E-Plant

Final Year Project

Session 2019-2021

A Project Submitted in partial fulfillment of the degree of

Master in Information Technology

Department of Information Technology

Faculty of Computer Science & Information Technology

The Superior College, Lahore

Spring 2021

Type (Nature of project)	[✓] **D**evelopment [ ] **R**esearch [ ] **R&D**
Area of specialization	Ecommerce Website
FYP ID	FYP-MITM-S20-005

Project Group Members

Sr.#	Reg. #	Student Name	Email ID	*Signature
(i)	MITM-S19-004	Muhammad Akram	Mitm-s19-004@superior.edu.pk	
(ii)	MITM-S19-009	Imran Ahmad	Mitm-s19-009@superior.edu.pk	
(iii)	MITM-S19-012	Muhammad Faisal	Mitm-s19-012@superior.edu.pk	

*The candidates confirm that the work submitted is their own and appropriate credit has been given where reference has been made to work of others

Plagiarism Free Certificate

This is to certify that, I Muhammad Akram Ameer S/D of Ameer Ahmad, group leader of FYP under registration no. Mitm-S19-004 at Information Technology Department, The Superior College, Lahore. I declare that my FYP proposal is checked by my supervisor and the similarity index is _____ that is less than 20%, an acceptable limit by HEC. Report is attached herewith as Appendix D.

Date: 02-03-2021 Name of Group Leader: Muhammad Akram Signature: _____

Name of Supervisor: Mr. Fahad Sabah Co-Supervisor:

Designation: Lecturer Designation:

Signature: _____ Signature: _____

HoD:

Signature: _____

THE SUPERIOR UNIVERSITY LAHORE

Faculty of Computer Science & IT

Final Year Project
PROJECT REPORT

E-Plant

Project ID: **FYP-MITM-S20-005**

Project Team

Student Name	Student ID	Program	Contact Number	Email Address
Muhammad Akram	Mitm-s19-004	MIT	03473870984	Mitm-s19-004@superior.edu.pk
Muhammad Faisal	Mitm-s19-012	MIT	03244368810	Mitm-s19-012@superior.edu.pk
Imran Ahmad	Mitm-s19-009	MIT	03044843339	Mitm-s19-009@superior.edu.pk

Sir. Fahad Sabah
Lecturer

Project Report

E-Plant

Change Record

Author(s)	Version	Date	Notes	Supervisor's Signature
Muhammad Akram, M. Faisal, Imran Ahmad	1.0		Template 1	
Muhammad Akram, M. Faisal, Imran	1.2		Documentation	
Muhammad Akram, M. Faisal, Imran Ahmad	1.3		Review of layouts	
Muhammad Akram, M. Faisal, Imran Ahmad	1.4		Review of Coding	
Muhammad Akram, M. Faisal, Imran Ahmad	1.5		Review of database	

APPROVAL

PROJECT SUPERVISOR

Comments: _____

_____

Name:_____

Date:_____ Signature:_____

PROJECT MANAGER

Comments: _____

_____

Date:_____ Signature:_____

HEAD OF THE DEPARTMENT

Comments: _____

_____

Date:_____ Signature:_____

Dedication

We dedicate our project to Allah Almighty and whom the world owes its existence Hazrat Muhammad (s.a.w.w).

This humble effort is dedicated to our beloved parents who brought us to the level of excellence where we are studying today looking for most promising and gleaming future ahead for which they scarified most of the time of their life.

&

This work is dedicated to respectable my team members and my teacher Sir. Fahad Sabah for their endless support and who guided us throughout academic career. A lot of thanks for all my teachers. May Allah continue to guide and protect them (Ameen).

Acknowledgements

The author would like to express the sincere gratitude to their project advisor Sir. Fahad Sabah for his vigilant supervision, intellectual guidance, constructive advice and very kind attitude throughout the course of project.

Appreciate to the efforts of all our teachers whose teachings have brought us to this stage of academic zenith.

In the last but not the least, special gratitude with the deepest sense of respects to our parents whose love and affections kept us steep fast and enabled us to attain targets and goals of academic life. The authors are extremely indebted to their brothers and sisters whose constant encouragement provides us with the impetus that was necessary for attaining academic initiatives. We are really thankful to my supervisor who has fully supported me in my all work and delivered me all content already that support to understand work.

Executive Summary

A nursery is part of agriculture where plants are propagated, grown and sold out for the home the home garden and commercial purpose. Online presence make task easy to consumers by providing plant at their door steps. E-plant Nursery is dedicated to providing a quality choice for people looking for plant and garden supplies, as well as serving contractors who need a reliable source of products. We will offer a wide variety of plants, trees, vegetable plants, along with a selection of garden supplies. Most of the plants we sell must be grown on our own earth. Our marketing strategy includes providing a Gardner, affordable prices, a great location, and top customer service. Plant of different kind occupy most of the vacant space in the compound that's why people prefer pot plant for garden. Increasing disposal income and hobby drives interest among people in raising small gardens, backyard plantation and ornamental plants. During the past decade, significant achievement have been made by plantation development and many area has been brought under fruits, vegetables, flowers, plantation, crops and aromatic plants. Online plants business has great opportunity and market potential due to its convenient and home delivery factors, it attracts many consumers.

Table of Contents

E-Plant i
Final Year Project i
Session 2019-2021 i
Master in Information Technology i
Plagiarism Free Certificate ii
Dedication vi
Acknowledgements vii
Executive Summary viii
Table of Contents ix
List of Figures xii
List of Tables xiii
Chapter 1 i
Introduction i
.1.1. Background 2
.1.2. Motivations and Challenges 2
.1.3. Goals and Objectives 3
.1.4. Literature Review/Existing Solutions 3
.1.5. Gap Analysis 3
.1.6. Proposed Solution 4
.1.7. Project Plan 4
.1.7.1. Work Breakdown Structure 4
.1.7.2. Roles & Responsibility Matrix 5
.1.7.3. Gantt Chart 7
.1.8. Report Outline 7
Chapter 2 8
Software Requirement Specifications 8
.2.1 Introduction 9
.2.1.1. Purpose 9
.2.1.2 Document Conventions 9
This document uses the following conventions. 9
Bold: is used for heading 9
Line spacing: 1.5 9
Online Nursery system 9
.2.1.3. Intended Audience and Reading Suggestions 9
2.1.4. Product Scope 9
.2.1.5.References 10
.2.2. Overall Description 10
2.2.1. Product Perspective 10
.2.2.2. Product Functions 11
.2.2.3. User Classes and Characteristics 11
.2.2.4 Operating Environment 12
.2.2.5Design and Implementation Constraints 12
2.2.6 User Documentation 12
2.2.7 Assumptions and Dependencies 12

.2.3. External Interface Requirements 13
2.3.1 User Interfaces 13
2.3.2Hardware Interfaces 18
.2.3.3. Software Interfaces 18
.2.3.4 Communications Interfaces 18
.2.4. System Features 18
.2.4.1 Payment Option 19
.2.4.1.1 Description and Priority 19
.2.4.1.2 Stimulus/Response Sequences 19
.2.4.1.3 Functional Requirements 20
.2.4.2 Site Search and Browse 20
.2.4.2.1 Description and Priority 20
.2.4.2.2 Stimulus/Response Sequences 20
2.4.2.3 Functional Requirements 21
.2.4.3. Real Time Plants 21
.2.4.3.1 Description and Priority 21
.2.4.3.2. Stimulus/Response Sequences 21
.2.4.3.3 Functional Requirements 22
.2.5. Other Nonfunctional Requirements 22
.2.5.1 Performance Requirements 22
.2.5.2. Safety Requirements 23
.2.5.3 Security Requirements 23
.2.5.4. Software Quality Attributes 23
.2.5.5 Business Rules 24
.2.6. Other Requirements 24
Chapter 3 25
Use Case Analysis 25
.3.1 Use Case Model 26
3.2. Fully Dressed Use Cases 31
Chapter 4 32
System Design 32
4.1. Architecture Diagram 33
4.2. Domain Model 34
4.3. Entity Relationship Diagram with data dictionary 35
4.4. Class Diagram 36
4.5. Sequence / Collaboration Diagram 37
4.6. Operation contracts 47
4.7. Activity Diagram 49
4.8. State Transition Diagram 50
4.9. Component Diagram 51
4.10. Deployment Diagram 52
4.11. Data Flow diagram 53
..... 53
Chapter 5 54
Implementation 54
5.1. Important Flow Control/Pseudo codes 55

5.2. Components, Libraries, Web Services and stubs 55
5.3. Deployment Environment 56
5.4. Tools and Techniques 57
5.5. Best Practices / Coding Standards 58
5.6. Version Control 58
Chapter 6 59
Testing and Evaluation 59
6.1. Use Case Testing 60
6.2 Equivalence partitioning 65
6.3 Boundary value analysis 65
6.5 Unit testing 66
6.6 Performance testing 66
6.7 Stress Testing 66
Chapter 7 68
Summary, Conclusion and Future Enhancements 68
7.1. Project Summary 69
7.2. Achievements and Improvements 69
7.3. Critical Review 69
7.4. Lessons Learnt 69
7.5. Future Enhancements/Recommendations 70
Appendices 71
Appendix A: User Manual 72
Appendix A: E-Plant 72
Reference and Bibliography 78

List of Figures

1.1 Caption of first figure of first chapter 5
1.2 Caption of second figure of first chapter 7
2.1 Caption of first figure of second chapter 13
2.2 Caption of second figure of second chapter 14
2.3 Caption of third figure of second chapter 14
2.4 Caption of 4rth figure of second chapter 15
2.5 Caption of 5th figure of second chapter 15
2.6 Caption of 6 figure of second chapter 16
2.7. Caption of 7 figure of forth chapter 16
2.8. Caption of 8 figure of forth chapter 17
2.9 Caption of 9 figure of forth chapter 17
3.1.1 Caption of 1st figure of third chapter 27
3.1.2 Caption of 2nd figure of third chapter 28
3.1.3 Caption of 3rd figure of third chapter 29
3.1.4 Caption of 4th figure of third chapter 30
3.2.1 Caption of 5th figure of third chapter 31
4.1.1 Caption of 1st figure of forth chapter 33
4.2.1 Caption of 2nd figure of forth chapter 34
4.3.1 Caption of 3rd figure of forth chapter 35
4.4.1 Caption of 4rth figure of forth chapter 36
4.5.1 Caption of 5th figure (sequence diagrams) of forth chapter 37
4.5.2 Caption of 5th figure (sequence diagrams) of forth chapter 37
4.5.3 Caption of 5th figure (sequence diagrams) of forth chapter 38
4.5.4 Caption of 5th figure (sequence diagrams) of forth chapter 38
4.5.5 Caption of 5th figure (sequence diagrams) of forth chapter 39
4.5.6 Caption of 5th figure (sequence diagrams) of forth chapter 39
4.5.7 Caption of 5th figure (sequence diagrams) of forth chapter 40
4.5.8 Caption of 5th figure (sequence diagrams) of forth chapter 40
4.5.9 Caption of 5th figure (sequence diagrams) of forth chapter 41
4.5.10 Caption of 5th figure (sequence diagrams) of forth chapter 41
4.5.11 Caption of 5th figure (sequence diagrams) of forth chapter 42
4.5.12 Caption of 5th figure (sequence diagrams) of forth chapter 42
4.5.13 Caption of 5th figure (sequence diagrams) of forth chapter 43
4.5.14 Caption of 5th figure (sequence diagrams) of forth chapter 43
4.5.15 Caption of 5th figure (sequence diagrams) of forth chapter 44
4.5.16 Caption of 5th figure (sequence diagrams) of forth chapter 44
4.5.17 Caption of 5th figure (sequence diagrams) of forth chapter 45
4.5.18 Caption of 5th figure (sequence diagrams) of forth chapter 45
4.5. Caption of 5th figure (collaboration diagram) of forth chapter 46
4.7.1 Caption of 6 figure of forth chapter 48
4.8.1 Caption of 7 figure of forth chapter 49
4.9.1 Caption of 8 figure of forth chapter 50
4.10.1 Caption of 9 figure of forth chapter 51
4.11.1 Caption of 10 figure of forth chapter 52

List of Tables

Table 1:Role& Responsibility Matrix 5
Table 2 :User case of register 70
Table 3: User case of login 71
Table 4 : Use case of delete data 72
Table 5: Use case of search data 73
Table 6 : Use case of record to display 74
Table 7: boundary analysis 75
Table 8: Stress Testing 76

Chapter 1

Introduction

Chapter 1: Introduction

We are living in the era of technology where everyone is too busy in their lives that one-third of the adults order packaged food and beverages online. People mostly shop online almost all the routine life products including clothes, shoes, grocery and much more. Our project is about an online plant store that will help its users to buy plants, flowers and pots without the hassle of going to a nursery. This website will provide its users the ease to order their desired plants on a few clicks and their order will be delivered at their doorstep in the same way they order to purchase clothes or food etc. It will also provide its users an ease to contact the gardeners for their services and to get their expert opinion.

.1.1. Background

People are lot of busy in their life's and have not time to visit nursery and bought plants, but they like gardening and want contribute to clean environment by plants ,people like plants but cannot access to nursery due to shortage of time they cannot grow flowers plants ,trees indoor plants .plants are basic need of house best of environment ,your health so we need a system that provide facility to full fill your need.

.1.2. Motivations and Challenges

Plants maintain our environment provide clean air, basic need like oxygen, food, fresh fruits, vegetables, roses that things we get only by plants. people want grow plants in house and land but main reason that work a wall between plants and people is time, if you have not time . The motivation behind this project is to facilitate the users to buy plants as they can buy food, clothes and make other shopping online and also to provide the information about growing them. Growing plants will help in bettering the environment. Our team is highly motivated to work on this project even in worst scenarios the supervisor will assist as much as possible

.1.3. Goals and Objectives

Main goal of website provide a service that make easy to people find plants and provide door to door service

The main objective of our website is to automate the traditional nursery selling

- To guide user about different plants and flowers etc.
- To provide best indoor/outdoor plants and flowers etc.
- To provide different categories of plants
- To ensure easy ordering
- To provide easy payment methods
- To ensure safe and secure delivery of the order
- To provide its users to hire the gardeners to get their services

.1.4. Literature Review/Existing Solutions

In literature Review: people have contact to nursery owner they can get plants on phone calls and get plants at home, but main default is that people cannot check what kind of variety are available in nursery condition of plants and more over nursery owner demand more money than exact price that is not profitable for a middle class people .

In Existing Solution: There exist some online plants selling store that offers the buying of plants but they are not offering such interesting features like getting services of the gardeners, chatting to the experts in real time etc. So, this project is unique in its all aspects most of website like online books order, food order, stationer order most of website that are successful working in market on the base of these website we design a website that facilitate the people

.1.5. Gap Analysis

In Gap Analysis our first priority is performance we provide all types of plants with complete detail, his benefits and supply service.

Second our priority increases our potential in future we make a YouTube channel base on our website that deliver video on plants how to grow, care, watering, fertilizer and all kind of information will share our followers.

.1.6. Proposed Solution

The project is to make a website that will automate the traditional selling of plants of a nursery into to an online module that will provide the users an ease to buy plants, flowers and pots. The users can also contact the gardeners for their services as well. Manager will appoint web admin, web admin can update items etc.

Furthermore, in order to facilitate the users, this website will provide all the necessary details about plants and how to grow them.

.1.7. Project Plan

The project duration is nearly six months more than fifty percent will be done in first three months; we use software techniques especially water fall, agile method (swat) work complete and check time to time changes will be define on base of agile method

.1.7.1. Work Breakdown Structure

The Tree Structure View is the most popular format for the WBS. It presents an easy to understand view into the WBS; however, it is also tricky to create without an application specifically designed for creating this organizational chart structure.

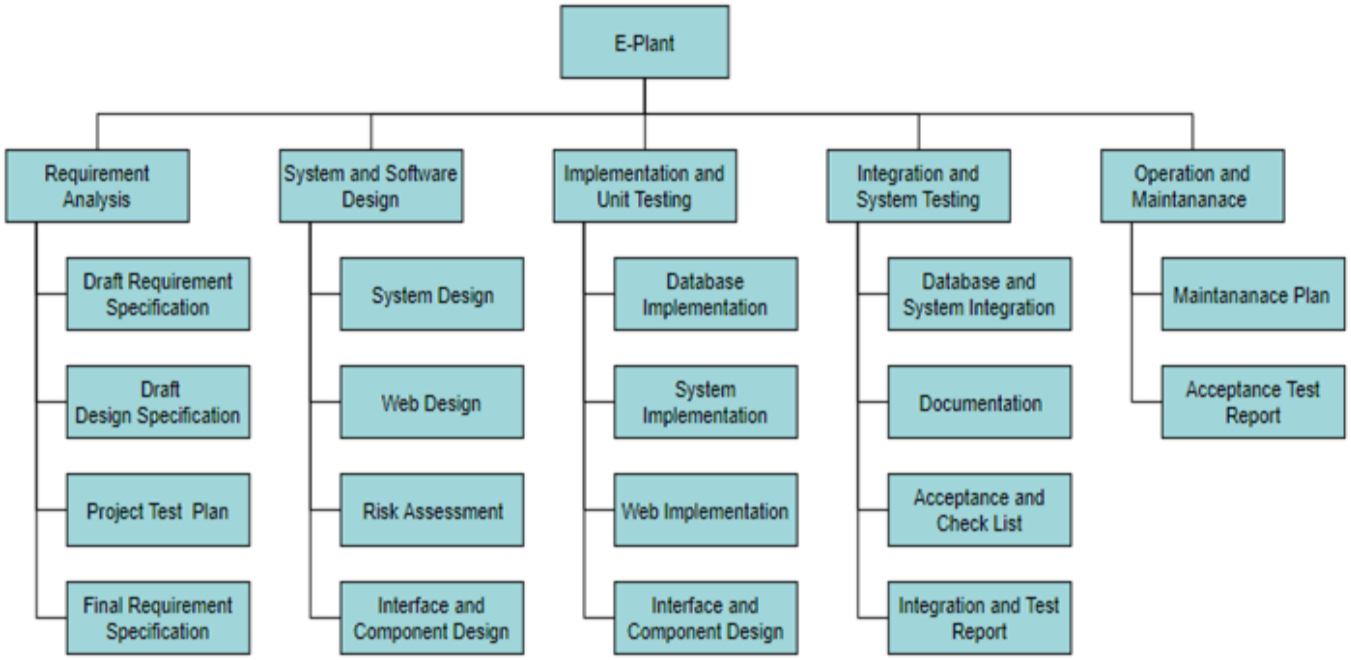


Figure 1 (.1.7.1.1)

.1.7.2. Roles & Responsibility Matrix

The RACI matrix is a responsibility assignment chart that maps out every task, milestone or key decision involved in completing a project and assigns which roles are Responsible for each action item, which personnel are Accountable, and, where appropriate, who needs to be Consulted or Informed. As described in WBS one teams get requirements analysis one system and software design, one team for implementation, one for integration and testing, and last team for maintained.

WBS #	WBS Deliverable	Activity	Activity to Complete the Deliverable	Duration of Days	Responsibility of Team members & Roles
1	Initiating	1	Planning	11	Muhammad Akram
2	Requirements	2	Analysis	12	Imran Ahmad
3	Design	3	Designing	10	Muhammad Faisal
4	Implementation	4	Coding	19	Muhammad Faisal
5	Testing	5	Testing	18	Muhammad Akram
6	Deployment	6	Maintenance	17	Imran Ahmad
7	Project Course	7	Deliverable	1	Muhammad Faisal

Table #1

.1.7.3. Gantt Chart

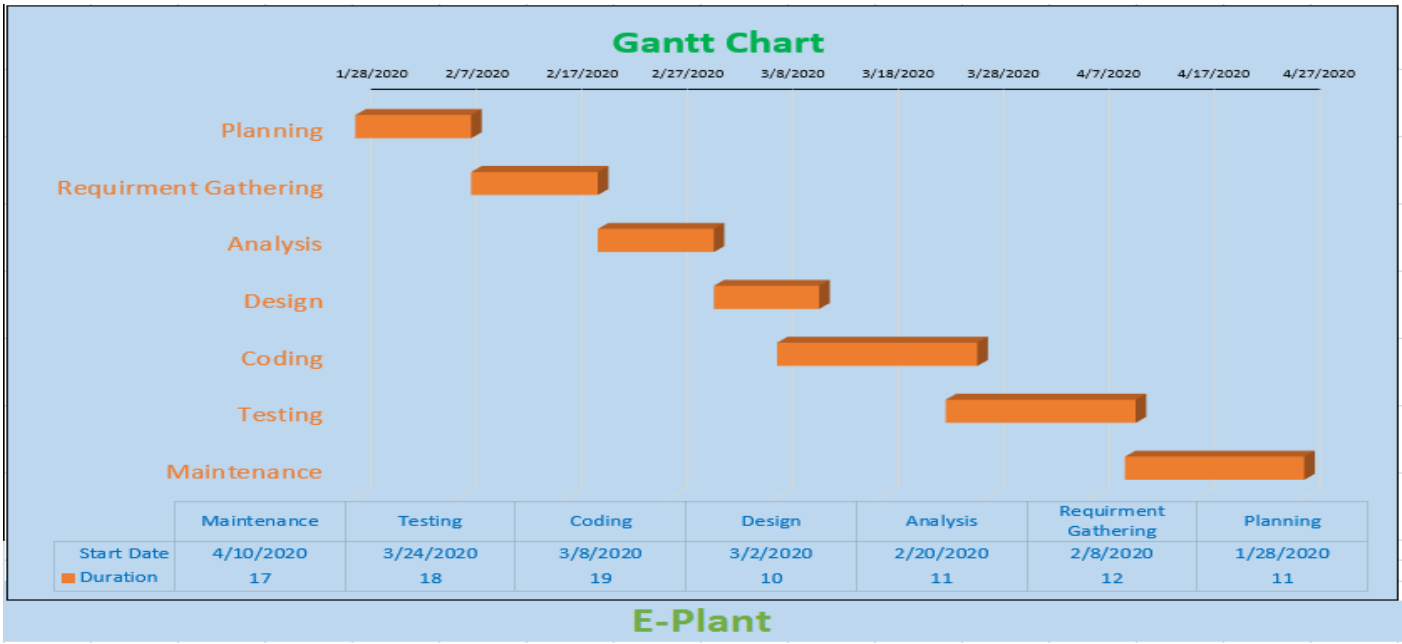


Figure 2 (1.7.3.1)

.1.8. Report Outline

- Over all basic method all applied
- Project design
- Rule and regulation
- Scope
- Plan
- Existing solution
- Gap analysis etc.

Chapter 2

Software Requirement Specifications

Chapter 2: Software Requirement Specifications

.2.1 Introduction

A Software Requirements Specification (SRS) is a document that describes the nature of a project, software or application. In simple words, SRS document is a manual of a project provided it is prepared before you kick-start a project/application. This document is also known by the names SRS report, software document.

.2.1.1. Purpose

The purpose of the document is to collect and analyze all assorted ideas that have come up to define the system, its requirements with respect to consumers. Also, we shall predict and sort out how we hope this product will be used in order to gain a better understanding of the project, outline concepts that may be developed later, and document ideas that are being considered, but may be discarded as the product develops.

.2.1.2 Document Conventions

This document uses the following conventions.

Bold: is used for heading

Line spacing: 1.5

Online Nursery system

.2.1.3. Intended Audience and Reading Suggestions

This project is a prototype for the Online nursery system and it is restricted within the University premises. This has been implemented under the guidance of university Professors. This project is useful for the nursery owners.

2.1.4. Product Scope

Problem statement:

This is the era of technology everyone wants to buy and sell online. This project will facilitate the users to buy plants online to grow. The scope of the project is not limited to

just buying the plants it would be a source of selling plants for the other nurseries through this application and the users can also get the gardener's services.

Project Objective:

- To automate traditional nursery selling
- To facilitate the users to buy their desired plants according to their interests
- To provide an ease in making order
- To ensure real order by confirmation of order after order placement
- To ensure safe and secure transaction of payment by Jazz Cash mobile account
- To provide users an online chat service to get help by the experts

.2.1.5.References

- Nursery online: HOME
- www.google.com
- www.wikipedia.org
- www.tutorialpoint.com
- By plants online
- Nature Hills Nursery

.2.2. Overall Description

2.2.1. Product Perspective

This document contains the problem statement that the current system is facing which is hampering the growth opportunities of the system. It further contains a list of the stakeholders and users of the proposed solution. It also illustrates the needs and wants of the stakeholders that were identified in the brainstorming exercise as part of the requirements workshop. It further lists and briefly describes the major features and a brief description of each of the proposed system.

The following SRS contains the detail product perspective from different stakeholders. It provides the detail product functions of E-Store with user characteristics permitted constraints, assumptions and dependencies and requirements subsets.

