E-Commerce Web Application

Software Requirements Specification

Version: 1.0

Preface

This document represents the Software Requirements Specification for the **e-Commerce Web Application** by **Mawai Infotech LTD**. The document begins with an Introduction section that describes the purpose of the document and what is considered to be in the scope of this document as well as what is outside the scope of this document.

The next section is an Overall Description of the requirements and functions. This section includes the overall constraints that the project is working within as well as the assumptions made by the project as far as the defining the requirements is concerned. Lastly, the project dependencies are also listed in this section.

The Specific Requirements section comes next and is the most important section of this document. This section goes into detail about each specific requirement of the application. A description, use case with sequence of events, and any related requirements is given for each requirement. This section also gives a detailed description of the External Interfaces for the project including a description of the user interface for the software.

The Specific Requirements section also describes the Performance Requirements that are too met by the application. Design Constraints and Standards Compliance are also considered in this section. Lastly, various System Attributes are discussed including Maintainability, Security, and Portability.

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1 Introduction

1.1 Purpose

The purpose of this Software Requirements Specification is to describe the specific requirements of the e-Commerce web application that are to be met by the implementation effort of Mawai Infotech LTD. Included with the description of the requirements, is a description of any constraints or assumptions that the project is working within.
This document also provides a description of any project dependencies that need to be explicitly expressed. Along with the requirements descriptions, it is also the purpose of this document to describe any performance requirements that need to be met. If there are any standards that need to be considered when developing the application are also listed. Lastly, the purpose of this document is to communicate the system attributes of the application. These system attributes include reliability, availability, scalability, maintainability, and portability.

1.2 Scope

It is within the scope of the Software Requirements Specification to describe the specific system requirements of the desired application. This would include performance requirements, system constraints, and project assumptions. Any specific detail that is needed about the standards or technology used to define these requirements, constraints, and assumptions are within the scope of this document.

It is outside the scope of the document that what platform or how the system will be implemented. It is out of the scope of the project what all pre-defined systems and tools should be used to implement the application.

1.3 Definitions, Acronyms, and Abbreviations

Table of Definitions, Acronyms, and Abbreviations

Definition, Acronym, or Abbreviation	**Description**
SRS	Software Requirements Specification.
DB	Database

1.4 References

Table of References

References	**Description**
Project planning Document	The project planning document has been referenced for mentioning the requirements.
Stakeholders' list	The list of Stakeholders has been referenced for their user description and their requirements.

2 Overall Description

2.1 Product Perspective

E-Commerce is becoming a trend and has captured the market for years. This application is to be built for providing the users, a marketplace for all the types of products. Additionally, all the vendors and system managers can operate being a part of the application. So, the main purpose of the project is to meticulously examine all the requirements of the system and implement it using suitable application.
Then, the application will be able to arrange and manage files easily along with all the details and it will provide a handy system which can be easily be operated. All the user requirements are taken into consideration, which will help us to be more efficient with the functionalities of the system.

2.2 Product Functions

The follow is a table of the requirements that the system SHALL meet. The list of requirements was produced from the initial project documentation provided by the requirements expert.

Table of Shall Requirements

ID	Origin	Shall Requirement
1	*Project Planning Document*	The customers SHALL be able to view and add products.
2	*Project Planning Document*	The customers SHALL be able to filter products by categories and sub categories
3	*Project Planning Document*	A help manual SHALL be available in the application
4	*Project Planning Document*	The customers SHALL be have access to a cart, having their chosen products in it.
5	*Project Planning Document*	The customers SHALL be able to modify their products added in cart.
6	*Project Planning Document*	The customers SHALL be able to change their personal details
7	*Project Planning Document*	The customers SHALL be able to make payments for their orders.
8	*Project Planning Document*	The customers SHALL be able to view invoices and details after payment.
9	*Project Planning Document*	The customers SHALL be able to log in and log out of the application anytime.
10	*Project Planning Document*	The customers SHALL be able to contact the vendor anytime.
11	*Project Planning Document*	The customers SHALL be able to receive message of payment
12	*Project Planning Document*	The customers SHALL be able to get order receipt on mail.
13	*Project Planning Document*	Vendors SHALL be able to log in and log out of the applications anytime.
14	*Project Planning Document*	Vendors SHALL be able to add, modify and delete products.
15	*Project Planning Document*	Vendors SHALL be able to add products in bulk using excel sheets.
16	*Project Planning Document*	Vendors SHALL be able to view and print order receipts
17	*Project Planning Document*	Administrator SHALL be able to view all products.

ID	Origin	Shall Requirement
18	*Project Planning Document*	Administrator SHALL be able to add categories and subcategories of products.
19	*Project Planning Document*	Administrator SHALL be able to view all categories and subcategories.
20	*Project Planning Document*	Administrator SHALL be able to add and delete new users.
21	*Project Planning Document*	Administrator SHALL be able to modify user active status.
22	*Project Planning Document*	Administrator SHALL be able to add, delete and modify privileges of vendors.
23	*Project Planning Document*	Administrator SHALL be able to view all transactions details.
24	*Project Planning Document*	Administrator SHALL be able to view application usage logs.

2.3 Constraints

The follow is a table of the design constraints that the system SHALL meet. The list of constraints was produced from the initial project documentation provided by the requirements expert.

Table of Design Constraints

ID	Origin	***Shall Requirement***
1	*Project Planning Document*	*Customers SHALL not be able to view other customer's information.*
2	*Project Planning Document*	*Customers SHALL not be able to order products without login*
3	*Project Planning Document*	*Customers SHALL not be able to change price of any product.*
4	*Project Planning Document*	*The database SHALL be well-built and SHALL not contain redundant information*
5	*Project Planning Document*	*Customers SHALL not be able to modify transaction history.*
6	*Project Planning Document*	*Customers SHALL not be able to delete order receipts.*
7	*Project Planning Document*	*Vendors SHALL not be able to view menus other than that provided by administrator.*
8	*Project Planning Document*	*Vendors SHALL not be able to modify other vendor's product.*
9	*Project Planning Document*	*Administrator SHALL not be able to view or change any user's password.*
10	*Project Planning Document*	*Administrator SHALL not be able to modify any vendor's product.*

2.4 User Characteristics

The following table identifies and describes the different users of this application. The information gathered about the different users of the system helped define what the software needs to do. Also, these users are referenced in the requirements and diagrams.

