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Department of Software Engineering, FSIT

SWE-431 Project / Thesis

Project Documentation

Garments ERP System (Merchandising)

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Approval

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Acknowledgement

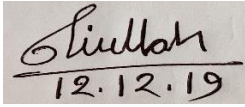
First of all, I am very much blessed as I have successfully reached towards the final semester. And so this is why I am pleased to my almighty. From the very beginning of my university life, I have learned a lot about software engineering as well as core computer science related knowledge from my course teachers. Moreover, they teach us ethics, morality and politeness.

Besides, I am so much thankful to my parents that, I was always supported by them. They always prioritize my opinion and inspired me as well.

I am also so many grateful to my supervisor **Mr. Iftekharul Alam Efat** for allowing me to work with this project. He always supports me to make this projects successful.

DECLARATION

We hereby declare that we have taken this thesis under the supervision of **Mr. Iftekharul Alam Efata**, Senior Lecturer, Department of Software Engineering, Daffodil International University. We also declare that neither this project nor any part of this has been submitted elsewhere for award of any degree.



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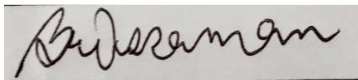
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Abstract

I have started to develop this project from April. From the very starting of development of this project, it demands hard working, patients, persistency to meet the requirements of stakeholders. After that I have proposed the design. And then started to work.

Database plays a vital role for any application software. And so this is why, I have designed the database diagram having tables with proper relationship. After that, I have prepared the user interface and take their approval to continue to the next part. It is to be said that, the interface of my application is very simple and easy to understand. After completing that, I have started to write the core functionality of the project.

Developing project is not end of all tasks actually. There are some other important tasks to perform. And that is testing. It is also known as quality assurance also. Almost at every software company there are a quality assurance team. Their main responsibility is to find the loop holes or vulnerability of software. If there any bug remains before handover to the stakeholders, there is a change to ruin the whole project. So testing plan is very important. And after developing the project, I have tried to assure the quality of this project.

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Chapter 1

Introduction

1.1 Overview

Today we've computers with giant computing power and virtually each business goes to require the benefits of exploitation those technologies. However these days digital certifications itself becomes a necessary part for each business infrastructure. As a result of it provides security and it will establish each distinctive individual. Besides, it additionally provides confidential communications to the users. These days paperless calculation, documentation and communication permits individuals to access to everything by their distinctive identity like fingerprints or passwords. It's additionally with success reduced the clutters of disorganization papers and calculations which can arrive from connected purpose. Digital papers cut back the workplace area that needed for business and provides a lot of ability to access to data. Management & integration all aspects of the business key functions including: order entry, sample, IE, inventory, marketing, production & Finance area unit such a lot complicated in manual manner. Determination to attain lower costs, higher quality and faster delivery is additionally troublesome once individuals won't to use manual ways in which.

Providing right data to the proper individuals at the proper time anyplace within the world, facultative peoples to enhance productivity, enhance deciding capabilities and promote communication between co-workers, suppliers and consumers additionally such a lot troublesome. Reduce and eliminate duplicate work and automatise operational tasks to save lots of time & price is not possible in manual ways in which. Standardization the producing processes and improvement quality at intervals multiple business units across the corporate was additionally terribly troublesome. These area unit some common state of affairs across the country. And also the reality is that, nobody from out of this universe would return to resolve our downside. We'd like to resolve our own downside exploitation our own resources still. And also the initiatives ought to return from North American country.

For that reason, we tend to area unit progressing to create an internet supported laptop. By exploitation this net application, staff of clothes is benefited as they might not face associate degreey hassles to create an order, coming up with for specific order, creating inventory report for specific order or create a distinct order of inventory for specific order, creating and generating reports and exportation data. Solely merchandizer, planner, business officer and inventory manager ready to create registration. most significantly, taking order in step with price profit calculation, coming up with for every order, manage inventory collections, business reports and import and export is managed mechanically. And also the method would be done at intervals some whereas.

1.2 Purpose

The main purpose of this project named “**GarmentsERP System**” is to make an automation system which might be helpful for millions of users from different garments by solving their a few problems. Therefore, we are going to develop such a project.

1.2.1 Background

Suddenly we notice that, people from our country of different garments is facing a lot of problem at the time of their daily work. And there are a few options remaining to escape those problem. Thousands of people from different garments are being suffering. So considering that, we have brainstormed and thinking that our project is going to solve their problems.

1.2.2 Benefits & Beneficiaries

The module “Merchandising” of our applications would be beneficial for some point of view. Now, I am mentioning those

Below:

- Our system helps Merchandiser to make registration easily
- It helps authenticated access to the system.
- It would be helpful for making Order Entry.
- It is helpful for determining the size breakdown, fabrication, basic accessories, finishing accessories, decorative accessories, quantity.
- It is also helpful for determining required cost calculation.
- It helps Merchandiser to make for an order within a moment
- It helps Merchandiser to cost calculation for an order within a moment
- This application makes authentication system for a garment so confidential data cannot be highlighted.
- Our app helps garments company to increase their business
- This app helps Merchandiser to make any order entry and cost calculation easily.
- The system also going to reduce unwanted problems
- Only authorized person can get access to the system.

I have also mentioned some benefits as well as beneficiaries. So, I think this application is very much helpful for users.

1.2.3 Goals

The main scope of this project is to develop an application based on PC device. As more than 80% high level employees are using Windows operating based PC device, so we are targeting to implement our system firstly for computer users. Our proposed system has 5 modules.

This document is also aimed at specifying requirements of software to be developed but it can also be applied to assist in the selection relation between the different stakeholders. The standard can be used to create software requirements specifications directly or can be used as a model for defining the system requirements.

1.3 Stakeholders

There are six types of stakeholders in our total “GarmentsERP” system. Such as:

Buyer/Company	Buyer will order for his need, can know the each product cost and total cost of order, production completion estimated date, can get all reports too.
Merchandizer	Merchandizer makes each order. For each order he calculates cost benefit reports, deals with buyer and confirms order.
T&A and Planning manager	Planner can see each of the orders, yarn and fabric info and plans for each order in some sub works and generates report for each order. He can also generate daily work report too.
Inventory manager	Inventory manager can see all orders, calculate needed inventories and send request for inventory to commercial manager.
Commercial manager	Commercial manager can see all orders and needed inventory for each order to import from other companies. He will gather all information of the garment, each cost for production of each order, export info and bank info of buyer.
BGMEA	Planner, merchandizer, commercial manager will give report to BGMEA. And all deal for each order will be confirmed with the permission of BGMEA.
Banks	An order report of specific order and daily work report of this order will be sent to bank and bank will monitor daily work progress.

1.4 Project Schedule

We need to prepare a scheduling plan to complete the project on time. It also refers to make communication with what task need to get done within timeframe.

1.4.1 Gantt Chart

Gantt chart is mainly a production control tools. It remained us to complete our assigned tasks within a certain period of time. For developing software, it is mostly used. Now I will show a Gantt chart for our project.

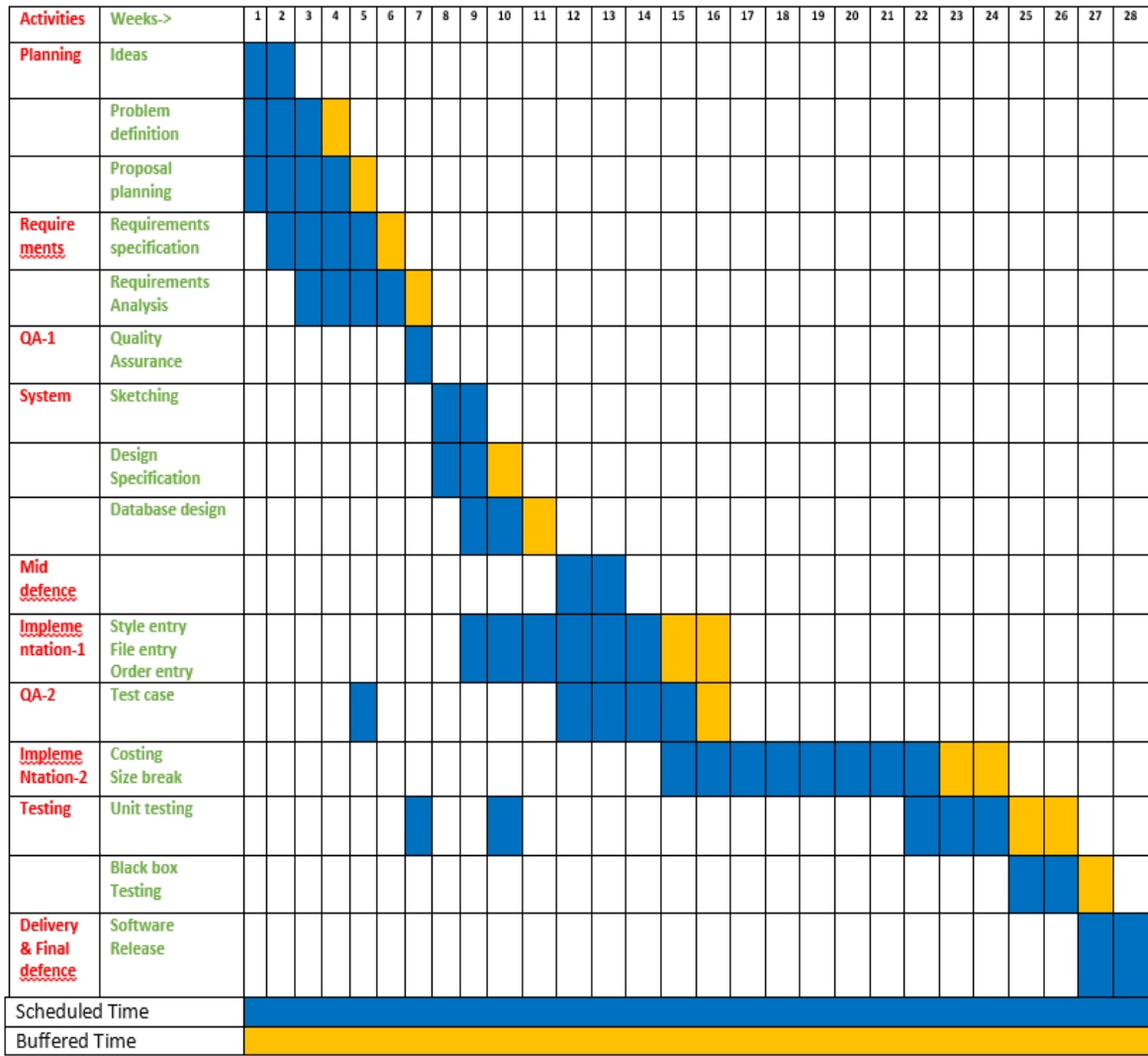


Figure 1.1 Gantt chart

1.4.2 Release Plan or Milestone

Activities	Duration in week	Total week
Brainstorming	Week no. (1,2)	2
Problem identification	Week no. (1,2,3,4)	4
Requirement specification	Week no. (2,3,4,5)	4
Requirement analysis	Week no. (3,4,5,6)	4
Sketching	Week no. (8,9)	2
Design specification	Week no. (8,9)	2
Database design	Week no. (9,10)	2
Order entry and Style Entry	Week no. (9,10,11,12,13,14)	6
Quality assurance(1,2)	Week no. (7,12,13,14,15)	5
Test case	Week no. (4,7,12,13,14,15)	6
Impose case & demerits	Week no. (15,16,17,18,19,20,21,22)	8
Unit testing	Week no. (22,23,24)	3
Black-box testing	Week no. (25,26)	2
Software release	Week no. (27,28)	2

Chapter 2

Software Requirement Specification

2. Requirement Specification

The complete requirement specification based on the elicitation process is described in this section.

2.1 Functional Requirements:

Functional requirements refer to the functions which are mandatory to the system.

2.1.1 Merchandiser create style Entry for order

Requirements 1	Merchandiser create style entry for order.
Description	Merchandiser wants to create an order. For that reason in manual way Merchandiser collects the requirements from client/buyer, then he/she write into a paper and then calculate the cost in manual way. But in our system when he/she input client/buyer requirement in the system. Then he/she no needs to calculate the cost, system calculate that cost automatically.
Stakeholders	Merchandiser, Client/Buyer.

2.1.2 Merchandiser create Pre-order for order

Requirements 2	Merchandiser create Pre-order for order
Description	After completing a style entry merchandiser needs to create a pre-order for client/buyer. Because that pre-order helps to deal with client/buyer. For that reason in manual way merchandiser calculates required cost for the orders. But in our system he can calculate require cost and quantity. He need to send it to Production.
Stakeholders	Merchandiser, Production Manager.

2.1.3 Merchandiser create Production order for order

Requirements 3	Merchandiser create Production order for order
Description	After completing Pre-order by Merchandiser Production manager needs to create Production order. For that reason in manual way going to Merchandiser and collect all requirement in paper for Production order. But in our system he no need to going to Merchandiser. When he/she enter order id then the system automatically show the previous order info.
Stakeholders	Production Manager ,Merchandiser

2.1.4 Merchandiser calculate all cost for order.

Requirements 4	Merchandiser calculate all cost for order.
Description	After completing Production order by Production manager Merchandiser needs to Cost calculation. For that reason in manual way Merchandiser collect all requirement in paper for cost calculation and calculate it in manual way. But in our system he no need to do it. When he/she enter order id then the system automatically show the all cost calculation.
Stakeholders	Merchandiser.

2.1.5 Merchandiser create a Post order

Requirements 5	Merchandiser create a Post order for order.
Description	After completing Cost calculation Merchandiser needs to create Post order. For that reason in manual way Merchandiser collect all requirement in paper for Post order. But in our system he no need to do it. When he/she enter order id then the system automatically show the previous info and lock the order.
Stakeholders	Merchandiser.

2.1.6 Merchandiser wants to view all style entry.

Requirements 6	Merchandiser wants to view all style entry.
Description	After completing Style Entry Merchandiser wants to view Style entry. For that reason in manual way Merchandiser need to finding all file manually. But in our system he no need to do it. He easily view all style entry. When he/she enter order id then the system automatically show the style entry and he can also easily update delete and making report for it.
Stakeholders	Merchandiser.

2.1.7 Merchandiser wants to all view Pre-order.

Requirements 7	Merchandiser wants to view all pre-order.
Description	After completing Pre order Merchandiser wants to view Pre-order. For that reason in manual way Merchandiser need to finding all file manually. But in our system he no need to do it. He easily view all pre-order. When he/she enter order id then the system automatically show the Pre-order and he can also easily update delete and making report for it.
Stakeholders	Merchandiser.

2.1.8 Merchandiser wants to view all Production order.

Requirements 8	Merchandiser wants to view all Production order.
Description	After completing Production order Merchandiser wants to view Production order. For that reason in manual way Merchandiser need to finding all file manually. But in our system he no need to do it. He easily view all pre-order. When he/she enter order id then the system automatically show the Production order and he can also easily update delete and making report for it.
Stakeholders	Merchandiser.

2.1.9 Merchandiser wants to view all cost calculation.

Requirements 9	Merchandiser wants to view all cost calculation.
Description	After completing cost calculation Merchandiser wants to view cost calculation. For that reason in manual way Merchandiser need to finding all file manually. But in our system he no need to do it. He easily view all cost calculation. When he/she enter order id then the system automatically show all the cost calculation and he can also easily update delete and making report for it.
Stakeholders	Merchandiser.

2.1.10 Merchandiser wants to view all Post order.

Requirements 7	Merchandiser wants to view all Post order.
Description	After completing Post order Merchandiser wants to view Post order. For that reason in manual way Merchandiser need to finding all file manually. But in our system he no need to do it. He easily view all Post order. When he/she enter order id then the system automatically show all the Post order and he can also easily update delete and making report for it.
Stakeholders	Merchandiser

2.2 Data Requirements:

For our application maximum data would be loaded from client/buyer and some from Organization's employees. And for that purpose we need to focus on some major points.

Such as:

- Types of entity of the system
- Quantity of order
- Data availability
- Inventory
- Quantity of data
- Country's all garment's inventory elements.
- Availability of data

2.3 Performance Requirements:

Now, I will explain some perspective by which we are going to enhance the performance of our project.

2.3.1 Speed & Latency Requirements:

Speed and latency requirements must be ensured while retrieving data from the cloud server.

SLR-1	Cost calculate must be faster
Description	When merchandiser cost calculate for order then the cost calculate result must show within a second.
Stakeholders	Merchandiser.

SLR-2	Search result must be faster
Description	When Merchandiser search for view a style entry by order id, view a pre order by order then the search result must show Within seconds.
Stakeholders	Merchandiser.

2.3.2 Precision & Accuracy Requirements:

Results that is to be shown to the merchandiser is need to be accurate. Because, wrong results might be ruined the whole search process.

PAR-1	Search result must be accurate
Description	When Merchandiser search for view an order, style entry by order then the search result must show accurately.
Stakeholders	Merchandiser.

PAR-1	Cost calculate must be accurate
Description	When merchandise cost calculate for an order then the cost calculate result must be shown accurate cost for that order.
Stakeholders	Merchandiser.

2.3.3 Capacity Requirements:

CR-1	The system will handle thousands of data
Description	The system need to handle data thousands of data every moment.
Stakeholders	Merchandiser.

2.4 Dependability Requirements:

The term dependability is measured based on four dimensions. Such as:

- Availability
- Reliability
- Safety
- Security

If we want to say that our application system is dependable then it must fulfil the four dimensions.

2.4.1 Reliability & Availability Requirements:

RAR-1	The system must be available on 24 X 7
Description	Our system must be available all day long, every day in a week <ul style="list-style-type: none"> • The system must be updated regularly
Stakeholders	Merchandiser

2.4.2 Robustness or Fault-Tolerance Requirements:

RFT-1	The system handles merchandiser access without system errors
Description	Not more than 3 merchandiser might hit our application system at a time. All their requests must be handled without any fault.
Stakeholders	Merchandiser

2.4.3 Safety-Critical Requirements:

In my project have no safety-critical requirements.

2.5 Maintainability & Supportability Requirements:

It is important to provide after service or support to the merchandiser.

2.5.1 Maintainability Requirements:

It is not available for this project.

2.5.2 Supportability Requirements:

Supportability requirements may have related to some extends. Like:

- Testability
- Maintainability
- Configurability
- Serviceability
- Install ability

2.5.3 Adaptability Requirements

In my system have no adaptability requirements.

2.6 Security Requirements:

Some security related requirements is given below:

- Signing in as Merchandiser.
- Signing out as Merchandiser..
- Handling encrypted passwords.

While accessing to the system, each and every module must provide a central authentication mechanism.

2.6.1 Access Requirements:

For accessing to our application system, there remains some authentication and authorization techniques. And every module of our system will provide it. Now I will provide an explanation below.

AR-1	Application provides security mechanism
Description	Every module is designed in such a way that it only give access to the authorized and authenticated users.
Stakeholders	Merchandiser.

2.6.2 Integrity Requirements:

We will store our user passwords as encrypted format which is impossible to decrypt. It is also called hashed password.

2.6.3 Privacy Requirements:

To ensure privacy, the central database should be protected by the anonymous. Merchandiser permitted to get access to those data which are being associated by them or by the organization's employees which can be ensured by the Merchandiser log in system.

2.7 Usability and Human-Interaction Requirements:

The main target of developing any system is to make the system user friendly and easy to usable for the end users.

2.7.1 Ease of Use Requirements:

Our application is easy to use and also easily understandable.

EUR-1	Application must be usable for the end users
Description	This app is enough usable to the merchandiser by which he can operate this system easily.
Stakeholders	Merchandiser

2.7.2 Personalization and Internationalization Requirements:

In my project have not any personalization and internationalization requirements. This maiden version of our application is only be operated by a specific Garments.

2.7.3 Understand ability and Politeness Requirements:

It is already said that the application which we are going to develop, is understandable enough. The system provides hints to users whether any error occurred or wrong. By reading those errors Merchandiser can be able to operate the system easily.

2.7.4 Accessibility Requirements:

Documentation are mainly two types. One is internal documentation which is generally written by the application engineers. It is prepared to make development life cycle easier for the system engineers or system analysts.

2.7.5 User Documentation Requirements

UDR-1	The system engineer documentation
Description	To develop our application named GarmentsERP, firstly we have make a system analysis team as well as documentation team.
Stakeholders	System analysts or software developers

2.7.6 Training Requirements:

Training requirements involved in after service of any application. It is very necessary to properly train up end users to the system so that they would be capable to operate easily. After launching the full package to the market, firstly we provide training to the different end users like planning manager, merchandiser, commercial manager, inventory manager.

2.8 Look and Feel Requirements:

Look and feel requirements mainly refers how the system will look like and how the user interface of our system will display to the users.