.2.2.2. Product Functions

This subsection contains the requirements for the E-plant. These requirements are organized by the features discussed in the vision document. Features from vision documents are then refined into use case diagrams and to sequence diagram to best capture the functional requirements of the system. All these functional requirements can be traced using tractability matrix.

.2.2.3. User Classes and Characteristics

Register user

- Login
- View Items
- Filter Categories
- Make Order
- Confirm Order
- View Status
- Chose Payment Method

Visitor

- Registration
- Login
- View Item
- Filter Categories

Jazz Cash

- Payment verification

Web Admin

- Add Items
- View customer details
- View order
- Update status

Manager

- Make web admin
- View customer details
- View status
- View Items

.2.2.4 Operating Environment

The all operation will operate on electronic devices like computer attach scanner for scan code, printer for bill etc. all data will store in DBMS record and web base system.

- IBM
- ORACLE
- MY SQL
- VISUAL STUDIO

.2.2.5Design and Implementation Constraints

1. SQL commands for above queries/website

2. How the response for website 1 and 2 will be generated. Assuming these are global Queries. Explain how various clasess will be combined to do so.

3. Implement the database

2.2.6 User Documentation

The components are:

- Nuxeo
- Office
- Greek book

2.2.7 Assumptions and Dependencies

Assumptions: we assume that our product will full fill the task.

- Supply to customer on time
- Our software will easy to use
- Customer satisfaction
- Customer can check every plant details

- No issue in payment method

Dependencies:

- Quality and price of plant
- Supply on time
- Customer Satisfaction
- Customer interest to use online system
- Well known how to use system

.2.3. External Interface Requirements

2.3.1 User Interfaces

The user interface for the software shall be compatible to any browser such as Internet Explorer, Mozilla or Netscape Navigator by which user can access to the system.

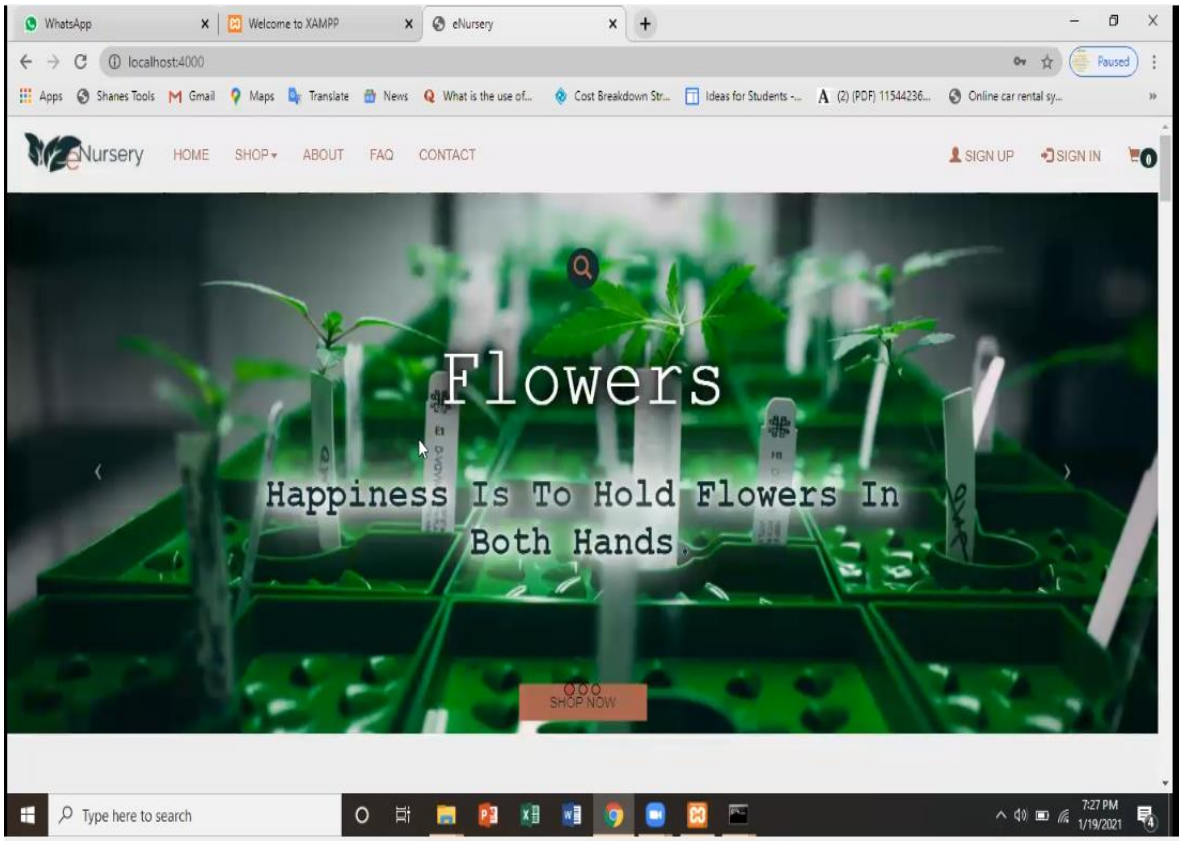


Figure 1: Website User Interface

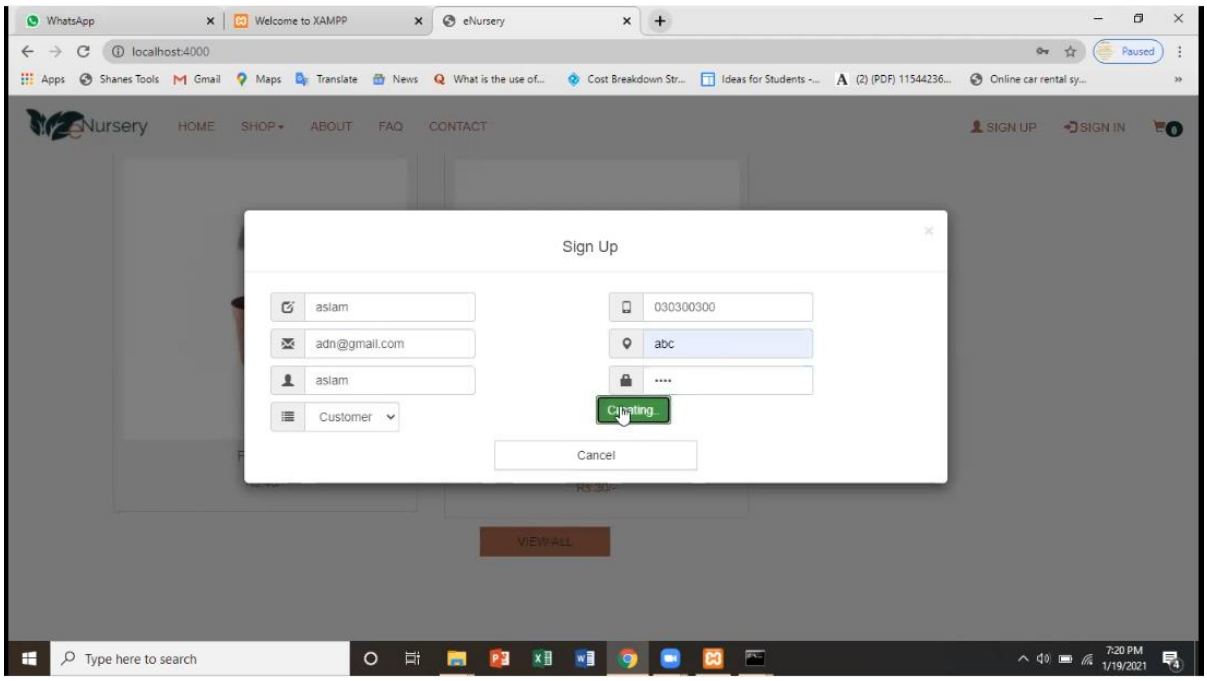


Figure 2: Sign Up Interface

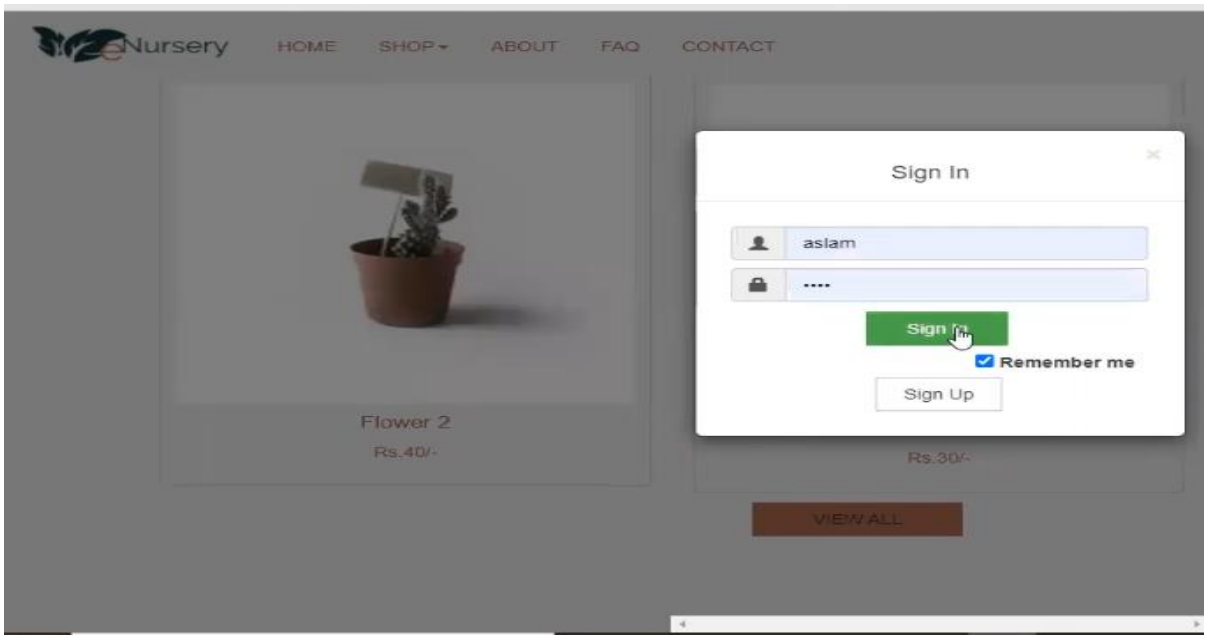


Figure 3: Sign In Interface

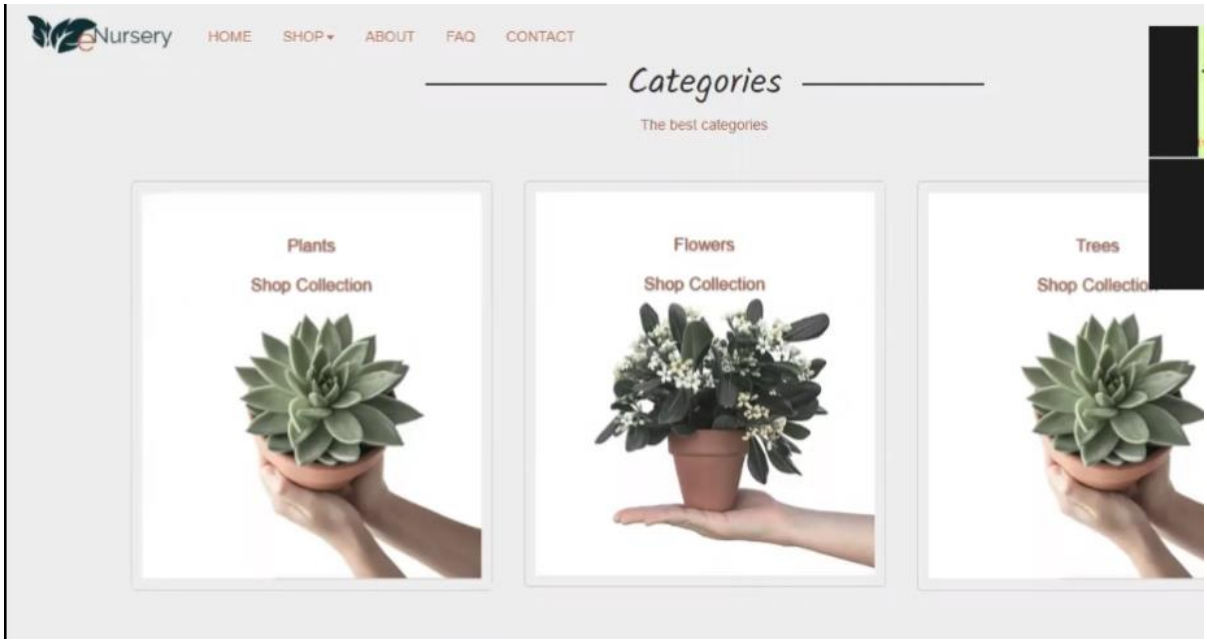


Figure 4: Categories Interface

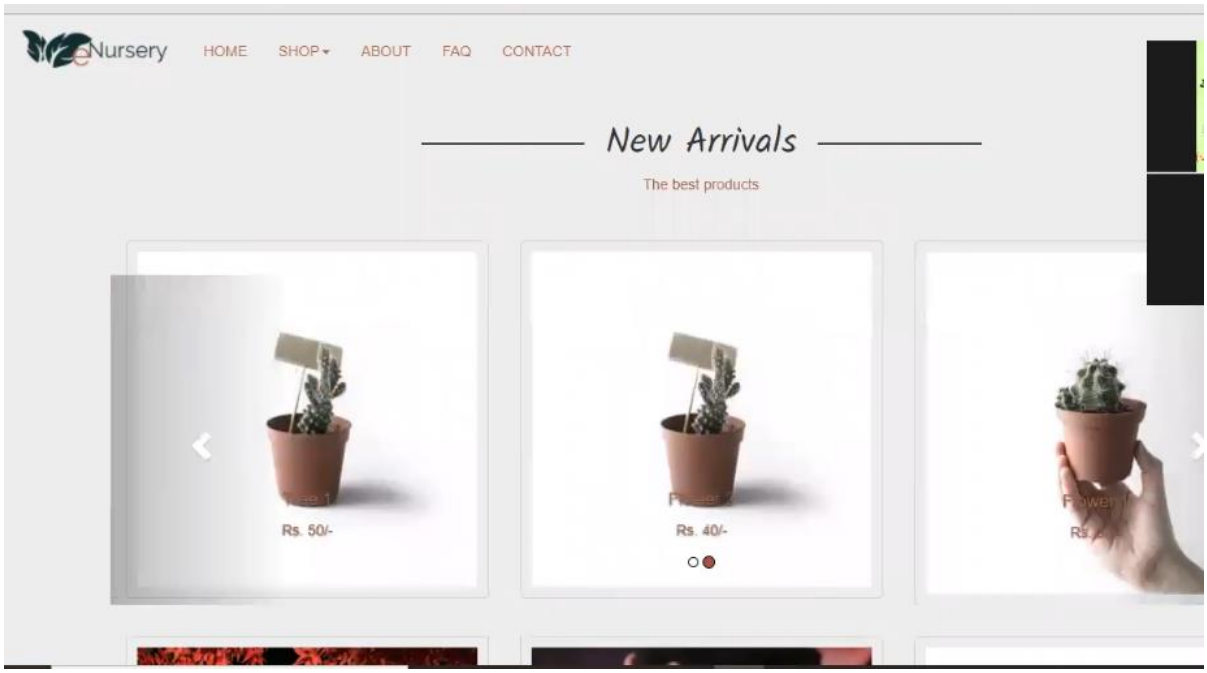


Figure 5: New Arrivals Products Interface

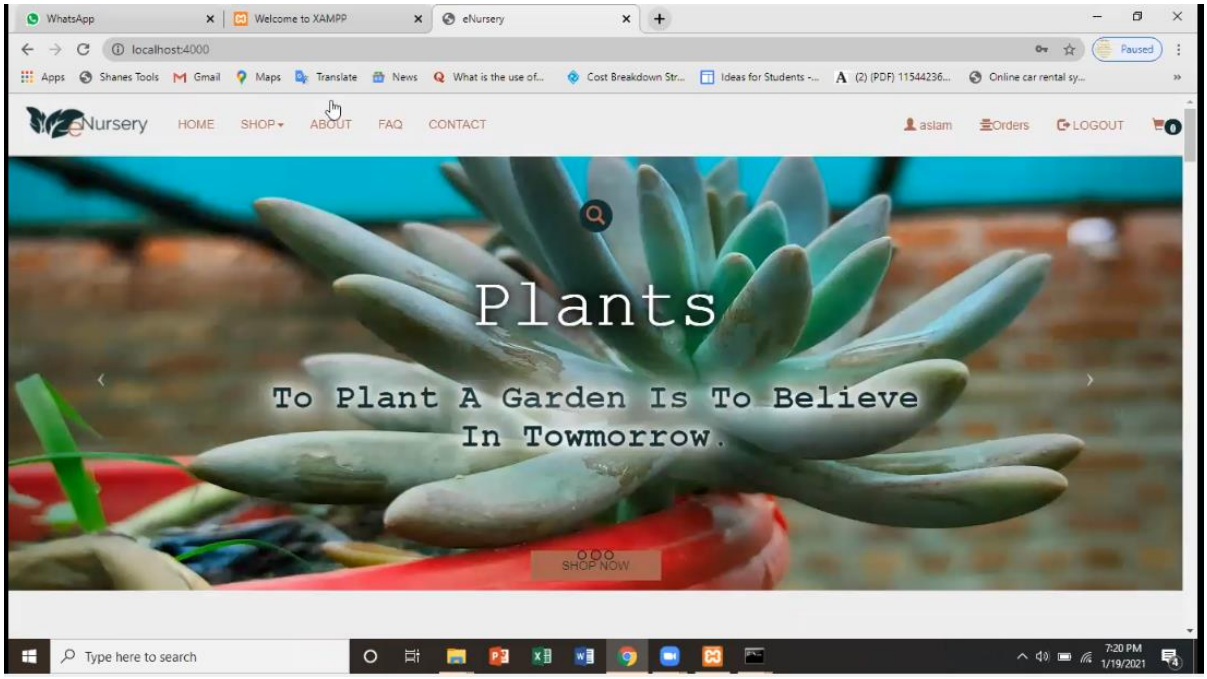


Figure 6: Interface After Register User Login

Figure 7: Interface After Admin Login

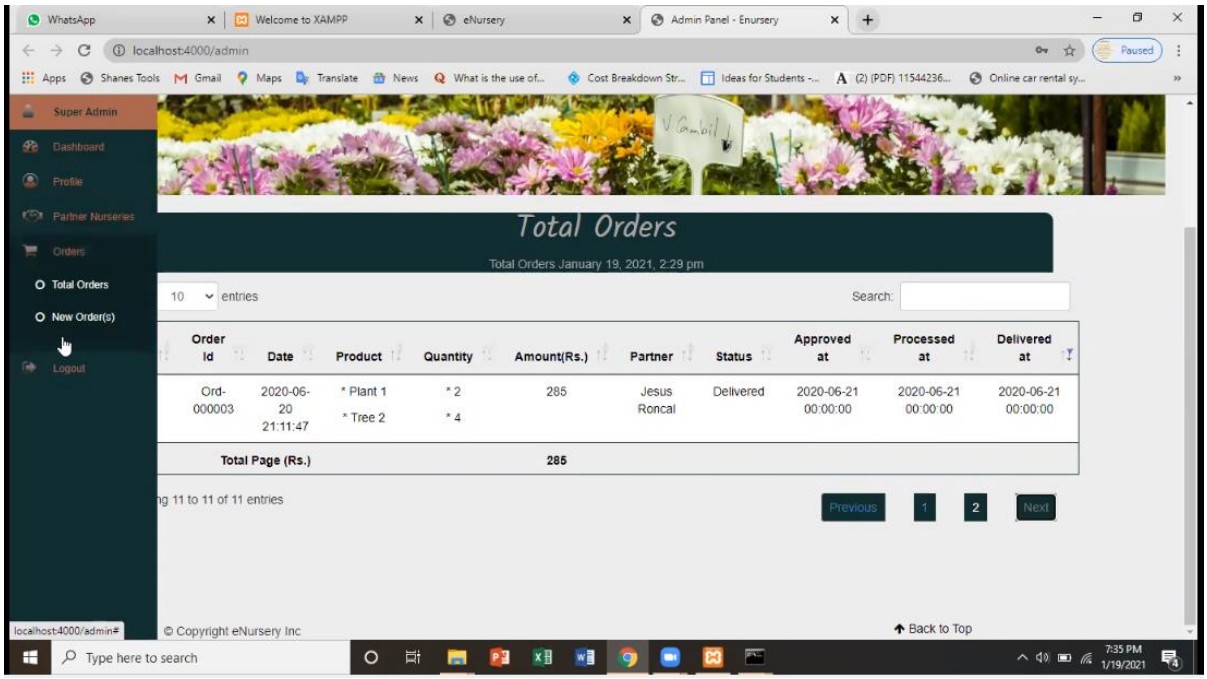


Figure 8: Website Admin Panel

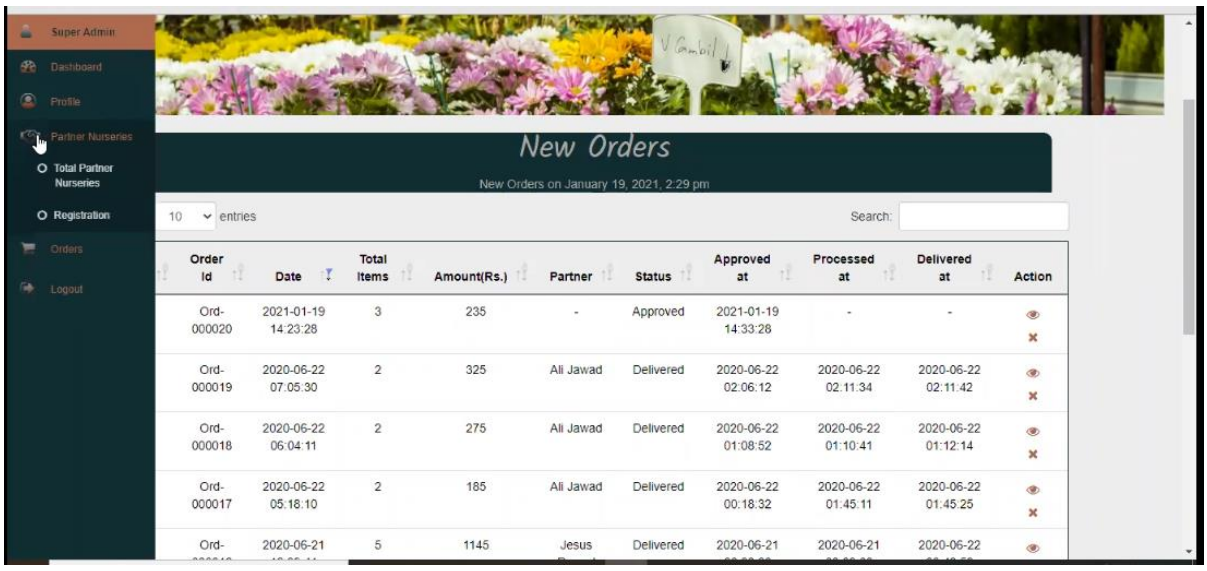


Figure 9: Admin Panel

2.3.2Hardware Interfaces

Since the application must run over the internet, all the hardware shall require to connect internet will be hardware interface for the system. As for e.g. Modem, WAN – LAN, Ethernet Cross-Cable.

.2.3.3. Software Interfaces

- The system will communicate with the Configurator to identify all the available components to configure the product.
- The system will communicate with the content manager to get the product specifications, offerings and promotions.
- The system will communicate with bill Pay system to identify available payment methods, validate the payments and process payment.
- The system will communicate to web management system for handling financing options.
- The system will communicate with CRM system to provide support.

.2.3.4 Communications Interfaces

- The e-store system shall use the HTTP protocol for communication over the internet and for the intranet communication will be through TCP/IP protocol suite.
- We use What's app to communicate customers
- The communication will be secure end to end communication
- System will alert by sms on delivery time and mail for confirm order

.2.4. System Features

They included such items as:

- Payment Options: We use Jazz Cash, Credit card or COD method for payment

- Site Search & Browse: Visitors or customer to [E-Plant] have a need for speed - and it starts with time-saving search
- Product Reviews: the customer can check available plants.
- Special Offers: Regular customer have opportunity our special offers like buy one get one free, discount.
- Real-Time plant: all display plants will be same to deliver plants
- Order Tracking: email and sms will b confirmed time of delivery that build confidence of system

.2.4.1 Payment Option

- Jazz Cash
- Credit cart
- Cash in delivery

.2.4.1.1 Description and Priority

Description:

The customer can pay money different method like credit cart, jazz cash, COD method, in Credit card customer will pay using bank account balance, jazz cash is similar to credit card but difference you have always balance in jazz cash account and pay easily by mobile, COD if you not have online account customer can pay by hand, time of delivery.