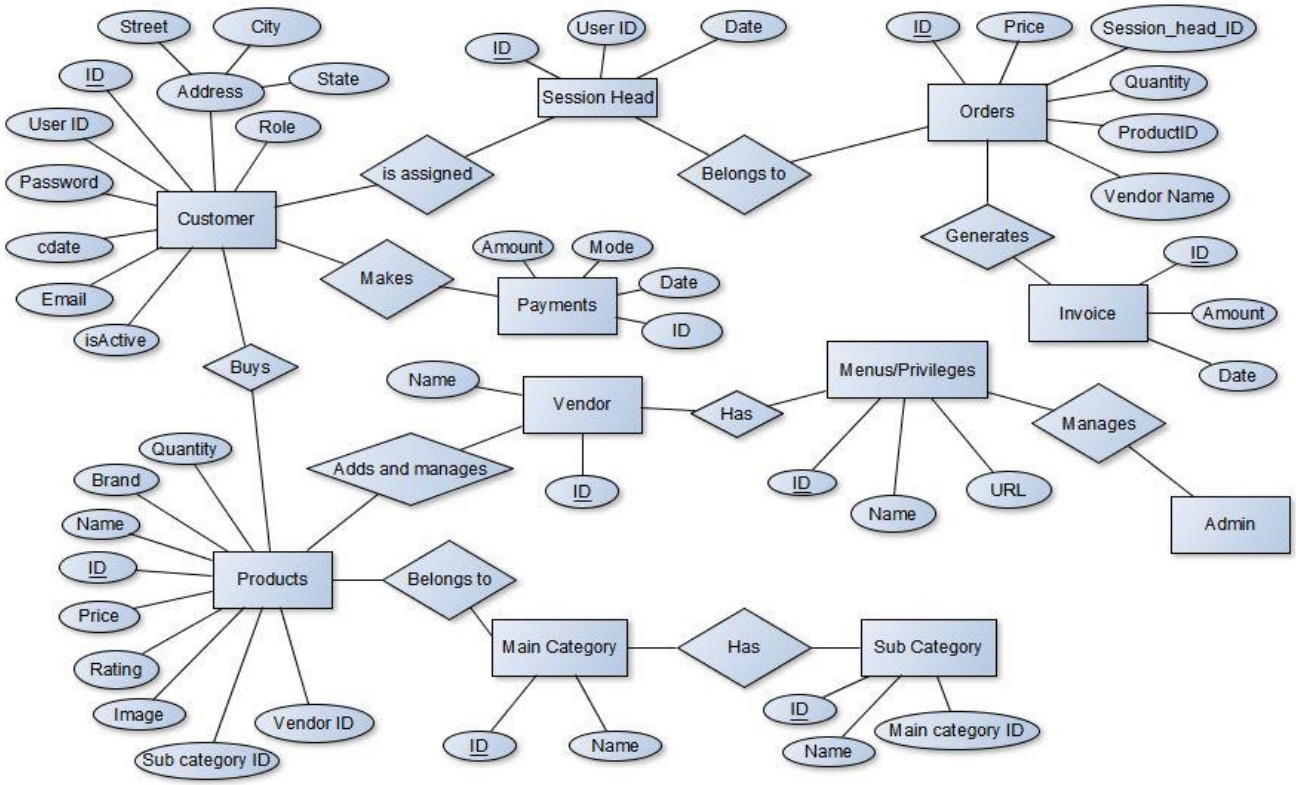
Table of User Characteristics

User	Description
Customers	A customer is someone who will buy any product added by any vendor. A customer will view products and add them in their cart. They can modify their orders and then they can checkout them. After, checkout and successful payment, they will receive their order by the respective products' vendor.
Vendor	A vendor is a person, who will sell the products. He will add the products and then, customers will buy them. After, the customers buy the products and pays money, he will send the products for delivery.
Administrator	An administrator is a person who will manage the application and maintain database. He will add categories and subcategories in the database. He will view all the transactions and order receipts.

2.5 Entity Relationships

Figure 1 shows the entity relationships for the E-Commerce Web Application project.

Figure 1: ER Diagram



2.6 Data Dictionary

The follow tables in this section make up the data dictionary for the E-Commerce Web Application project. Using the Database requirements and specifications, the following Data Dictionary elements were defined.

1. Login

Column	Type	Null	Default
id	int(10)	No	
user_id	varchar(50)	Yes	*NULL*
password	varchar(50)	Yes	*NULL*
isActive	tinyint(1)	Yes	1
cdate	date	Yes	*NULL*
role	varchar(50)	Yes	*NULL*
address	varchar(400)	Yes	*NULL*
city	varchar(100)	Yes	*NULL*
state	varchar(100)	Yes	*NULL*
email	varchar(400)	Yes	*NULL*

2. Product Head

Column	Type	Null	Default
id	varchar(40)	No	
user_id	varchar(50)	Yes	*NULL*
entry_date	date	Yes	*NULL*

3. Orders

Column	Type	Null	Default
id	int(20)	No	
head_id	varchar(40)	Yes	*NULL*
productid	int(10)	Yes	*NULL*

imagelink	varchar(200)	Yes	*NULL*
product_name	varchar(40)	Yes	*NULL*
quantity	int(10)	Yes	*NULL*
price	float	Yes	*NULL*
peritempreice	float	Yes	*NULL*
vendor_name	varchar(100)	Yes	*NULL*

4. Products

Column	Type	Null	Default
id	int(40)	No	
name	varchar(100)	Yes	*NULL*
brand	varchar(40)	Yes	*NULL*
price	float	Yes	*NULL*
rating	float	Yes	*NULL*
imagelink	varchar(100)	Yes	*NULL*
subcatid	int(10)	Yes	*NULL*
vendor_name	varchar(100)	Yes	*NULL*
quantity	int(100)	Yes	*NULL*

5. Categories

Column	Type	Null	Default
id	int(4)	No	
name	varchar(40)	Yes	*NULL*

6. Sub categories

Column	Type	Null	Default
id	int(4)	No	
name	varchar(50)	Yes	*NULL*
maincategory	int(4)	Yes	*NULL*

7. Invoice

Column	Type	Null	Default
invid	varchar(20)	No	
amount	float	Yes	*NULL*
invdate	date	Yes	*NULL*
username	varchar(40)	Yes	*NULL*

8. Invoice details

Column	Type	Null	Default
id	int(20)	No	
invid	varchar(20)	Yes	*NULL*
amountpaid	float	Yes	*NULL*
depositdate	date	Yes	*NULL*
mode	varchar(20)	Yes	*NULL*