2.8.1 Appearance Requirements:

All user must know which input fields are required and which are not. For that reason, we will use labels for all input fields. Input fields might be text type, radio, checkbox etc.

AR-1	Labels of mandatory fields must be bold
Description	The mandatory field's label must be bold and all input fields must have placeholder to make it easier for the users.
Stakeholders	All users of the system

2.9 Operational and Environmental Requirements:

Operational and environmental requirement refers to the capabilities, performance measurements, process, measurements of effectiveness, measurements of performance, measures of sustainability, measurements of technical performances etc.

2.9.1 Expected Physical Requirements:

In my project have no expected physical requirements.

2.9.2 Requirements for Interfacing with Adjacent Systems:

In my project have no requirements for interfacing with adjacent system. Because it is a desktop and web based system.

2.9.3 Release Requirements:

In my project no specific release requirements. Because it is a live project.

2.10 Legal Requirements:

Legal requirements normally refer to the terms and conditions or privacy policy of any organizations. The terms and condition of our application is that, no third party software or person are allowed to engage to use our data for their personal purpose.

2.10.1 Compliance Requirements:

In my project no specific compliance requirements.

2.10.2 Standards Requirements:

As I said above there are no specific standards requirements for our system.

Chapter 3

Requirement Analysis

3.1 Use Case Diagram

We have use case diagram. And there are one actors. And those are already indicated to this use case diagram. This diagram will clarify our system in brief.

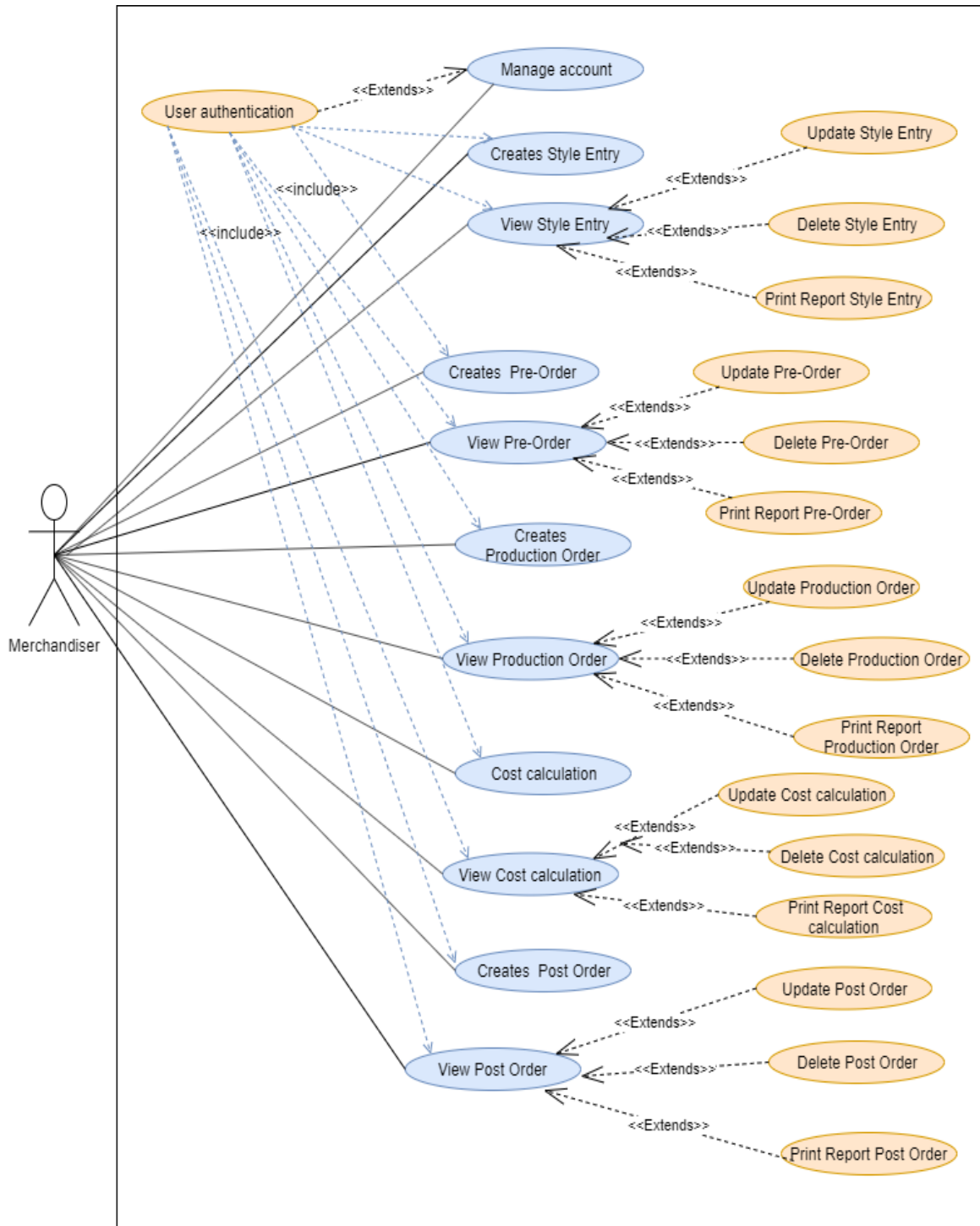


Figure 3.1: Use Case diagram for “GarmentsERP(Merchandising)”

3.2 Use Case Description

3.2.1 Manage account.

Use Case Id	01	
Use Case	Manage account.	
Goal	Merchandiser can log in to the system so that other person can't get access to the system and finally after doing his job he can log to from the system.	
Preconditions	<ul style="list-style-type: none"> • Merchandiser must open the system. • Merchandiser must go to the Merchandising option. 	
Success End Condition	<ul style="list-style-type: none"> • Merchandiser can login successfully. • Merchandiser can logout successfully. 	
Failed End Condition	<ul style="list-style-type: none"> • Merchandiser can't login successfully. • Merchandiser can't logout successfully. 	
Primary Actors:	Merchandiser	
Secondary Actors:	System	
Trigger	Merchandiser must have a account for logging in.	
Description / Main Success Scenario	Step	Action
	1	Merchandiser clicks the Merchandising option
	2	Merchandiser gets login form.
	3	Merchandiser enters right username password
	4	Merchandiser finally clicks sign in button.
	5	Merchandiser successfully logs in.
	6	Merchandiser clicks log out button and successfully logs out
Alternative Flows	Step	Branching Action
	1	Merchandiser doesn't clicks the T&A and planning option.
	2	Merchandiser doesn't get login form.
	3	Merchandiser can't enter right username password

3.2.2 Create Style entry

Use Case Id	02	
Use Case	Create Style entry	
Goal	Merchandiser create a style entry for order.	
Preconditions	<ul style="list-style-type: none"> • Merchandiser must know about client requirement and demand. • Buyer/client must give Merchandiser a take pack. 	
Success End Condition	<ul style="list-style-type: none"> • Merchandiser can create a style entry successfully. 	
Failed End Condition	<ul style="list-style-type: none"> • Merchandiser can't create a style entry successfully 	
Primary Actors:	Merchandiser	
Secondary Actors:	System	
Trigger	Merchandiser must have an uncreated style entry for order.	
Description / Main Success Scenario	Step	Action
	1	Merchandiser clicks the Style Entry option
	2	Enter all input.
	3	Fill up all the filed correctly.
	4	Merchandiser finally clicks save button.
	5	Insert all the data in database.
Alternative Flows	Step	Branching Action
	1	Style entry option cannot work.
	2	Input filed are not working.
	3	Save button cannot work.
	4	Style are not insert in database table perfectly.

3.2.3 Create Pre order

Use Case Id	03	
Use Case	Create Pre order	
Goal	Merchandiser create a Pre order for order.	
Preconditions	<ul style="list-style-type: none"> • Merchandiser must know about style entry. 	
Success End Condition	<ul style="list-style-type: none"> • Merchandiser can create a Pre order successfully. 	
Failed End Condition	<ul style="list-style-type: none"> • Merchandiser can't create a Pre order successfully 	
Primary Actors:	Merchandiser	
Secondary Actors:	System	
Trigger	Merchandiser must have an uncreated Pre-order for order.	
Description / Main Success Scenario	Step	Action
	1	Merchandiser clicks the Pre order option
	2	Submit an order id who is style entry already exists

	3	Show the style Entry information.
	3	Fill up the pre order filed.
	4	Merchandiser finally clicks save button.
	5	Insert all the data in database.
Alternative Flows	Step	Branching Action
	1	Pre order option cannot work.
	2	Submit an order who is not already exists.
	3	System show wrong style entry info.
	4	Save button cannot work.
	5	Style are not insert in database table perfectly.

3.2.4 Create Production order

Use Case Id	04	
Use Case	Create Production order.	
Goal	Merchandiser create a Production order for order.	
Preconditions	<ul style="list-style-type: none"> Merchandiser must know about style entry and Pre order. 	
Success End Condition	<ul style="list-style-type: none"> Merchandiser can create a Production order successfully. 	
Failed End Condition	<ul style="list-style-type: none"> Merchandiser can't create a Production order successfully. 	
Primary Actors:	Merchandiser	
Secondary Actors:	System	
Trigger	Merchandiser must have an uncreated Production order for order.	
Description / Main Success Scenario	Step	Action
	1	Merchandiser clicks the Production order option
	2	Submit an order id who is style entry and pre order already exists.
	3	Show the style Entry and pre order information.
	3	Fill up the production filed.
	4	Merchandiser finally clicks save button.
	5	Insert all the data in database.
Alternative Flows	Step	Branching Action
	1	Production order option cannot work.
	2	Submit an order who is not already exists.
	3	System show wrong style entry and pre order info.
	4	Save button cannot work.
	5	Style are not insert in database table perfectly.

3.2.5 Calculate Cost calculation

Use Case Id	05	
Use Case	Calculate cost calculation.	
Goal	Merchandiser calculate cost for order.	
Preconditions	<ul style="list-style-type: none"> Merchandiser must know about style entry, Pre order and Production order. 	
Success End Condition	<ul style="list-style-type: none"> Merchandiser can calculate cost for order accurately. 	
Failed End Condition	<ul style="list-style-type: none"> Merchandiser can't calculate cost for accurately. 	
Primary Actors:	Merchandiser	
Secondary Actors:	System	
Trigger	Merchandiser must have an uncalculated order.	
Description / Main Success Scenario	Step	Action
	1	Merchandiser clicks the cost calculation option.
	2	Submit an order id who is style entry, production order and pre order already exists.
	3	Show the style entry, pre order information.
	4	Fill up the cost calculation filed.
	5	Merchandiser finally clicks calculate button.
	6	Show the calculate results.
	7	Insert all the in database.
Alternative Flows	Step	Branching Action
	1	Style entry option cannot work.
	2	Submit an order who is not already exists.
	3	System show wrong style entry and pre order info.
	4	Calculate button cannot work.
	5	Calculate are not right.
	6	Style are not insert in database table perfectly.

3.2.6 Create Post order

Use Case Id	06	
Use Case	Create Post order.	
Goal	Merchandiser create a Post order for order.	
Preconditions	<ul style="list-style-type: none"> Merchandiser must know about style entry and pre order. 	
Success End Condition	<ul style="list-style-type: none"> Merchandiser can create a Post order successfully. 	
Failed End Condition	<ul style="list-style-type: none"> Merchandiser can't create a Post order successfully. 	
Primary Actors:	Merchandiser	

Secondary Actors:	System	
Trigger	Merchandiser must have an uncreated Post order for order.	
Description / Main Success Scenario	Step	Action
	1	Merchandiser clicks the Post order option
	2	Submit an order id who is style entry production order, pre-order and cost calculation already exists.
	3	Show the style entry, production order, cost calculation and pre order information.
	4	Fill up the production filed.
	5	Merchandiser finally clicks save button and lock it.
Alternative Flows	Step	Branching Action
	1	Post order option cannot work.
	2	Submit an order who is not already exists.
	3	System show wrong style entry, production order, pre order and cost calculation info.
	4	Save or lock button cannot work.
5	Style are not insert in database table perfectly.	

3.2.7 View style entry

Use Case Id	07	
Use Case	View style entry	
Goal	Merchandiser wants to view all the style or wants to update a style entry or wants to delete style entry or wants to print report for style entry.	
Preconditions	<ul style="list-style-type: none"> Style entry must be already created. 	
Success End Condition	<ul style="list-style-type: none"> Merchandiser wants to view all the style or wants to update a style entry or wants to delete style entry or wants to print report for style entry successfully. 	
Failed End Condition	<ul style="list-style-type: none"> Merchandiser can't want to view all the style or wants to update a style entry or wants to delete style entry or wants to print report for style entry successfully. 	
Primary Actors:	Merchandiser	
Secondary Actors:	System	
Trigger	Must have already exists style entry.	
Description / Main Success Scenario	Step	Action
	1	Merchandiser clicks the View style entry option
	2	System show all the style entry in table.

	3	Merchandiser can update a style entry by order id.
	3	Merchandiser can delete a style entry by order id.
	4	Merchandiser can view a style entry and Print report for this style entry by order id.
	5	Merchandiser can search a style entry by order id.
Alternative Flows	Step	Branching Action
	1	View style entry button cannot work.
	2	System cannot show all the style entry in table.
	3	Merchandiser cannot update a style entry.
	4	Merchandiser can delete a style entry.
	5	Search result are not accurate.
	6	Merchandiser can view a style entry and Print report for this style entry.

3.2.8 View pre order

Use Case Id	08	
Use Case	View pre order	
Goal	Merchandiser wants to view all the pre order or wants to update a pre order or wants to delete pre order or wants to print report for pre order.	
Preconditions	<ul style="list-style-type: none"> Pre order must be already created. 	
Success End Condition	<ul style="list-style-type: none"> Merchandiser wants to view all the pre order or wants to update a pre order or wants to delete pre order or wants to print report for post successfully. 	
Failed End Condition	<ul style="list-style-type: none"> Merchandiser can't want to view all pre order or wants to update a pre order or wants to delete pre order or wants to print report for pre order successfully. 	
Primary Actors:	Merchandiser	
Secondary Actors:	System	
Trigger	Must have already exists pre order.	
Description / Main Success Scenario	Step	Action
	1	Merchandiser clicks the View pre order option
	2	System show all the pre order in table.
	3	Merchandiser can update a pre order by order id.
	3	Merchandiser can delete a pre order by order id.
	4	Merchandiser can view a pre order and Print report for this pre order by order id.
	5	Merchandiser can search a pre order by order id.
Alternative Flows	Step	Branching Action

	1	View pre order button cannot work.
	2	System cannot show all the pre order in table.
	3	Merchandiser cannot update a pre order.
	4	Merchandiser can delete a pre order.
	5	Search result are not accurate.
	6	Merchandiser can view a pre order and Print report for this pre order.

3.2.9 View production order

Use Case Id	09	
Use Case	View Production order	
Goal	Merchandiser wants to view all the View production order or wants to update a production order or wants to delete production order or wants to print report for production order.	
Preconditions	<ul style="list-style-type: none"> • Production order must be already created. 	
Success End Condition	<ul style="list-style-type: none"> • Merchandiser wants to view all the production order or wants to update a production order or wants to delete production order or wants to print report for production order successfully. 	
Failed End Condition	<ul style="list-style-type: none"> • Merchandiser can't want to view all production order or wants to update a production order or wants to delete production order or wants to print report for production order successfully. 	
Primary Actors:	Merchandiser	
Secondary Actors:	System	
Trigger	Must have already exists production order.	
Description / Main Success Scenario	Step	Action
	1	Merchandiser clicks the View production order option
	2	System show all the production order in table.
	3	Merchandiser can update a production order by order id.
	3	Merchandiser can delete a production order by order id.
	4	Merchandiser can view a production order and Print report for this pre order by order id.
5	Merchandiser can search a production order by order id.	
Alternative Flows	Step	Branching Action
	1	View production order button cannot work.

	2	System cannot show all the production order in table.
	3	Merchandiser cannot update a production order.
	4	Merchandiser can delete a production order.
	5	Search result are not accurate.
	6	Merchandiser can view a production order and Print report for this production order.

3.2.10 View cost calculation

Use Case Id	10	
Use Case	View Cost calculation.	
Goal	Merchandiser wants to view all the View cost calculation or wants to update a cost calculation or wants to delete cost calculation or wants to print report for cost calculation.	
Preconditions	<ul style="list-style-type: none"> • Cost calculation must be already created. 	
Success End Condition	<ul style="list-style-type: none"> • Merchandiser wants to view all the cost calculation or wants to update a cost calculation or wants to delete cost calculation or wants to print report for cost calculation successfully. 	
Failed End Condition	<ul style="list-style-type: none"> • Merchandiser can't want to view all cost calculation or wants to update a cost calculation or wants to delete cost calculation or wants to print report for cost calculation successfully. 	
Primary Actors:	Merchandiser	
Secondary Actors:	System	
Trigger	Must have already exists cost calculation.	
Description / Main Success Scenario	Step	Action
	1	Merchandiser clicks the View cost calculation option.
	2	System show all the cost calculation in table.
	3	Merchandiser can update a cost calculation by order id.
	3	Merchandiser can delete a cost calculation by order id.
	4	Merchandiser can view a cost calculation and Print report for this cost calculation by order id.
5	Merchandiser can search a cost calculation by order id.	
Alternative Flows	Step	Branching Action

	1	View cost calculation button cannot work.
	2	System cannot show all the cost calculation in table.
	3	Merchandiser cannot update a cost calculation.
	4	Merchandiser can delete a cost calculation.
	5	Search result are not accurate.
	6	Merchandiser can view a cost calculation and Print report for this cost calculation.

3.2.11 View post order

Use Case Id	11	
Use Case	View Post order.	
Goal	Merchandiser wants to view all the View post order or wants to update a post order or wants to delete post order or wants to print report for post order.	
Preconditions	<ul style="list-style-type: none"> Post order must be already created. 	
Success End Condition	<ul style="list-style-type: none"> Merchandiser wants to view all the cost calculation or wants to update a cost calculation or wants to delete cost calculation or wants to print report for cost calculation successfully. 	
Failed End Condition	<ul style="list-style-type: none"> Merchandiser can't want to view all post order or wants to update a post order or wants to delete cost calculation or wants to print report for post order successfully. 	
Primary Actors:	Merchandiser	
Secondary Actors:	System	
Trigger	Must have already exits post order.	
Description / Main Success Scenario	Step	Action
	1	Merchandiser clicks the View post order option.
	2	System show all the post order in table.
	3	Merchandiser can update a post order by order id.
	3	Merchandiser can delete a post order by order id.
	4	Merchandiser can view a post order and Print report for this post order by order id.
5	Merchandiser can search a post order by order id.	
Alternative Flows	Step	Branching Action
	1	View post order button cannot work.
	2	System cannot show all the post order in table.

	3	Merchandiser cannot update a post order.
	4	Merchandiser can delete a post order.
	5	Search result are not accurate.
	6	Merchandiser can view a post order and Print report for this post order.

3.3 Activity diagram

We have prepared some activity diagram according to our use case. These activity diagrams are properly referring the flow of the individual conditions of our project.

3.3.1 Manage account

For any system authorize access is very important. By this a user can secure his data and can avoid another unauthorized user to damage or update the saved data. For our system, Merchandiser must log in first for do his job. First he should click “Merchandising” and enter user name and password

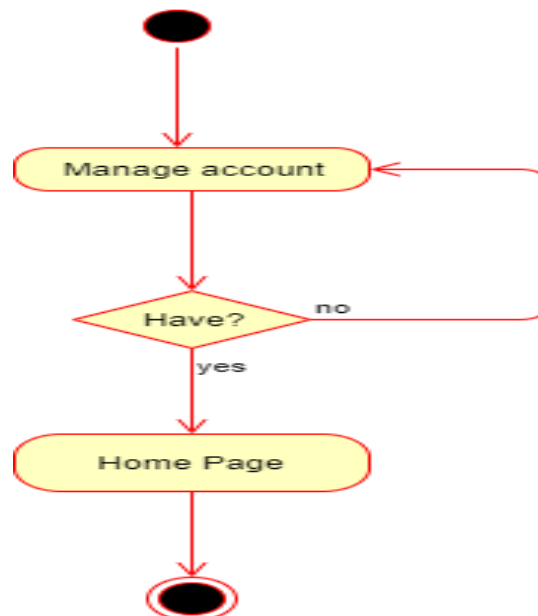


Figure 3.2: Activity diagram for Manage account

3.3.2 Create style entry

Merchandiser can create style entry for uncreated orders. For this Merchandiser should click “Style Entry”. Then he input all the style entry data. After that, he should click “Save” button.