Priority:

Payment method have high priority you cannot confirm order without pay money. And high risk in case of COD.

.2.4.1.2 Stimulus/Response Sequences

- Confirm order: confirmed order if you done shop
- Chose payment method: pay a method to pay your dues
- Confirm payment by jazz cash: pay by jazz cash and received sms of confirmation
- Receive payment confirmation message: message receive
- Confirmed order by web admin: web admin can confirmed order if payment is done

.2.4.1.3 Functional Requirements

- Login
- Make order
- Confirm order
- Pay money
- Confirmation code

Requirements:

REQ-SF1-1: Registration

REQ-SF1-2: confirm order

REQ-SF1-3: Pay bill

.2.4.2 Site Search and Browse

- Registration and login
- Filter categories
- View available items
- View details

.2.4.2.1 Description and Priority

Description:

System available easily everywhere on Pc, android and browsing available easily. System layout will be smooth and easy to use no extra traffic required, only required details will show.

Priority:

Searching and browsing will have high priority fast and accurate result within seconds system will be automated intelligent. There is lot of risk if site not found by name and difficult to browsing.

.2.4.2.2 Stimulus/Response Sequences

- Registration: for enter in system
- Search items: search your plants

- Add to cart: add plants what you like
- View available plants: view all types of plants available in system
- Read description: read description of each plants
- Confirm order: confirmed if your shopping is done

2.4.2.3 Functional Requirements

- Connect with internet
- Easy to search and browse
- Searching will be accurate

Requirements:

REQ-SF2-1: Login

REQ-SF2-2: Search items

REQ-SF2-3: view items

.2.4.3. Real Time Plants

- Confirmed order
- Receive order
- Both will be same

.2.4.3.1 Description and Priority

Description:

The confirmed order and receive order will be same real time inventory means all plants you see and confirmed will be as it is whose deliver you.

Priority:

For repudiation of system real time plant have high response this is for customer satisfaction.

.2.4.3.2. Stimulus/Response Sequences

- View plants: check the plants
- Select plants: selected like plants

- Confirmed order: confirmed shopping
- Received check order: check the plants on delivery
- Claim order: claim if order is not same

.2.4.3.3 Functional Requirements

- Login
- Make order
- Confirm order
- Receive order
- Claim order

Requirements:

REQ-SF2-1: check and make order

REQ-SF2-2: confirm order

REQ-SF2-3: receive and claim order

.2.5. Other Nonfunctional Requirements

.2.5.1 Performance Requirements

A non-functional requirement defines the performance attribute of a software system. Types of Non-functional requirement are:

- Scalability Capacity,
- Availability,
- Reliability,
- Recoverability,
- Data Integrity, etc.

.2.5.2. Safety Requirements

- Do not leak user information
- User order accuracy
- System granted
- Control Any third person presence
- backup

.2.5.3 Security Requirements

- The system will secure
- Only register member use software
- System update only web admin
- Customer cannot check other customer details
- Any second person cannot get access customer payment details.

.2.5.4. Software Quality Attributes

- Reliability. System will be 100% reliable and full fill on customer demand
- Reusability. customer can use system at any time and many more times he wants
- Correctness. All data show will be on user search demand correct name and correct picture of plant
- Testability. System will launch after the survey and test in society
- Adaptability. System will update time to time and ever new features will add time to time
- Maintainability. System will maintain on schedule time

.2.5.5 Business Rules

- System user behave must be good
- If customer make order and have any issue to confirmed order like money problem customer can leave system without any lose but order will not be done
- If you pay by COD you will be sincere, if you show insincerely you will lose membership
- Read description of all plants, don't claim any miss guide.

.2.6. Other Requirements

- For registration customer phone no, email id, address, are required
- All registration and login requirements fulfill correctly
- User feedback is required

Chapter 3

Use Case Analysis

Chapter 3: System Analysis

In IT, systems analysis can include looking at end-user implementation of a software package or product; looking in-depth at source code to define the methodologies used in building software; or taking feasibility studies and other types of research to support the use and production of a software product, among other things.

Systems analysis professionals are often called upon to look critically at systems, and redesign or recommend changes as necessary. Inside and outside of the business world, systems analysts help to evaluate whether a system is viable or efficient within the context of its overall architecture, and help to uncover the options available to the employing business or other party.

.3.1 Use Case Model

[E-plant] Use Case Diagram. This Use Case Diagram is a graphic depiction of the interactions among the elements of online plants by the help of actor that is user of system. It represents the methodology used in system analysis to identify, clarify, and organize system requirements of E-plant.

Actor of use case diagram are:

- Visitor user
- Register user
- Web admin
- Manager

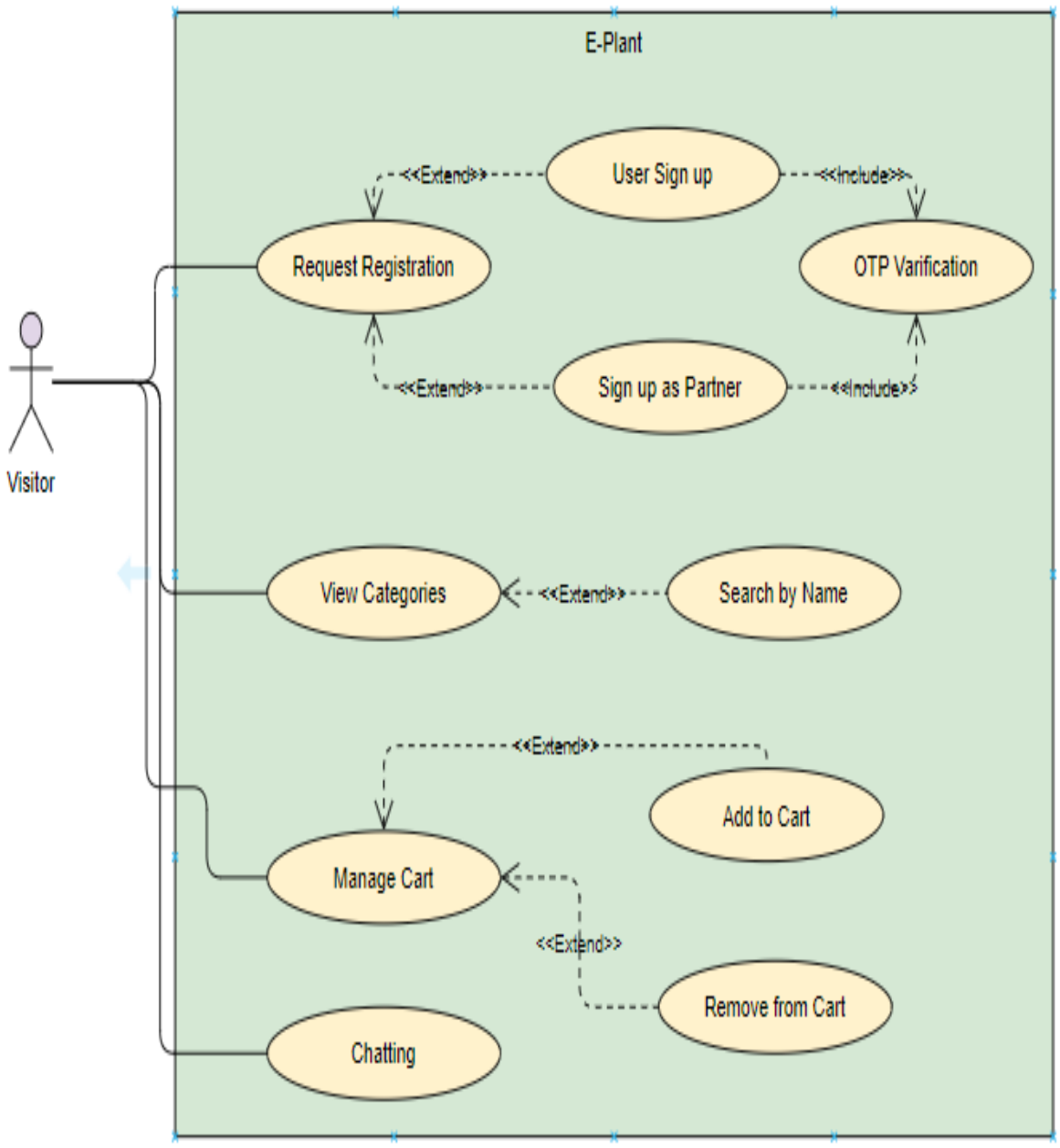

E-Plant
User Sign up
<<Extend>>
<<Include>>
Request Registration
OTP Varification
<<Extend>>
Sign up as Partner
<<Include>>
Visitor
View Categories
<<Extend>>
Search by Name
<<Extend>>
Add to Cart
Manage Cart
<<Extend>>
Remove from Cart
Chatting

Figure 1

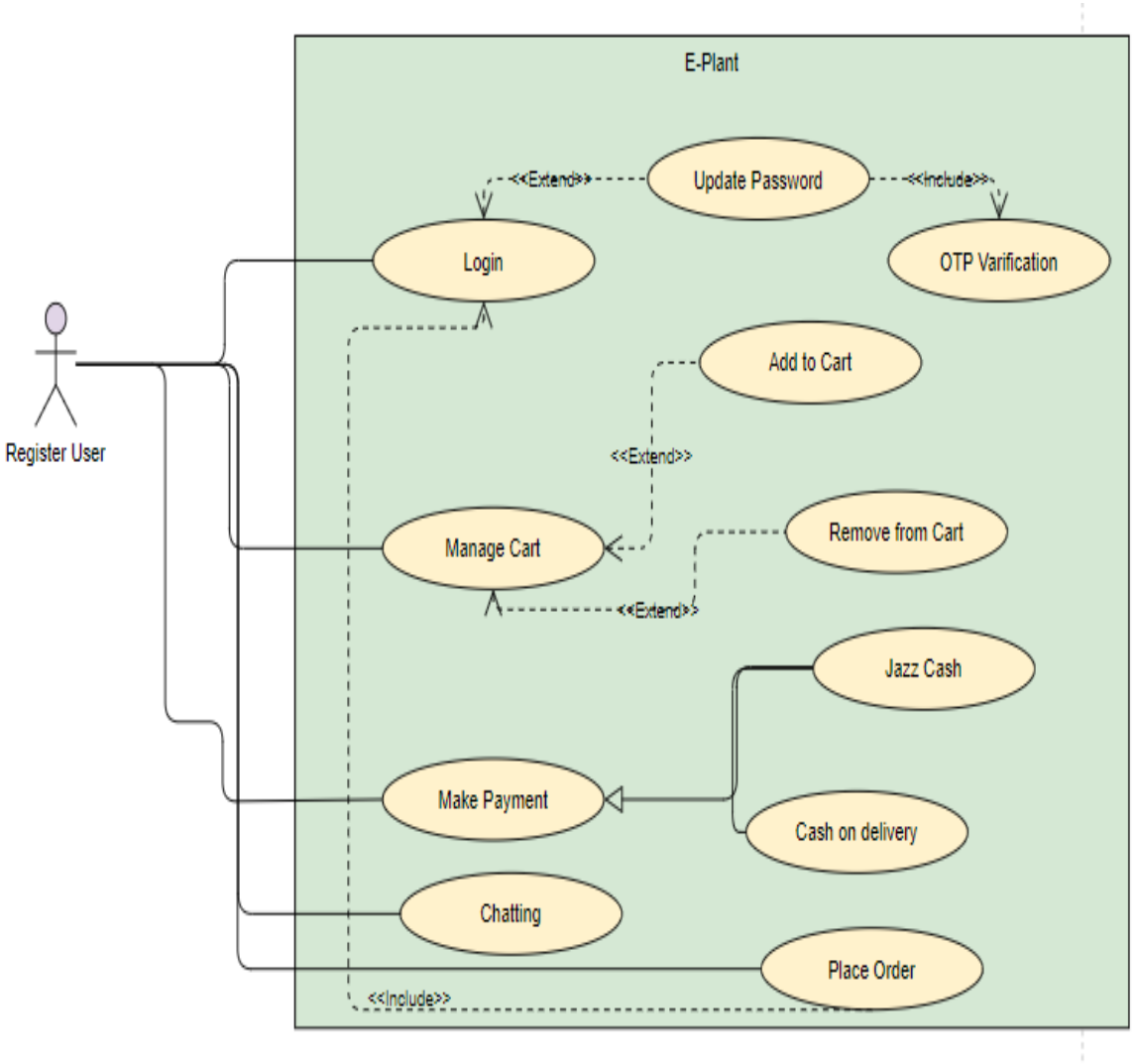

E-Plant
Update Password
<<Extend>>
<<Include>>
Login
OTP Varification
Add to Cart
Register User
<<Extend>>
Manage Cart
Remove from Cart
<<Extend>>
Jazz Cash
Make Payment
Cash on delivery
Chatting
Place Order
<<Include>>

Figure 2

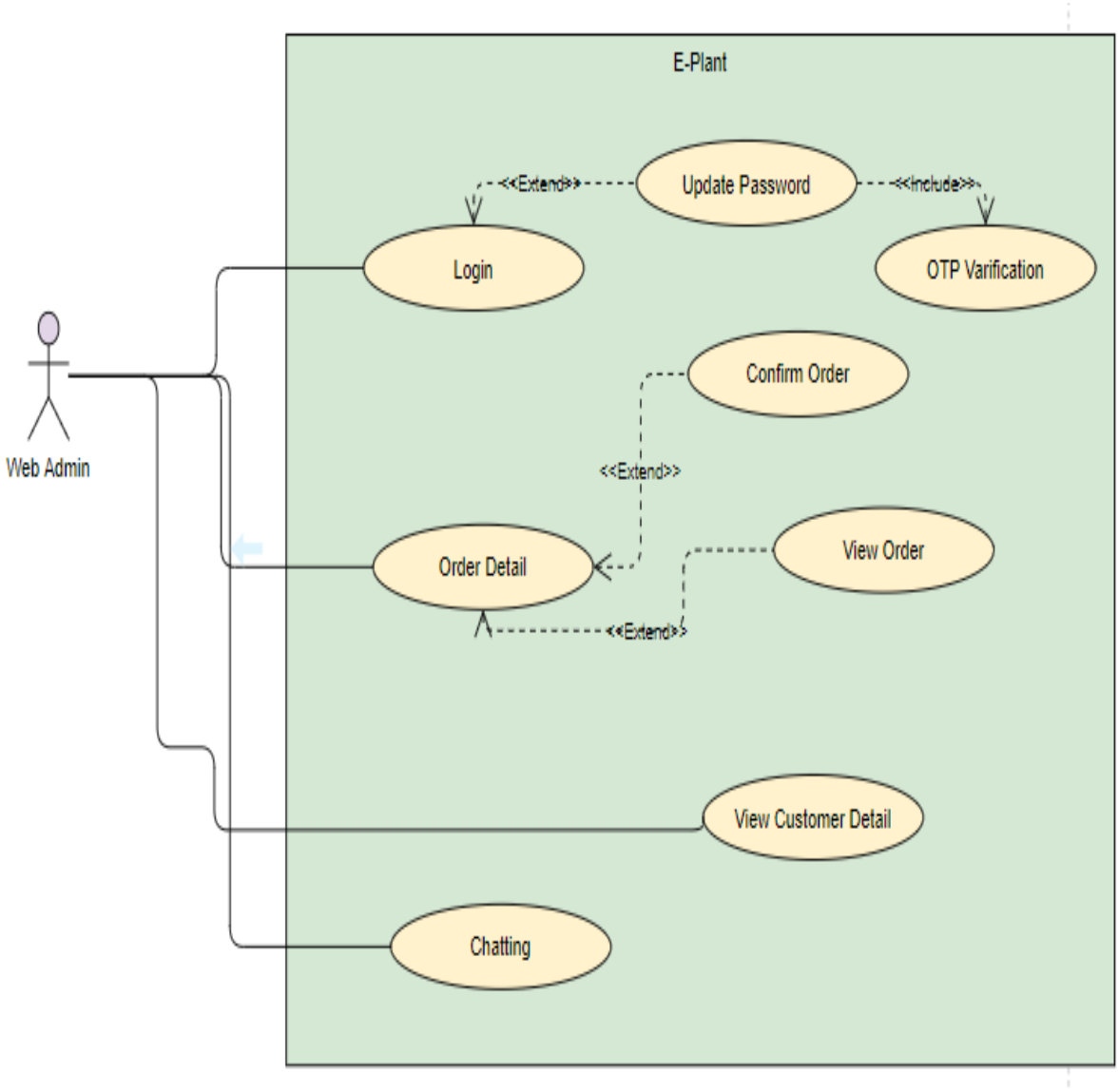

E-Plant
Update Password
<<Extend>>
<<include>>
Login
OTP Varification
Confirm Order
<<Extend>>
Web Admin
Order Detail
View Order
<<Extend>>
View Customer Detail
Chatting

Figure 3

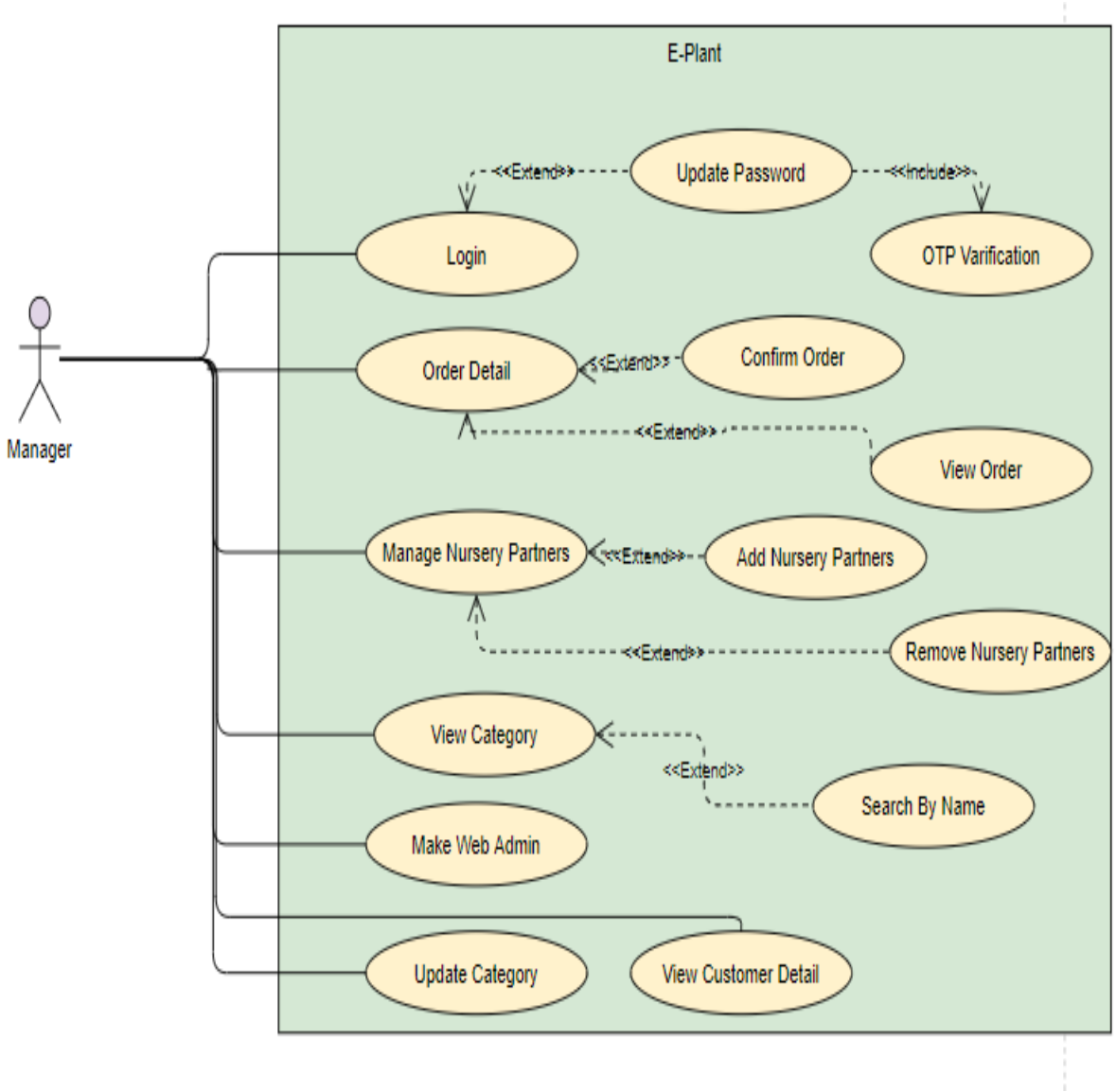


Figure 4 : Manager Use Case Diagram

3.2. Fully Dressed Use Cases

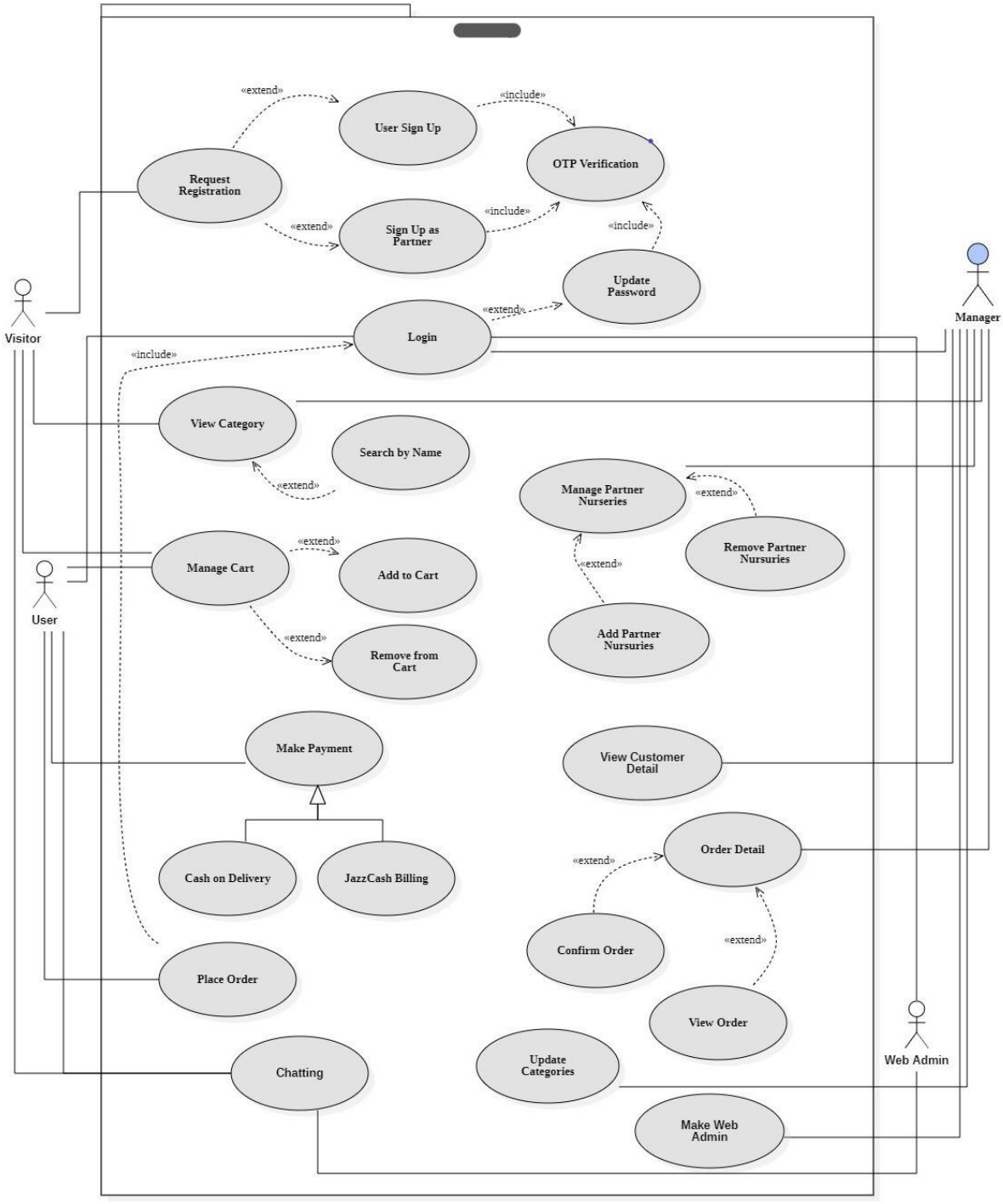


Figure 5 (.3.2.1)

Chapter 4

System Design

Chapter 4: System Design

Systems design is the process of defining the architecture, modules, interfaces, and data for a system to satisfy specified requirements. Systems design could be seen as the application of systems theory to product development. The purpose of the System Design is to supplement the system architecture providing information and data useful and necessary for implementation of the system elements.