9. Menu List

Column	Type	Null	Default
id	int(2)	No	
name	varchar(40)	Yes	*NULL*
href	varchar(500)	Yes	*NULL*
parentmenuid	int(2)	Yes	*NULL*
isactive	int(11)	Yes	1
cdate	date	Yes	*NULL*

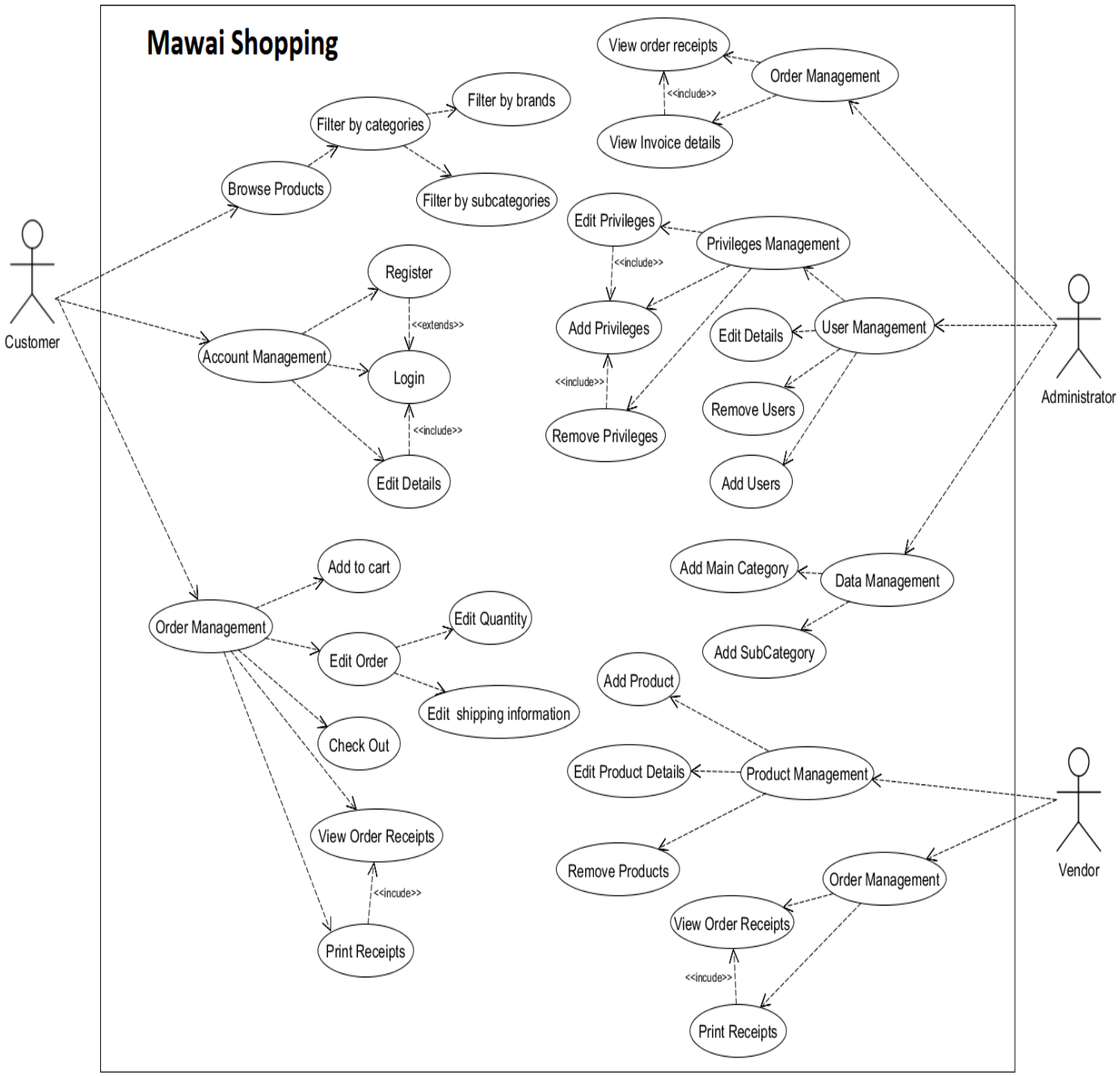
10. Admin Menus

Column	Type	Null	Default
Id	int(3)	No	
User	int(10)	Yes	*NULL*

Menu	int(2)	Yes	*NULL*
Read	tinyint(1)	Yes	*NULL*
update	tinyint(1)	Yes	*NULL*
delete	tinyint(1)	Yes	*NULL*

2.7 Use Case Diagram

Figure 2: Use Case Diagram



3 Specific Requirements

3.1 System Features

3.1.1 Buying Products

3.1.1.1 Introduction

The application developed provides customers to buy items from the vendors. The customer purchases items, adds it to the cart and then proceed to payment. After successful payment, the order is confirmed and delivered by vendor.

3.1.1.2 Functional Requirements

Purpose: Purchasing Products

Input: Customer ID, Products, User details

Processing: If a customer buys product, then items will be added to the cart. He can purchase them anytime, and when the payment is done, the order is confirmed

Output: Order Receipt and payment details.

3.1.1.3 Stimulus Response

A) Customer is not registered

User Actions	**System Actions**
Customer enters his details	
	System validate and adds user.
	System log in the customer.
Customer browses the catalogue	
Customer selects the items and adds them to cart	
Customer modifies the item quantity	
Customer Proceeds to checkout	
	System generates the invoice
User enters mobile number and email address	
	System shows all available options for payment
User selects an option for payment	
User does the payment	
	System confirms the order.
	System generates the order receipt
User views the order receipts	

B) Customer is already registered

User Actions	System Actions
Customer browses the catalogue	
Customer selects the items and adds them to cart	
Customer modifies the item quantity	
Customer Proceeds to checkout	
	System generates the invoice
User enters mobile number and email address	
	System shows all available options for payment
User selects an option for payment	
User does the payment	
	System confirms the order.
	System generates the order receipt
User views the order receipts	

3.1.2 Vendor Adds product

3.1.2.1 Introduction

The system allows the vendor to add products to the database, so that user/customer can buy them.

3.1.2.2 Functional Requirements

Purpose: Adding products so that customers can buy them

Input: Product Details.

Processing: If a vendor adds any product, its details should be stored in the database and then, the product should be visible to customer for purchase.