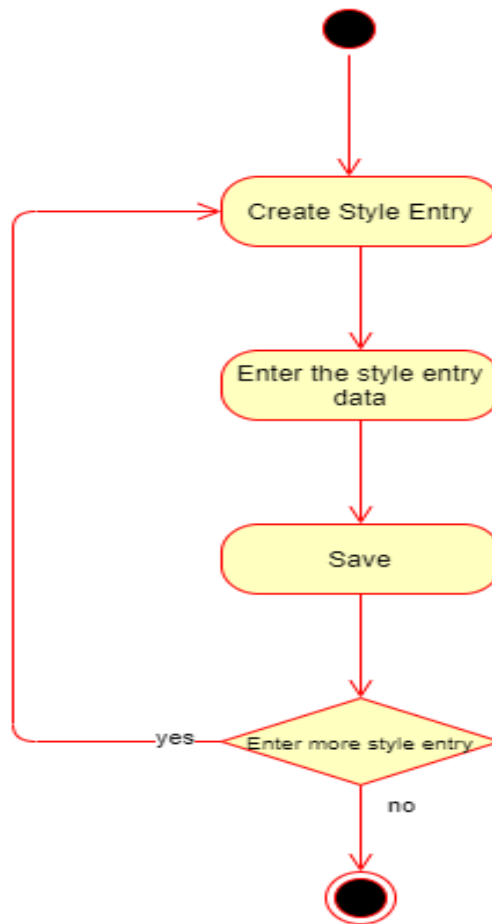


Figure 3.3: Activity diagram of Create style entry.

3.3.3 Create pre order

Merchandiser can create pre order for uncreated pre orders. For this Merchandiser should click “Pre order”. Then he submit an order id who is already complete style entry and when he should submit order id system show style entry information. After that, he should input pre order data. Finally, he should click “Save” button.

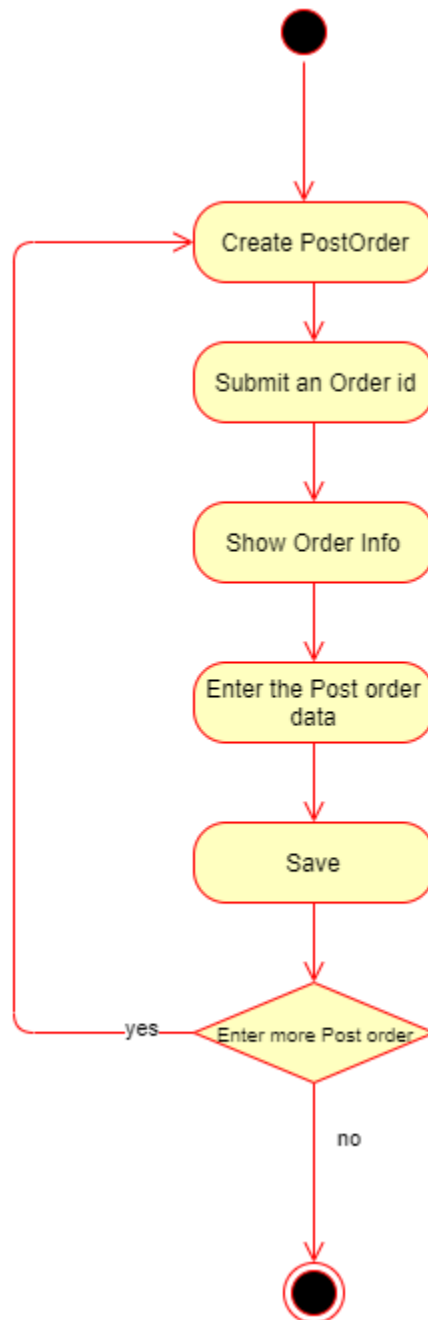


Figure 3.4: Activity diagram of Create Pre order.

3.3.4 Create Production order

Merchandiser can create production order for uncreated production orders. For this Merchandiser should click “Production order”. Then he submit an order id who is already complete style entry and pre order, when he should submit order id system show style entry and pre order information. After that, he should input production order data. Finally, he should click “Save” button.

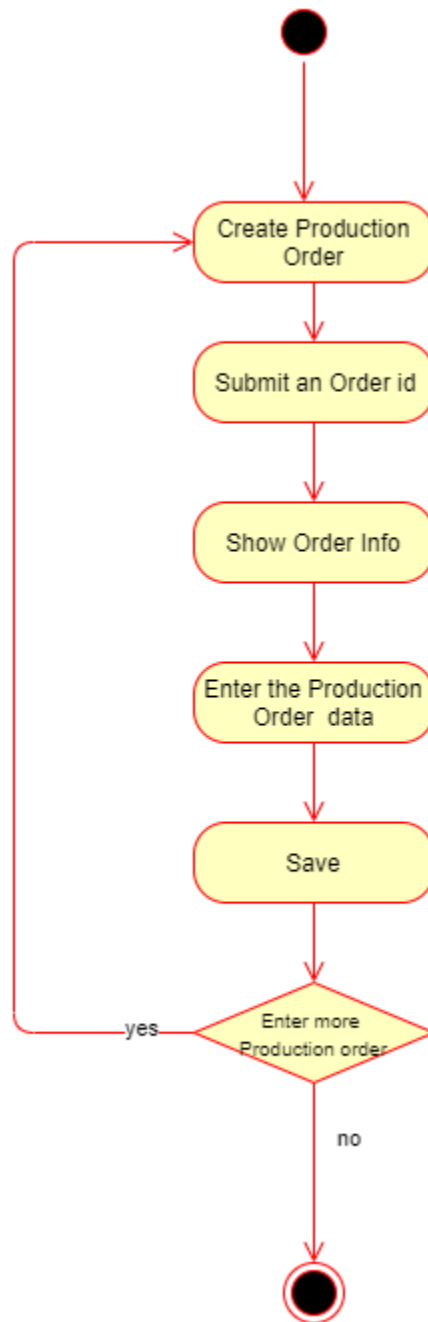


Figure 3.5: Activity diagram of create production order.

3.3.5 Cost calculation

Merchandiser can cost calculation for uncalculated orders. For this Merchandiser should click “Cost calculation”. Then he submit an order id who is already complete style entry, production order and pre order, when he should submit order id system show style entry , production and pre order information. After that, he should input cost calculation data. Finally, he should click “calculate” button and system shows calculate result.

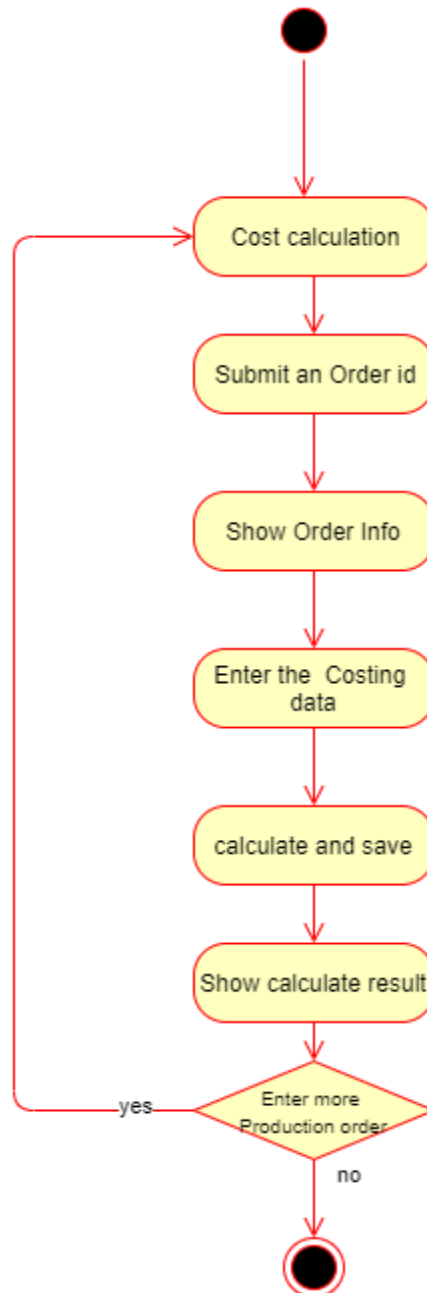


Figure 3.6: Activity diagram of Cost calculation.

3.3.6 Create Post order

Merchandiser can create post order for uncreated post orders. For this Merchandiser should click “Post order”. Then he submit an order id who is already complete style entry, production order, cost calculation and pre order, when he should submit order id system show style entry, production order, cost calculation and pre order information. After that, he should input post order data. Finally, he should click “Save” button and lock it.

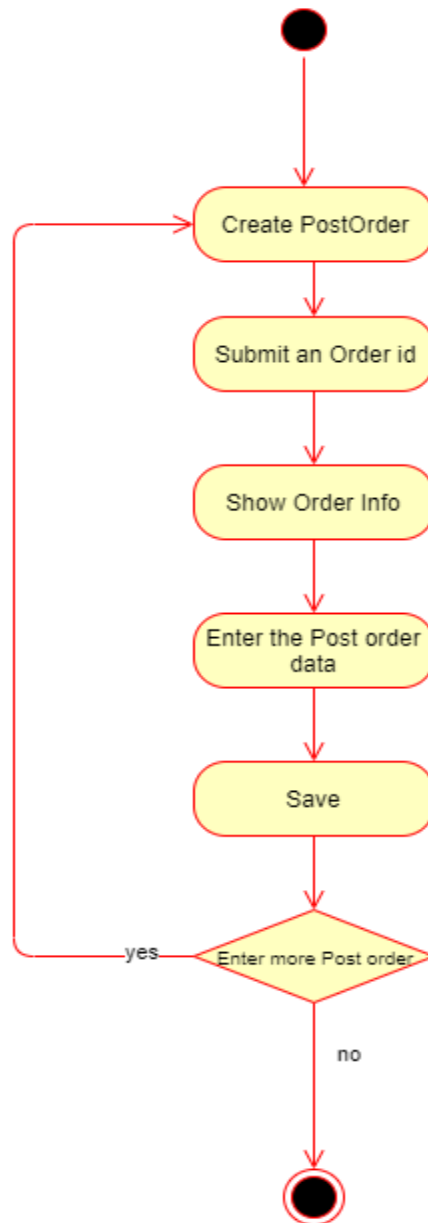


Figure 3.7: Activity diagram of Create post order

3.3.7 View style entry

Merchandiser can view style. For this Merchandiser should click “View style entry”. Then the system show the all style entry. And then if merchandiser wants to update style entry then he click Update button the system give an update style entry page, if merchandiser wants to delete a style entry then he click delete button, if merchandiser wants to print a report then he click report button.

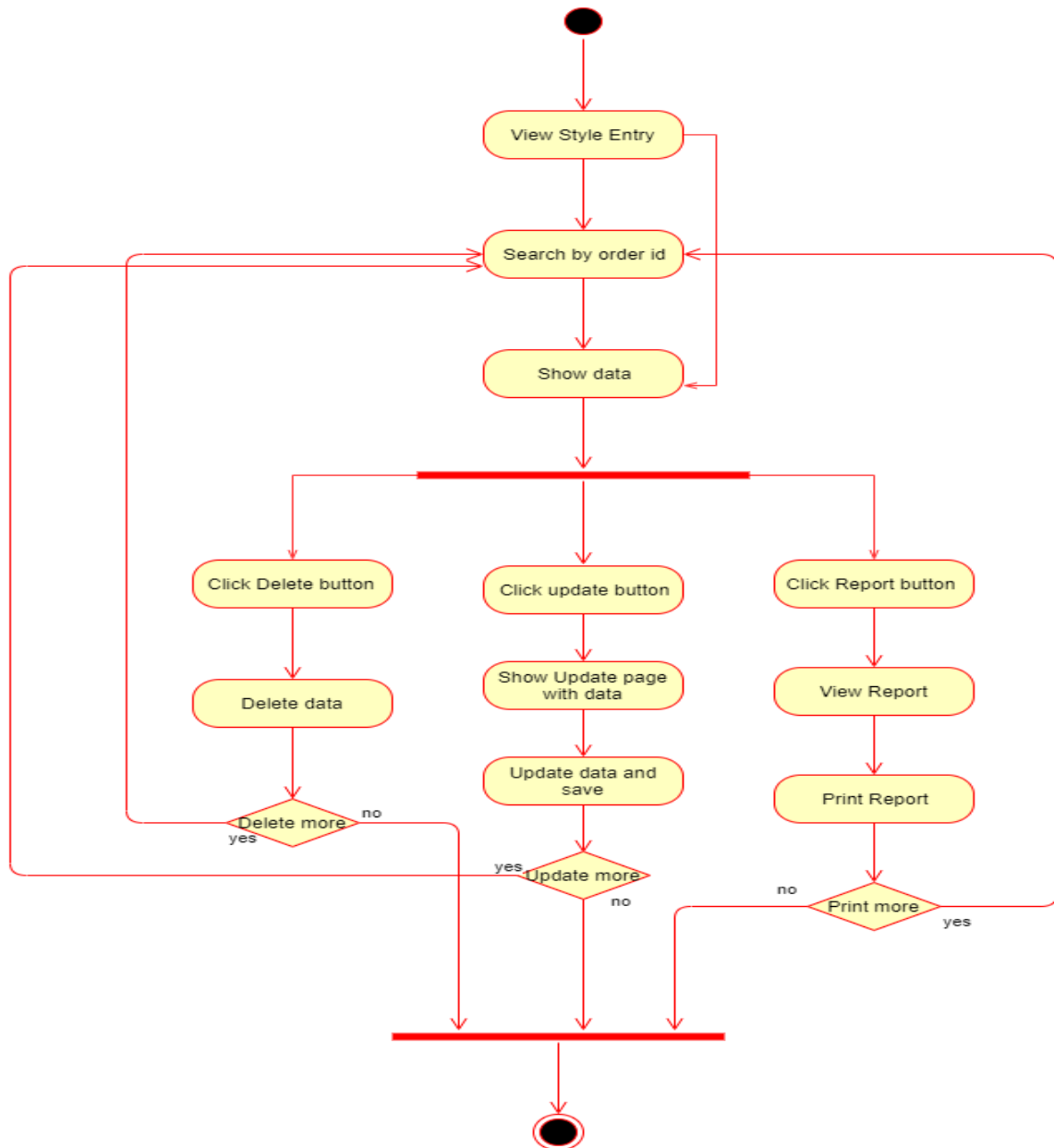


Figure 3.8: Activity diagram of view style entry

3.3.8 View Pre order

Merchandiser can view pre order. For this Merchandiser should click “View Pre order”. Then the system show the all Pre order. And then if merchandiser wants to update Pre order then he click Update button the system give an update Pre order page, if merchandiser wants to delete a Pre order then he click delete button, if merchandiser wants to print a report then he click report button.

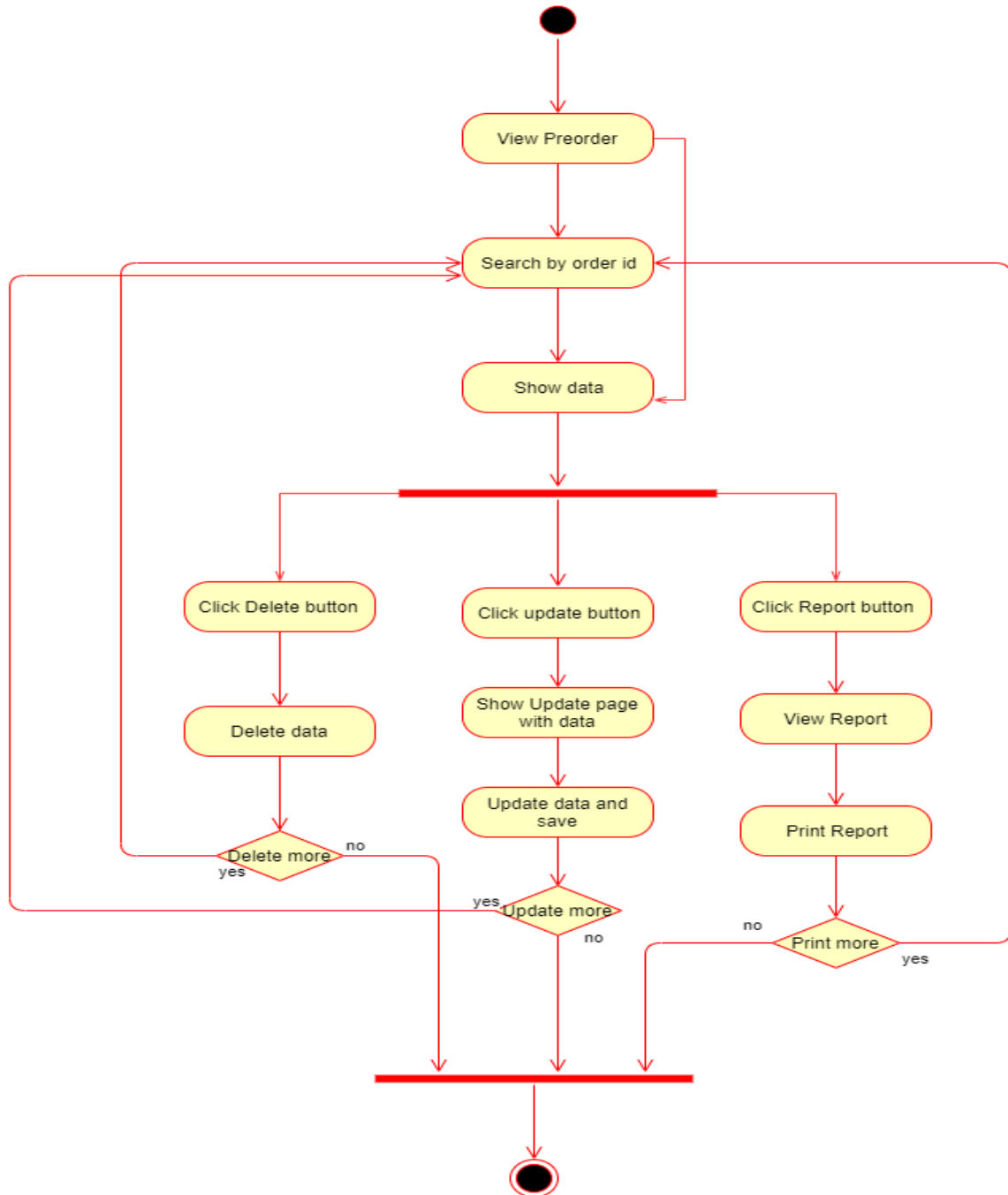


Figure 3.9: Activity diagram of view pre order

3.3.9 View Production order

Merchandiser can view Production order. For this Merchandiser should click “View Production order”. Then the system show the all Production order. And then if merchandiser wants to update Production order then he click Update button the system give an update production order page, if merchandiser wants to delete a Production order then he click delete button, if merchandiser wants to print a report then he click report button.

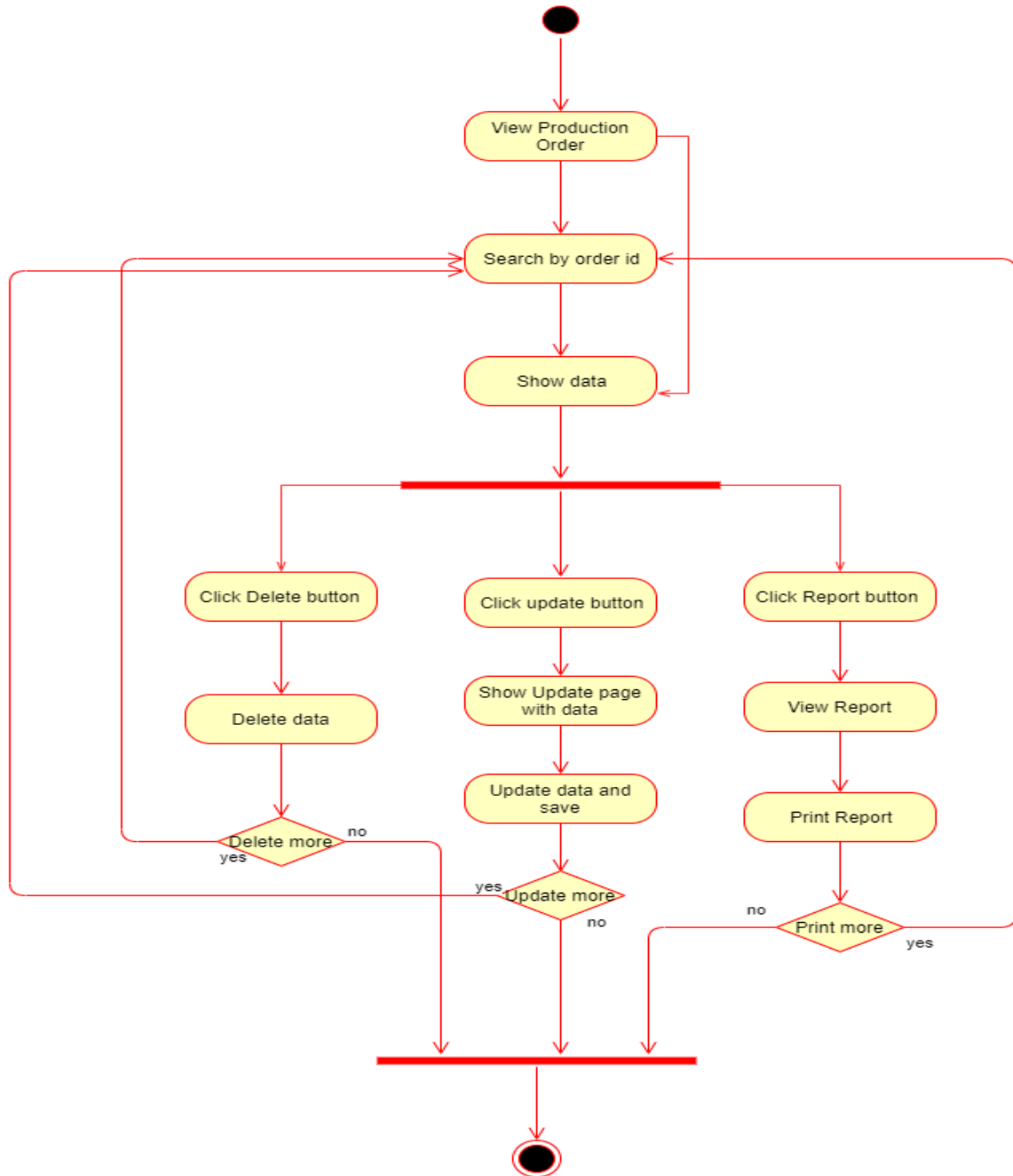


Figure 3.10: Activity diagram of view Production order

3.3.10 View cost calculation

Merchandiser can view cost calculation. For this Merchandiser should click “View cost calculation”. Then the system show the all cost calculation. And then if merchandiser wants to update cost calculation then he click Update button the system give an update cost calculation page, if merchandiser wants to delete a cost calculation then he click delete button, if merchandiser wants to print a report then he click report button.