4.1. Architecture Diagram

Following Architecture Diagram of e donation is a graphical representation to understand, clarify, and communicate ideas about the website structure and the user requirements that the website must support.

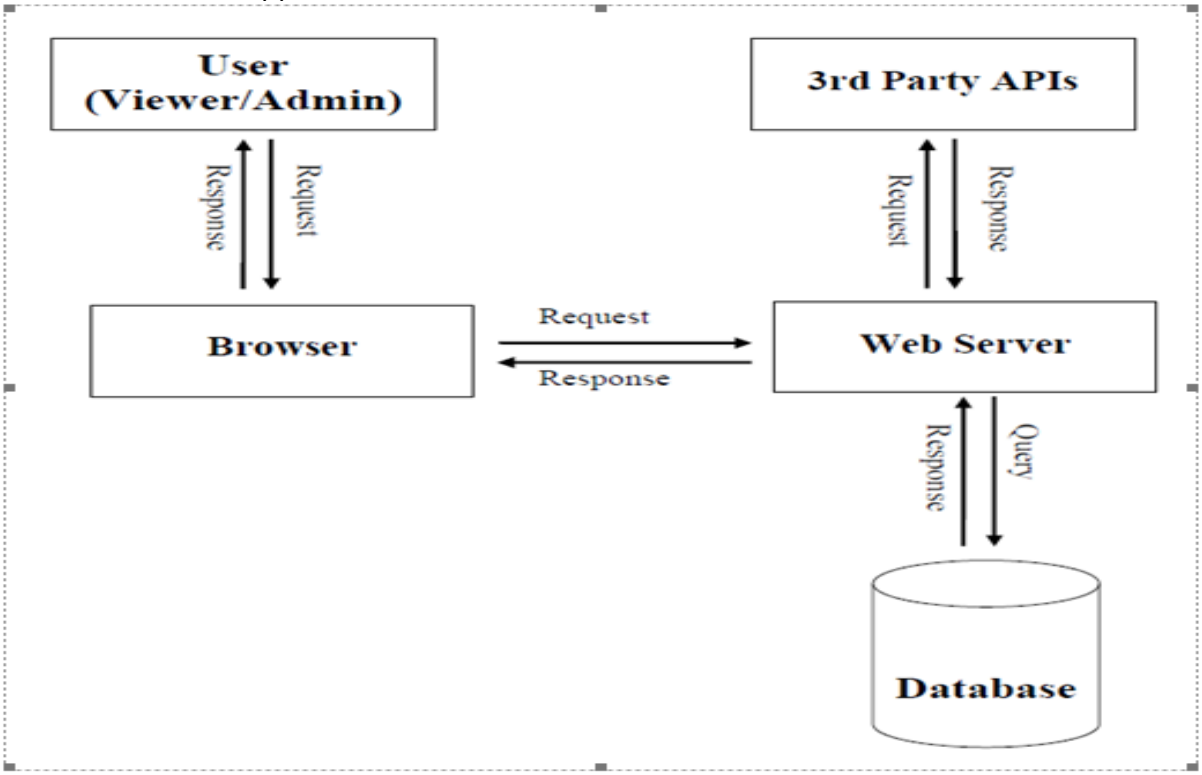


Figure 1

4.2. Domain Model

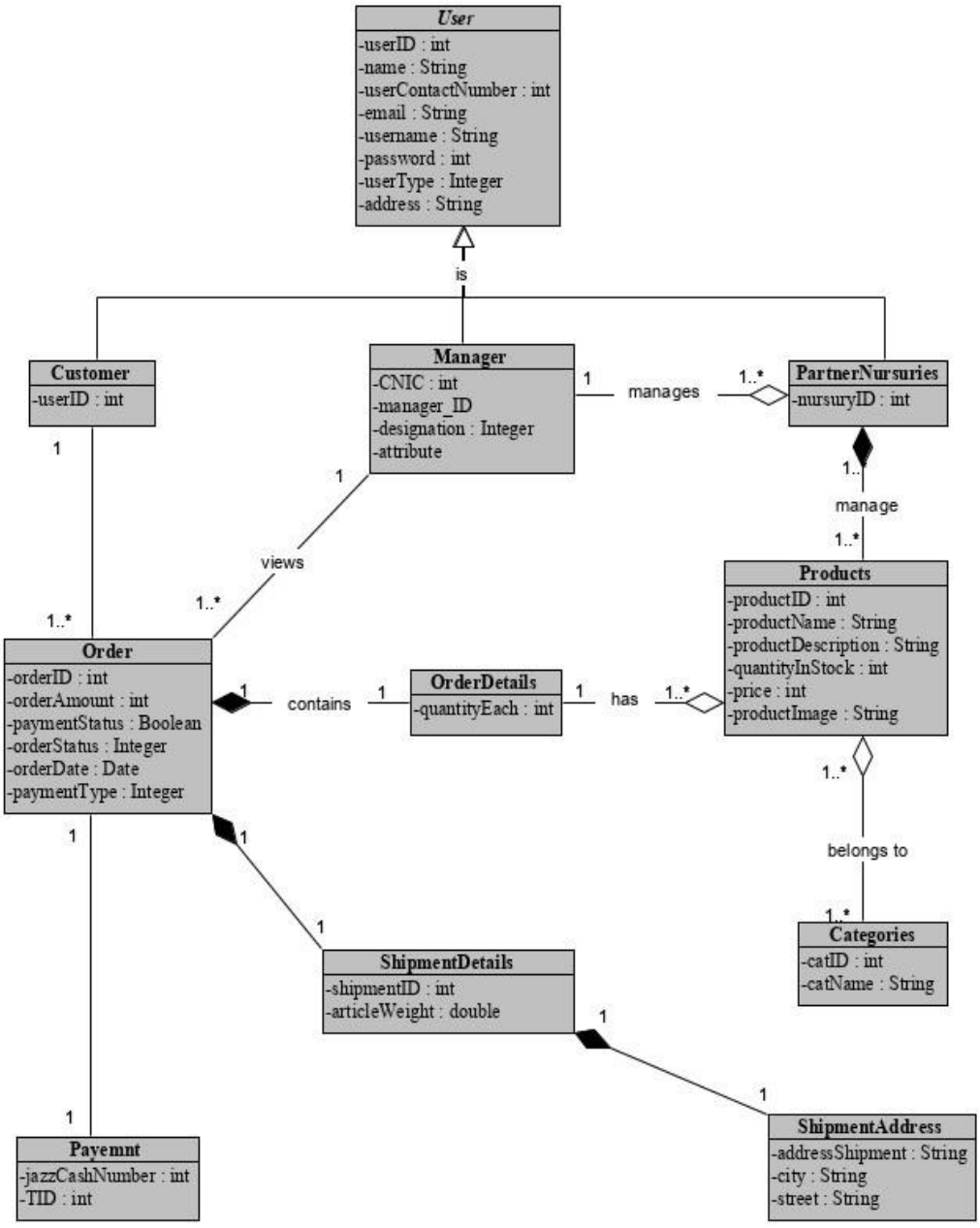


Figure 2

4.3. Entity Relationship Diagram with data dictionary

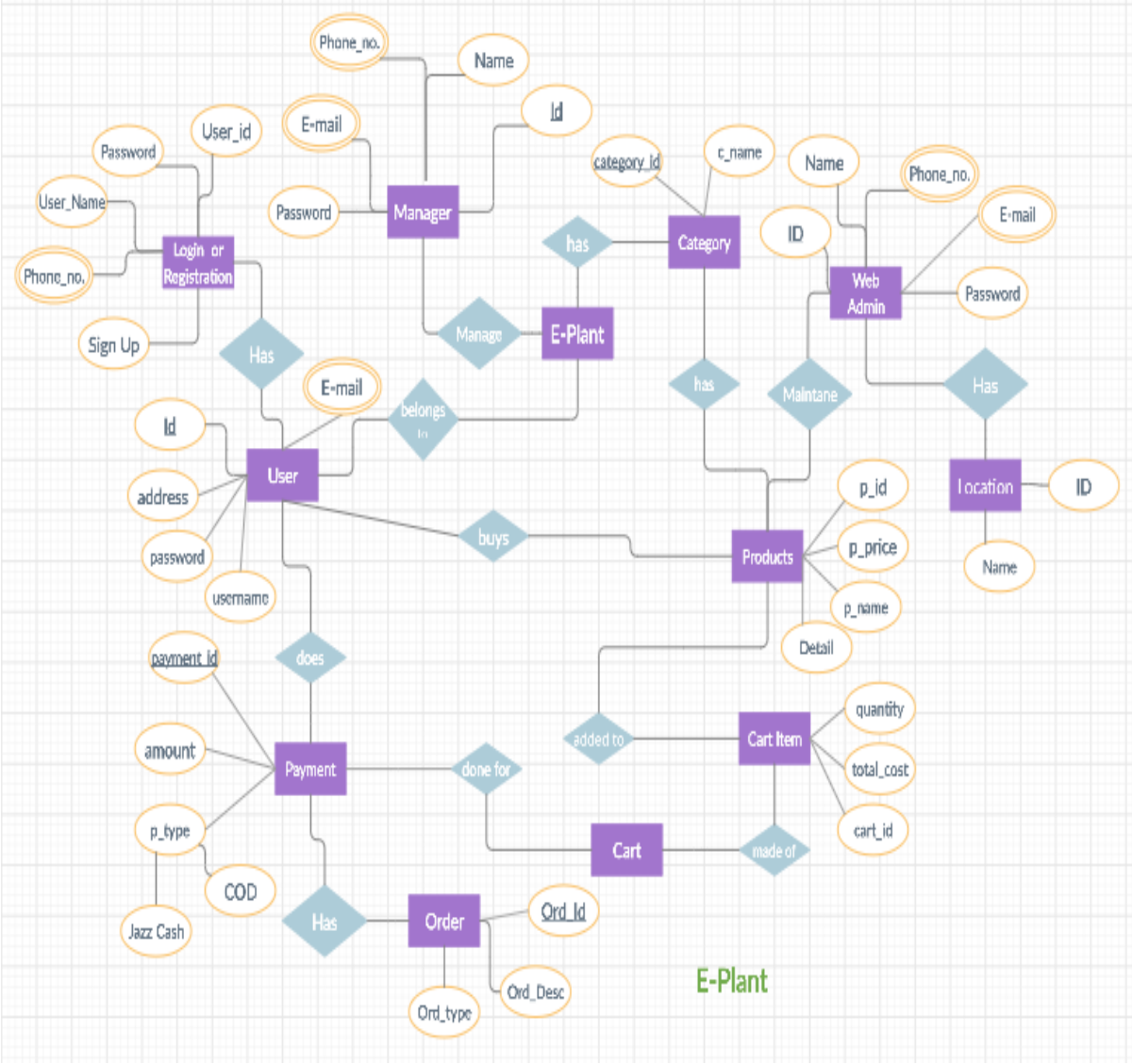


Figure 3

4.4. Class Diagram

In software engineering, a class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among objects

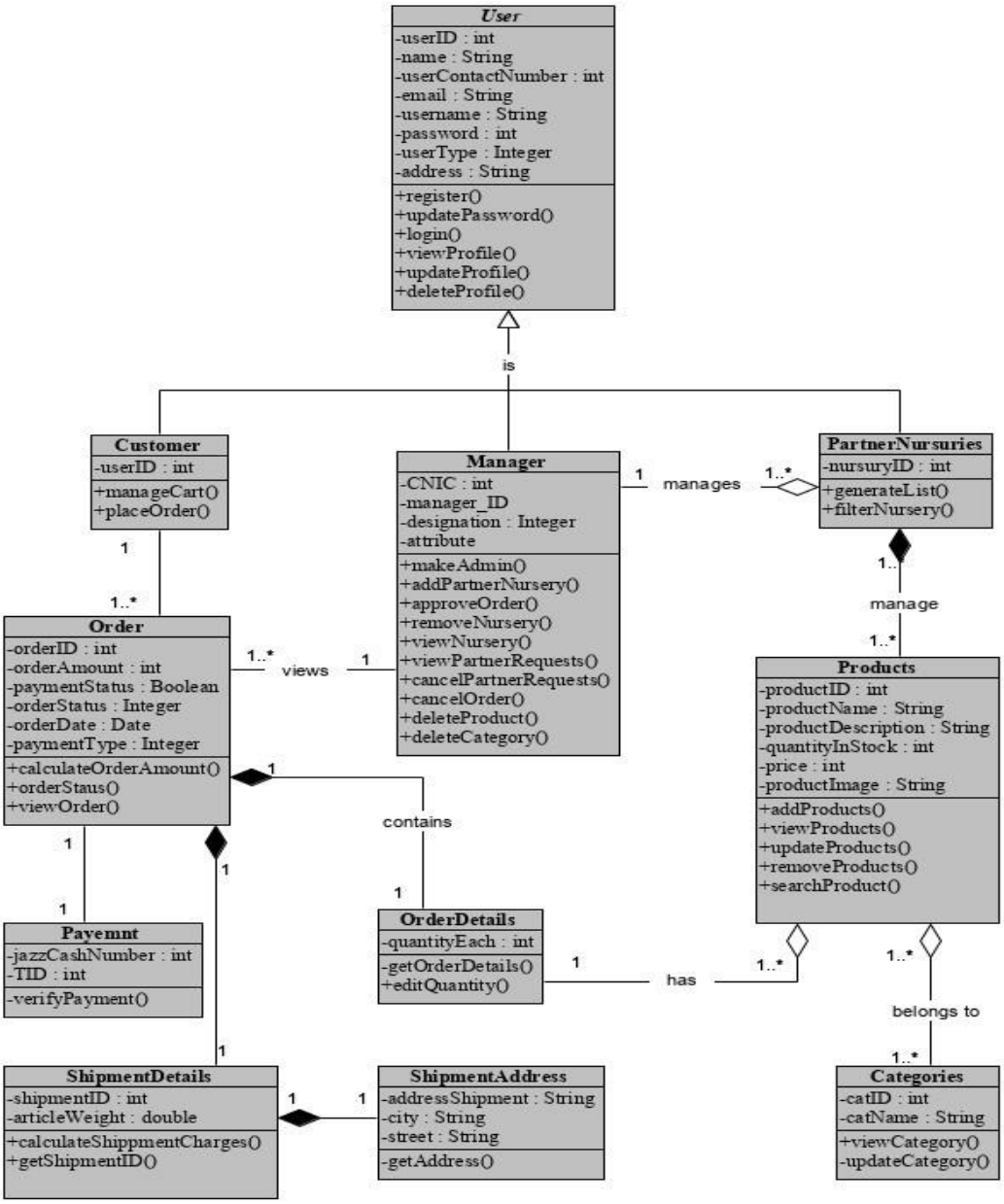


Figure 4

4.5. Sequence / Collaboration Diagram

The following Sequence Diagram shows system's objects interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the system.