Output: Product will be added to database

3.1.2.3 Stimulus Response

A) Individual Entry

User Actions	System Actions
Vendor enters his details	
	System validates the details
	System log in the vendor and redirects to the vendor portal

Vendor enters the details of the product	
	System validates the details and throw errors. (If any)
Vendor confirms the details	
	System adds the product in the database.

B) Bulk Entry

User Actions	**System Actions**
Vendor downloads the format of the excel sheet	
Vendor fills up the excel sheet	
Vendor uploads the excel sheet.	
	System takes the excel sheets
	System adds all the products in the database.
Vendor uploads the product images.	
	System updates the product.

3.1.3 Vendor Updates Product

3.1.3.1 Introduction

The system allows the vendor to modify products in the database, so that they can change their quantity, price, etc.

3.1.3.2 Functional Requirements

Purpose: Modifying the details of the products and adding the images of the products added by the vendor using excel sheet.

Input: New Details of the product.

Processing: If a vendor modifies a product, then the product details should be changed in the database and the changes should also be reflected in the catalog.

Output: Product will be modified

3.1.3.3 Stimulus Response

A) Edit Details

User Actions	**System Actions**
Vendor enters his details	
	System validates the details
	System log in the vendor and redirects to the vendor portal

Vendor select the product	
	System shows the original details of the product.
Vendor changes the details	
	System modifies the product's details in the database.
Vendor views new details of products	

B) Image upload for incomplete entries

User Actions	**System Actions**
Vendor enters his details	
	System validates the details
	System log in the vendor and redirects to the vendor portal
Vendor select the product	
Vendor uploads the product image	
	System takes the image and modifies the product's detail in the database
User views the updated product.	
	Image will be available in catalogue.

3.1.4 Vendor deletes a product

3.1.4.1 Introduction

The system allows the vendor to delete products from the database.

3.1.4.2 Functional Requirements

Purpose: Deleting products from the database, so that they will not be available in catalogue and customers cannot buy them. (In case if any vendor stops selling that product)

Input: Product.

Processing: If a vendor deletes any product from the database, then, the customers cannot see that product in the catalogue and hence, cannot buy it.

Output: Product will be deleted from database

3.1.4.3 Stimulus Response

Deleting Product

User Actions	System Actions
Vendor enters his details	
	System validates the details
	System log in the vendor and redirects to the vendor portal
Vendor select the product	
Vendor click on delete button	
	System gives a warning and ask for confirmation
Vendor accepts the warning	
	Product will be deleted from the database.

3.1.5 Vendor view orders

3.1.5.1 Introduction

The system allows the vendor to view all the orders so that he/she can complete the delivery of them.

3.1.5.2 Functional Requirements

Purpose: Viewing order receipts and printing them

Input: Vendor ID.

Processing: When, vendor inputs hi/her ID, then all the order receipts are shown and then, they can take its print out for further process.

Output: Receipts will be shown to vendors

3.1.5.3 Stimulus Response

Viewing and printing Receipts

User Actions	System Actions
Vendor enters his details	
	System validates the details
	System log in the vendor and redirects to the vendor portal
Vendor clicks on view orders	
	System retrieves the order receipts and display them
Vendor views the receipts and click print.	
	System displays the print

	preview.
Vendor takes the printout.	

3.1.6 Adding Categories

3.1.6.1 Introduction

The system allows administrator to add a category or subcategory into the database.

3.1.6.2 Functional Requirements

Purpose: Adding a category or subcategory into the database, so that a vendor can add products against that category and also, customers can filter products using it.

Input: Category Name

Processing: Insert the category or subcategory into the database

Output: Category or subcategory is stored in database.

3.1.6.3 Stimulus Response

A) Adding main category

User Actions	**System Actions**
Administrator enters his details	
	System validates the details
	System log in the administrator and redirects to the admin portal
Administrator views all categories in the database.	
Administrator enters the category name	
	System stores the category in the database
Administrator views the new category list.	

B) Adding Sub category

User Actions	**System Actions**
Administrator enters his details	
	System validates the details
	System log in the administrator and redirects to the admin portal
Administrator views all sub	

categories in the database.	
Administrator chooses the main category	
Administrator enters the sub category name	
	System stores the sub category in the database against the main category
Administrator views the new sub category list.	

3.1.7 Viewing transactions receipts

3.1.7.1 Introduction

The system allows the administrator to view all the transactions so that he/she can keep a check on the financial flow.

3.1.7.2 Functional Requirements

Purpose: Viewing transaction receipts and printing them

Input: User ID

Processing: When administrator selects the user, the receipts will be displayed from the database.

Output: Receipts will be shown to administrator

3.1.7.3 Stimulus Response

A) Viewing all receipts

User Actions	**System Actions**
Administrator enters his details	
	System validates the details
	System log in the administrator and redirects to the admin portal
Administrator clicks on view orders	
	System retrieves the order receipts and display them
Administrator views the particular receipt and click print.	
	System displays the print preview.
Vendor takes the printout.	

B) Viewing receipts by user id

User Actions	**System Actions**
Administrator enters his details	
	System validates the details

	System log in the administrator and redirects to the admin portal
Administrator selects the user ID.	
Administrator clicks on view orders	
	System retrieves the order receipts of that particular user and display them
Administrator views the particular receipt and click print.	
	System displays the print preview.
Vendor takes the printout.	

3.1.8 Managing the users

3.1.8.1 Introduction

The administrator can handle user management by adding new user, modifying the details of existing user or deleting a user.

3.1.8.2 Functional Requirements

Purpose: User Management

Input: User ID, new details

Processing: To add user, edit user details or deleting an existing user.

Output: The modification is made in the database.

3.1.8.3 Stimulus Response

A) Adding an user

User Actions	**System Actions**
Administrator enters his details	
	System validates the details
	System log in the administrator and redirects to the admin portal
Administrator enters the user details	
	System adds user and stores the details in the database
	System displays all users in database
Administrator views all the users.	

B) Editing User Details

User Actions	**System Actions**
Administrator enters his details	
	System validates the details
	System log in the administrator and redirects to the

	admin portal
Administrator selects the user	
	System displays original details of the user.
Administrator enters and submit new details	
	System modifies the details of the user
	System displays the new details.
Administrator views new details.	

C) Deleting an user

User Actions	**System Actions**
Administrator enters his details	
	System validates the details
	System log in the administrator and redirects to the admin portal
Administrator selects the user	
Administrator removes the user	
	System gives a warning and ask for confirmation
Administrator accepts the warning	
	User and its details will be deleted from the database.
Administrator views all users.	