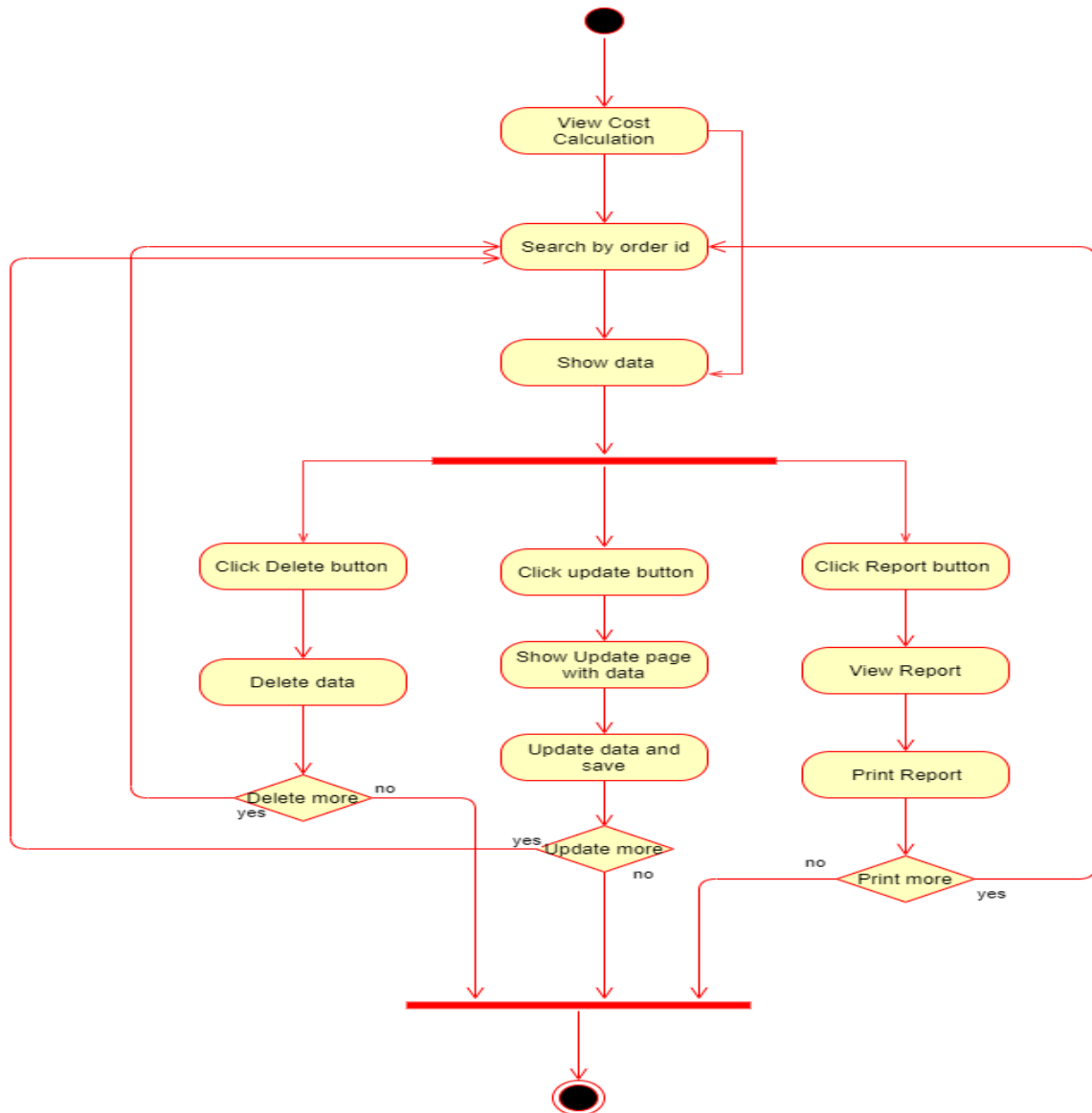


Figure 3.11: Activity diagram of view Cost calculation

3.3.11 View post order

Merchandiser can view post order. For this Merchandiser should click “View post order”. Then the system show the all post order. And then if merchandiser wants to update post order then he click Update button the system give an update post order page, if merchandiser wants to delete a post order then he click delete button, if merchandiser wants to print a report then he click report button.

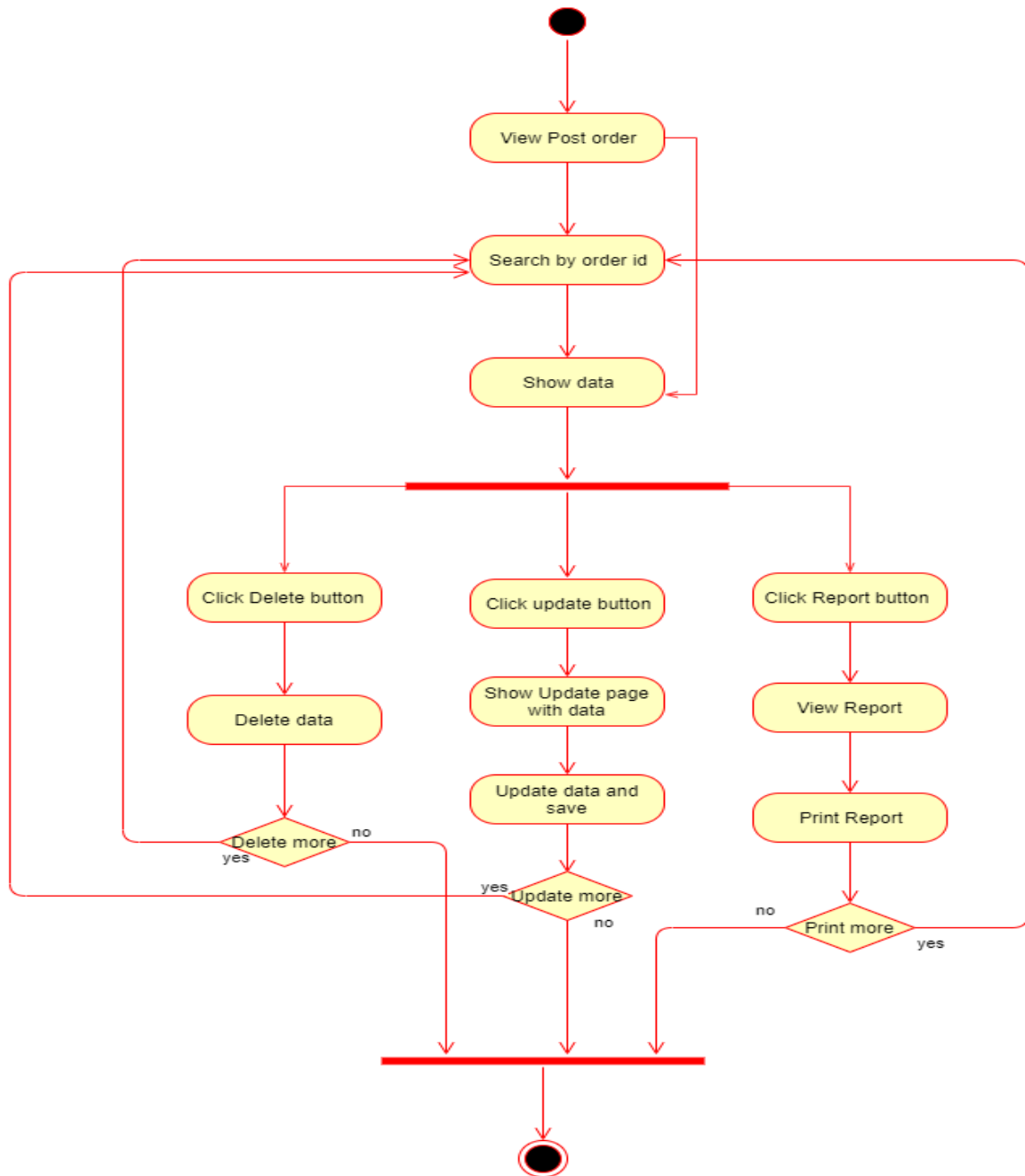


Figure 3.12: Activity diagram of view post order.

3.3 Sequence Diagram

Mainly sequence diagrams understand us how the data will be followed in any application. Now we are going to show some sequence diagrams.