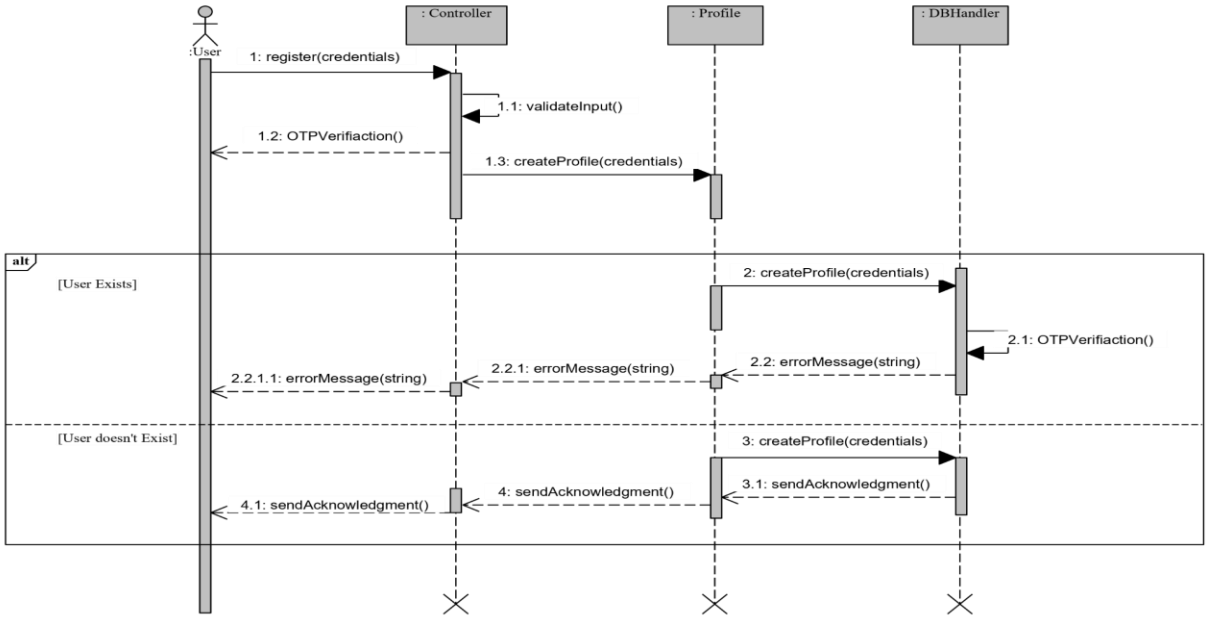


Fig 4.5.1 Sequence Diagram for UC_Registration

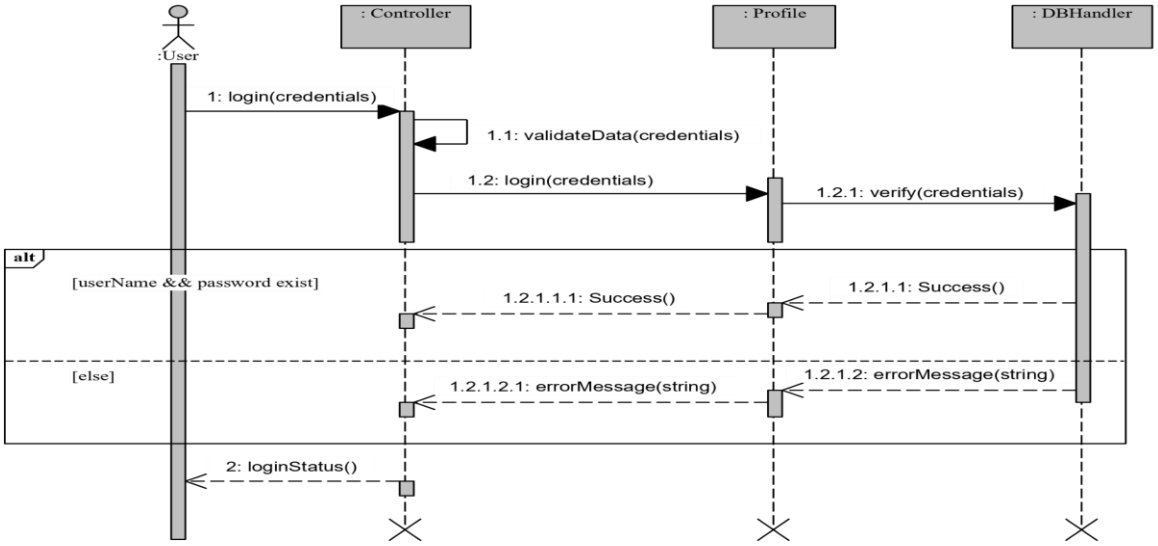


Fig 4.5.2 Sequence Diagram for UC_Login

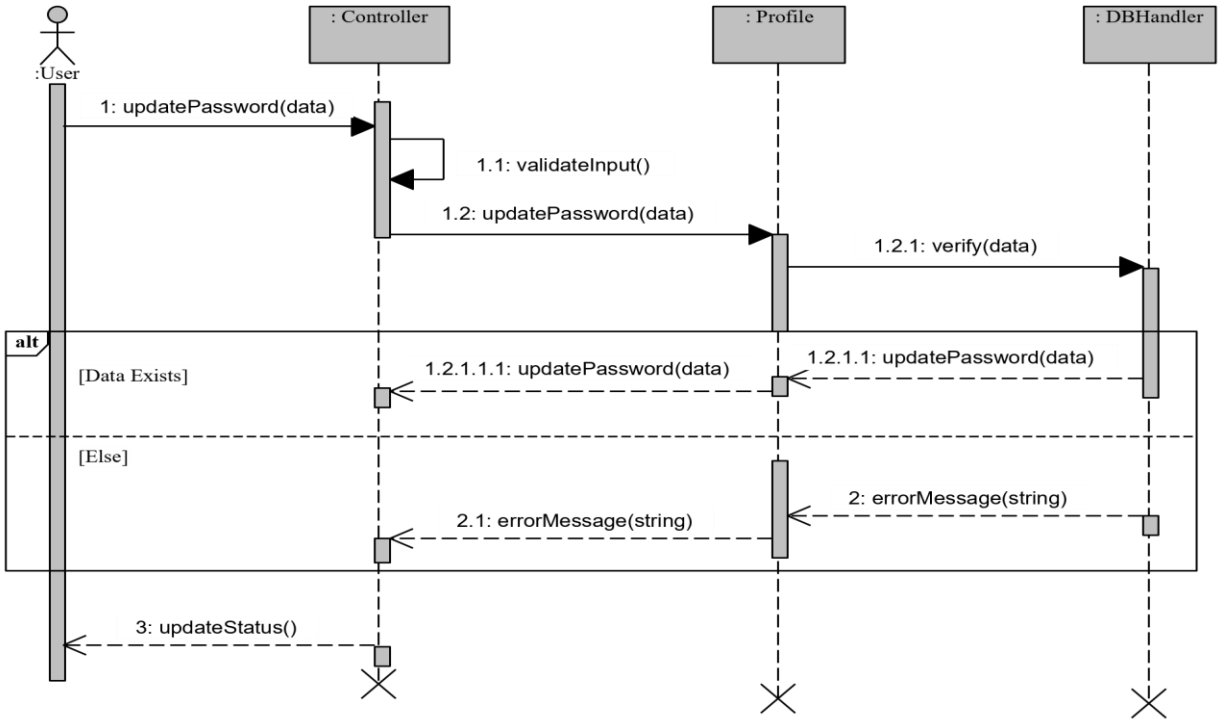


Fig 4.5.3 Sequence Diagram for UC_Update_Password

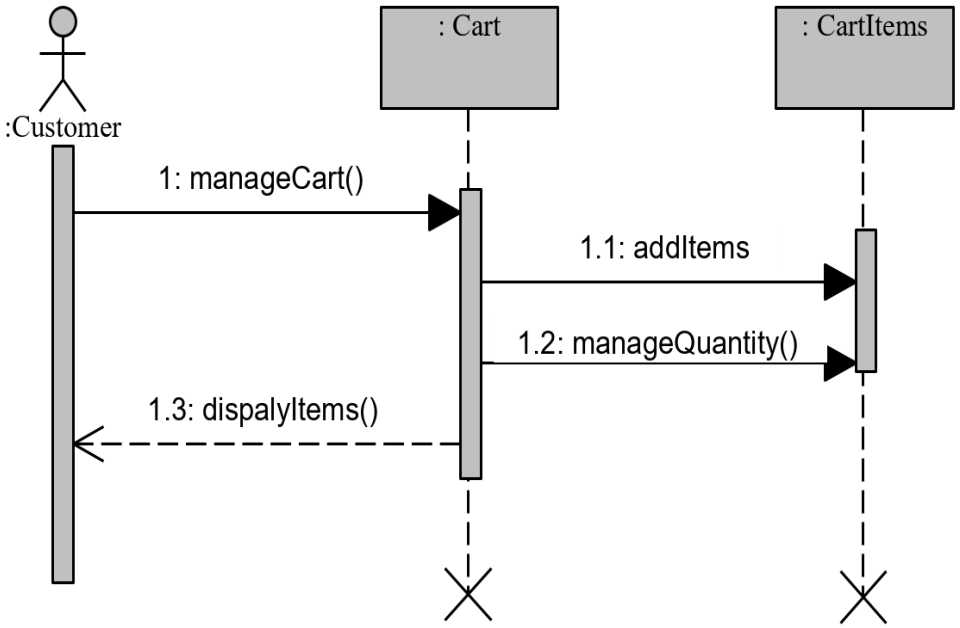


Fig 4.5.4 Sequence Diagram for UC_Add_to_Cart

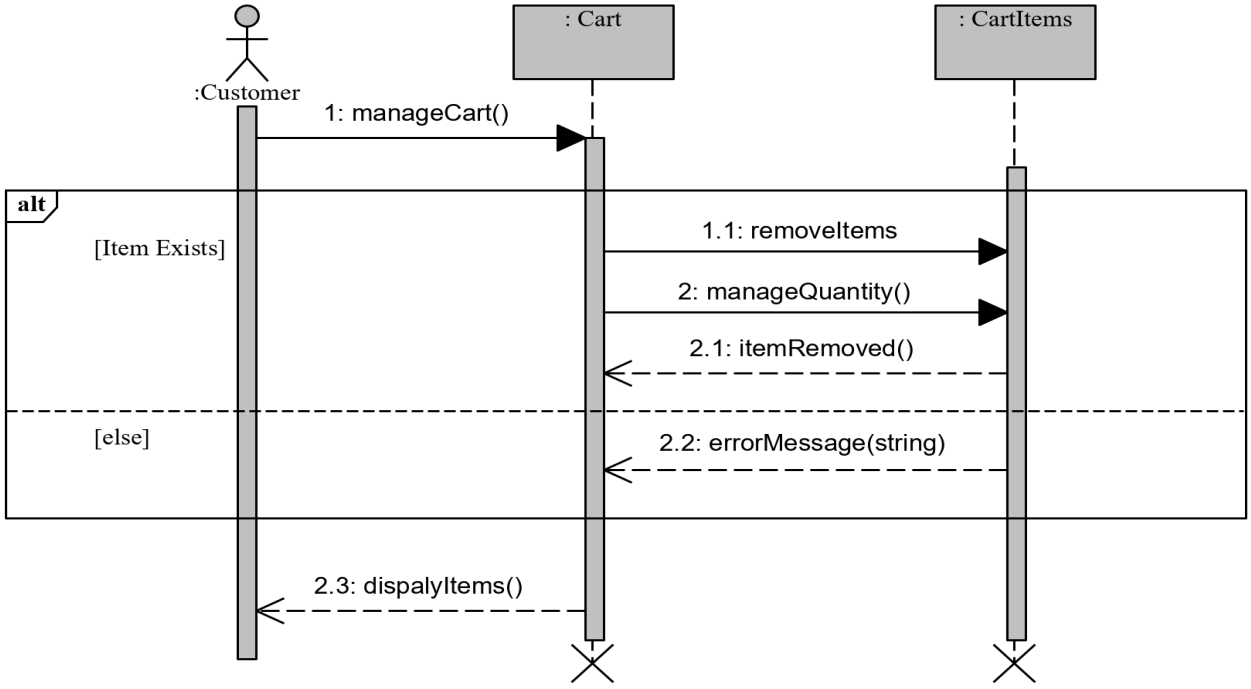


Fig 4.5.5 Sequence Diagram for UC_Remove_from_Cart

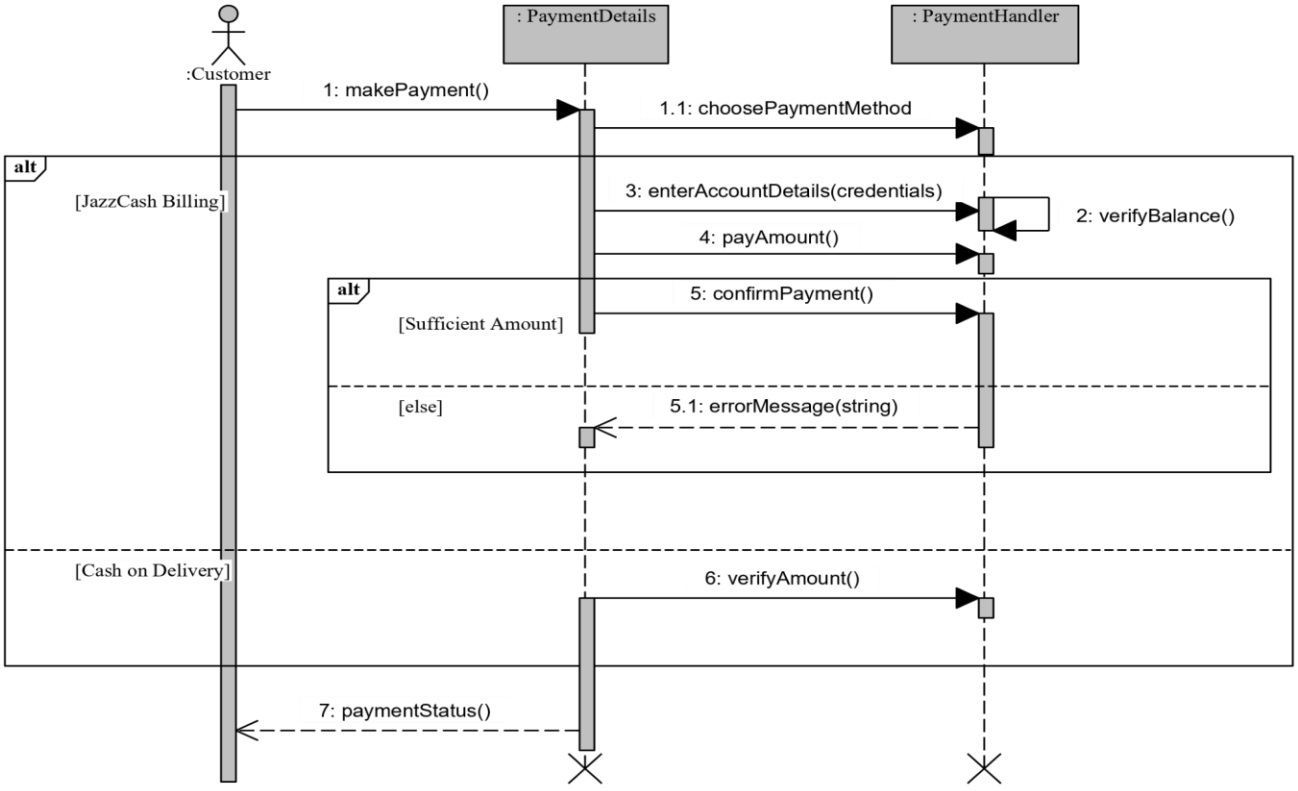


Fig 4.5.6 Sequence Diagram for UC_Make_Payment

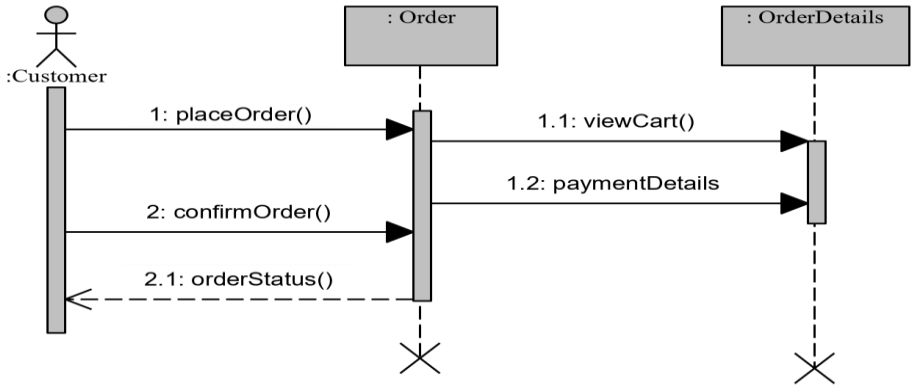


Fig 4.5.7 Sequence Diagram for UC_Place_Order

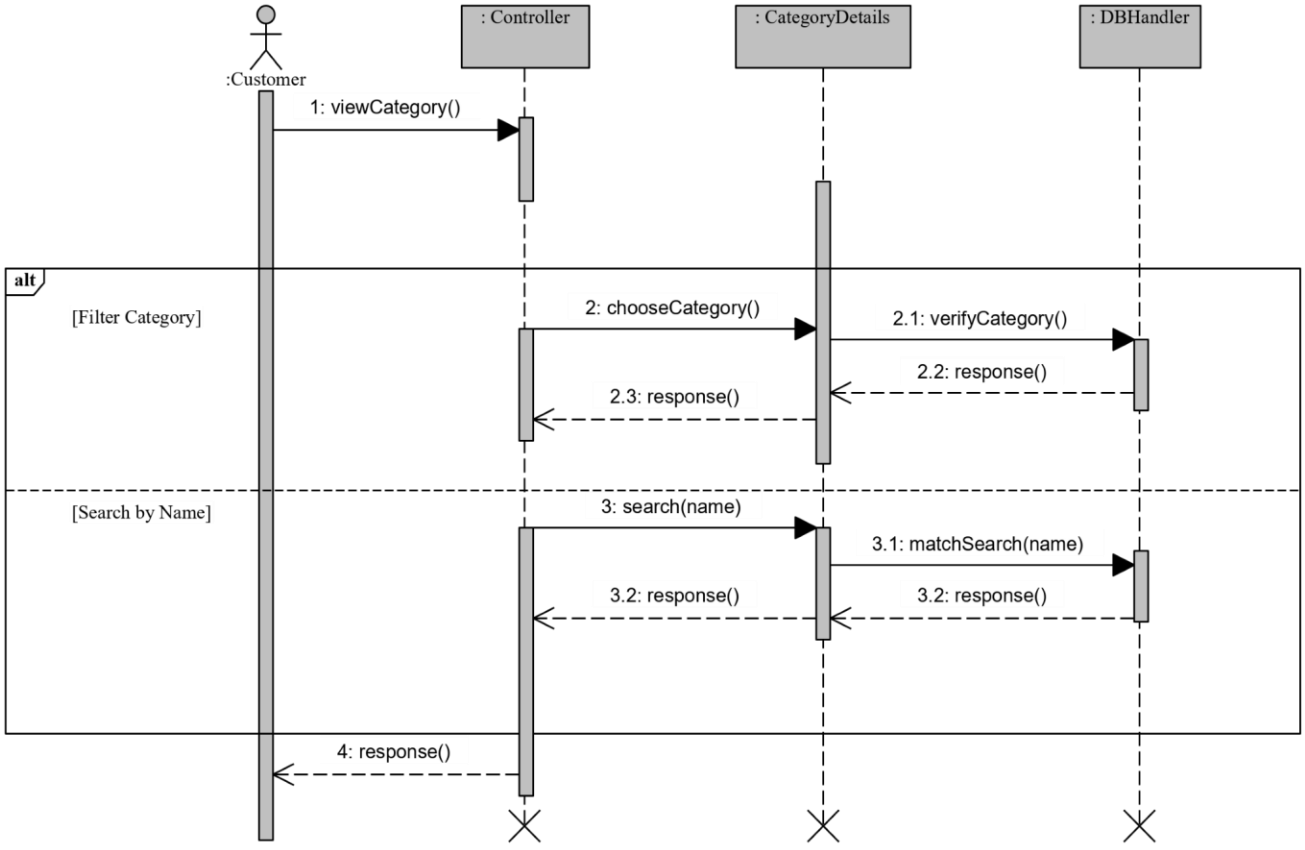


Fig 4.5.8 Sequence Diagram for UC_View_Categories

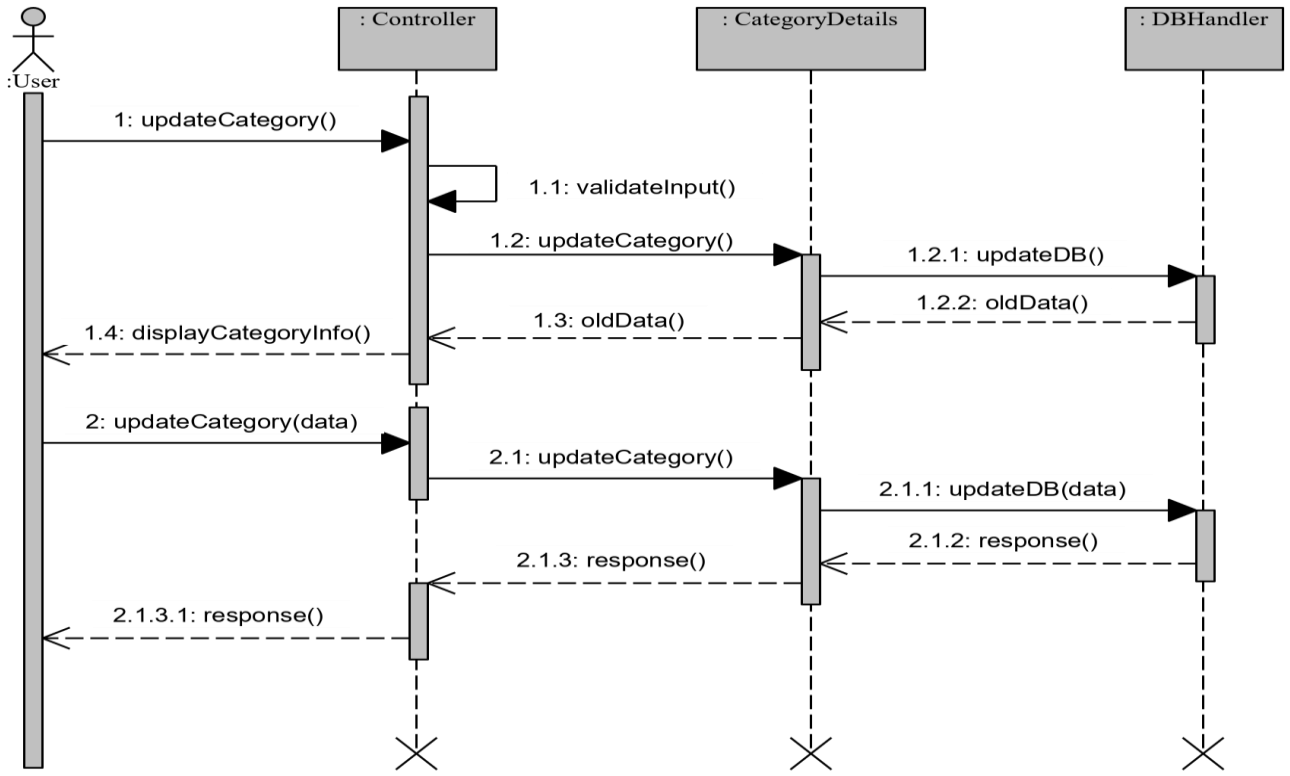


Fig 4.5.9 Sequence Diagram for UC_Update_Categories

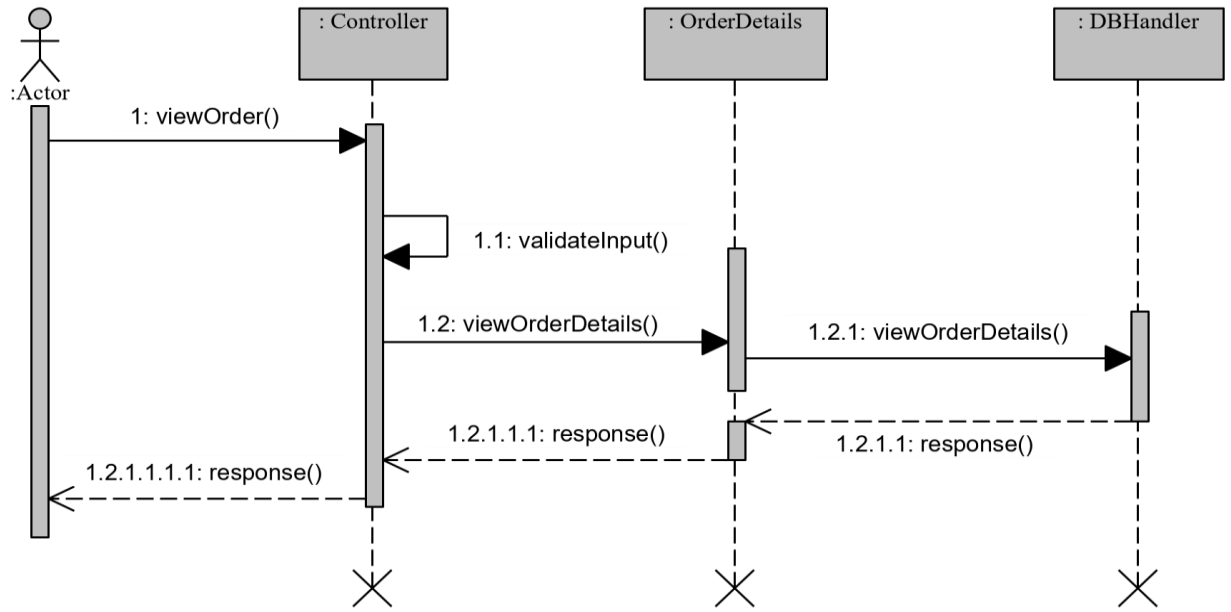


Fig 4.5.10 Sequence Diagram for UC_View_Order

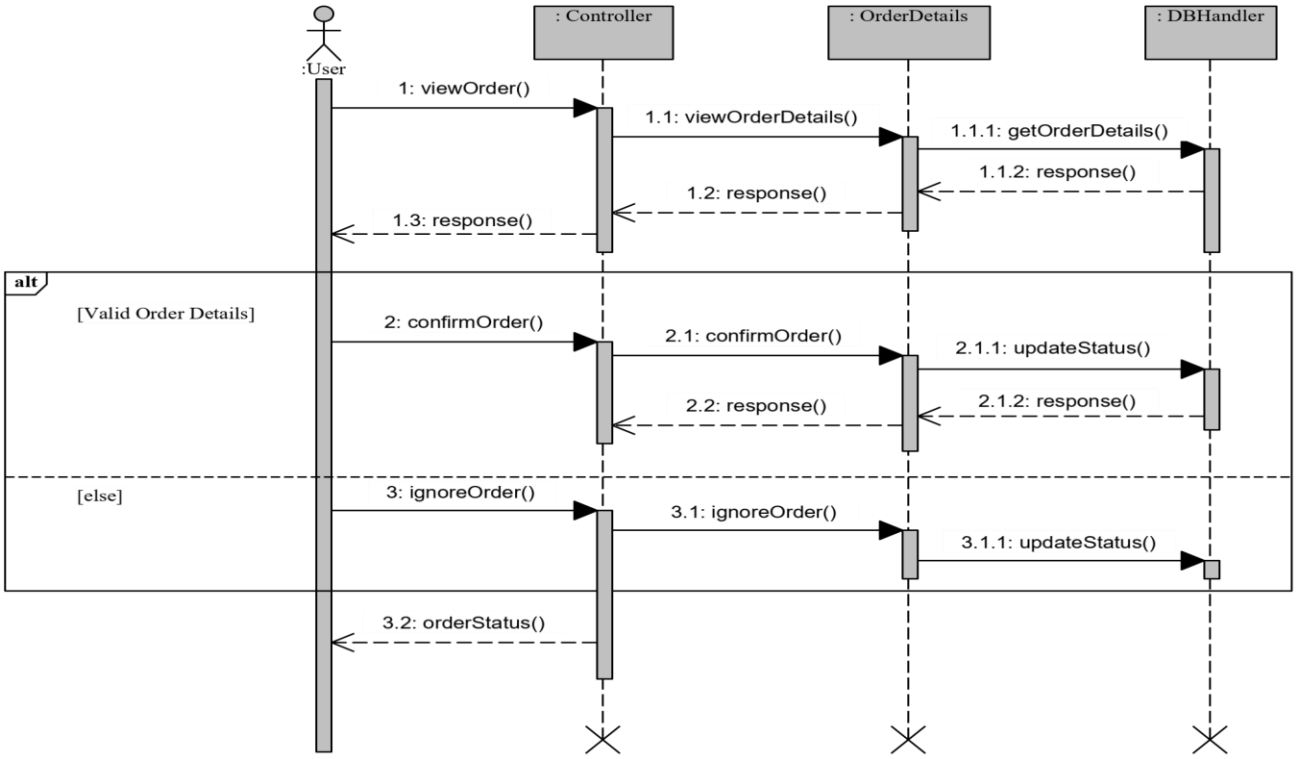


Fig 4.5.11 Sequence Diagram for UC_Confirm_Order

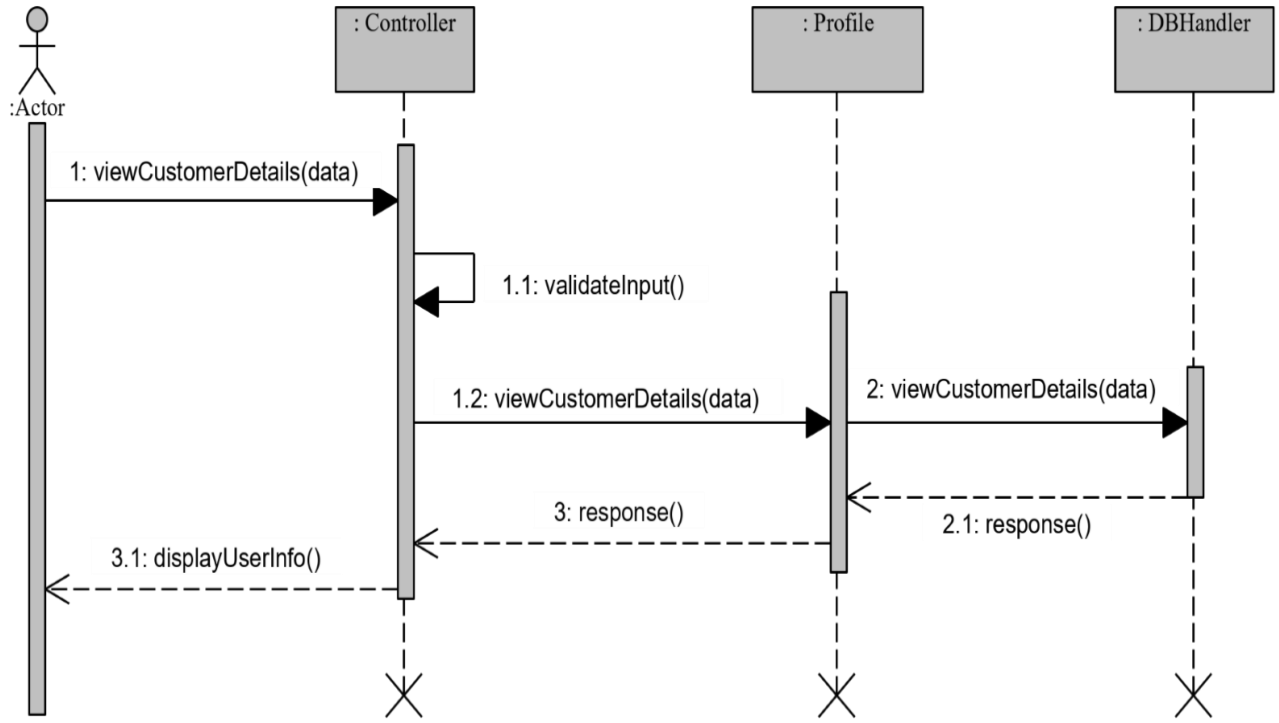


Fig 4.5.12 Sequence Diagram for UC_View_Customer_Detail

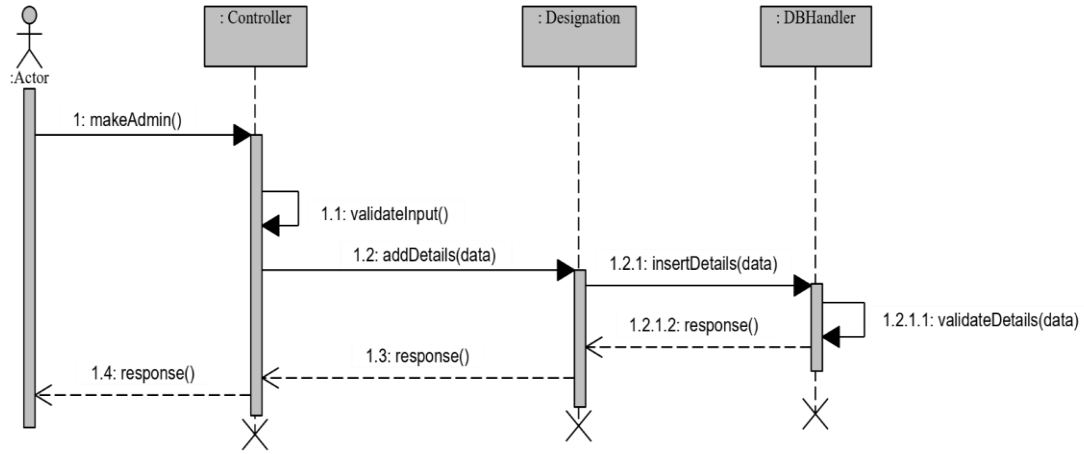


Fig 4.5.13 Sequence Diagram for UC_Make_Admin

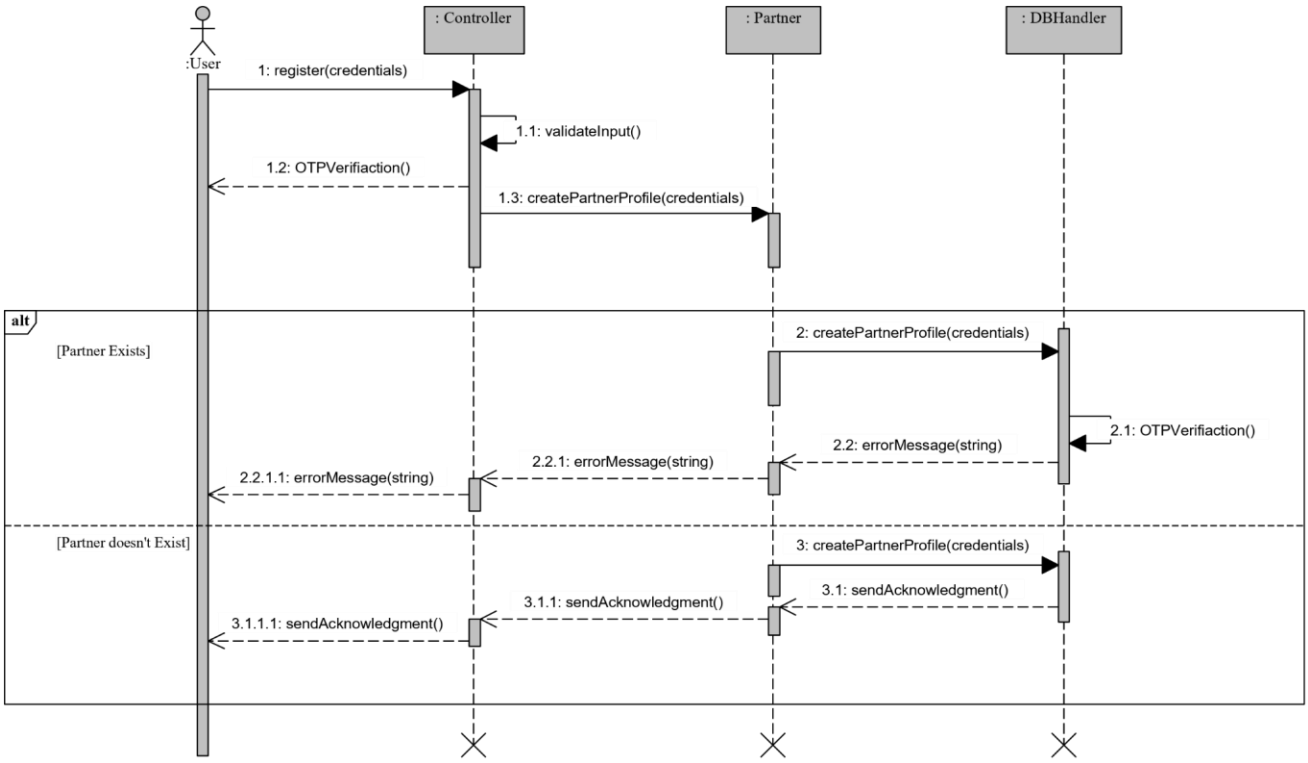


Fig 4.5.14 Sequence Diagram for UC_Sign_up_as_Partner

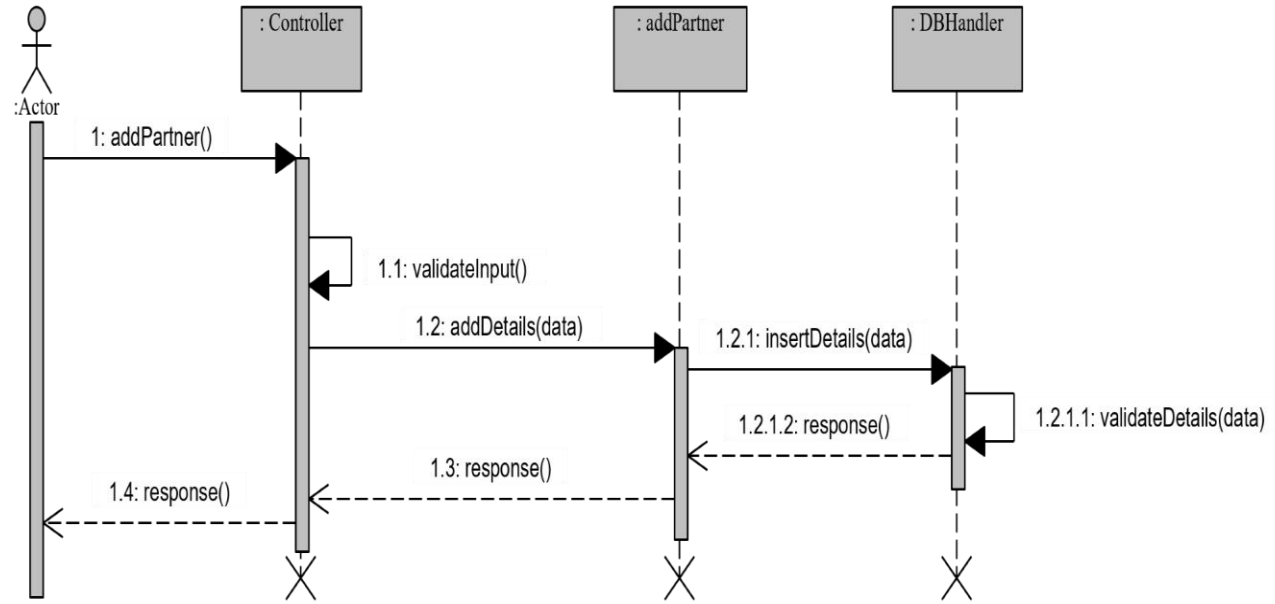


Fig 4.5.15 Sequence Diagram for UC_Add_Partner_Nurseries

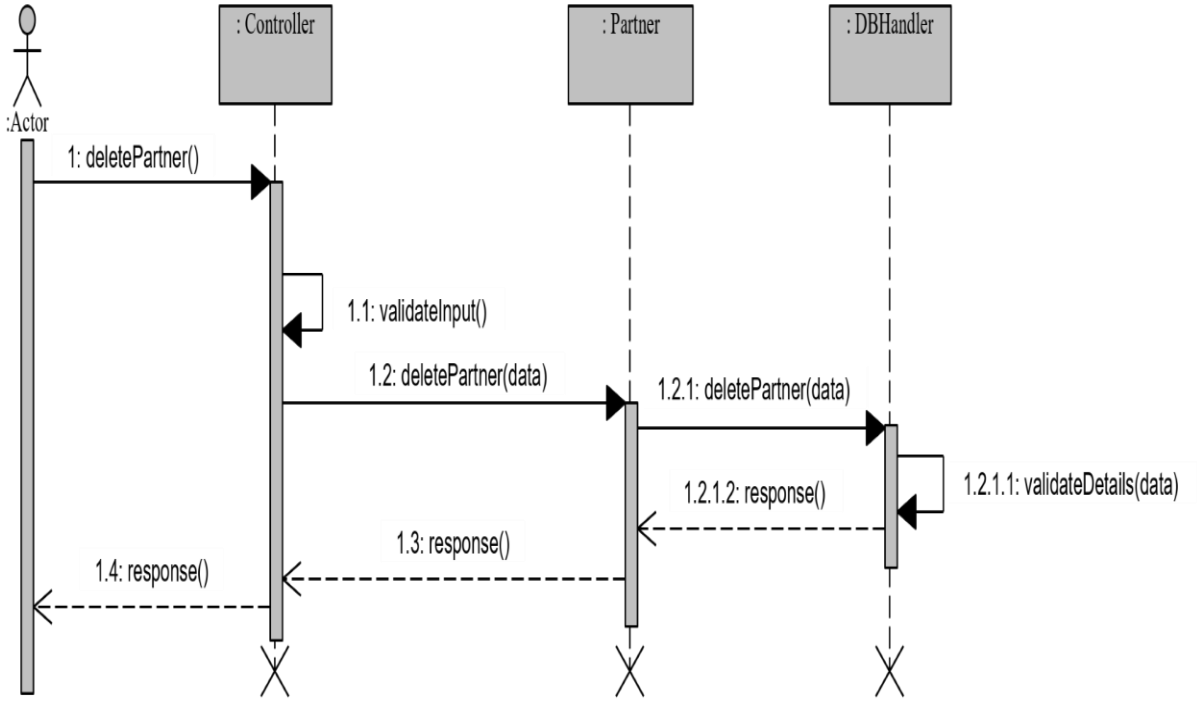


Fig 4.5.16 Sequence Diagram for UC_Remove_Partner_Nursery

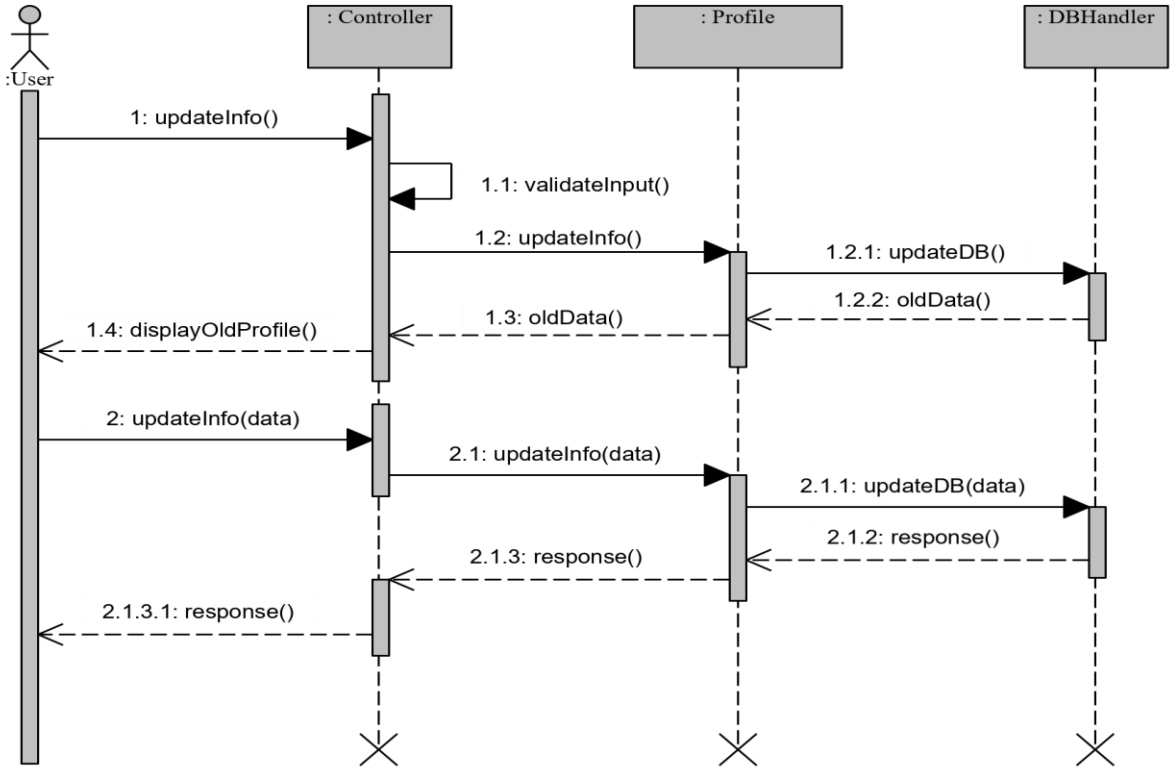


Fig 4.5.17 Sequence Diagram for UC_Update_Profile

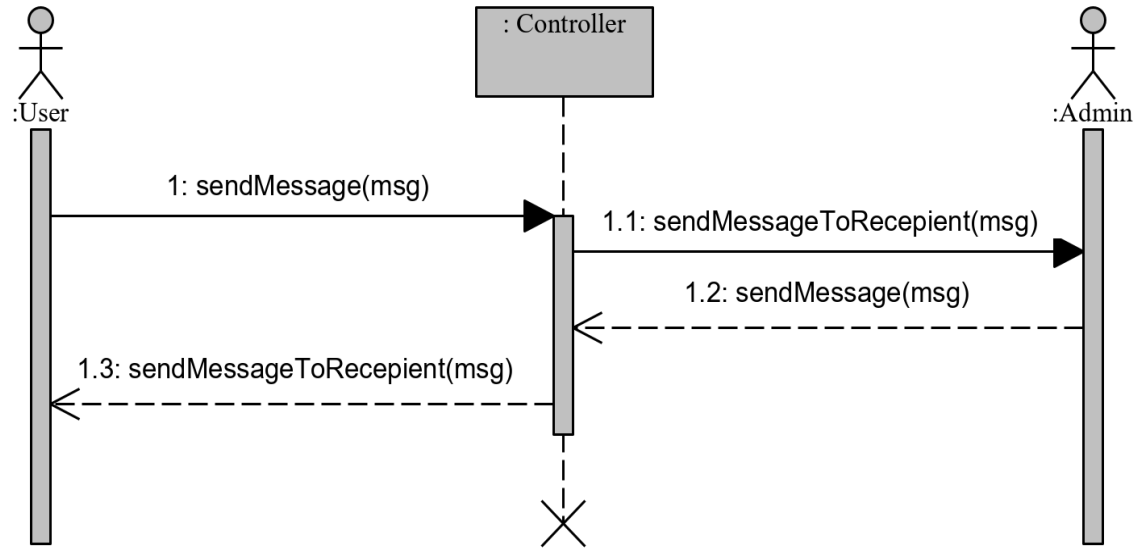


Fig 4.5.18 Sequence Diagram for UC_Chatting

4.5 Collaboration Diagram:

