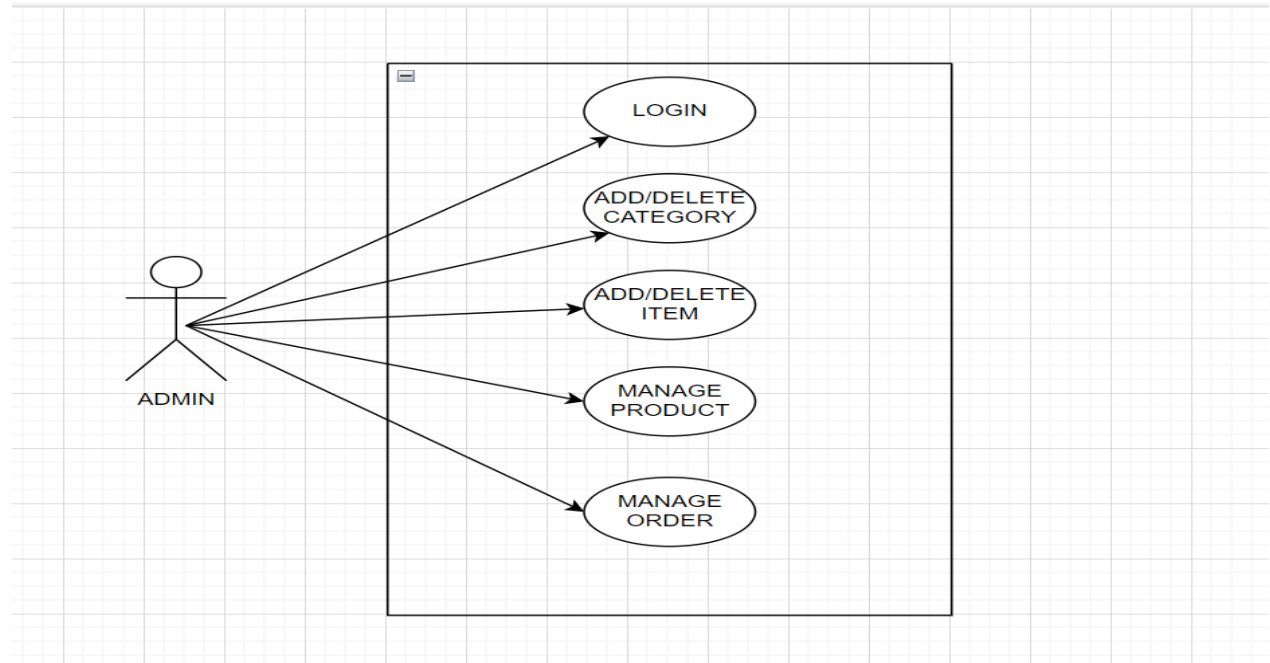
- Read feedbacks from a particular customer and let the administrator know about it.
- Provide solutions to the queries posted by the customer.
- Contact administrator.