3.4.1 Manage account.

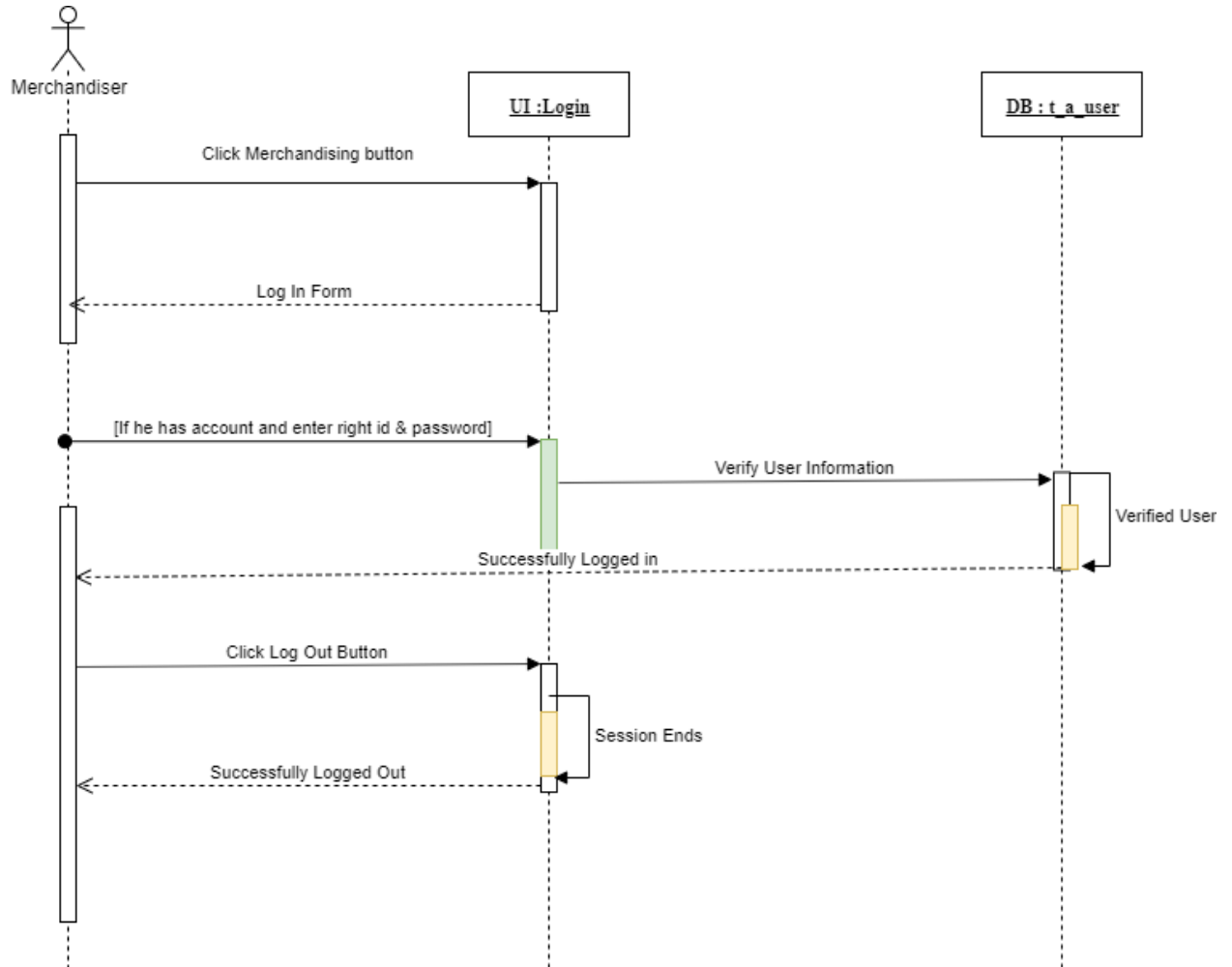


Figure 3.13: Sequence diagram of manage account

3.4.2 Create style entry

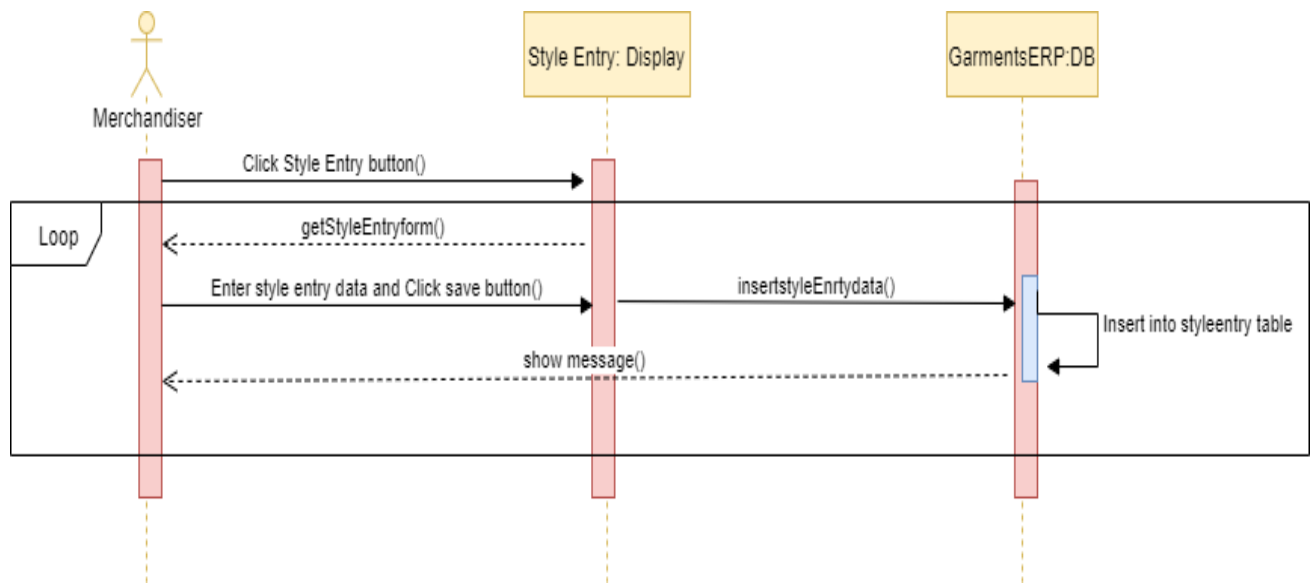


Figure 3.14: Sequence diagram of view style entry

3.4.3 Create pre order

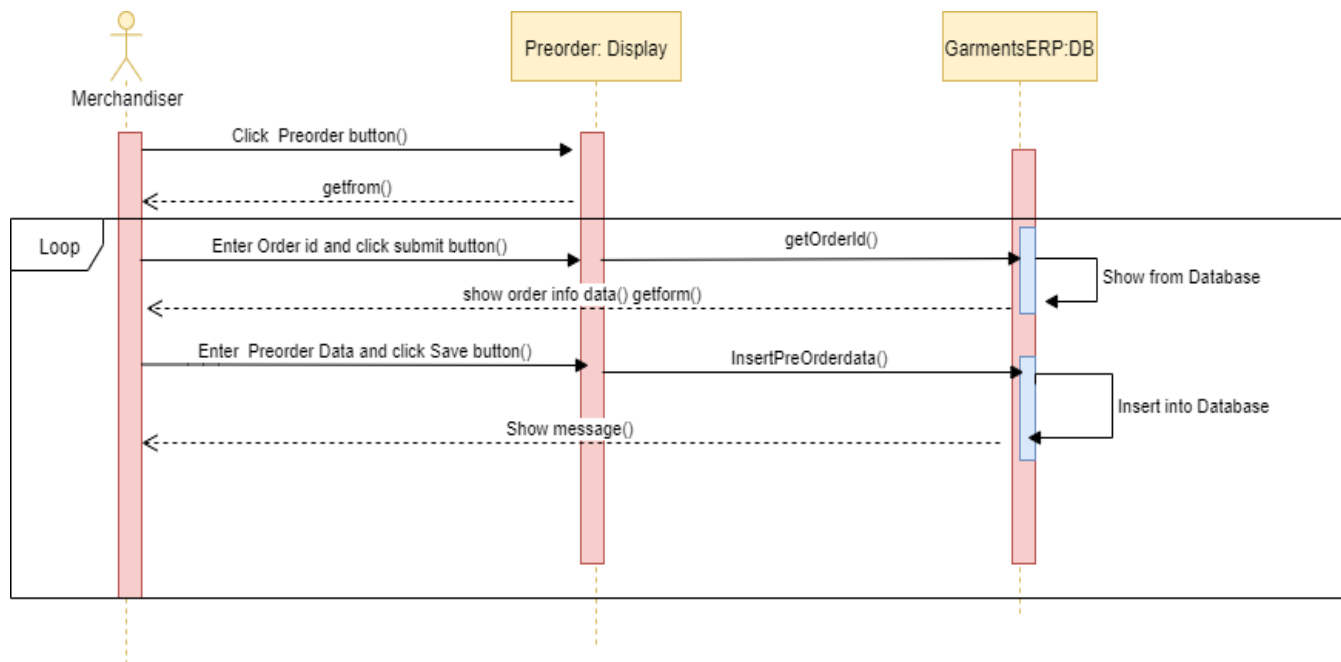


Figure 3.15: Sequence diagram of create pre order

3.4.4 Create production order

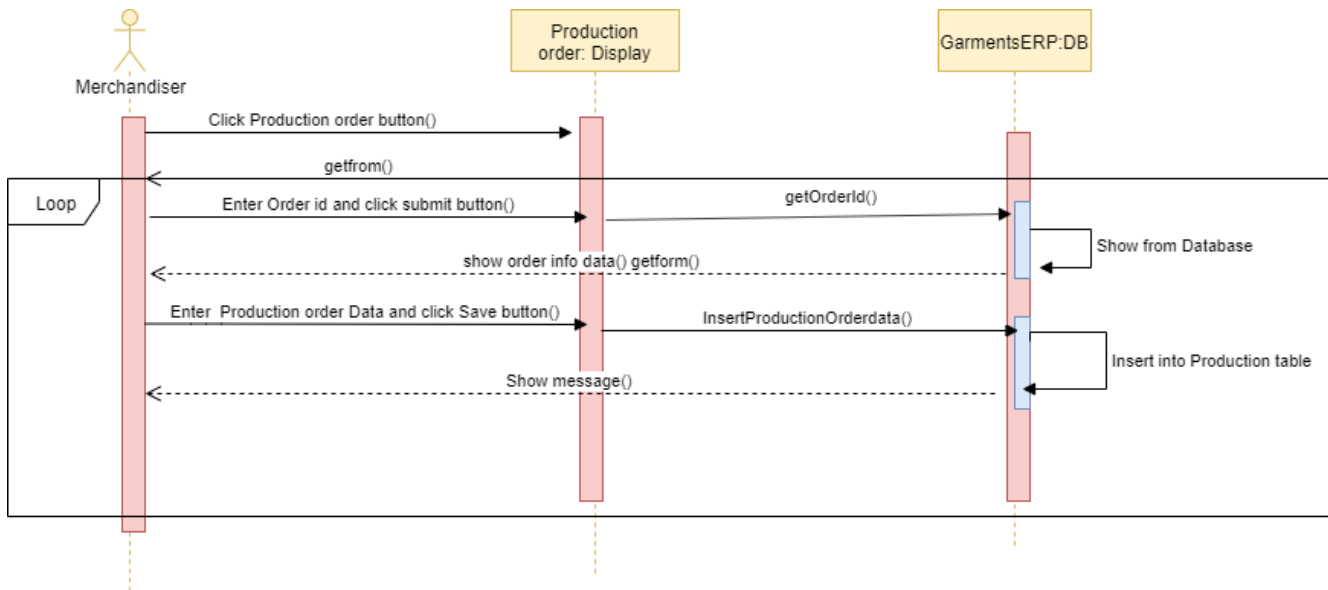


Figure 3.16: Sequence diagram of create production order

3.4.5 Cost calculation

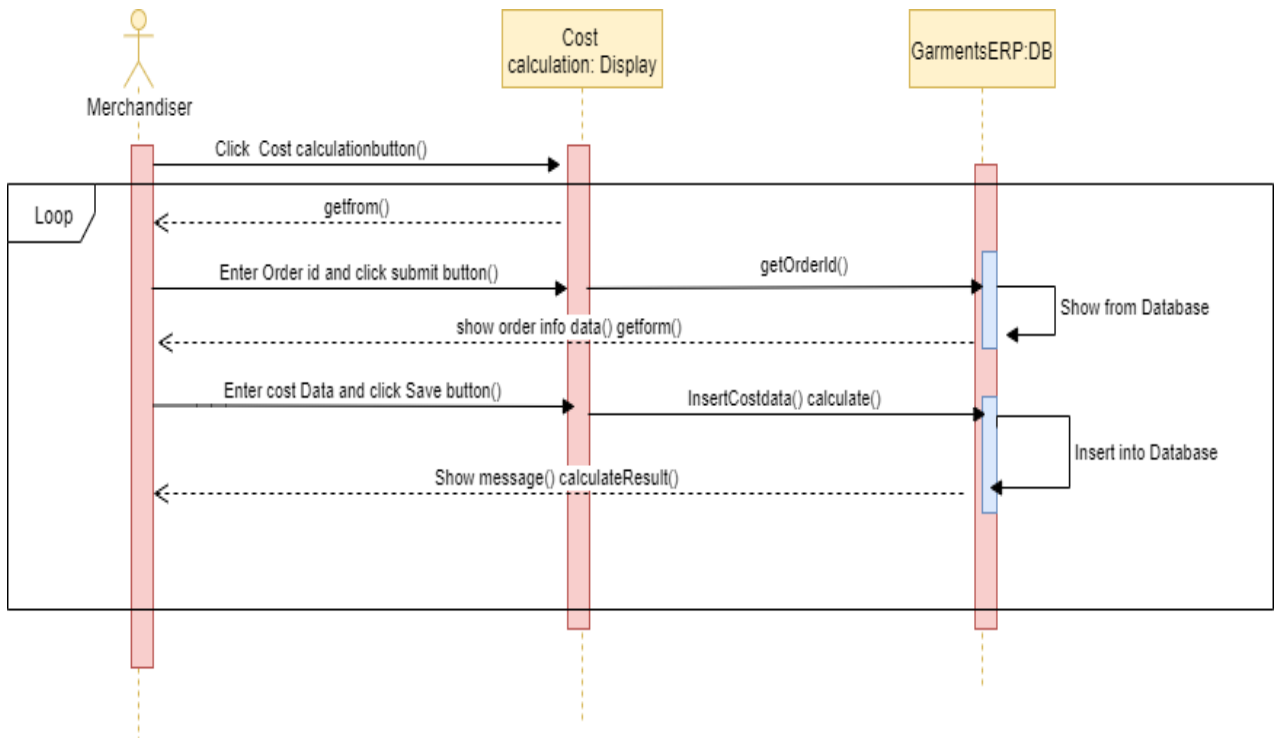


Figure 3.17: Sequence diagram of create cost calculation

3.4.6 Create post order

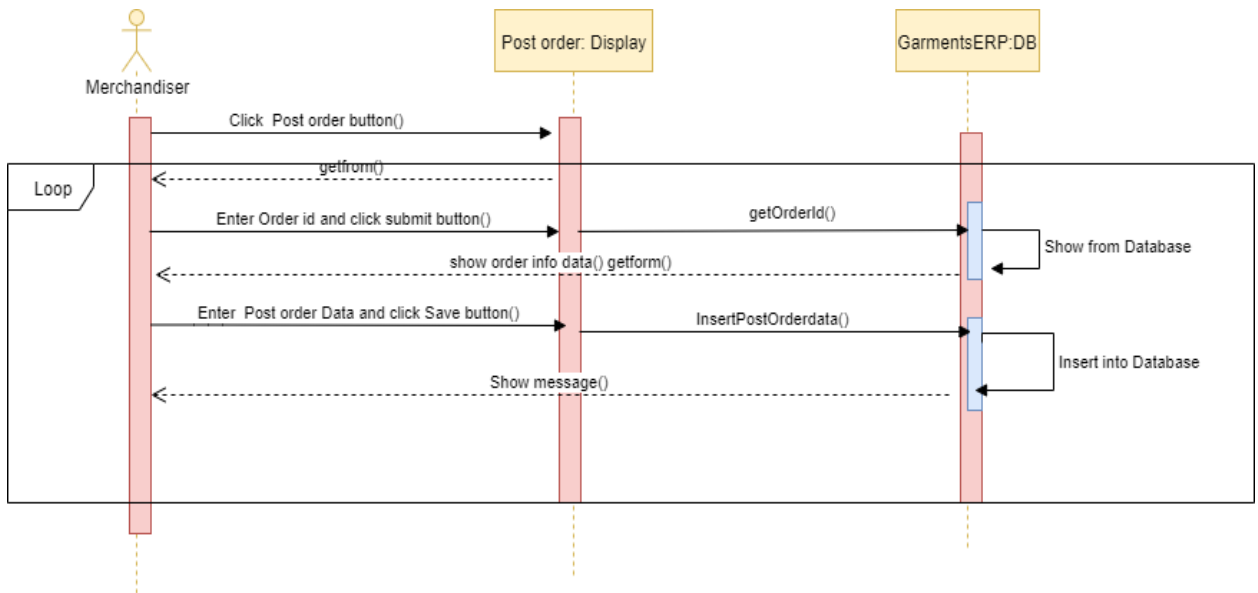


Figure 3.18: Sequence diagram of create post order.