3.1.9 Managing the access of the vendors

3.1.9.1 Introduction

The administrator can manage the access privileges of all the vendors and provide them different accesses respectively.

3.1.9.2 Functional Requirements

Purpose: Providing different privileges to different vendors.

Input: Vendor ID, New Privileges

Processing: To add, edit and delete privileges of different vendors.

Output: The privileges of vendors will be modified.

3.1.9.3 Stimulus Response

A) Adding a privilege

User Actions	**System Actions**
Administrator enters his details	
	System validates the details

	System log in the administrator and redirects to the admin portal
Administrator enters the user details	
Administrator selects the user.	
	System displays all the privileges/menus of the user
	System displays the menu list.
Administrator selects new menus	
Administrator clicks on submit	
	System adds the new menus.
	System displays all the privileges to the administrator.
Administrator views all the menus provided to the user.	

B) Modifying privilege

User Actions	**System Actions**
Administrator enters his details	
	System validates the details
	System log in the administrator and redirects to the admin portal
Administrator enters the user details	
Administrator selects the user.	
	System displays all the privileges/menus of the user
Administrator ticks new privileges of respective menu	
Administrator clicks on submit	
	System updates the menus in the database.
	System displays the new menus
Administrator views the new menus.	

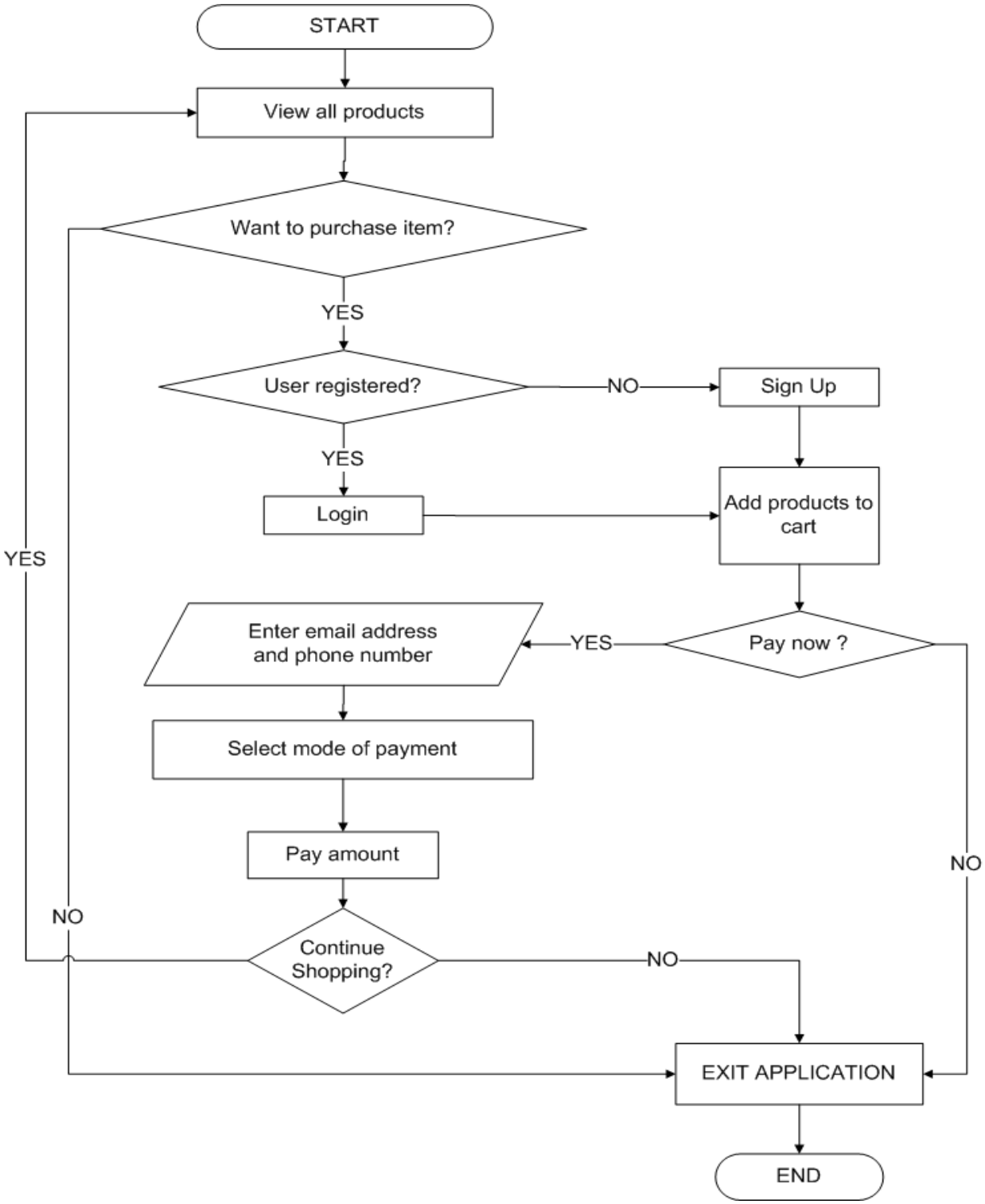
C) Deleting a privilege

User Actions	**System Actions**
Administrator enters his details	
	System validates the details
	System log in the administrator and redirects to the admin portal
Administrator selects the user	
	System displays all the privileges/menus of the user
Administrator clicks the corresponding delete button of the menu	
	System shoes the warning message and ask for confirmation
Administrator confirms the deletion	
	System removes the corresponding menu from privileges
	System displays the updated menus for the user.
Administrator views the menus for the user.	