# **6 Analysis Models**

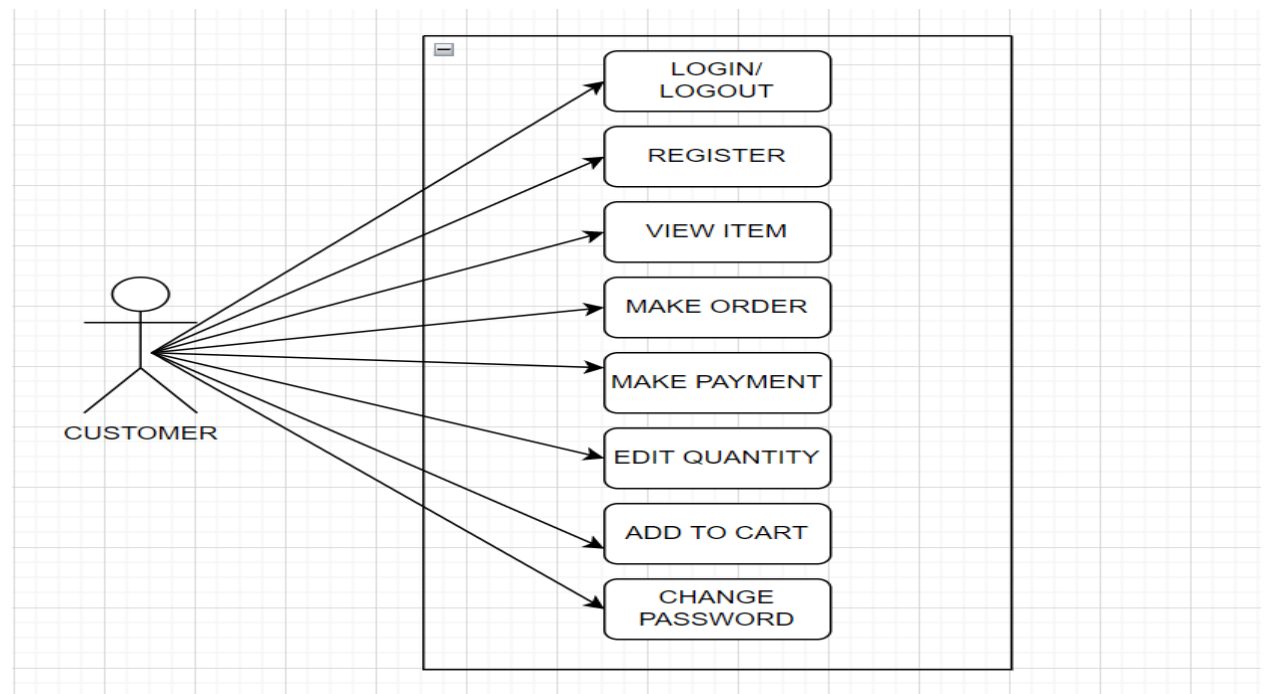
## **6.1 Use Case Diagram**

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## For Administrator