3.4.7 View style entry

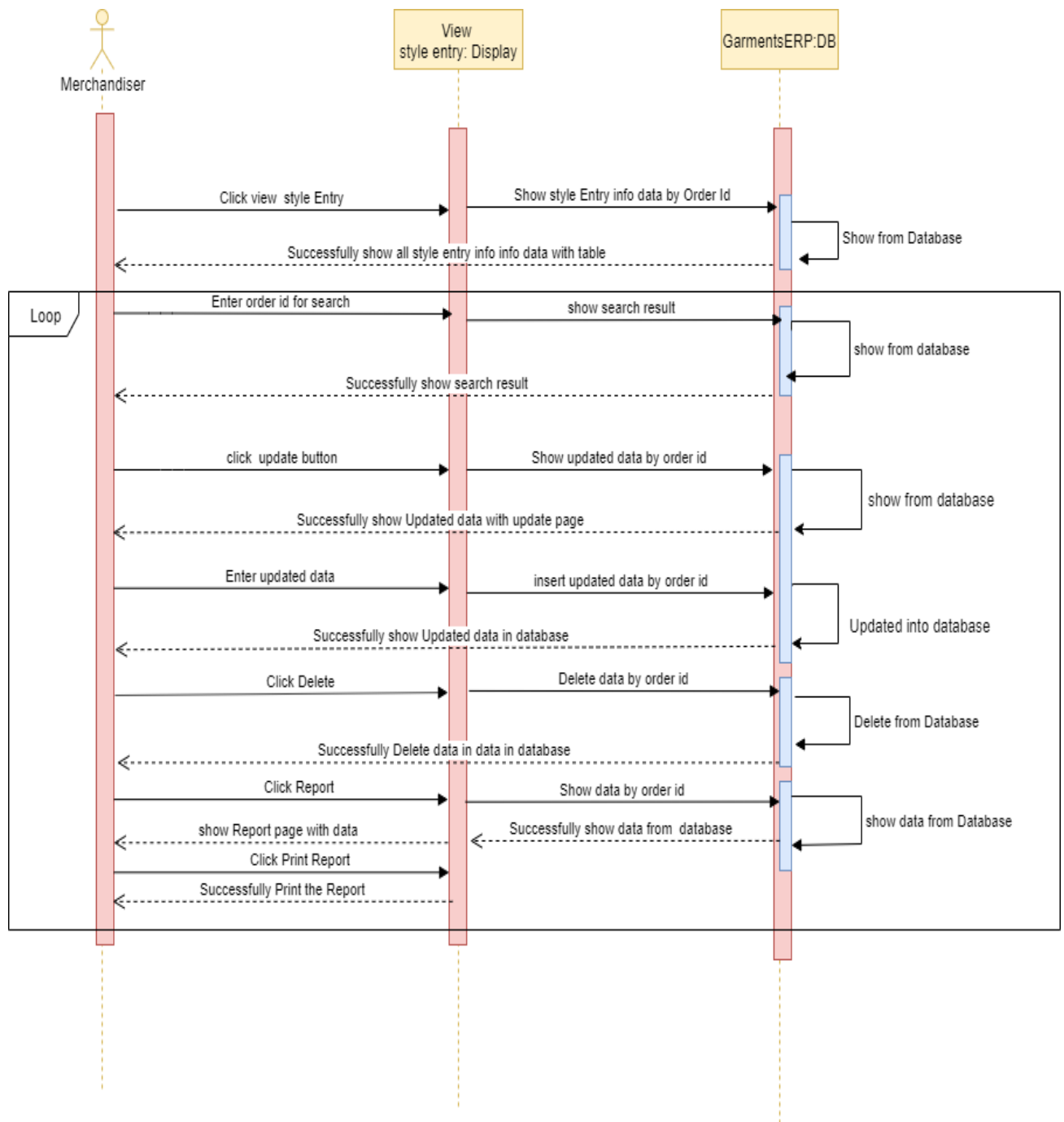


Figure 3.19: Sequence diagram of view style entry

3.4.8 View pre order

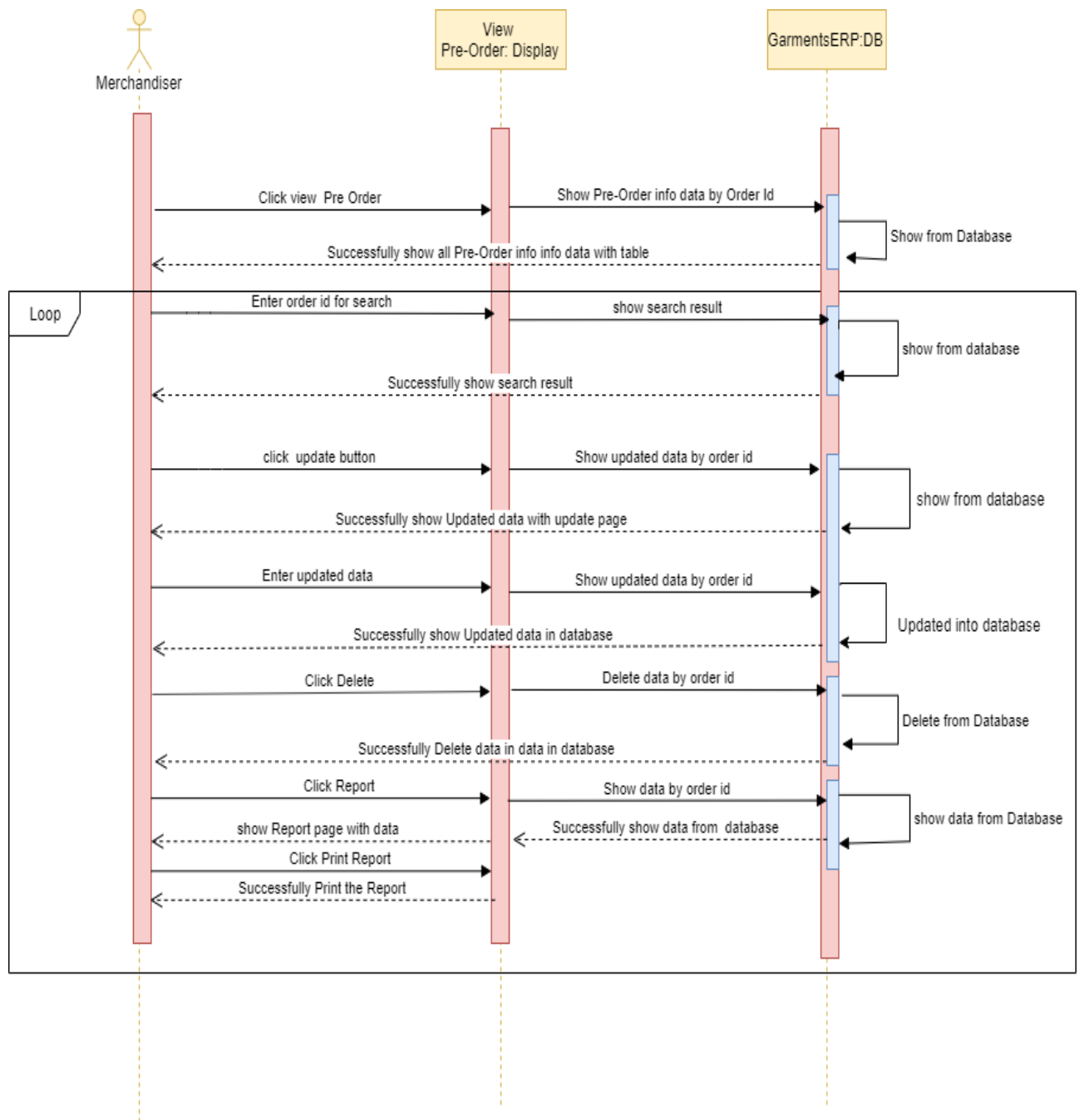


Figure 3.20: Sequence diagram of view pre order

3.4.9 View Production order

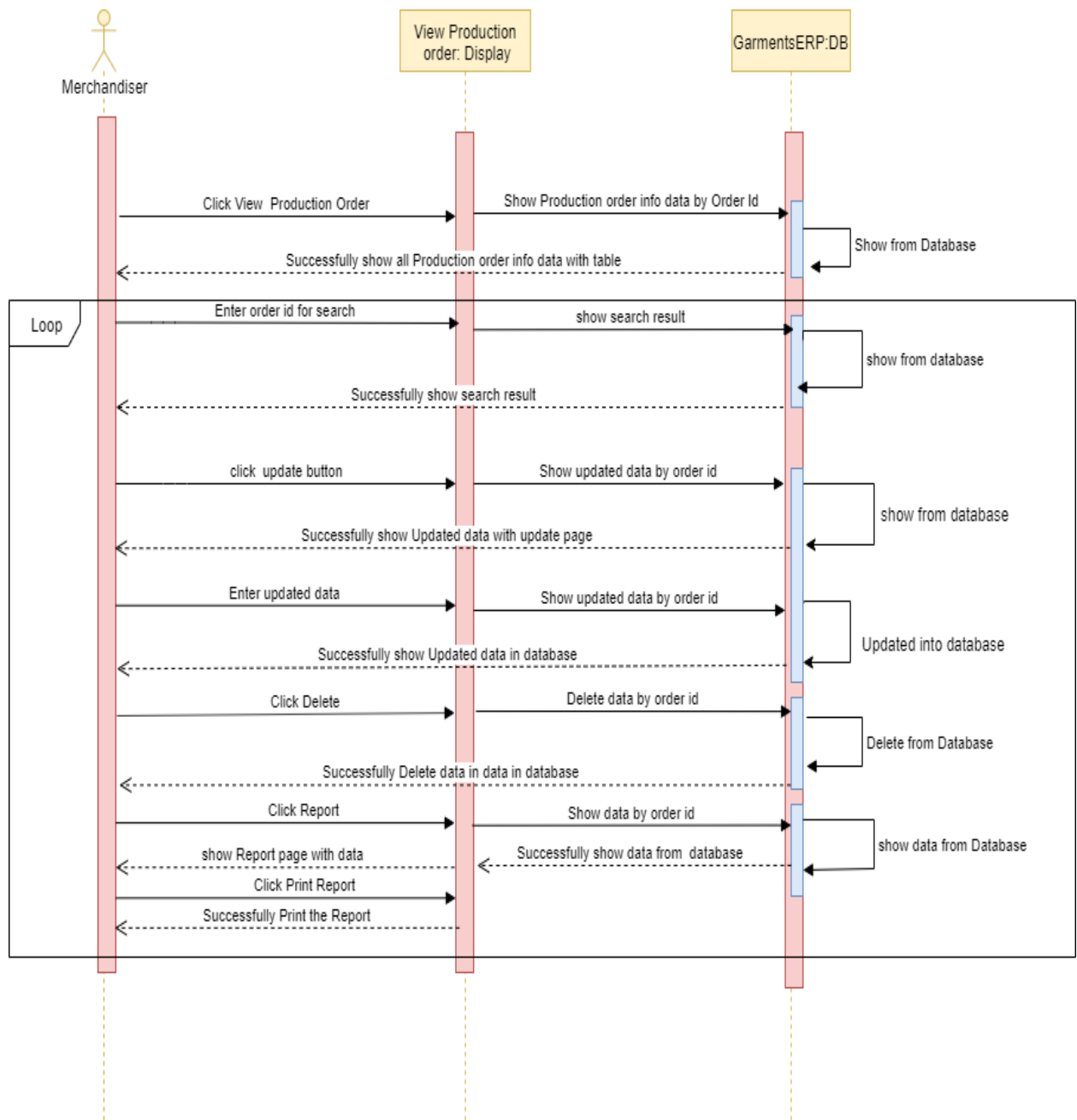


Figure 3.21: Sequence diagram of view Production order

3.4.10 View cost calculation

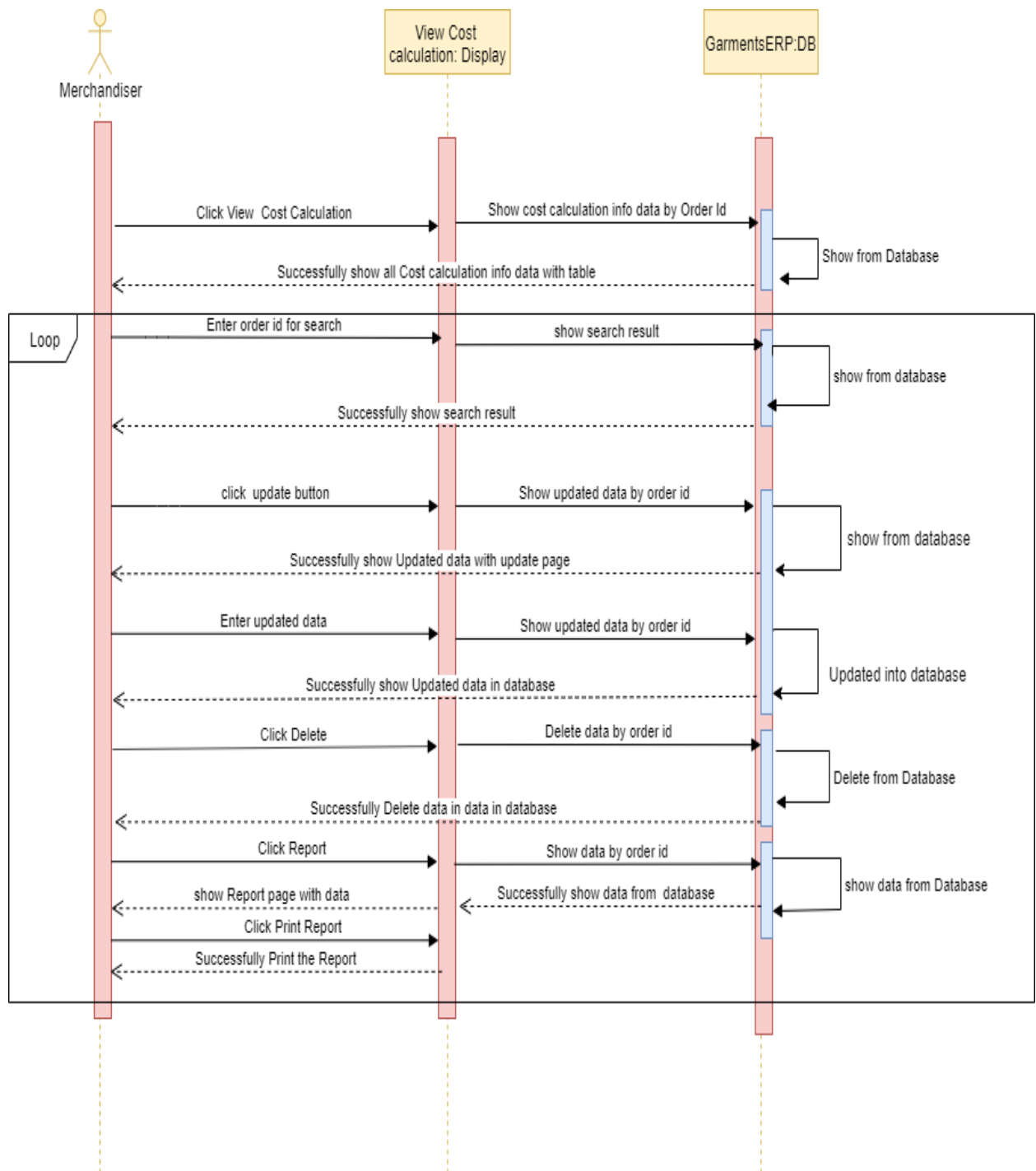


Figure 3.22: Sequence diagram of view cost calculation

3.4.11 View post order

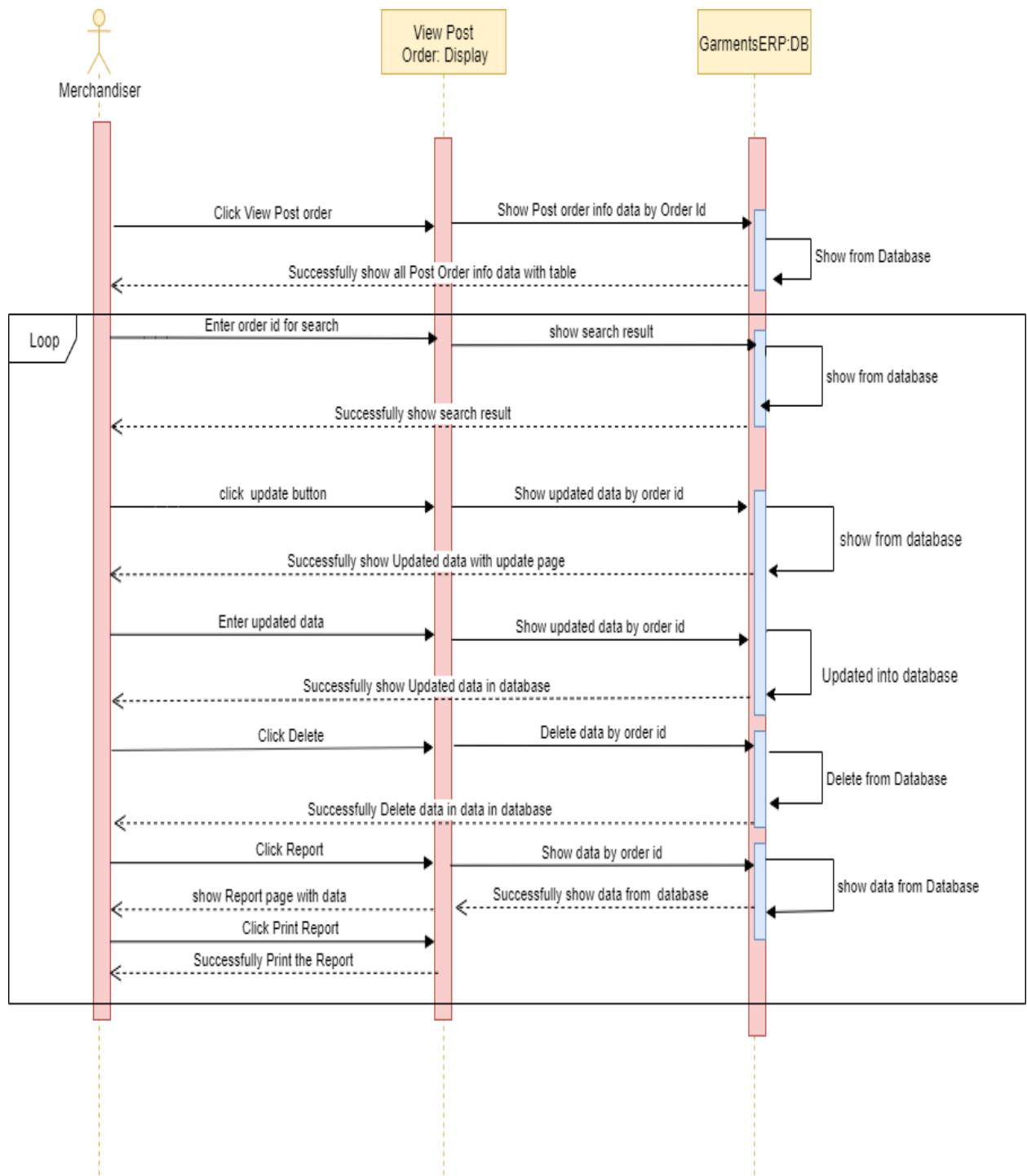


Figure 3.23: Sequence diagram of view Post order

Chapter 4

System Design Specification

4.1 Development tools and technology

Software development tools are used to develop software. There are different kinds of tools for software developers to make the process of software development very smoothly. But now I will mention some of tools that I am using to develop my project.

4.1.1 Class diagram

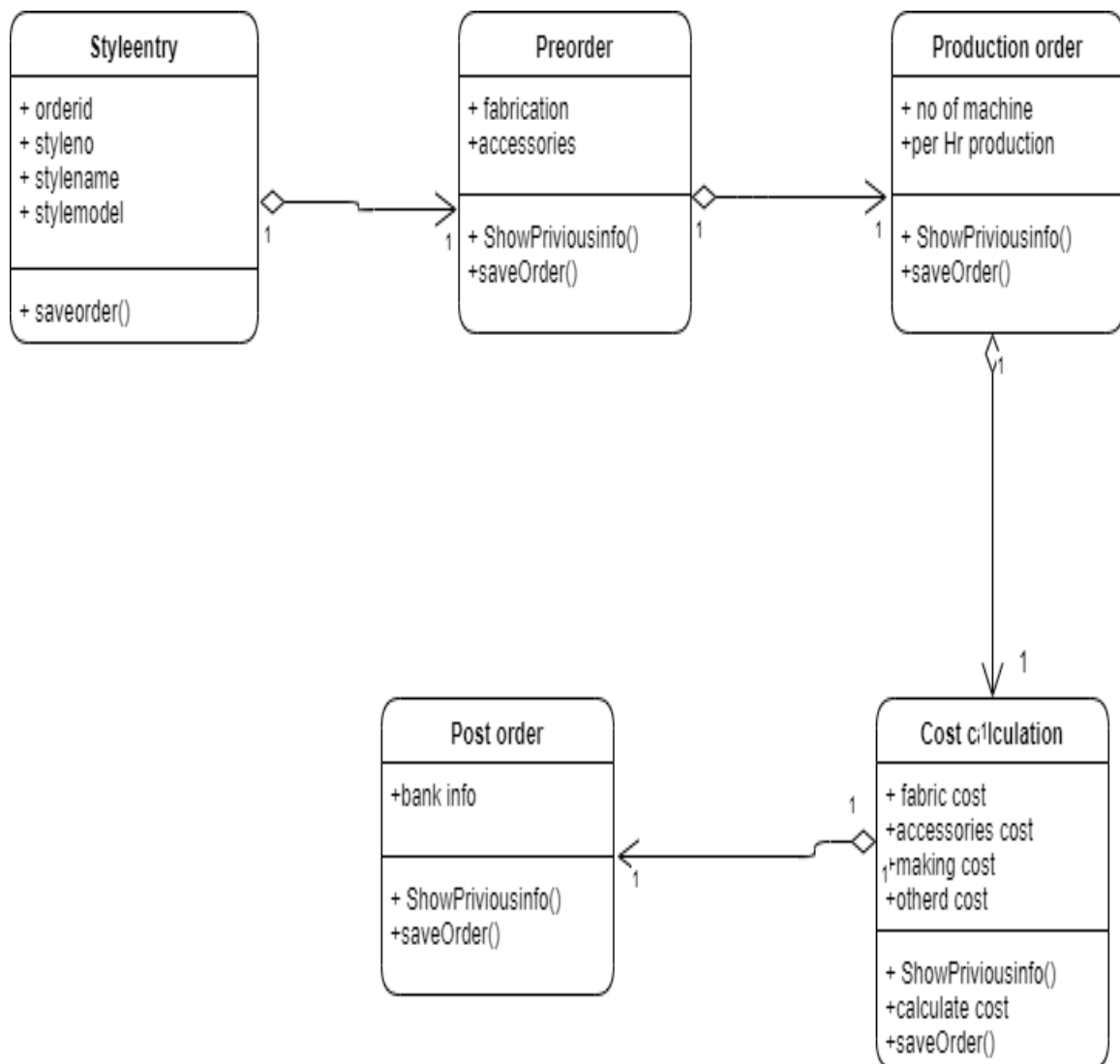


Figure 4.1: class diagram

4.1.2 ER diagram

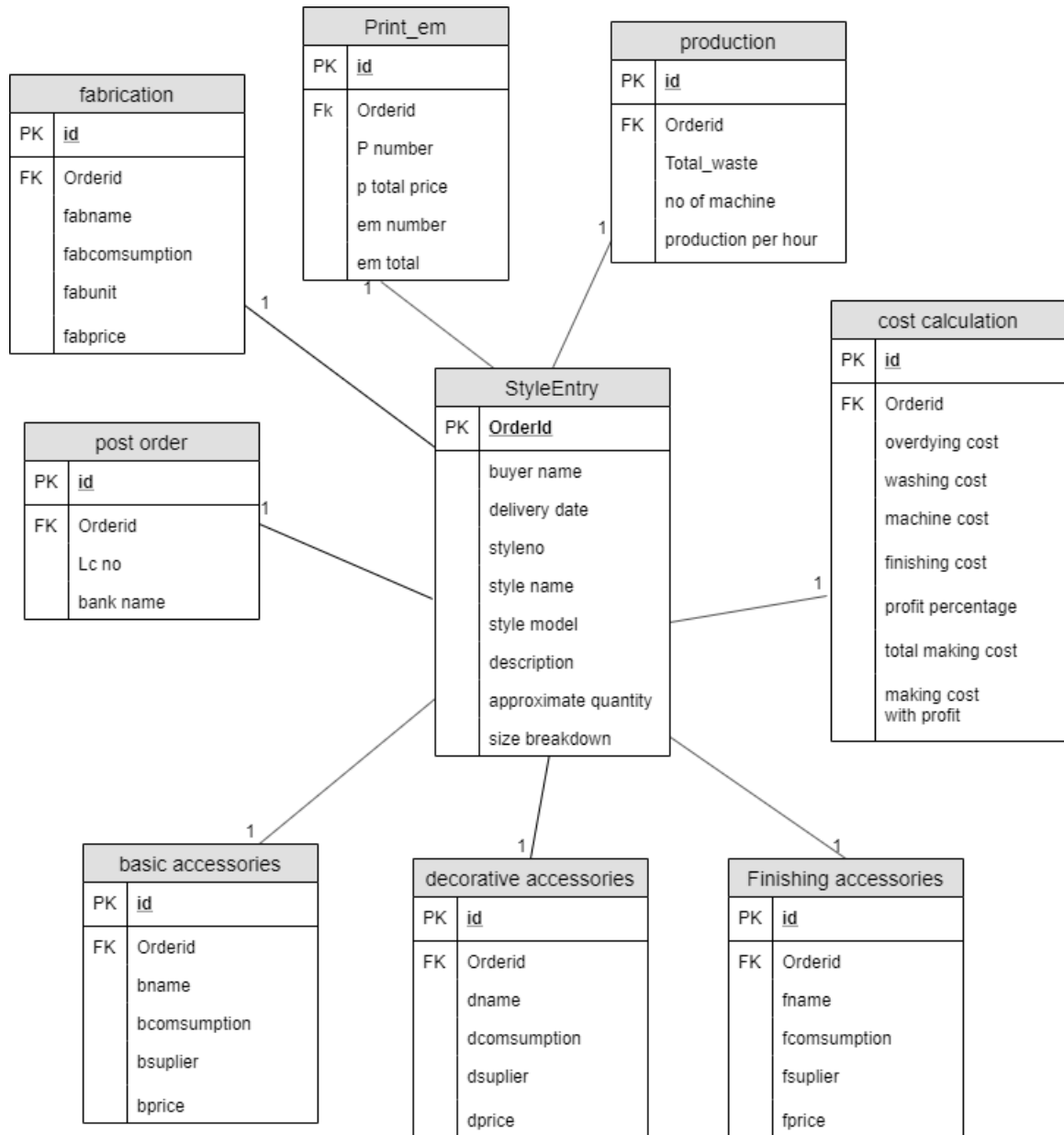


Figure 4.2: ER diagram

4.1.3 DFD Diagram

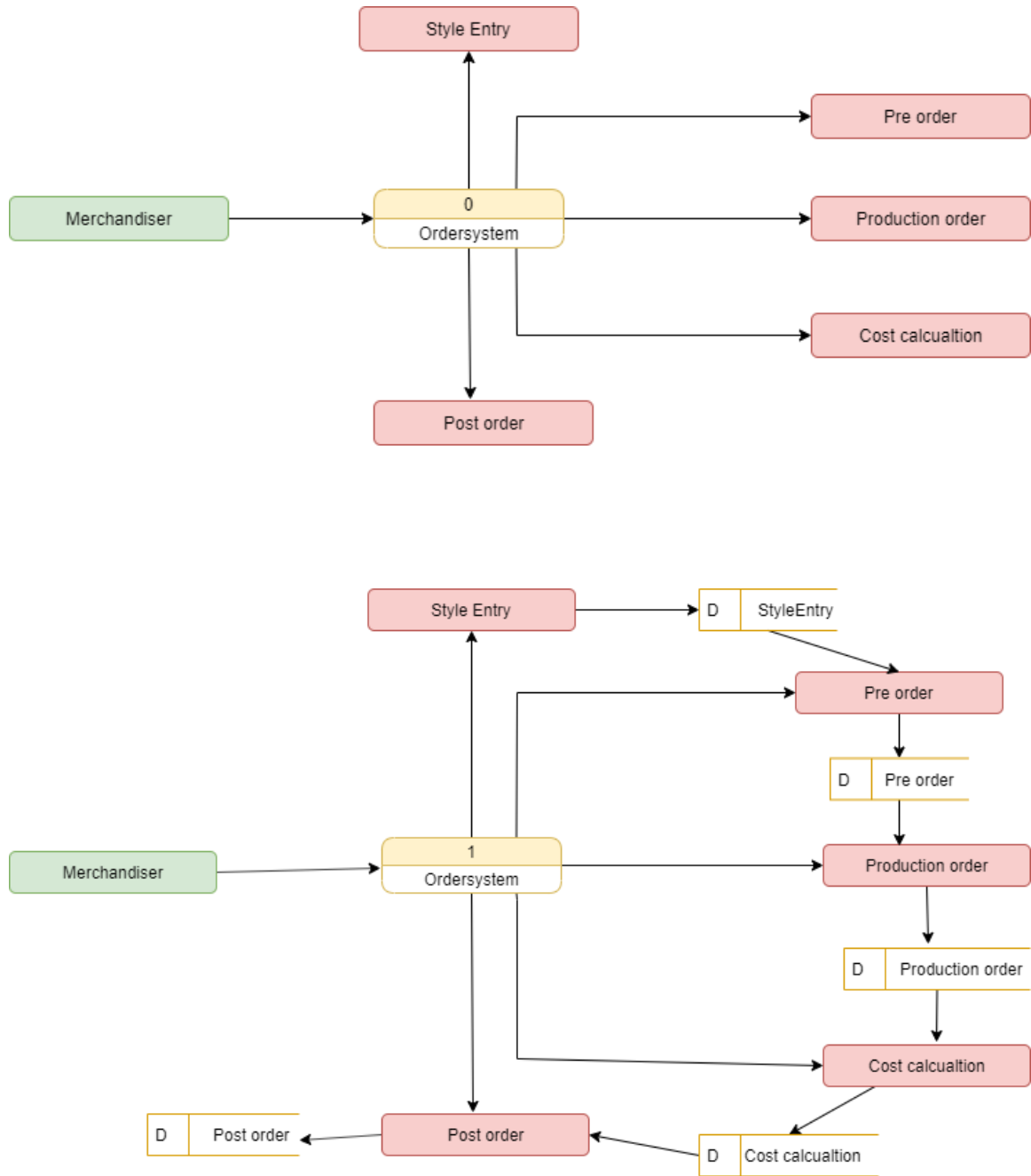


Figure 4.3: DFD diagram

4.2 Database Design Diagram

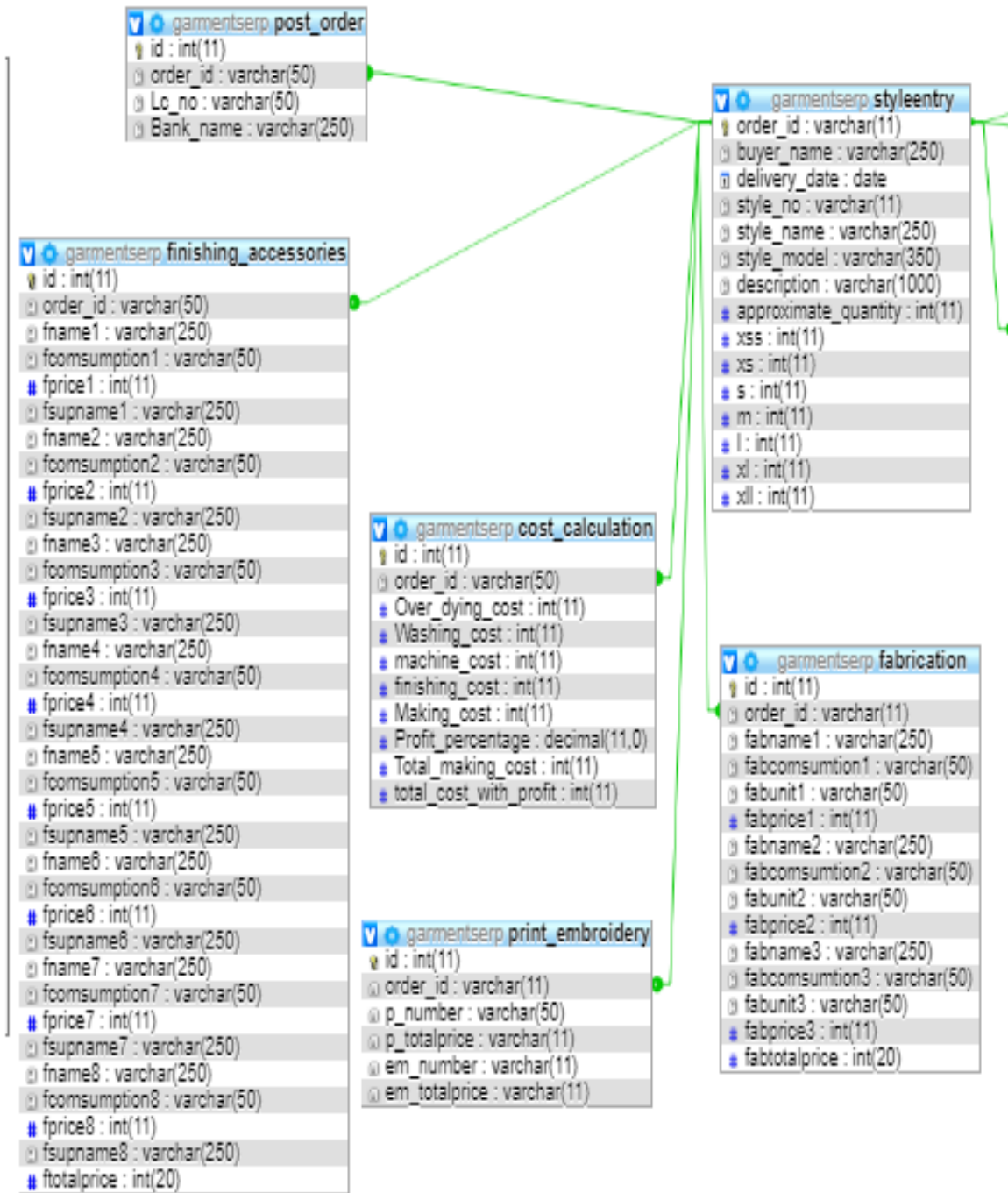


Figure 4.4: Database Diagram(GarmentsERP)