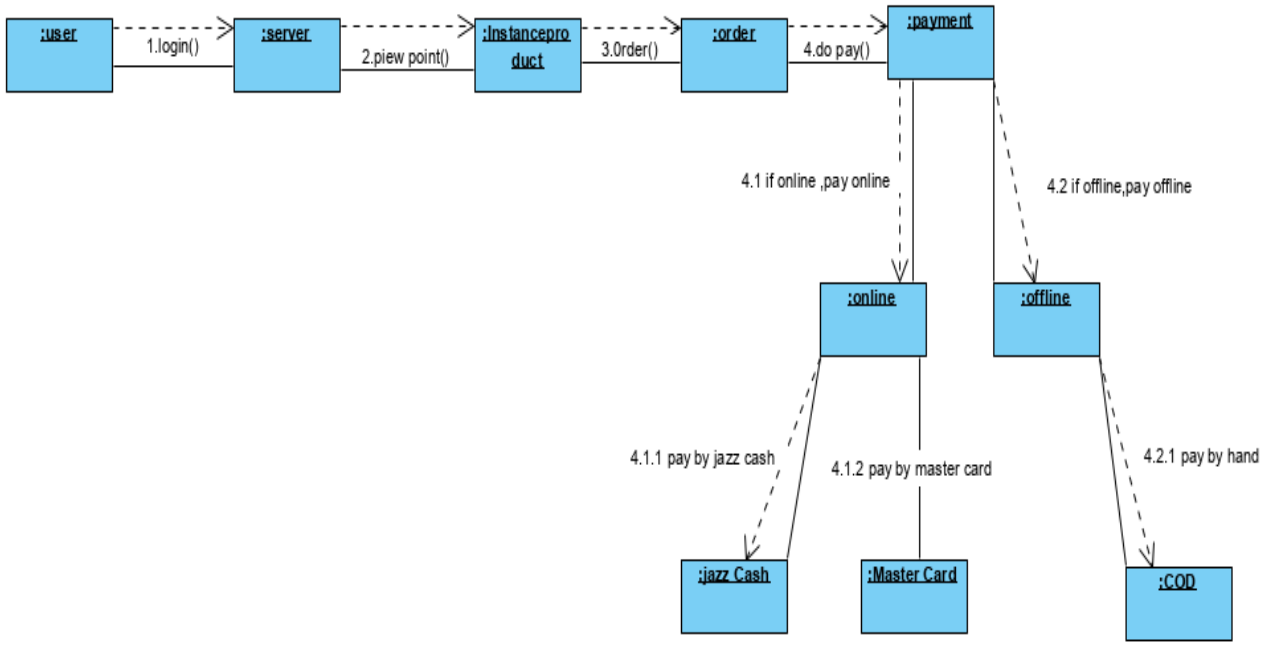


Figure 19

4.6. Operation contracts

OPC 1

- **Operation Name:** Signup
- **Pre-conditions**: User has entered the data in registration fields correctly
- **Post-Conditions**: User is registered to the database of user account.

OPC 2

- **Operation Name:** Login
- **Pre-conditions**: User must have registered in our system already.
- **Post-Conditions**: User is registered to the user accounts database.

OPC 3

- **Operation Name:** Portal
- **Pre-conditions**: User must be login in our system.
  View all products.

OPC 4

- **Operation Name:** Plant
- **Pre-conditions**: User has request to view a plant.
- **Post-Conditions**: successfully done by admin to user account.

OPC 5

- **Operation Name:** Manage profile
- **Pre-conditions**: User must not be an admin.
  User must be login.
- **Post-Conditions**: User will be redirect to profile page.

OPC 7

- **Operation Name:** Manage Accounts
- **Pre-conditions:** Admin must be logged in.
  User must be admin.
- **Post-Conditions**: Admin will redirect to accounts page.

OPC 8

- **Operation Name:** View plant Details
- **Pre-conditions**: user must be logged in
  User can be view all info about plant.
- **Post-Conditions**: Plant detail will be shown according to the access control.

OPC 9

- **Operation Name:** Logout
- **Pre-conditions**: user, admin and manager must be login.
- **Post-Conditions**: will be logout from system.

4.7. Activity Diagram

Activity diagrams are graphical representations of workflows of stepwise activities and action with support for choice, iteration and concurrency in following diagrams. we present the graphical image of the system.