3.2 Flow Charts for all major modules

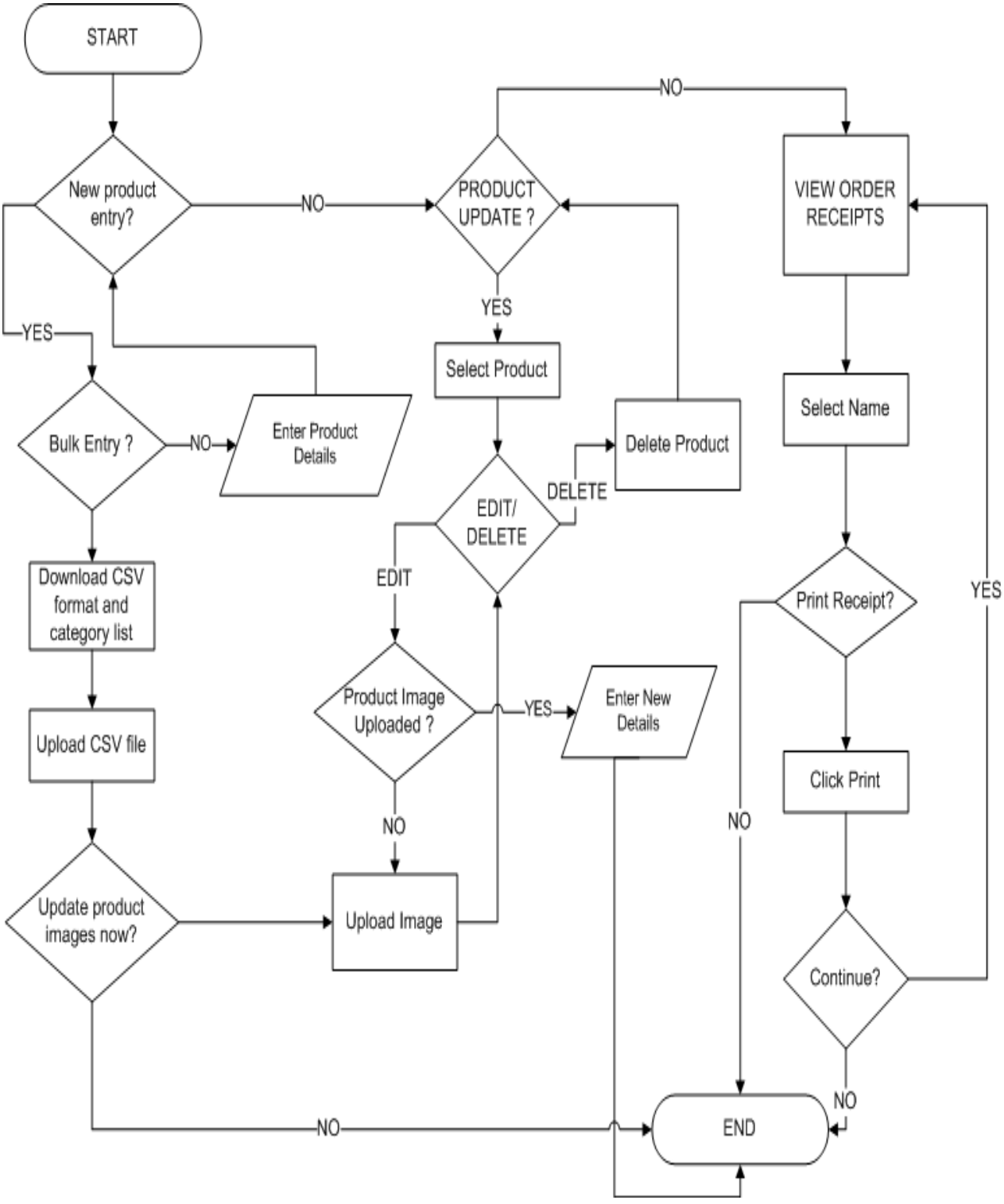
3.2.1 Customer work flow

Figure 3: Customer Work Flow



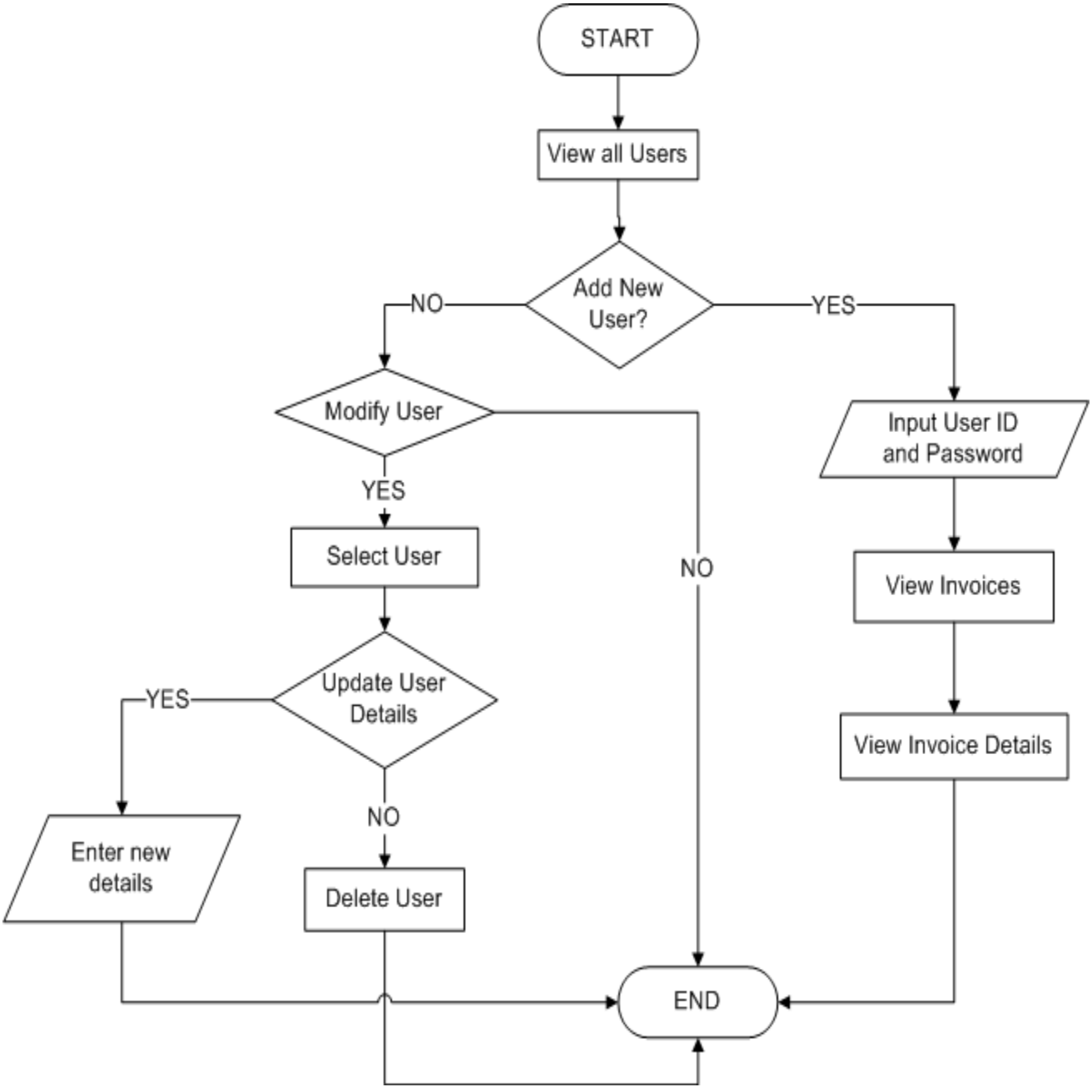
3.2.2 Vendor work flow

Figure 4: Vendor Work Flow