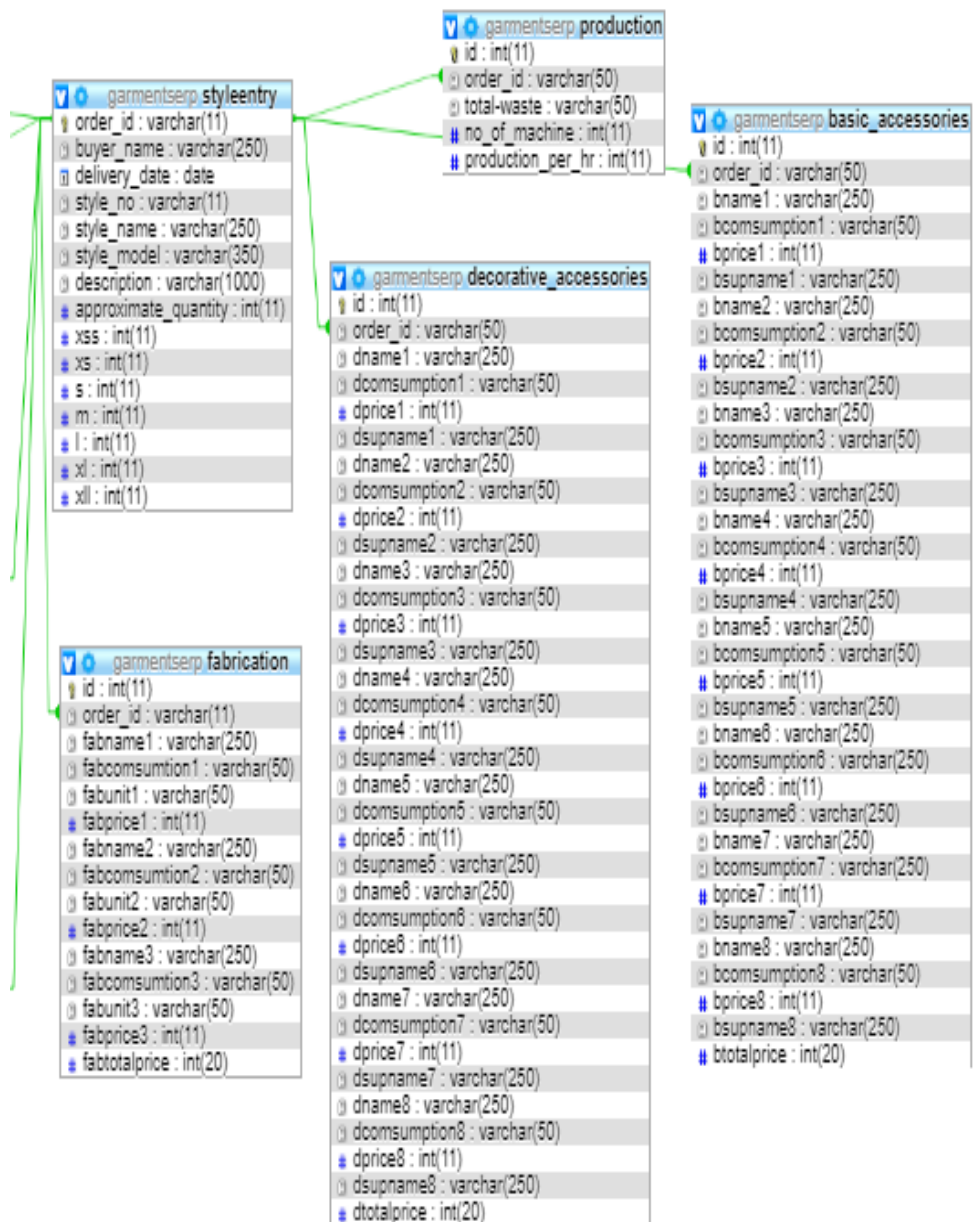


Figure 4.5: Database Diagram(GarmentsERP)

4.3.1 User Interface Technology

For success of any software application, a good looking user interface plays a vital role. User interface includes using good image, graphics, typography, stylesheets, scripting etc.

4.3.1.1 Programming Language

The front-end language that I have used to my application is HTML. And the server side programming language name is PHP which stands for Hypertext Preprocessor. Both of them are open source general purpose scripting language.

4.3.1.2 JQuery UI

JQuery UI is a name of library which uses JavaScript as core programming language. Generally, it interacts with Graphical User Interface (GUI). It also provides visual effects with animation. It is also a subset of JavaScript. By using AJAX no page reloading is required. It is also compatible with any browser like Google Chrome, Mozilla Firefox etc

4.3.1.3 CSS framework or Bootstrap

After completing markup, cascading style sheets are designed. It generally explains how HTML elements will display. But before start designing an application interface with Bootstrap4, one may have some basic knowledge about this framework. It will increase the efficiency.

4.4.2 Implemented tools and platform

As I have said before, there are many tools and technologies that need to be used for developing software.

4.4.2.1 Integrated Development Environment

IDE stands for Integrated Development Environment. Programmers write code on IDE. I have used IDE. To develop my web version, I have used “Visual Studio Code” which is powered by Microsoft.

4.4.2.2 Database Server (MYSQL Server V-10.1.36-MariaDB)

Now, I using for my project “MYSQL Server V-10.1.36-MariaDB”

4.4.2.3 Web Server

We have used XAMMP apache server. Now, I am working with HTTP 1.1 version.

Chapter 5

System Test

5.1 Testing Features

To test the features and functionality, a new test set is to be written for testing purpose. Almost every feature and functionality have different characteristics. Those are test to make the application more useful, intuitive, reliable, secured, scalable, effective and efficient.

5.1.1 Features to be tested

Features	Priority	Description
Login	1	User must be authenticated by login
Logout	1	Session must be destroyed after logout
Insert Style Entry data	2	Style Entry data must be inserted properly
Insert Pre order data	2	Pre order data must be inserted properly
Insert Production order data	2	Production order data must be inserted properly
Insert cost calculate data	3	Cost calculate data must be inserted properly and calculate accurately.
Insert Post order data	2	Production order data must be inserted properly.
Technological Features		
Database	1	Database will be used at almost every operation. So this is why, this part must be controlled tightly.

Here, 1 = Low Priority, 2 = Medium Priority, 3 = High Priority

5.2 Testing Strategy

Testing strategy is to be considered as a general purpose of testing process. Different kinds of testing strategies can be performed according to the type of application system that need to be tested.

5.2.1 Test approach

To complete the test process, testers must take some approach. There are mainly two test approach.

- **Automation testing:** Automation testing is a name of testing technique by which test engineers prepare some scripts according to test plan and after that they use suitable tools to perform testing of the software. Nowadays, almost every software company follow the approach of automation testing.
- **Manual testing:** Manual testing is also a name of technique of testing by searching out the bugs or vulnerability in an application. In this process, test engineers manually test and execute the test cases without having any automation tools.

5.2.1.1 Black Box Testing

Black box testing, also known as Behavioral Testing, is a software testing method in which the internal structure/design/implementation of the item being tested is not known to the tester. These tests can be functional or non-functional, though usually functional

5.2.1.2 Equivalent Class Partitioning

Equivalent class partitioning is also known as equivalent partitioning. In this technique input data is to be divided into groups. Those group of data are expected to perform as similar behavior. Each groups works as same as other groups also.

For legal input value output will produce a meaning data. But for illegal input value, output will not produce meaningful data.

5.2.1.3 Boundary Value Analysis

Boundary value analysis is a name of software testing by which input data can be included within a boundary range.

5.2.1.4 White Box Testing

White box testing is also a name of testing approach which is also known as clear box testing, glass box testing, open box testing, transparent box testing, code based testing or structural testing.

Testers can also predict the output of every test cases for white box testing. White box testing can be classified into some levels. Such as:

- Unit Testing
- Integration Testing
- System Testing

The main advantage of white box testing is that testing is more throughout and the testing can be started from the very beginning stage.

5.2.2 Pass / Fail Criteria

Pass or fail criteria will be set by the test engineers.

Now I will give the pass / fail criteria below.

- System crash will not be considered as pass case.
- If any criteria pass 100% times, then it will be considered as pass criteria only.
- If data can't be displayed to the application properly, then it is also to be considered as fail criteria.

5.3 Testing Schedule

Test Phase	Time
Testing plan create	1 week
Test specification	2 week
Unit testing	During development time
Component test	1 week
Test Phase	Time
Integration testing	1 week
Validating use cases	1 week
Testing user interfaces	1 week
Load testing	1 week
Performance testing	1 week
Release to production	1 week

5.4 Trace Ability Matrix

Project Manager			Business Analyst Lead		
QA Lead			Target Implementation Date		
BR#	Category / Functionality / Activity	Requirement Description	Use Case Reference	Test Case Reference	Comments
Br-1	Functional	Login	Use case 3.1.1	Test case 5.6.1	
BR-2	Functional	Create style entry	Use case 3.1.2	Test case 5.6.3	
BR-3	Functional	Create pre order	Use case 3.1.3	Test case 5.6.4	
BR-4	Functional	Create Production order	Use case 3.1.4	Test case 5.6.5	
BR-5	Functional	Cost calculation	Use case 3.1.5	Test case 5.6.6	
BR-6	Functional	Create post order	Use case 3.1.6	Test case 5.6.7	
BR-7	Non- functional	Reliability	N/A	N/A	

5.5 Testing Environment

Testing environment means to prepare the environment with hardware and software so that test engineers can be able to execute test cases as required. Besides hardware and software usage, network configuration might be needed to execute test plans.

For making the environment for testing, some key area need to setup. Those are:

- Test data
- Database server
- Client's operating system
- Front end running environment
- Browser
- System and application
- Network
- Hardware with server operating system
- Documentation is also required. Like: user manuals, installation guides, configuration guides, documents etc.

5.6 Test Cases

A test case refers to some rules and regulations or conditions by which it can be determined whether a system can be able to meet the works or requirements under test cases properly. For testing our application, I have prepared some test cases. Now, I am going to provide them.

5.6.1 Log In

Test case #1		Test case name: Log in			
System: GarmentsERP(Merchandising)		Subsystem: N/A			
Designed by: Oli Ullah		Designed date: 2/12/19			
Executed by:		Executed date:			
Short description: The registered users need to login to the application. And before that our application will check the authentication and authorization.					
Pre-conditions:					
<ul style="list-style-type: none"> Users are always redirected to the login page whether they have not authenticated by our application while entering into the dashboard. Assume that, the Username is 'Merchandiser' and password is 'password' 					
Step	Username	Password	Expected result	Pass/Fail	Comment
1	01719	420	Invalid		
2	Merchandiser		Password can't be blank		
3		143	Username can't be blank		
4	Merchandiser	password	Successfully login to the application and redirected to the dashboard		
Post-conditions: Users including Merchandiser will successfully login to the application.					

5.6.2 Input field is required in all pages

Test case #2		Test case name: Input field is required in all pages		
System: GarmentsERP(Merchandising)		Subsystem: N/A		
Designed by: Oli Ullah		Designed date: 2/12/19		
Executed by:		Executed date:		
Short description: Users including Merchandiser need to fill up all that fields which as marked as required.				
Pre-conditions:				
<ul style="list-style-type: none"> • User like Merchandiser need to login first to be authenticated by the application program. • Every required field must be filled up by that user. 				
Step	Action	Response	Pass/Fail	Comment
1	All required fields are not filled yet.	Fields must not be empty.		
2	All input filed is filled up by the user.	Application will save those information.		
Post-conditions: Every information is saved to the database of the application program properly.				

5.6.3 Create Style Entry

Test case #3		Test case name: Create Style Entry		
System: GarmentsERP(Merchandising)		Subsystem: N/A		
Designed by: Oli ullah		Designed date: 2/12/19		
Executed by:		Executed date:		
Short description: Merchandiser create a style entry for order.				
Pre-conditions:				
<ul style="list-style-type: none"> • User must be authenticated by our application. • User type must be Merchandiser. • Merchandiser must be know about client demand or tack pack. 				
Step	Action	Response	Pass/Fail	Comment

1	All data is not provided	Application push Style Entry to provide all required data to the application.		
2	Data provided properly	Data saved successfully For Order		
Post-conditions: After providing style entry data to the application, it will be add in database.				

5.6.4 Create Pre order

Test case #4		Test case name: Create Pre order		
System: GarmentsERP(Merchandising)		Subsystem: N/A		
Designed by: Oli ullah		Designed date: 2/12/19		
Executed by:		Executed date:		
Short description: Merchandiser create a Pre order for order.				
Pre-conditions:				
<ul style="list-style-type: none"> • User must be authenticated by our application. • User type must be Merchandiser. • Merchandiser must be know about this order Style entry. 				
Step	Action	Response	Pass/Fail	Comment
1	All data is not provided	Application push Pre order to provide all required data to the application		
2	Submit an order id who is already create in style entry.	Application show this order id style entry all data.		

3	Data provided properly	Data saved successfully For Order		
---	------------------------	-----------------------------------	--	--

Post-conditions: After providing Pre order data to the application, it will be add in database.

5.6.5 Create Production order

Test case #5		Test case name: Create Production order		
System: GarmentsERP(Merchandising)		Subsystem: N/A		
Designed by: Oli ullah		Designed date: 2/12/19		
Executed by:		Executed date:		
Short description: Merchandiser create a Production order for order.				
Pre-conditions:				
<ul style="list-style-type: none"> • User must be authenticated by our application. • User type must be Merchandiser. • Merchandiser must be know about this order Style entry and Pre order. 				
Step	Action	Response	Pass/Fail	Comment
1	All data is not provided	Application push Production order to provide all required data to the application		
2	Submit an order id who is already create in style entry and Pre order.	Application show this order id style entry and Pre order all data.		
3	Data provided properly	Data saved successfully For Order.		
Post-conditions: After providing Production order data to the application, it will be add in database.				

5.6.6 Cost calculation

Test case #6		Test case name: Cost calculation		
System: GarmentsERP(Merchandising)		Subsystem: N/A		
Designed by: Oli ullah		Designed date: 2/12/19		
Executed by:		Executed date:		
Short description: Merchandiser create a Cost calculation for order.				
Pre-conditions:				
<ul style="list-style-type: none"> • User must be authenticated by our application. • User type must be Merchandiser. • Merchandiser must be know about this order Style entry, Pre order and Production order. 				
Step	Action	Response	Pass/Fail	Comment
1	All data is not provided	Application push cost calculation to provide all required data to the application		
12	Submit an order id who is already create in style entry, production order and pre order.	Application show this order id style entry, production order and Pre order all data.		
3	Data provided properly	Data saved successfully For Order and application show accurate result of cost for order.		
Post-conditions: After providing Cost calculation data to the application, it will be add in database.				

5.6.7 Create Post order

Test case #7		Test case name: Create Post order		
System: GarmentsERP(Merchandising)		Subsystem: N/A		
Designed by: Oli ullah		Designed date: 2/12/19		
Executed by:		Executed date:		
Short description: Merchandiser create a post order for order.				
Pre-conditions:				
<ul style="list-style-type: none"> • User must be authenticated by our application. • User type must be Merchandiser. • Merchandiser must be know about this order Style entry, Pre order production order and cost calculation. 				
Step	Action	Response	Pass/Fail	Comment
1	All data is not provided	Application push Post order to provide all required data to the application		
12	Submit an order id who is already create in style entry and Pre order.	Application provided this order id style entry, cost calculation and Pre order all data.		
3	Data provided properly	Data saved successfully For Order		
Post-conditions: After providing Post order data to the application, it will be add in database.				

Chapter 6

User interface and User manual

6. User Interface

First of all, after landing any application, interface of that software is appeared to the user. So, the importance of user interface is very high. For success of any software application, a good looking user interface plays a vital role.

6.1 Merchandiser Log in page

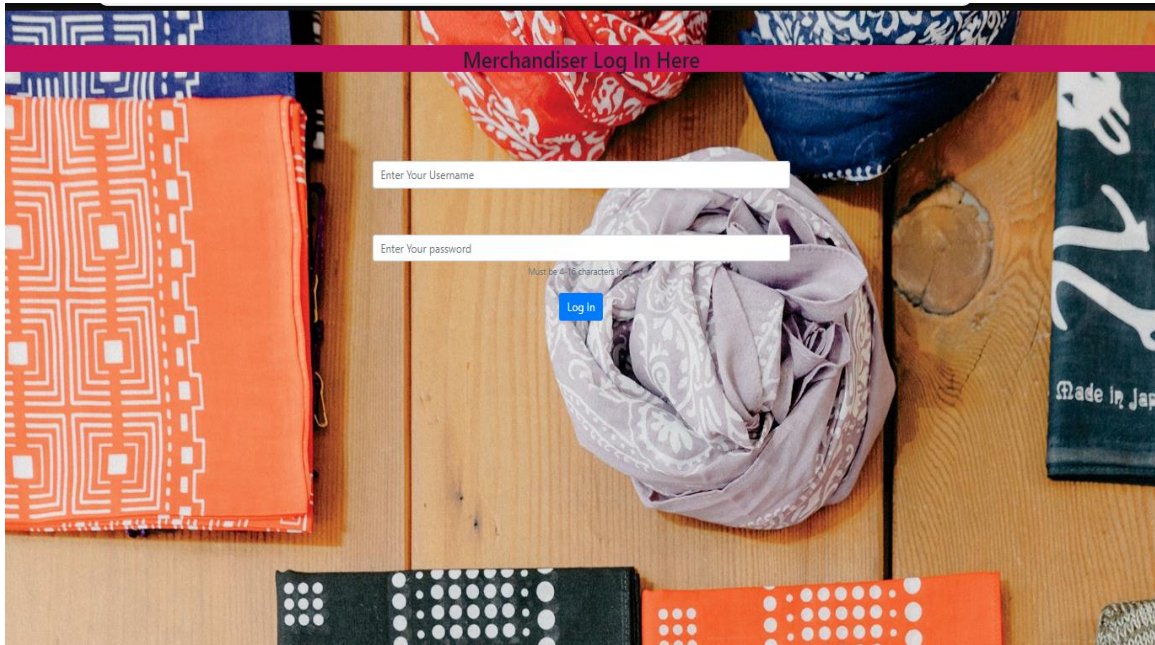


Figure 6.1: Log in page

6.2 Home page

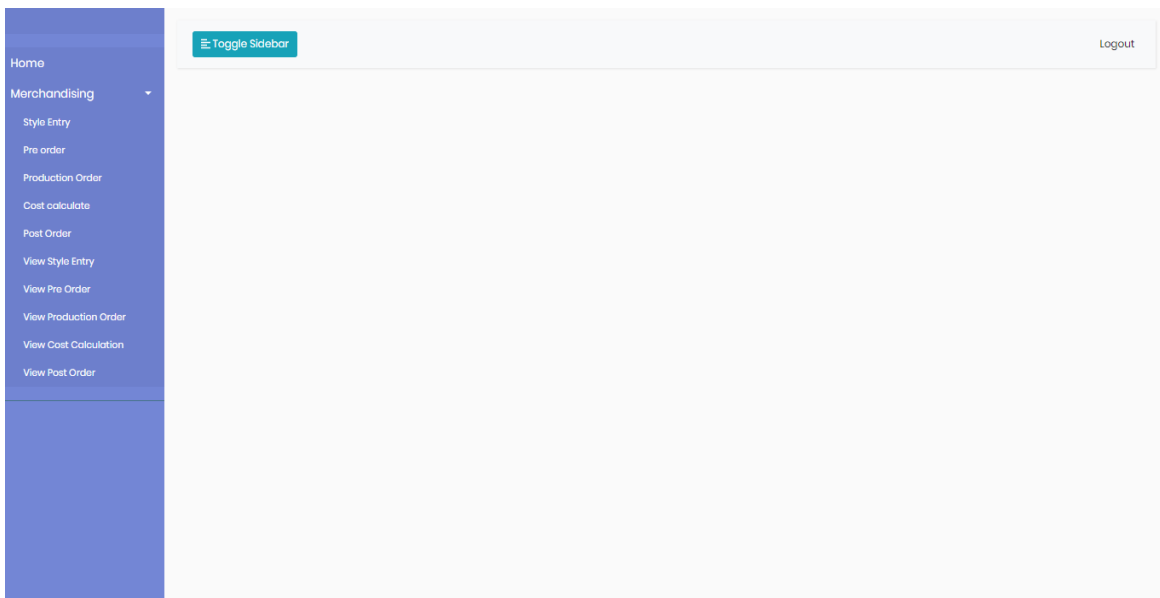


Figure 6.2: Home Page

6.3 Style Entry

Home Style Entry Pre-Order Production order Cost-calculation Post Order View Style Entry View Pre-Order View Production Order View Cost Calculation View Post Order