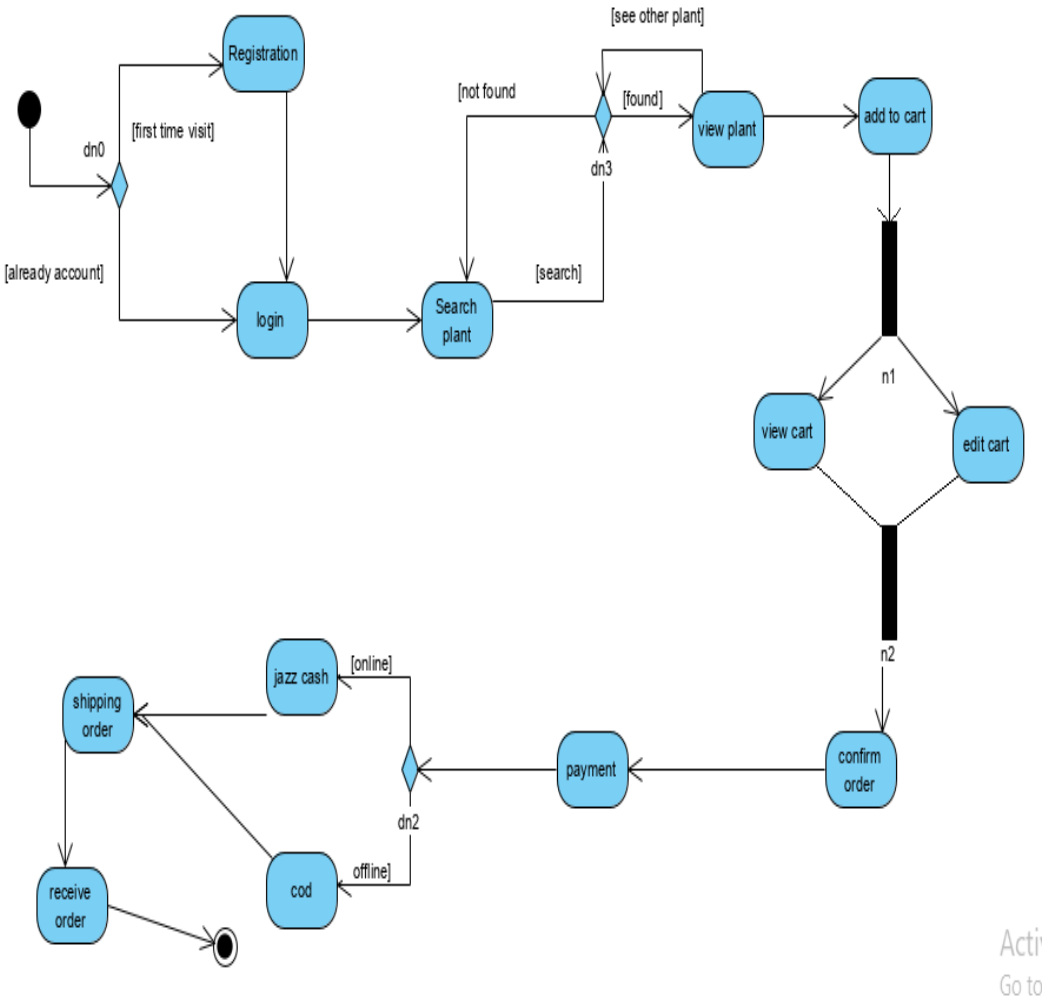


Figure 20

4.8. State Transition Diagram

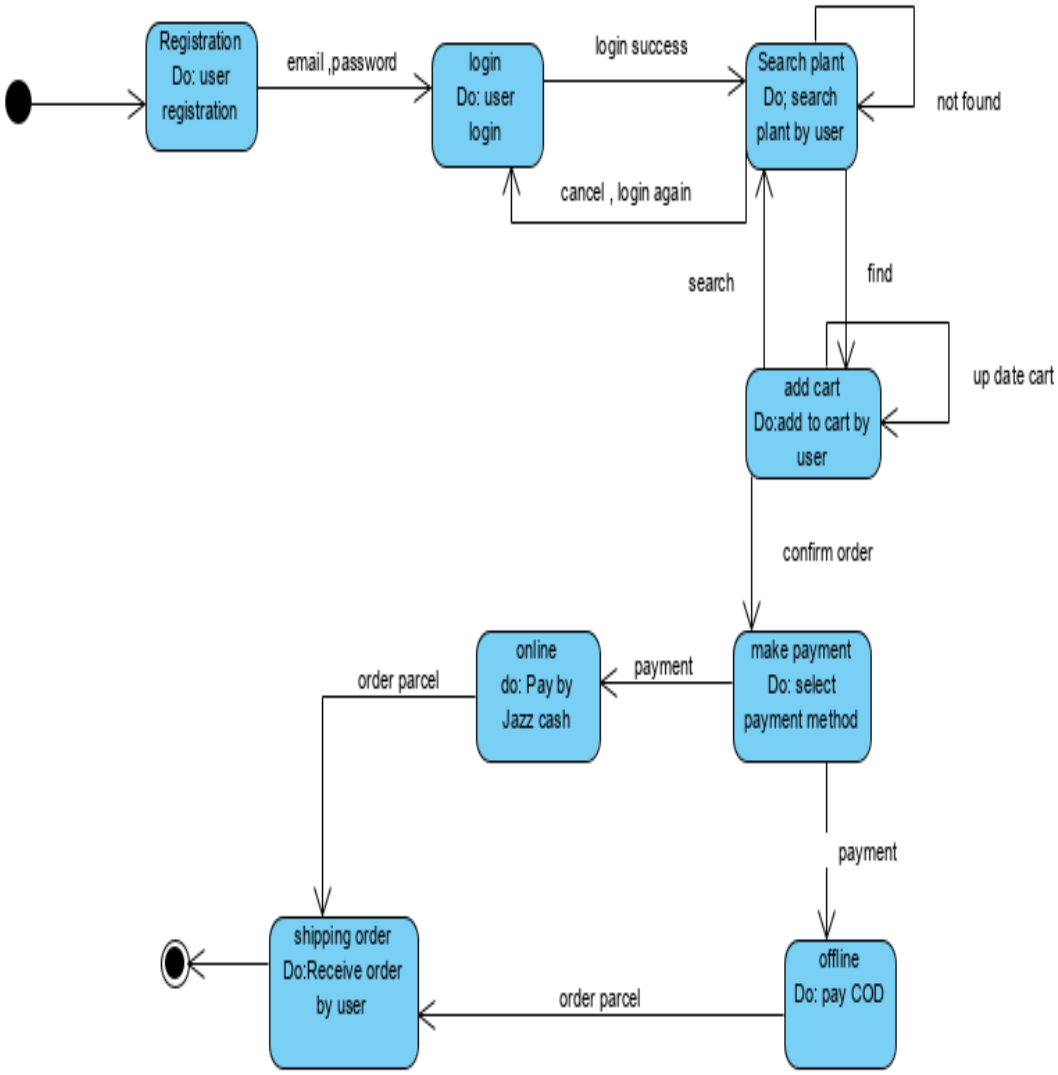


Figure 21

4.9. Component Diagram

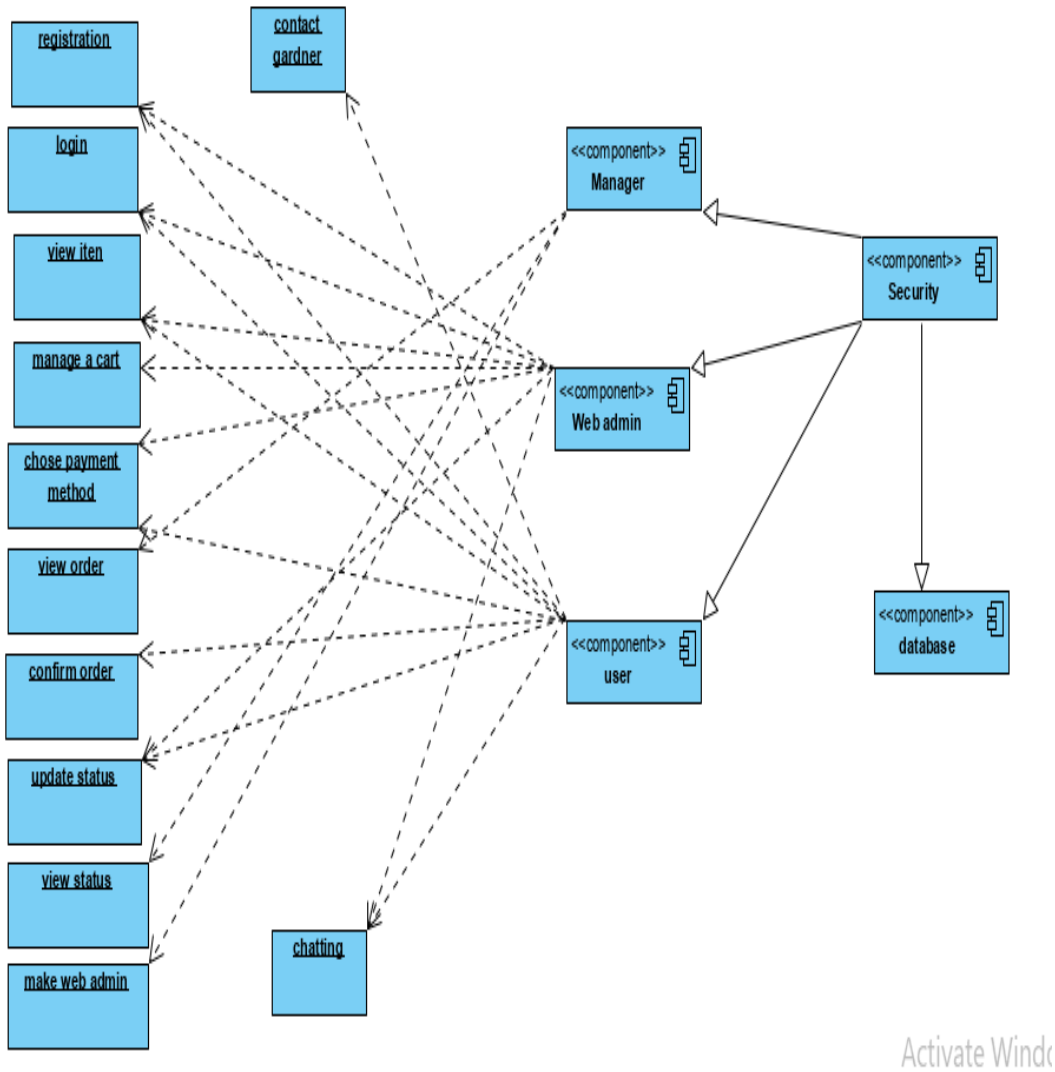


Figure 22

4.10. Deployment Diagram

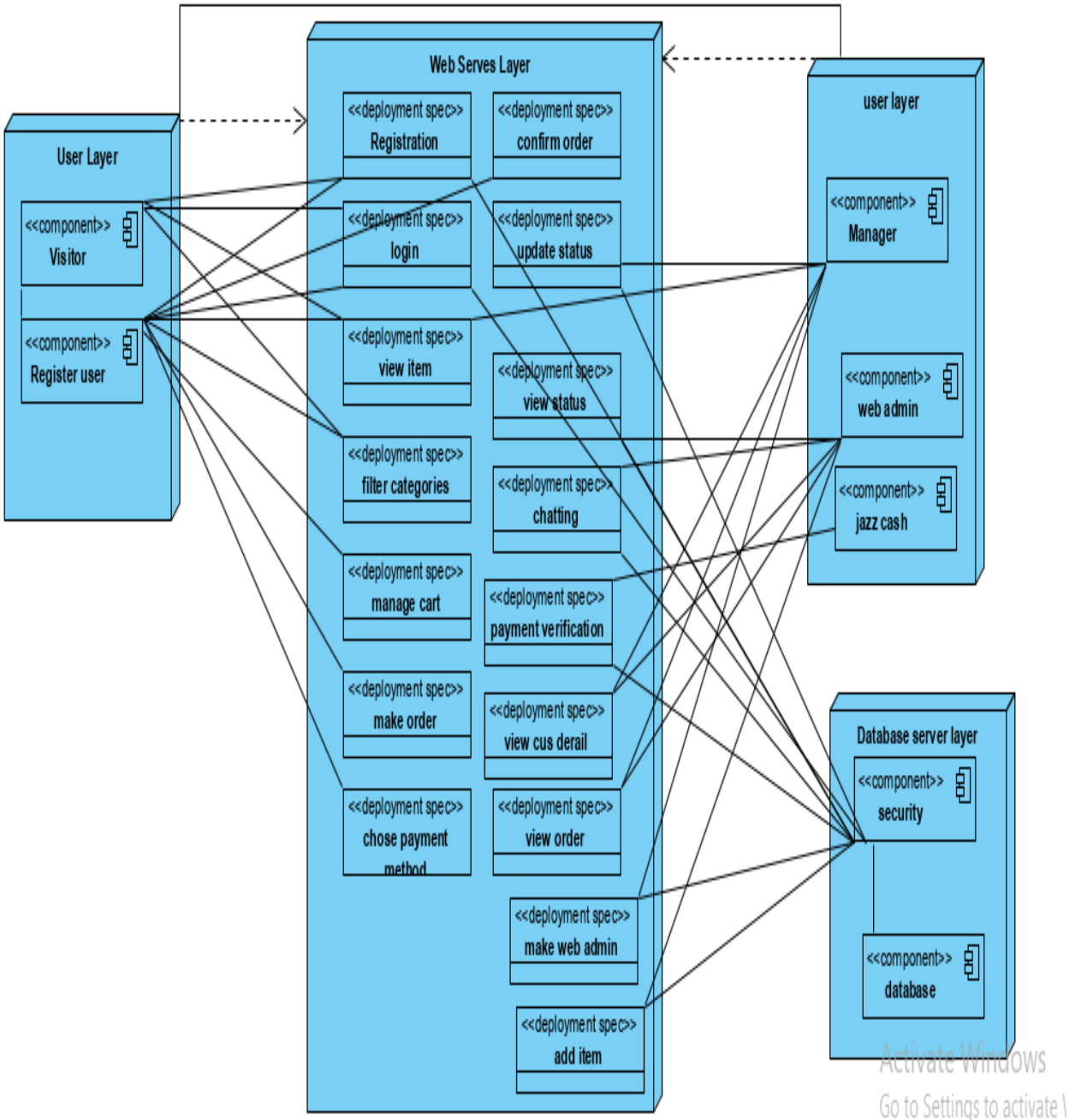


Figure 23

4.11. Data Flow diagram

A data-flow-diagram (DFD) is a way of representing a flow of a data of a process or a system . The DFD also provides information about the outputs and inputs of each entity and the process itself.

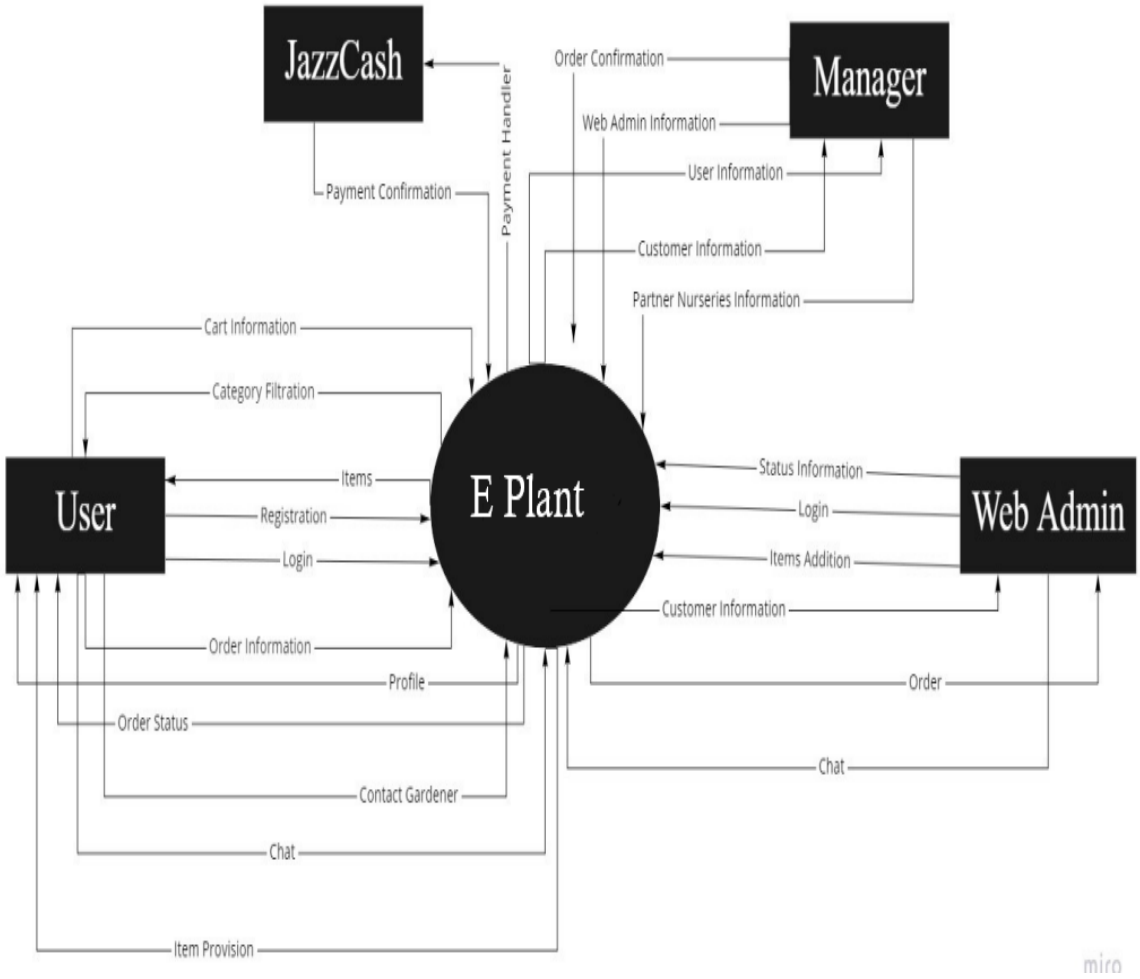


Figure 24

Chapter 5

Implementation

Chapter 5: Implementation

Implementation is the part of the process where software engineers actually program the code for the project. Software testing is an integral and important phase of the software development process. This part of the process ensures that defects are recognized as soon as possible. In this chapter we show you how to implement system pseudo codes libraries deployment
Environment how we implement this system how team work hard for this project and describe
Tools which are we used for developing this project.

5.1. Important Flow Control/Pseudo codes

Work in progress - stocks of unfinished goods

Keeping stocks of unfinished goods can be a useful way to protect production if there are problems down the line with other supplies.

Finished plants ready for sale.

You might keep stocks of finished plants when:

- demand is certain
- Plants are produced in batches
- you are completing a large order

5.2. Components, Libraries, Web Services and stubs

Components:
Basic components of [E-Plant] are Typically, a plants business incorporates multiple business operations – manufacturing of ports, nurseries that grow plants, soil for plants, Seed beds and mother plants, plant propagation, Point of Sales, finances, customer management, employee management, and much more.

1. Framework.
2. Fair method of ranking projects.

3. We use agile SDL'S model that is change oriented at any stage of development.
4. Wants versus Needs.
5. We or especially focused on user's satisfaction we are should fulfill we our project is Designed for current requirements.

5.3. Deployment Environment

Basically, in deployment environment the development team is supposed to deploy the code

For testing purpose. After the system is developed, integrated and tested, it is ready to be Deployed on site. System deployment may take several months to complete depending on the complexity of the system and the number of toll collection sites. A deployment plan is often required to ensure a smooth transition to operations. The plan needs to address staffing

Training, scheduling, testing, contractor coordination, con-figuration management and any Required phasing. The deployment environments have two types and following its types are described:

• Lower level environment

Developers can use this environment to test their code (this environment will be an exact Replica of higher environment where Internal and external testing will happen). We use SVN

And checking the code.

• Higher level environment

Where multiple testing team can test which from my experience seems stable environment. To test on. But we have lot of environments and time to time support has to give on different

Environment. But I see multiple environment where testing happens with no apparent concrete reason. My question is whose responsibility to support multiple environments? I find it difficult for development team to work on supporting multiple environments apart from regular dev. activities, Unit test case preparation, and get clarification from the design or business on User story.

5.4. Tools and Techniques

- MS Word: It will be used for documentation of this project.
- MS Project: It will be used for making Gantt chart.
- Lucid Chart, Miro & Star UML: To make the diagrams like Network diagram, DFDs and Use Case Diagrams etc.
- Visual Studio Code: VS Code is a code editor that will be used for writing the code of this project as it is used to design and build web and cloud apps.
- Microsoft SQL Server: It will be used for the database management for the undertaken project.
- Angular: Using Angular the front end will be designed. Angular provides developers a robust tool to create client side of web applications.
- Laravel: It will be used for the designing of server side of this website.
- Jazz Cash Payment Gateway It will be used for payment handling along with cash on delivery or COD payment method.
- Messenger It will be used to provide communication between the web admin and customers.

Development Tools

- Sublime Text 3 (For Website Development)
- MS Office (For Document design)
- MS Visio (For Diagram Design)

Structure Designing Language

- HTM

Designing Language

- CSS
- Bootstrap

Back-end Language

- PHP
- Laravel Framework
- Node.js

Database Design

- MySQL

Server (Web Hoisting)

- Local host
- XAMPP Server

Usability:

It is important to the success of a site depends on its usability because its existence is meaningless if users cannot use it and not in its visual design. It is best to use a user-centric design. It is necessary to let the user view all the available functions clearly. Feature exposure contributes to a good user interface design. The visitors should be able to interact with the system comfortably.

5.5. Best Practices / Coding Standards

- Coding Standards should be best code should be simple and divided into different chunks that will make ease to modify code.
- Optimize Your Pick and Pack Process. ...
- Use Batch Tracking. ...
- Use an Accurate Reorder Point Formula. ...
- Carry Safety Stock Inventory. ...
- Read Open Source Code
- Commenting & Documentation
- Factorization of Code is good habit it make your website light and easy accessible.

5.6. Version Control

We are using latest versions of the tools which using for the development of this project. We will use PHP version control system where we can handle our project with speed and efficiency. We can easily manage and share our code with other team members by using PHP.

Version control of a document or record are managed. It is a tool which tracks a series of draft documents, culminating in a final version.

Chapter 6

Testing and Evaluation

Chapter 6: Testing and Evaluation

Use Case Testing is a functional black box testing technique that helps testers to identify test scenarios that exercise the whole system on each transaction basis from start to finish.

6.1. Use Case Testing

6.1.1:

Test Suite ID	TS001
Test Case ID	TC001
Test Case Summary	To verify that by clicking Signup icon username, password, email, phone# and address store in users detail in database.
Related Requirement	RSoo1: User should able to Sign up.
Prerequisites	No
Test Procedure	1. Select fields in Signup form. 2. Enter user data in fields. 3. Click Signup button.
Test Data	Valid username: akram, AKRAM Invalid username: 12 akram ./akram ,akram %^3 Valid password: 123Abc@5, Abc567$%9 Invalid password: 1_2akram, _akram12 Valid email:ali@gmail.com, 12ali@yahoo.com Invalid email: ali.com, akam@yahoo Valid phone# :03123456578 Invalid phone: @56rfgf7999, 2wstyyA
Expected Result	1. If username, password, email and phone# are valid then store user data in database by clicking signup button. 2. If given inputs are invalid then display error message. 3. If fields are empty then show warning message.
Actual Result	1. If name is valid, the result is as expected. 2. If name is not valid then invalid message displayed. 3. If fields are empty then warning massage displayed.

Status	Pass
Remarks	This test case is simple and easy.
Created By	M. Akram Ameer
Date of Creation	04/01/21
Executed By	M. Akram Ameer
Date of Execution	04/01/21
Text Environment	OS: Sublime Text 3

Use case of sign up

6.1.2:

Test Suite ID	TS001
Test Case ID	TC002
Test Case Summary	To verify Authentication or Login.
Related Requirement	RS002: User should able to Login.
Prerequisites	User should Signup first.
Test Procedure	1. Select Username field and enter username. 2. Select Password field and enter password. 3. Click Login button.
Test Data	Valid username: akram,AKRAM Invalid username: 1iqra, ./akram , akram%^3 Valid password: 123Aabc@, abMc567$% Invalid password: 1_2akram, _akram12
Expected Result	1. If username and password are valid then clicking the Login button user successfully login. 2. If username and password are invalid then clicking the Login button invalid message display.

	3. If fields are empty then display warning message
Actual Result	1. If fields are valid, the result is as expected. 2. If fields are not valid then invalid message displayed. 3. If fields are empty then warning message displayed.
Status	Pass
Remarks	This test case is simple and easy.
Created By	Akram Ameer
Date of Creation	04/01/21
Executed By	Akram Ameer
Date of Execution	04/01/21
Text Environment	OS: Sublime Text Version 3

Table : use case of login

6.1.3:

Test Suite ID	TS002
Test Case ID	TC004
Test Case Summary	To verify that user, nursery partner once signup if they are deleted in database by performing crud operation by clicking Delete button.
Related Requirement	RS004: Admin can delete data.
Prerequisites	Admin should login.
Test Procedure	Click delete button.
Expected Result	If data is deleted by click button then message will appear
Actual Result	If action is valid, the result is as expected.

Status	Pass
Remarks	This test case is simple and easy.
Created By	Akram Ameer
Date of Creation	04/01/21
Executed By	Akram Ameer
Date of Execution	04/01/21
Text Environment	OS: Sublime Text Version 3

Table : use case of delete data

6.1.4:

Test Suite ID	TS002
Test Case ID	TC005
Test Case Summary	To verify that data is searched by clicking search button.
Related Requirement	RS005: User should be able to search data.
Prerequisites	User should login.
Test Procedure	1. Select search field. 2. Enter name of item in fields. 3. Click search button.
Expected Result	1. If name is valid then show detail. 2. If name is invalid then display error message. 3. If field is empty then display warning message.
Actual Result	1. If name is valid, the result is as expected. 2. If name is not valid then invalid message displayed. 3. If fields are empty then warning message displayed.
Status	Pass
Remarks	This test case is simple and easy.

Created By	Akram Ameer
Date of Creation	04/01/2021
Executed By	Akram Ameer
Date of Execution	04/01/2021
Text Environment	OS: Sublime Text Version 3

Table: use case of search data

6.1.5:

Test Suite ID	TS002
Test Case ID	TC006
Test Case Summary	To verify that record is display.
Related Requirement	RS006: User should be able to view data.
Prerequisites	User should login.
Test Procedure	1. Enter name in fields. 2. Click View button.
Expected Result	1. If name is valid then show detail. 2. If name is invalid then display error message. 3. If field is empty then display warning message.
Actual Result	1. If name is valid, the result is as expected. 2. If name is not valid then invalid message displayed. 3. If fields are empty then warning message displayed.
Status	Pass
Remarks	This test case is simple and easy.
Created By	Akram Ameer
Date of Creation	04/01/2021

Executed By	Akram Ameer
Date of Execution	04/01/2021
Text Environment	OS: Sublime Text Version 3

Table : use case of record to display

6.2 Equivalence partitioning

1	User name is alphabetic.	valid
2	User name is not alphabetic.	invalid
3	Password is equal to 10 or greater than 15 characters in length.	valid
4	Password is 2 to 16 characters in length.	invalid
5	Password include one uppercase letter & one lowercase letter.	valid
6	Password include '_'.	invalid
7	Email without '@' and '.com'.	invalid
8	Email with '@' and '.com'.	valid
9	Price only be numeric.	valid
10	Price is alphabetic.	invalid
11	Search product with alphabetic.	valid
12	Search product with special character (/,%,^,#,@).	invalid
13	No search product name entered	invalid
14	Brand name alphabetic	valid
15	Brand name with special character	invalid
16	Empty field	invalid

6.3 Boundary value analysis

7 Sr.		Partition 1	Partition 2	Partition 3
1.	Password	Less than 8 character	1 – 8 character	9 – 12
2.	Phone	<=0	1 - 11	9 – 12

Table: boundary analysis

6.4 Data flow testing

The relationship between one entity and another while performing a specific task in during data flow. Such as between the sign up and registration process etc.

6.5 Unit testing

In unit testing we have testified our different panel codes individually by performing different tests and by executing them individually, separately on different computers and they were successfully executed and they performed well.

6.6 Performance testing

In performance testing a particular certain situation is given to the website let's just say a 100 users try to register at the same time so how the system recovers back gracefully with complete results. So according to our extracted results, around 100+ people were able to register in our website.

6.7 Stress Testing

Let's say if 100 customers order at the same nursery at the same time along with the same item which increases the stress on the website at a maximum load how will the website will perform under these circumstances.

Activity	Description
Register	The user can register and make his/her order by using E-Plant website.
Login	The user can login using his/her credentials

Type of user	Upon registering, the user specifies which type of user they are
Manage profiles	The user can edit his profile.
Browse Categories	The users can browse the categories to items which they want to order.
Reviews Order	The users can reviews their order.
Confirm Order	The web admin can confirm users order.
Log out	The user can log out.

Chapter 7

Summary, Conclusion and Future Enhancements

7.1. Project Summary

Now that the project E- Plant is completed, so that I can explain the purpose of the Website. It is basically a Nursery. The main purpose of this website is that automate the traditional selling of plants of a nursery into to an online module that will provide the users an ease to buy plants, flowers and pots. The users can also contact the gardeners for their services as well. Manager will appoint web admin, web admin can update items etc. This system will provide many features in a single platform.

7.2. Achievements and Improvements

The biggest achievements here are that we were able to enhance our skills to the professional extend that we learned in two year of studying and apply it to this project. We learned software architecture design techniques, UML modeling, project management, testing and much more, and were able to apply it all in this project.

The next big achievement is the things we learnt during this project. New languages, frameworks, libraries, different software's for diagrams Database. All that will be useful for us in our futures. We learn Creative thinking.

7.3. Critical Review

The critical element of our system is our system is fast moving, give user friendly interface, not very costly, fulfill the specific requirements of the users at a runtime, and has all the features which any organizations can require. To manage all these aspects it took lot of time and hard work.

7.4. Lessons Learnt

We absorb very much from this project. This project sharpens our skills in html, CSS, Javascript and PHP and many other tools and many management concepts as well as how to deal with a problem and how to stick for finding the solution of any problem until you fond.

As well as technical skills this project also enhances our personal development skills such as team working, dedication.

7.5. Future Enhancements/Recommendations

As it has been already said, there is always room for further improvement. And since we plan to launch this website as our own startup, enhancements will keep coming.
The some point of the system at which we work on its efficiency, accessibility, flexibility, we are definitely going to scale it up which we believe ours is eventually going to become. We make it more user friendly interface.