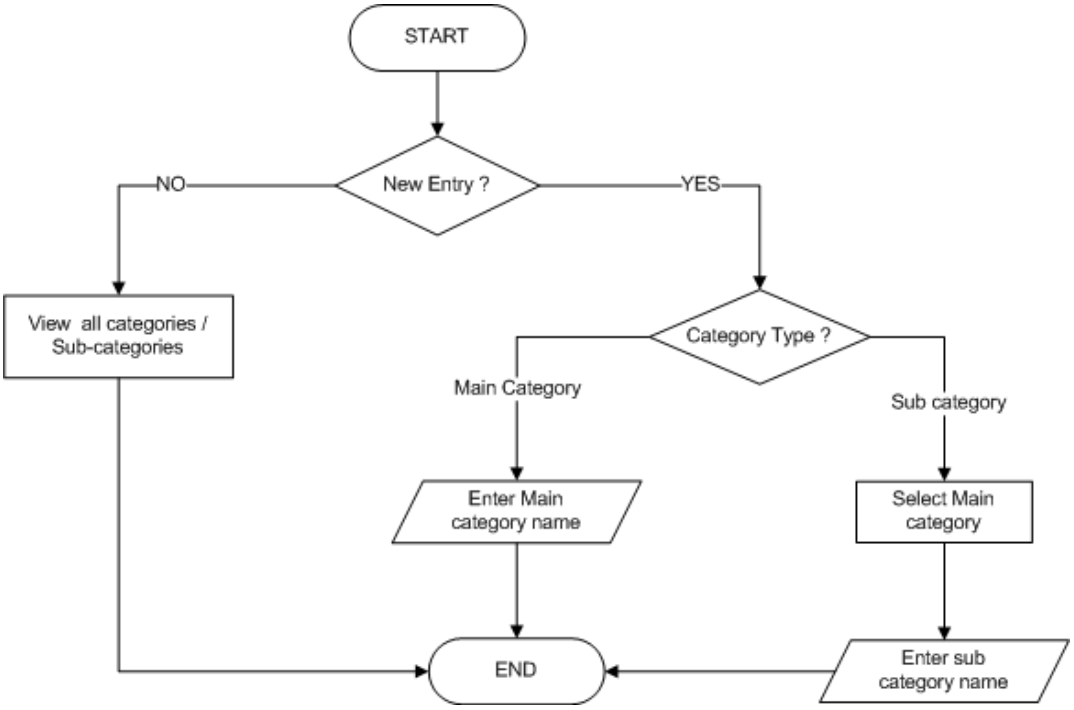
3.2.3 Administrator user management module

Figure 5: Administrator user management module



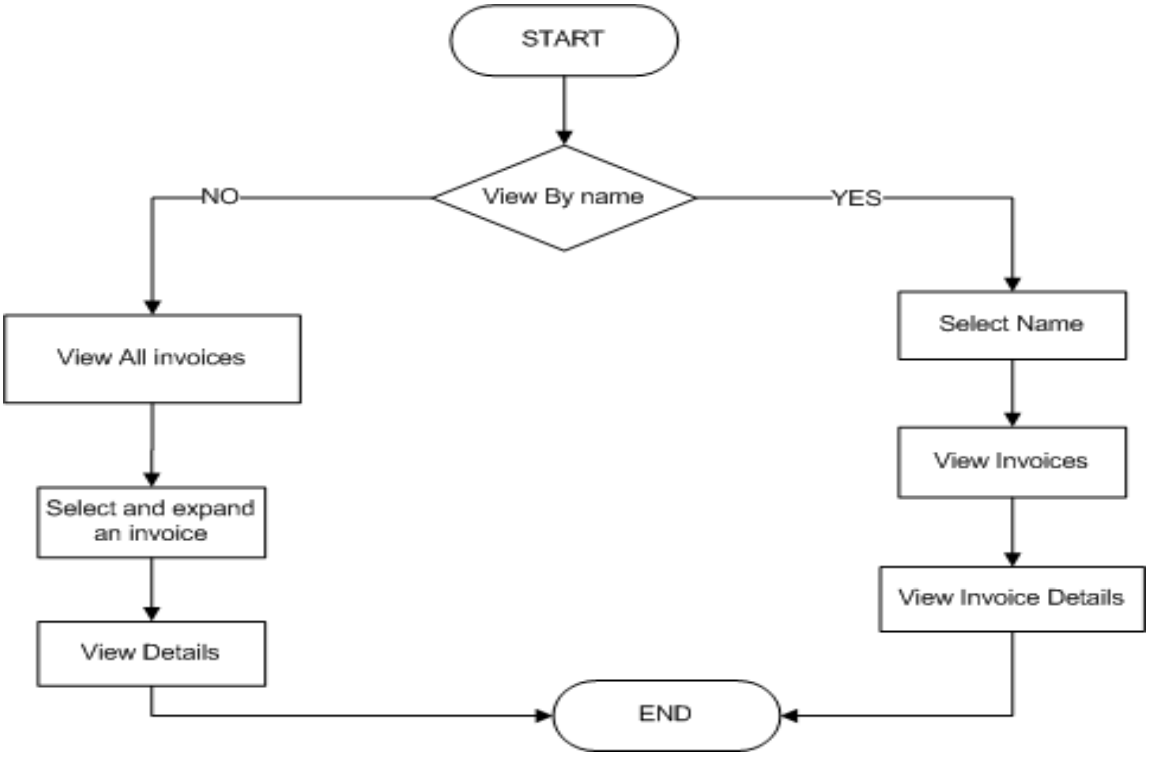
3.2.4 Administrator data management module