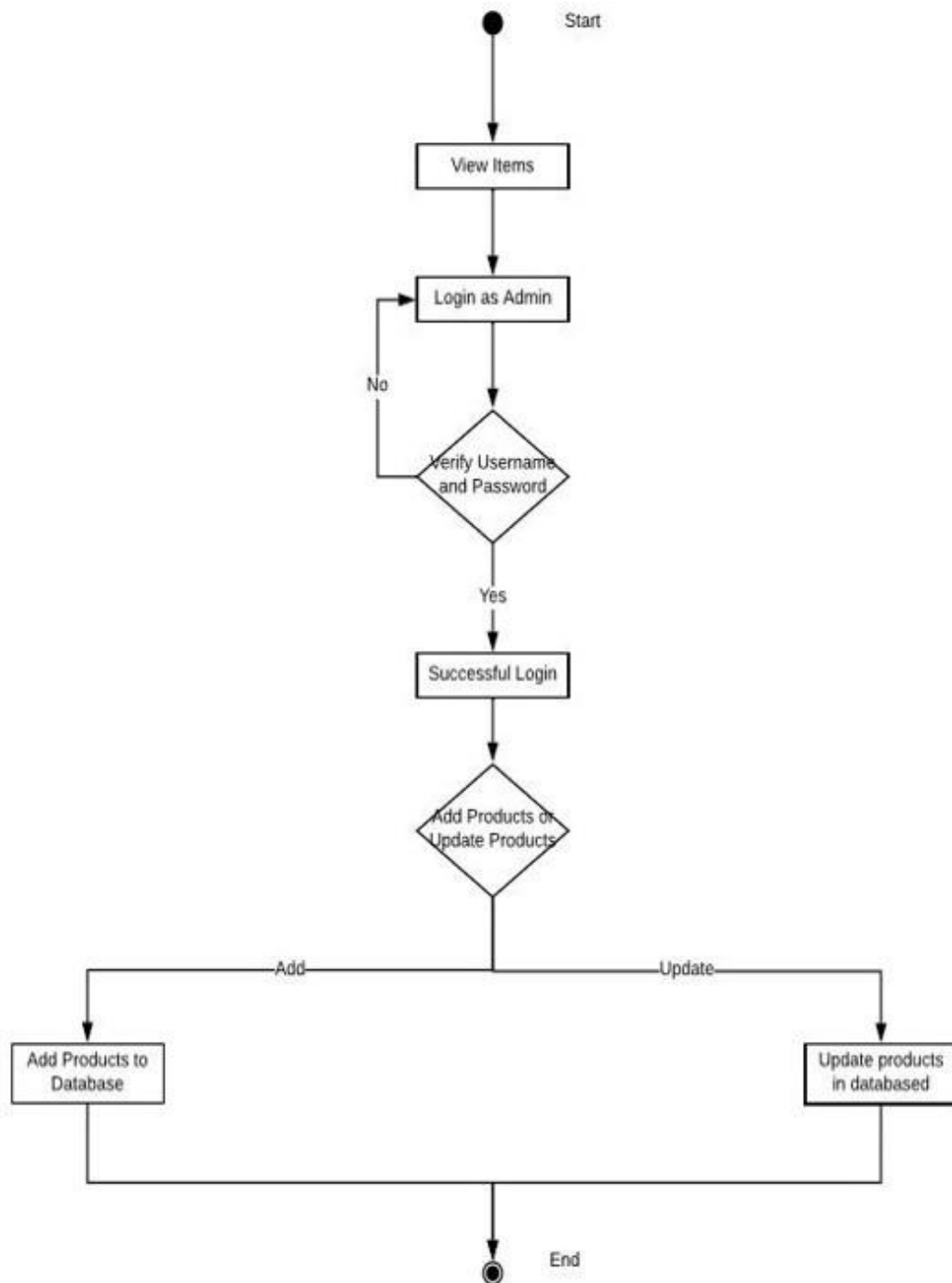


## For Customer

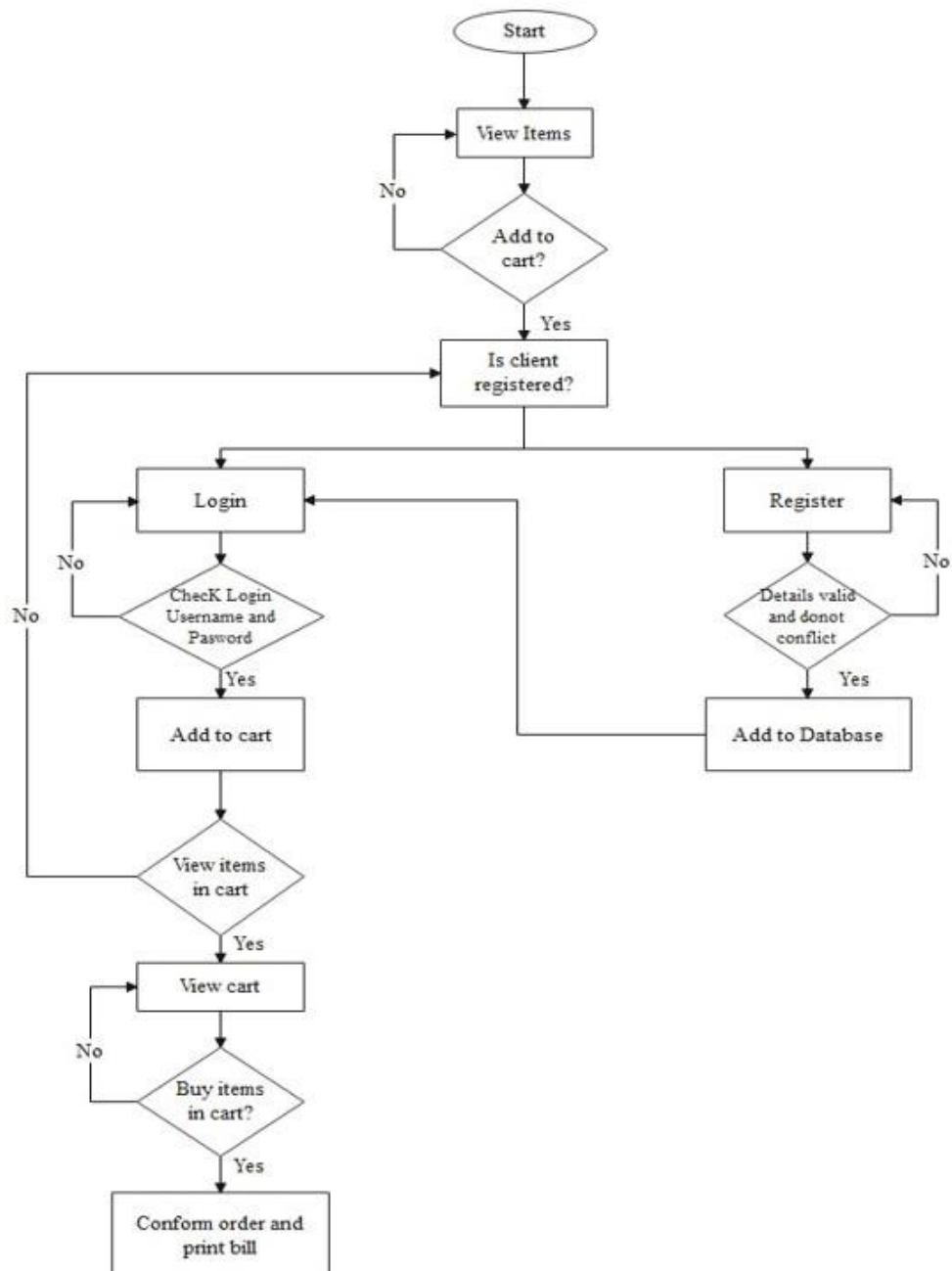


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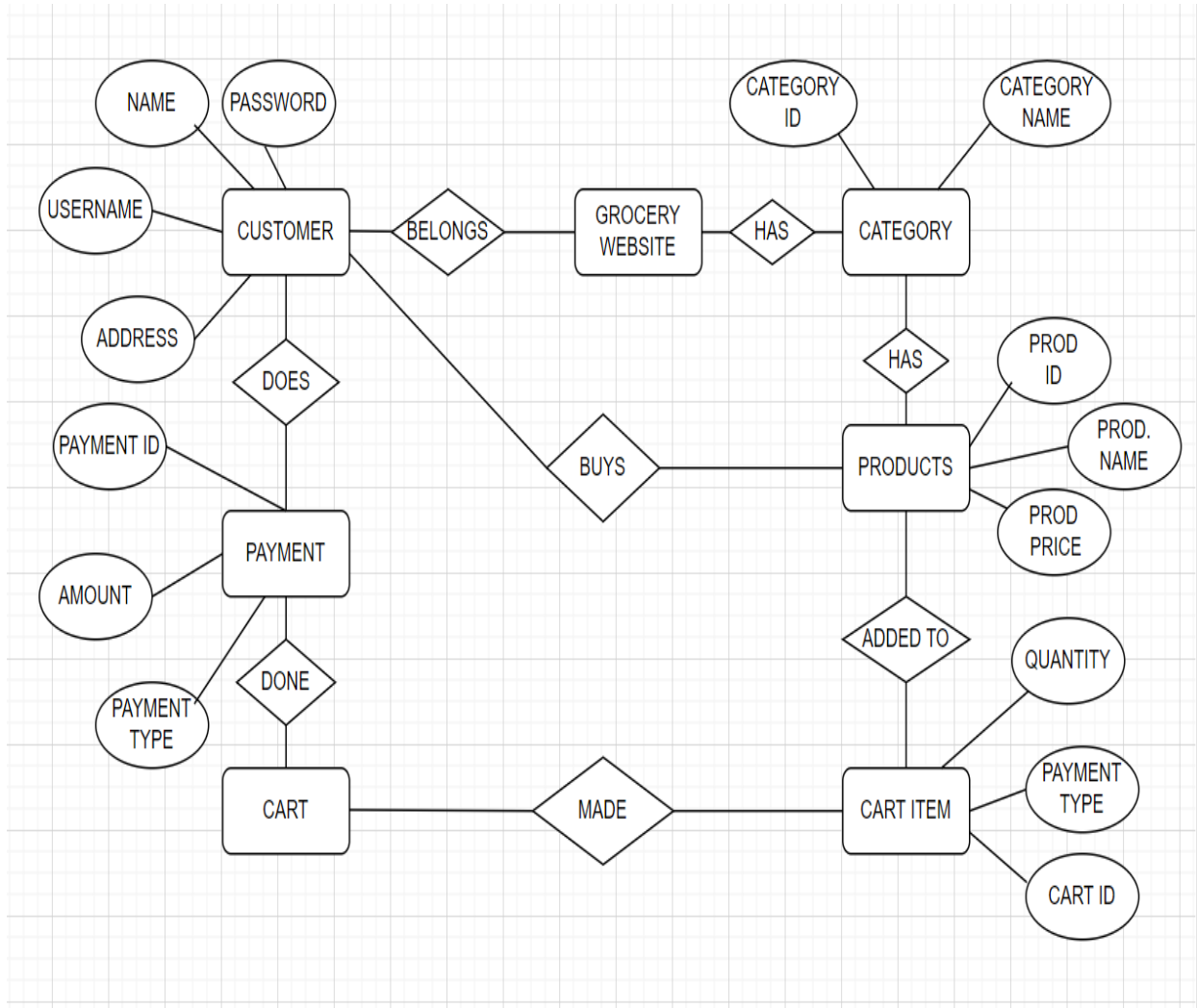
## 6.2 Activity Diagram for Admin



### 6.3 Activity Diagram for user



## 6.4 Entity Relationship Diagram



## 7 References

IEEE 830-1998 standard for writing SRS document