Appendices

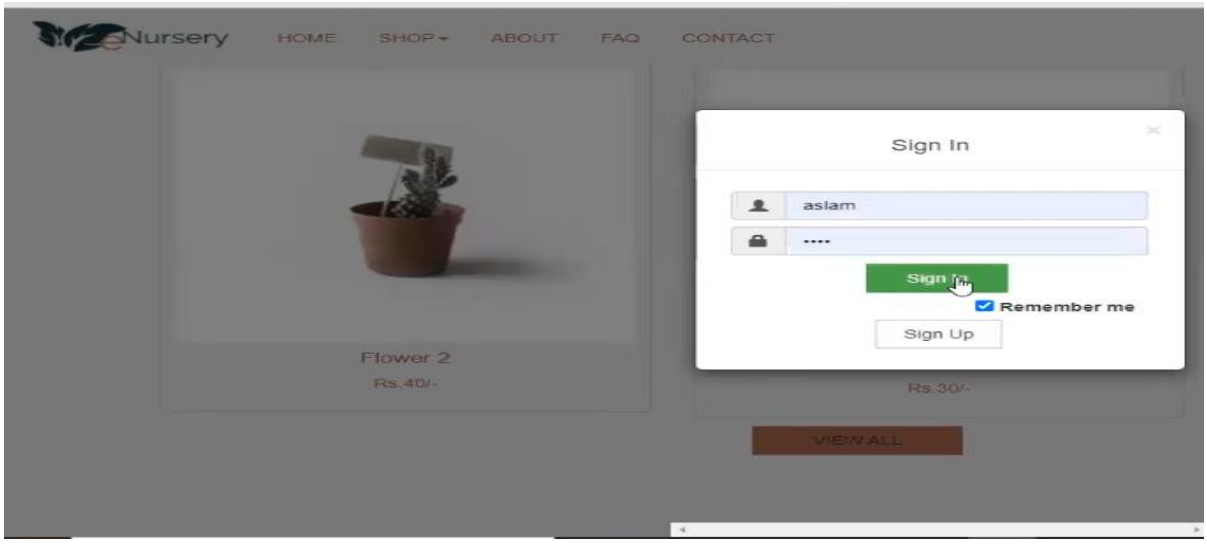
Appendix A: User Manual

In this appendix section we describe the different phases of user interface and also describe how user can use our project.

Appendix A: E-Plant

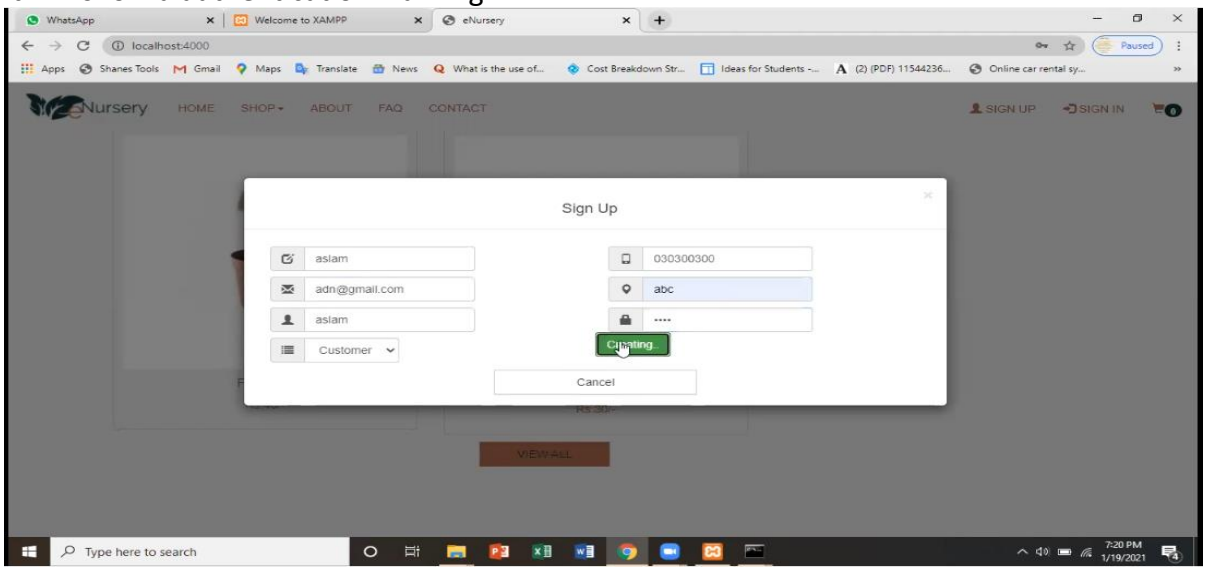
A.1. Login

User can login by entering name and password.



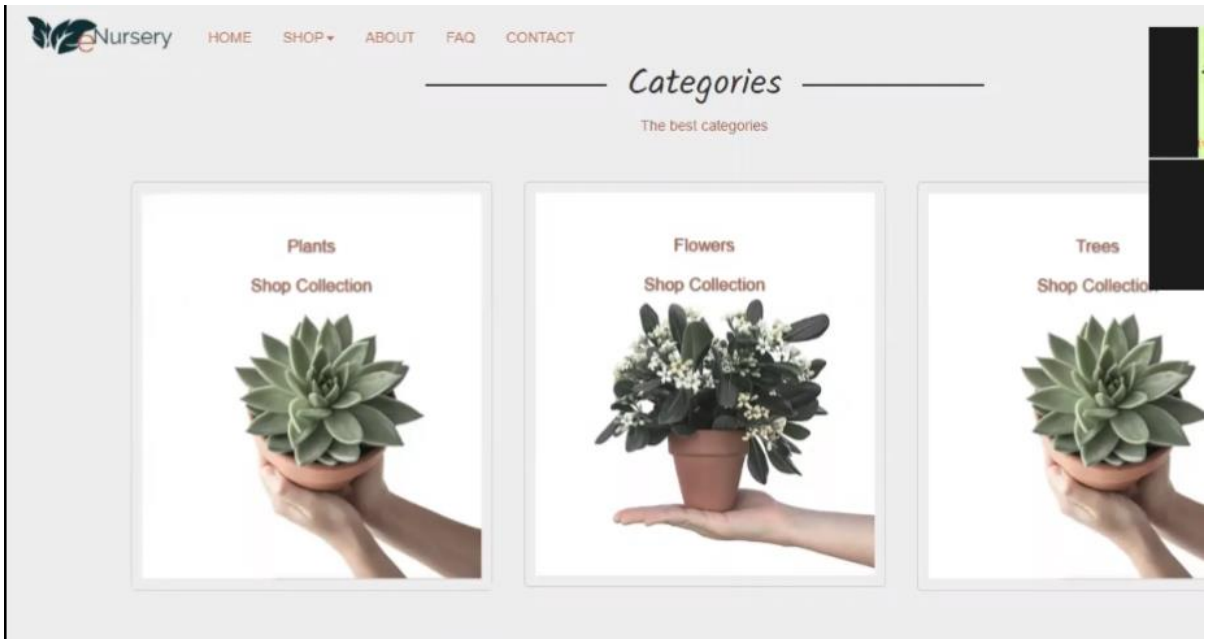
A.1.2 Signup

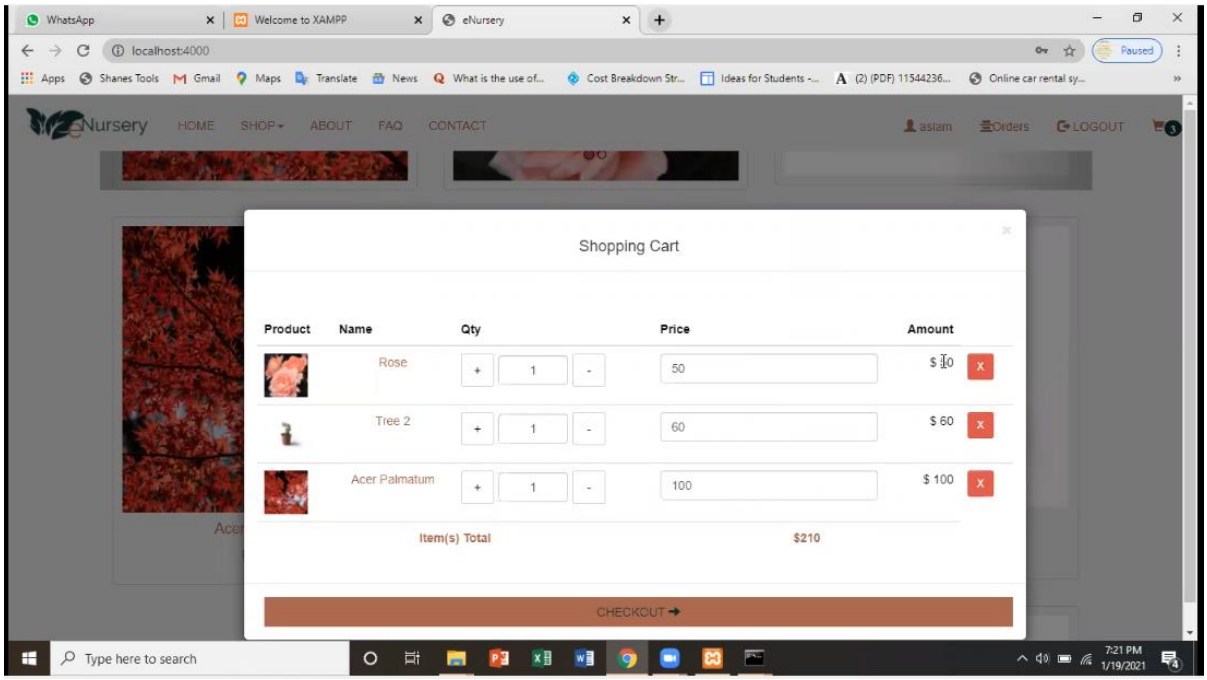
User fills the registration form.in case if ser is not valid aur enter wrong name and password it will show a authentication warning.



A.1.3 Different Categories of Product

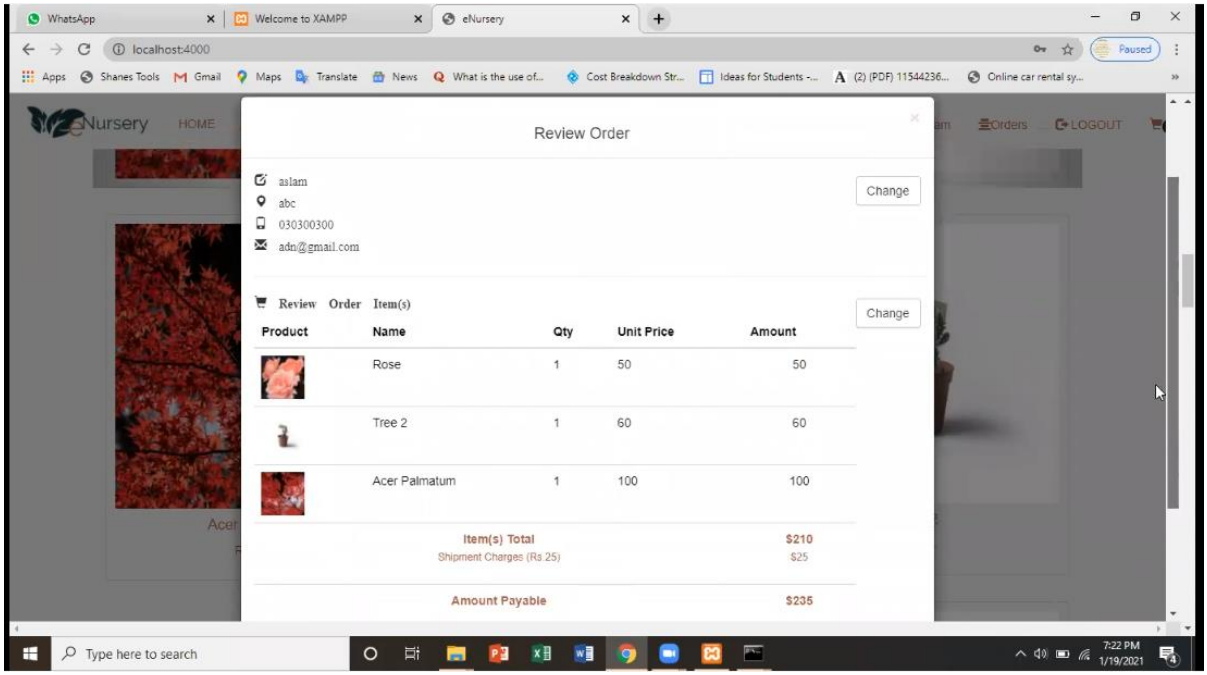
Now User can select different categories of plants and flowers or Trees and then select add to cart. After all user can see cart items and then check out his order.





A.1.4 Preview Order

After Confirm his order user can change his information about data before delivery of his order and see the price of total order.



Appendix B: Admin Manual

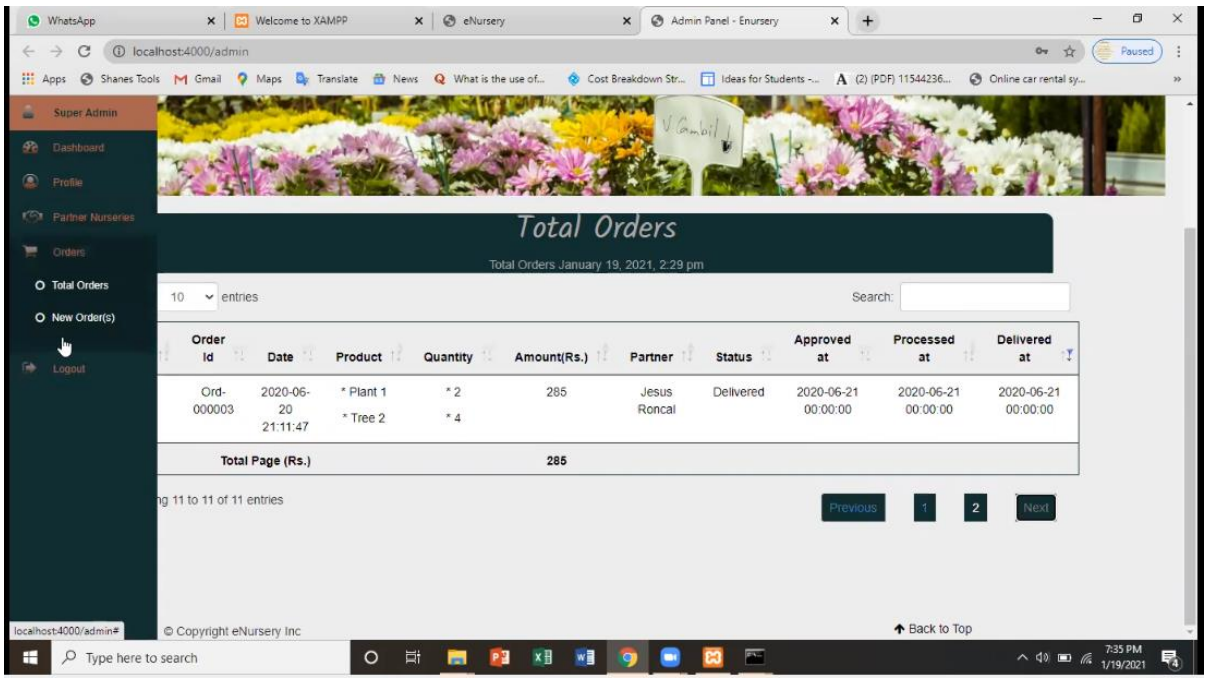
In this appendix section we describe the different phases of admin interface and also describe how admin can manage the system.

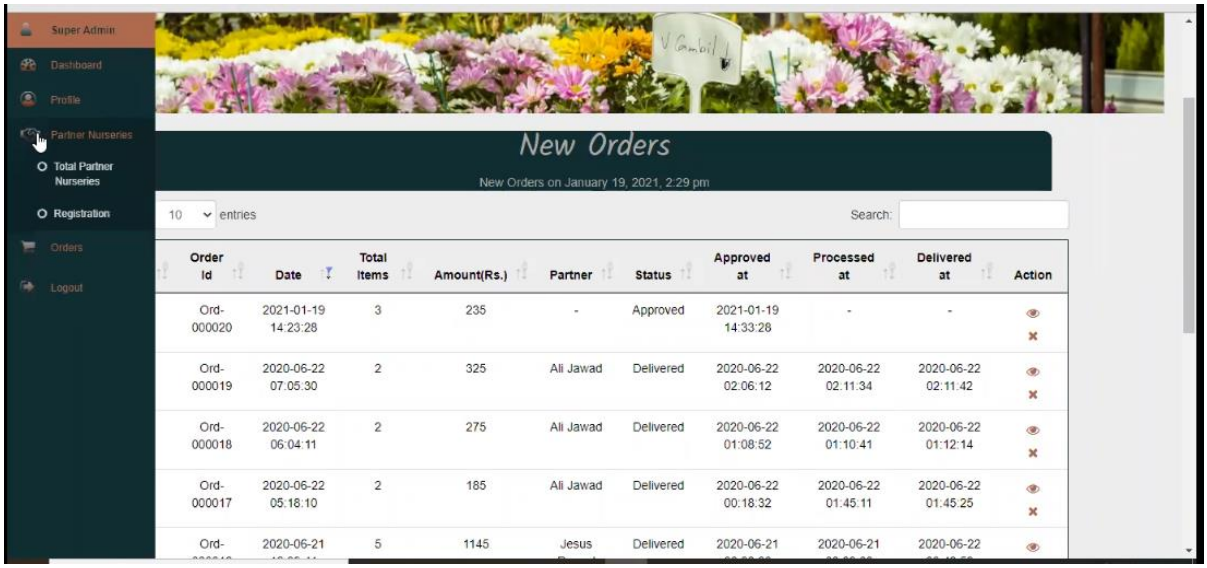
B.1. Login

Admin can login by entering the password and username.

B.1.1 Admin Dashboard

Admin have full access of Update the website and record of Register User and Order and also have record of all product which should be in every nursery and consumed by the user.

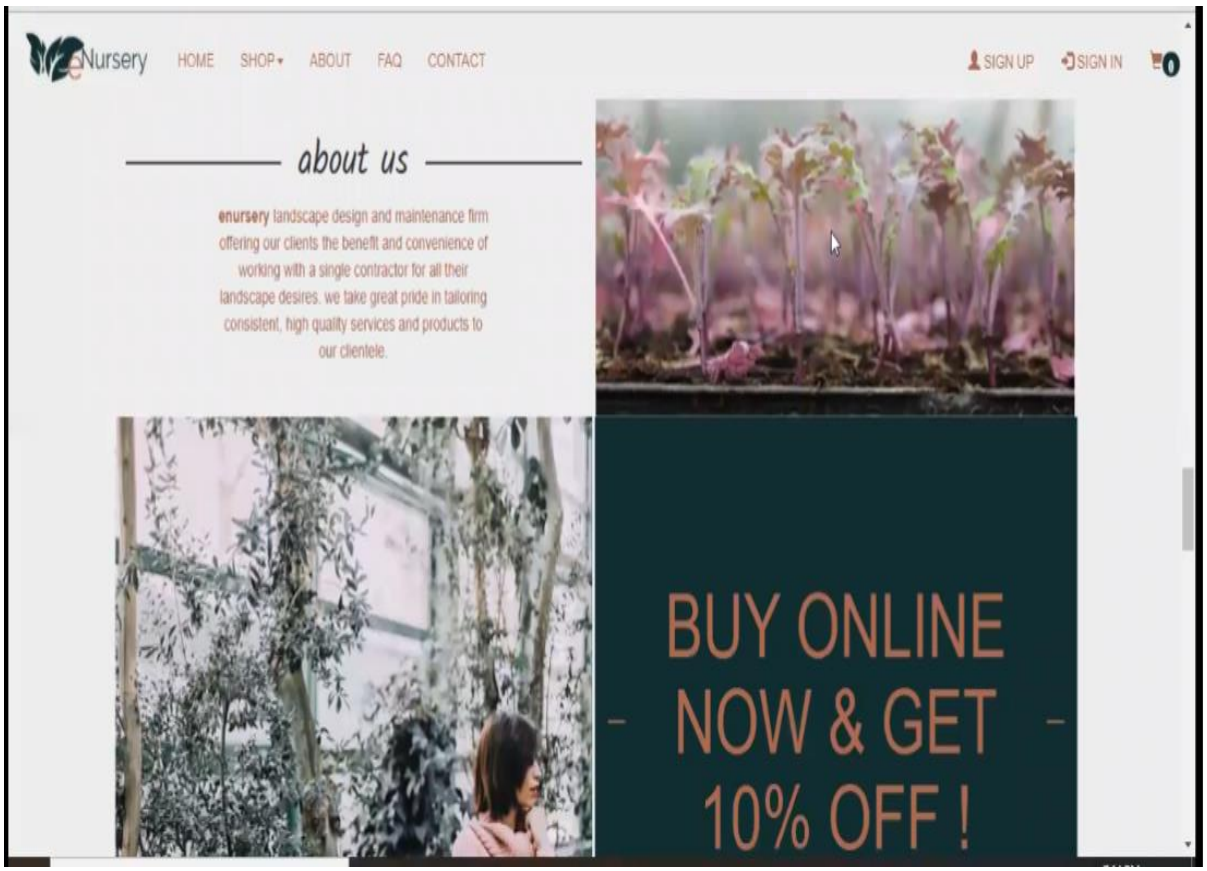

WhatsApp
Welcome to XAMPP
eNursery
Admin Panel - Enursery
localhost:4000/admin
Super Admin
Dashboard
Profile
Partner Nurseries
Orders
Total Orders
New Order(s)
Logout
Total Orders
Total Orders January 19, 2021, 2:29 pm
10 entries
Search:
Order Id
Date
Product
Quantity
Amount(Rs.)
Partner
Status
Approved at
Processed at
Delivered at
Ord-000003
2020-06-20 21:11:47
* Plant 1
* Tree 2
* 2
* 4
285
Jesus Roncal
Delivered
2020-06-21 00:00:00
2020-06-21 00:00:00
2020-06-21 00:00:00
Total Page (Rs.)
285
ng 11 to 11 of 11 entries
Previous
1
2
Next
Back to Top
© Copyright eNursery Inc
localhost:4000/admin#
Type here to search
7:35 PM
1/19/2021


Super Admin
Dashboard
Profile
Partner Nurseries
Total Partner Nurseries
Registration
Orders
Logout
New Orders
New Orders on January 19, 2021, 2:29 pm
10 entries
Search:
Order Id
Date
Total Items
Amount(Rs.)
Partner
Status
Approved at
Processed at
Delivered at
Action
Ord-000020
2021-01-19 14:23:28
3
235
-
Approved
2021-01-19 14:33:28
-
-
Ord-000019
2020-06-22 07:05:30
2
325
Ali Jawad
Delivered
2020-06-22 02:06:12
2020-06-22 02:11:34
2020-06-22 02:11:42
Ord-000018
2020-06-22 06:04:11
2
275
Ali Jawad
Delivered
2020-06-22 01:08:52
2020-06-22 01:10:41
2020-06-22 01:12:14
Ord-000017
2020-06-22 05:18:10
2
185
Ali Jawad
Delivered
2020-06-22 00:18:32
2020-06-22 01:45:11
2020-06-22 01:45:25
Ord-
2020-06-21
5
1145
Jesus
Delivered
2020-06-21
2020-06-21
2020-06-22

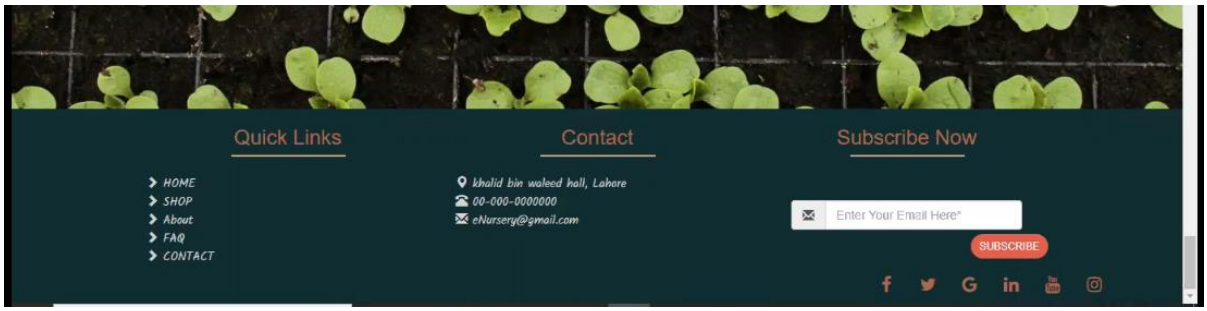
Appendix C: Information / Promotional Material

In Appendix we add promotional material about our website. We add these for only promote our website.

C.1.Broacher



C.2.Flyer



C.3. Banner

Reference and Bibliography

Reference and Bibliography

[1] [Online Available] https://en.wikipedia.org/wiki/Plant

[2] Plant [Online Available] https://plant.pk

[3] Lucid chart [Online Available] https://lucid.app/pricing/lucidchart#/pricing

[4] Visual Paradigm [Online Available] https://online.visual-paradigm.com/drive/#diagramlist:proj=0&new=UseCaseDiagram

[5] [Online Available] http://www.aziznursery.com/online/

[6] [Online Available] https://www.ambius.com/learn/benefits-of-our-services/

[7] [Online Available] https://www.sciencedirect.com/science/article/abs/pii/S0272494409000413

[8] [Online Available] https://sites.google.com/a/hanalani.org/justine-meaghan/research-paper

[9] [Online Available] https://www.sciencedirect.com/science/article/abs/pii/S0168945220303095

[10] ……