Figure 6: Administrator data management module



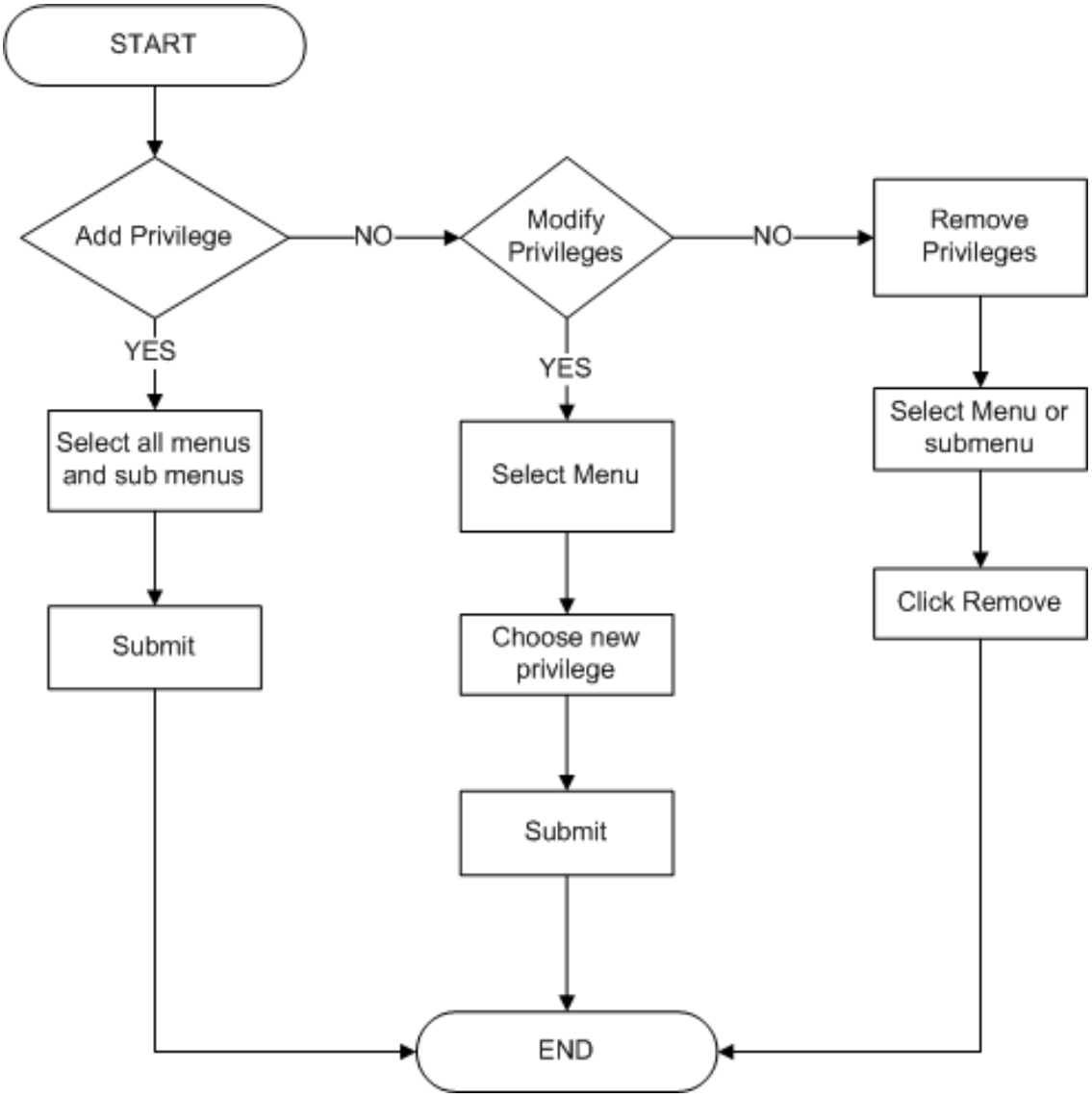
3.2.5 Administrator transaction view module

Figure 7: Administrator transaction view module



3.2.6 Administrator access management module

Figure 8: Administrator access management module



3.3 Performance Requirements

The following tables list the performance requirements of the E-Commerce web application.

Table of Performance Requirements

Performance Requirement	Description
Data storage capacity	The storage of the database should be maintained in such a way that the capacity is fully utilized and although it is very large, then too the space should be monitored regularly and in case there is some sort of problem with the space and storage, the administrators should be informed timely
Software Runtime Errors	The E-Commerce web application should handle the runtime errors consistently and as gracefully as possible.

3.4 Design Constraints

The E-Commerce web application have some design constraints to meet the nonfunctional requirements which are mentioned with the descriptions

Table of Design Constraints

Design Constraint	Description
Ease of Use	All the instructions should be clearly mentioned according to the feature. If any document needs to be uploaded, then correct format of the same should be available for download in the application itself.
SQL constraints	The SQL provides us the security feature but some design constraints related to the SQL server that should be taken care of are its classes and storage capacity. As the products and orders will be continuously increasing, the database capacity should be taken care of, at the time of database purchase.
Data representation	The data such as orders receipts, stocks data, sales data, etc. should be represented in an understandable way. Different representation styles CAN be used to display the same.

3.5 Software System Attributes

3.5.1 Reliability

Reliability of E-Commerce web application will be thoroughly checked using User acceptance testing and after every release of any deliverable it will be tested by the testing team and all the flaws will be resolved. Other than that, the software will also be sent to the workplace where it will be tested by the stakeholders to gain some more information about the additional requirements and then the system can be made more reliable.

3.5.2 Security

The e-commerce web application will be highly enabled with security feature. The credit card/debit card details of the customer will not be available to anyone. A vendor cannot modify the product details or delete any product of other vendor. No user can modify the login details of any other user. Other than that, the data is fully secured and backed-up. For example, if the application has been submitted by any of the stakeholders, it is secured in the database and can be accessed later also if the power goes off or system was not closed or exited properly.
Other than that, it is made on offline java platform which will help to enhance the security of the system as the data will be stored through SQL and will be secured.

3.5.3 Maintainability

The maintenance of E-Commerce web application is very efficient. All the modules will be built with high coupling and low cohesion, which will make it more efficient to modify and accessibility will be much better. We will be able to make the changes on local server and then make it available in addition to the current hosted application. It will not affect the ongoing work of the system and without any data loss we can make changes according to the revised user requirements (if any).

3.5.4 Portability

The e-commerce web application should be built totally responsive, so that user can view the application in mobile or other low end devices without any difficulty. Also, if the hosting plan or hosting platform needs to be changed, there should not be any difficulty in doing so, keeping in mind that it is a long-term working web application with frequent entries. The server uptime should be maximum for both high end and low end devices