Style Entry

Order ID Buyer Name Delivery Date

Style No Style Name Style Model

Description Approximate Quantity

Size-Breakdown

Size Name	Quantity
XSS	<input type="text"/>
XS	<input type="text"/>
S	<input type="text"/>
M	<input type="text"/>
L	<input type="text"/>

Figure 6.3: Style Entry

Style No Style Name Style Model

Description Approximate Quantity

Size-Breakdown

Size Name	Quantity
XSS	<input type="text"/>
XS	<input type="text"/>
S	<input type="text"/>
M	<input type="text"/>
L	<input type="text"/>
XL	<input type="text"/>
XLL	<input type="text"/>

Figure 6.4: Style Entry

6.4 Pre order

Home Style Entry Pre-Order Production order Cost-calculation Post Order View Style Entry View Pre-Order View Production Order View Cost Calculation View Post Order

Pre-Order

OrderID:

Order ID: **Buyer Name:** **Delivery Date:**
Style No: **Style Name:** **Approximate Quantity:**
Description:

No. of Print **Print Total Price** **No. of Embroidery** **Embroidery Total Price**

Fabrication

Fabric Name	Consumption	Unit	Price
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Figure 6.5: Pre order

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Accessories

Basic accessories				Decorative accessories				Finishing accessories			
Name	consumption	Price	▼	Name	consumption	Price	▼	Name	consumption	Price	▼
Name	consumption	Price	▼	Name	consumption	Price	Supplier ▼	Name	consumption	Price	Supplier ▼
Name	consumption	Price	Supplier ▼	Name	consumption	Price	Supplier ▼	Name	consumption	Price	Supplier ▼
Name	consumption	Price	Supplier ▼	Name	consumption	Price	Supplier ▼	Name	consumption	Price	Supplier ▼
Name	consumption	Price	Supplier ▼	Name	consumption	Price	Supplier ▼	Name	consumption	Price	Supplier ▼
Name	consumption	Price	Supplier ▼	Name	consumption	Price	Supplier ▼	Name	consumption	Price	Supplier ▼
Name	consumption	Price	Supplier ▼	Name	consumption	Price	▼	Name	consumption	Price	Supplier ▼

Figure 6.6: Pre order

6.5 Production order

Home Style Entry Pre-Order Production order Cost-calculation Post Order View Style Entry View Pre-Order View Production Order View Cost Calculation View Past Order

Pre-Order For Production

OrderID:

Order ID: Buyer Name: Delivery Date:
 Style No: Style Name: Style Model:
 Description: Approximate Quantity:
 No. of Print: Print Total Price: No. of Embrodary: Embrodary Total Price:

Fabrication

Fabric Name	Consumption	Unit	Price
Casement	12	KG	2000
Single jersey	18	KG	2000
Single jersey	29	KG	3000

Basic Accessories

Name	Consumption	Price	Supplier
------	-------------	-------	----------

Figure 6.7: Production order

Name	Consumption	Price	Supplier
Thread	12	12000	J K Company
Interlining	18	15000	J K Company
Snap Button	29	12000	J K Company

Decorative Accessories

Name	Consumption	Price	Supplier
Buttonhole tape	12	12000	J K Company
Piping	18	15000	J K Company
Galloon	29	12000	J K Company

Finishing Accessories

Name	Consumption	Price	Supplier
Price tag	12	12000	J K Company
Tissue paper	18	15000	J K Company
Tag pin	29	12000	J K Company

Total Waste: No Of Machine: Production Per Hour:

Figure 6.8: Production order

6.6 Cost calculation

Cost calculation

OrderID:

Style Model:

Order ID:	Buyer Name:	Delivery Date:
Style No:	Style Name:	
Description:	Approximate Quantity:	
Print Total Price:	Embroidary Total Price:	Fabric Total Price:
Basic Accessories Total Price:	Decorative Accessories Total Price:	Finishing Accessories Total Price:
Total Wasta/%:	No Of Machine:	Production Per Hour/PCS:
Working day/month:	Total number of Machine required to complete an item:	

Over Dying Cost:	Washing Total Cost:	Machine Total Cost:
<input type="text"/>	<input type="text"/>	<input type="text"/>
Finising Total Cost:	Cost of Making:	Profit Percentage/%:
<input type="text"/>	<input type="text"/>	<input type="text"/>

Total Making Cost:	Total Cost With Profit:
<input type="button" value="Calculate"/>	<input type="button" value="Save"/>

Figure 6.9: Cost calculation

6.7 Post Order

[Home](#) [Style Entry](#) [Pre-Order](#) [Production order](#) [Cost-calculation](#) [Post Order](#) [View Style Entry](#) [View Pre-Order](#) [View Production Order](#) [View Cost Calculation](#) [View Post Order](#)

Post Order

OrderID:

Style Model:

Order ID:	Buyer Name:	Delivery Date:
Style No:	Style Name:	Approximate Quantity:
Description:		
Making cost total:	Total with profit	

LC NO:	Bank Name:
<input type="text"/>	<input type="text"/>

Figure 6.10: Post order

6.8 View Style Entry

Home Style Entry Pre-Order Production order Cost-calculation Post Order View Style Entry View Pre-Order View Production Order View Cost Calculation View Post Order

Search By order ID Search

All Style Entry

Order ID	Style No	Style Name	Buyer Name	Delivery Date	Option
01	S201	Shirt	oli ullah	28/05/19	Report Edit Delete

Figure 6.11: View Style Entry Page

6.9 View Pre order

Home Style Entry Pre-Order Production order Cost-calculation Post Order View Style Entry View Pre-Order View Production Order View Cost Calculation View Post Order

Search By order ID Search

All Pre-Order

Order ID	Style No	Buyer Name	Quantity/PCS	Fabrication	Delivery Date	Option
01	S201	oli ullah	10000	100%cutton	28/05/19	Report Edit Delete

Figure 6.12: View Pre order Page

6.10 View Production order

Home Style Entry Pre-Order Production order Cost-calculation Post Order View Style Entry View Pre-Order View Production Order View Cost Calculation View Post Order

Search By order ID

All Production Order

Order ID	Style No	Buyer Name	Quantity/PCS	Fabrication	Total Waste/%	No of Machine	Per Hr Production/PCS	Delivery Date	Option
O1	S201	oli ullah	10000	100%cutton	30	150	120	28/05/19	<input type="button" value="Report"/> <input type="button" value="Edit"/> <input type="button" value="Delete"/>

Figure 6.13: View Production order Page

6.11 View Cost calculation

Home Style Entry Pre-Order Production order Cost-calculation Post Order View Style Entry View Pre-Order View Production Order View Cost Calculation View Post Order

Search By order ID

All Cost Details

Order ID	Style No	Buyer Name	Quantity/PCS	Fabrication	Total Making Cost/US	Total With Profit/US	Delivery Date	Option
O1	S201	oli ullah	10000	100%cutton	300000	350000	28/05/19	<input type="button" value="Report"/> <input type="button" value="Edit"/> <input type="button" value="Delete"/>

Figure 6.14: View Cost calculation Page

6.12 View Post order

Home Style Entry Pre-Order Production order Cost-calculation Post Order View Style Entry View Pre-Order View Production Order View Cost Calculation View Post Order

Search By order ID

All Post Order

Order ID	Style No	Buyer Name	Quantity/PCS	Fabrication	Total Making Cost/US	LC NO	Bank Name	Delivery Date	Option
01	S201	oli ullah	10000	100%cutton	300000	200001	Union Bank	28/05/19	<input type="button" value="Report"/> <input type="button" value="Edit"/> <input type="button" value="Delete"/>

Figure 6.15: View Post order Page

User Manual

6.13 Merchandiser Log in page user manual

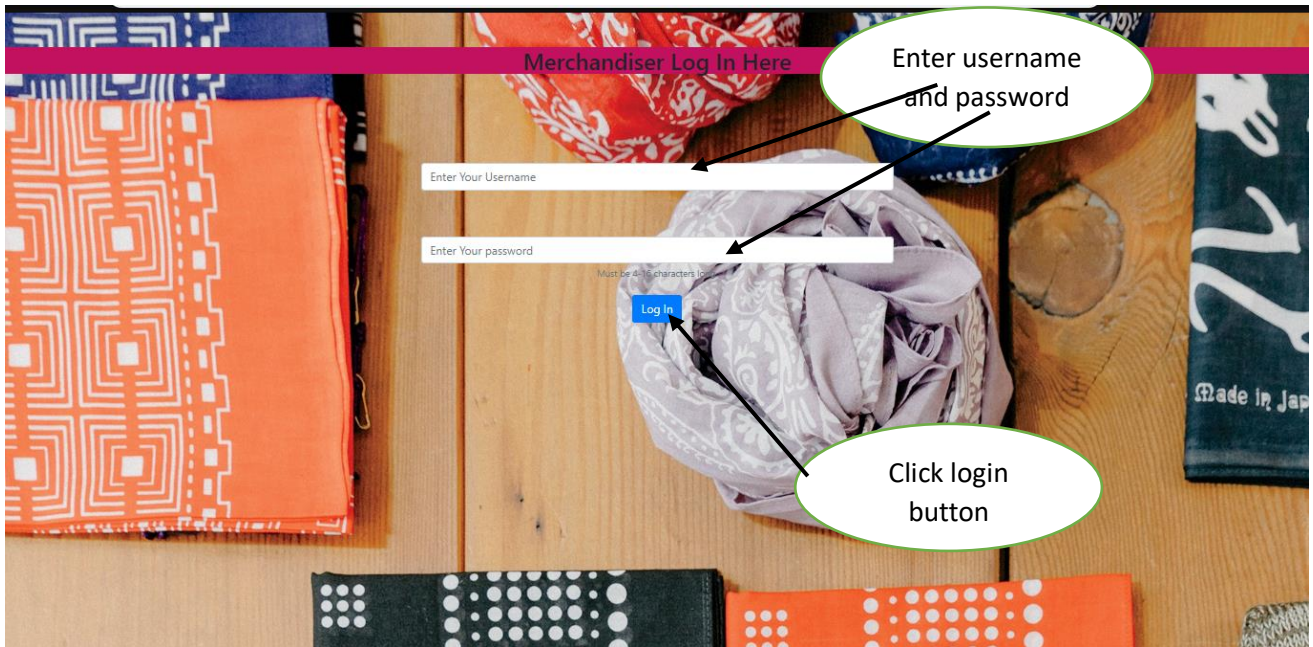


Figure 6.16: Log in page User manual

6.14 Home page user manual

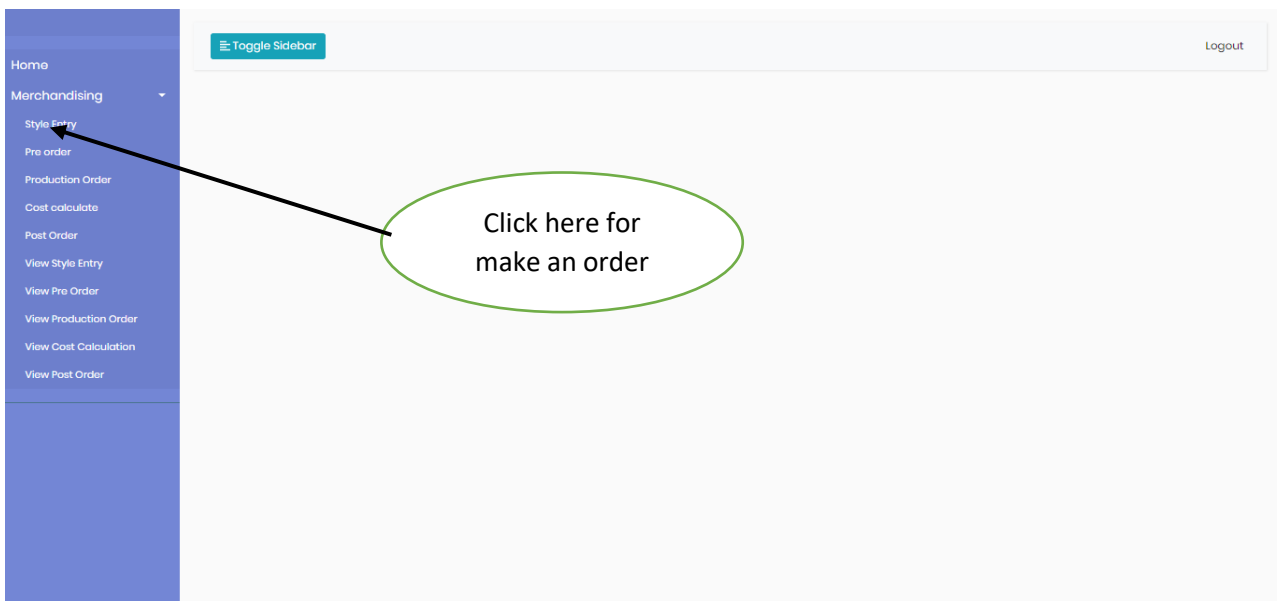


Figure 6.17: Home Page User manual

6.15 Style Entry user manual

Home Style Entry Pre-Order Production order Cost-calculation Post Order View Style Entry View Pre-Order View Production Order View Cost Calculation View Post Order

Style Entry

Order ID Buyer Name Delivery Date

Style No Style Name Style Model

Description Approximate Quantity

Size-Breakdown

Size Name	Quantity
XSS	<input type="text"/>
XS	<input type="text"/>
S	<input type="text"/>
M	<input type="text"/>
L	<input type="text"/>
XL	<input type="text"/>
XLL	<input type="text"/>

Enter here required order data

Figure 6.18: Style Entry User manual

Style No Style Name Style Model

Description Approximate Quantity

Size-Breakdown

Size Name	Quantity
XSS	<input type="text"/>
XS	<input type="text"/>
S	<input type="text"/>
M	<input type="text"/>
L	<input type="text"/>
XL	<input type="text"/>
XLL	<input type="text"/>

Save Style Entry

Click save button

Figure 6.19: Style Entry User manual

6.16 Pre order user manual

Home Style Entry Pre-Order Production order Cost-calculation Post Order View Style Entry View Pre-Order View Post Order

OrderID: **Submit**

Order ID: Buyer Name: Delivery Date:
 Style No: Style Name: Approximate Quantity:
 Description:

No. of Print Print Total Price No. of Embroidery Embroidery Total Price

Fabrication

Fabric Name	Consumption	Unit	Price
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Figure 6.20: Pre order User manual

Fabric Name	Consumption	Unit	Price
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Accessories

Basic accessories Decorative accessories

Name	consumption	Price	Name	consumption	Price
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Save Pre-Order

Figure 6.21: Pre order User manual

6.17 Production order user manual

Home Style Entry Pre-Order Production order Cost-calculation Post Order View Style Entry View Pre-Order View Production Order View Cost Calculation View Post Order

Pre-Order For Pr

OrderID: **Submit**

Style Model:

Order ID: Buyer Name: Delivery Date:
 Style No: Style Name: Approximate Quantity:
 Description:
 No. of Print: Print Total Price: No. of Embrodary: Embrodary Total Price:

Fabrication

Fabric Name	Consumption	Unit	Price

Basic Accessories

Figure 6.22: Production order User manual

Name	Consumption	Price	Supplier
Thread	12	12000	J K Company
Interlining	18	15000	J K Company
Snap Button	29	12000	J K Company

Decorative Accessories

Name	Consumption	Price	Supplier
Buttonhole tape	12	12000	J K Company
Piping	18	15000	J K Company
Galloon	29	12000	J K Company

Finishing Accessories

Name	Consumption	Price
Price tag	12	12000
Tissue paper	18	15000
Tag pin	29	12000

Total Waste: No Of Machine: Production Per Hour:

Save

Fill up all the felid and click save

Figure 6.23: Production order User manual

6.18 Cost calculation user manual

Cost calculation

OrderID:
Give an Order id

Submit

Style Model:

Order ID: Buyer Name: Delivery Date:
Style No: Style Name: Approximate Quantity:
Description: Approximate Quantity: Embroidary Total Price: Fabric Total Price:
Print Total Price: Embroidary Total Price: Finishing Accessories Total Price:
Basic Accessories Total Price: Decorative Accessories Total Price:
Total Waste/%: No Of Machine: Production Per Hour/PCS:
Working day/month: Total number of Machines:

Over Dying Cost: Washing Total Cost:
Finishing Total Cost: Cost of Making:
Total Making Cost: Total Cost With Profit:

Calculate Save

Enter an order id and click submit

Fill up all the felid and click calculate and save

Figure 6.24: Cost calculation User manual

6.19 Post Order user manual

Home Style Entry Pre-Order Production order Cost-calculation Post Order View Style Entry View Pre-Order View Production Order View Cost Calculation View Post Order

Post Order

OrderID:
Give an Order id

Submit

Style Model:

Order ID: Buyer Name: Delivery Date:
Style No: Style Name: Approximate Quantity:
Description: Approximate Quantity:
Making cost total: Total with profit:
LC NO: Bank Name:

Save

Enter an order id and click submit

Fill up all the felid and click save

Figure 6.25: Post order User manual

6.20 View Style Entry user manual

Home Style Entry Pre-Order Production order Cost-calculation Post Order View Style Entry View Pre-Order View Production Order View Cost Calculation View Post Order

Search By order ID

All Style Entry

Order ID	Style No	Style Name	Buyer Name	Delivery Date	Option
01	S201	Shirt	oil ullah	28/05/19	<input type="button" value="Report"/> <input type="button" value="Edit"/> <input type="button" value="Delete"/>

If we want to delete update create then click here

Figure 6.26: View Style Entry Page User manual

Chapter 7

Conclusion

7.1 GitHub Link

<https://github.com/oliullah1565/GarmentsERP-Merchandising-.git>

7.2 Project Summary

I have started to develop this project from April. From the very starting of development of this project, it demands hard working, patients, persistency to meet the requirements of stakeholders. After that I have proposed the design. And then started to work.

Database plays a vital role for any application software. And so this is why, I have designed the database diagram having tables with proper relationship. After that, I have prepared the user interface and take their approval to continue to the next part. It is to be said that, the interface of my application is very simple and easy to understand. After completing that, I have started to write the core functionality of the project.

Developing project is not end of all tasks actually. There are some other important tasks to perform. And that is testing. It is also known as quality assurance also. Almost at every software company there are a quality assurance team. Their main responsibility is to find the loop holes or vulnerability of software. If there any bug remains before handover to the stakeholders, there is a change to ruin the whole project. So testing plan is very important. And after developing the project, I have tried to assure the quality of this project.

7.3 Limitations

For developing this project, I have faced some limitations. Now I will describe those in brief.

- **Sending reports by email:** In our application, there is not having any mailing method directly by which one can contract with others for business purpose. End user need to email or contract with others now by manual way.

7.4 Obstacles and Achievements

I believe that if there are not any obstacles to develop a project, then there doesn't have any challenges. Because we know, challenge give us the opportunity to prove ourselves. Obstacles, challenges and achievements are like a path to the success. Before starting this project, I didn't know the actual flow of software development life cycle. By developing this project, I have learnt to know how to have a row requirement from clients. After that I have learnt system analysis, database design and many things. My supervisor helps me a lot from the very beginning of the development of this project.

There are some other obstacles and achievements also that I will describe below.

- **Lack of Actor's Engagement:** There are different types of stakeholders in our full web application. And each actors uses different functionality. And almost they are busy with their day to day activities. So this is why, Merchandiser cannot create order or update order in time.

- **Scope Change:** Sometimes, some features need to be changed or modified. Then I need to follow reverse engineering process. And again designed to meet the new requirements. It also made me frustrated sometimes.

7.5 Future Scope

I have learnt a lot throughout the whole development stage of this project. For making this project developed, I have also meet some young entrepreneurs and enthusiasts also. I am very much thankful to all of them as their idea and discussion gave me some opportunities to make my product complete. It will help me to work with similar type project in future also.

7.6 References

I have gained some knowledge from some platforms. Obviously I will mention those references. For making my project successful those resources help me a lot. Not I will mention the names below.

- <https://www.draw.io/#G1-gB5lil2QVOcolpzjFVx8KRpKgh4VYm7> access in 12.08.19
- <https://getbootstrap.com/docs/4.0/getting-started/download/> access in 07.07.19
- <https://www.youtube.com/watch?v=9yYF4XHEeXY> access in 09.10.19
- https://www.w3schools.com/sql/sql_join_left.asp access 10.11,19
- <http://www.garmentsmerchandising.com/how-to-calculate-garments-cost-of-making-cm/> access 01.12.19