

LAB REPORT

Submitted by

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Under the Guidance of

DEEPA THILAK.K

In partial satisfaction of the requirements for the degree of

**BACHELOR OF TECHNOLOGY
in
COMPUTER SCIENCE ENGINEERING**

with specialization in Cloud computing



**SCHOOL OF COMPUTING
COLLEGE OF ENGINEERING AND TECHNOLOGY
SRM INSTITUTE OF SCIENCE AND TECHNOLOGY
KATTANKULATHUR - 603203**

JUNE 2022



SRM INSTITUTION OF SCIENCE AND TECHNOLOGY KATTANKULATHUR-603203

BONAFIDE CERTIFICATE

Certified that this lab report titled "**Agrolife**" is the bonafide work done by Student

who carried out the lab exercises under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other work.

SIGNATURE

Deepa thilak

SEPM – Course Faculty

Assistant Professor

Department of Information technology

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Department of Networking and Communications

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	1
Title of Experiment	To identify the Software Project, Create Business Case, Arrive at a Problem Statement
Name of the candidate	Durga Chandana Sree Mandapati
Team Members	Aarhee Phukan Reddy Jyothi Sri D Roshini Devi Jammula
Register Number	RA2011028010092 RA2011028010099 RA2011028010104 RA2011028010108
Date of Experiment	8 th March, 2022

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

Aim

To Frame, a project team, analyze and identify a Software project. To create a business case and Arrive at a Problem Statement for the online farm management system. **Team Members:**

S. No	Register No	Name	Role
1	RA2011028010099	DURGA CHANDANA SREE MANDAPATI	Lead/Rep
2	RA2011028010104	ROSHINI DEVI JAMMULA	Member
3	RA2011028010108	REDDY JYOTHI SRI D	Member
4	RA2011028010092	AARHEE PHUKAN	Member

Project Title: ONLINE ORGANIC-FARM MANAGEMENT SYSTEM.

Project Description

Business Case

ONE PAGE BUSINESS CASE TEMPLATE

DATE	15/03/2022
SUBMITTED BY	DURGA CHANDANA SREE M AARHEE PHUKAN REDDY JYOTHI SRI D ROSHINI DEVI JAMMULA
TITLE / ROLE	ONLINE ORGANIC-FARM MANAGEMENT SYSTEM

LOGO

THE PROJECT

In bullet points, describe the problem this project aims to solve or the opportunity it aims to develop.

1. It focuses on helping farmers around the globe.
2. It provides basic requirements like organic fertilizers, pesticides, seeds, etc.
3. It gives knowledge about modern farming which is eco-friendly(tutorials).
4. Collects soil samples and provides suitable recommendations (collection centres).

THE HISTORY

In bullet points, describe the current situation.

1. In the present situation, the soil is gradually degrading because of improper farming.
Also, high usage of chemical fertilizers and pesticides accounts for soil degradation.
2. Due to a lack of knowledge about organic farming, farmers are mainly engaged in inorganic farming for profits.

LIMITATIONS

List what could prevent the success of the project, such as the need for expensive equipment, bad weather, lack of special

1. The app does provide fertilizers, pesticides, and seeds but they are lacking the feature of studying the soil type before proving the resources. Not all soil types accept all fertilizers and seeds.
2. The app doesn't emphasize the importance and need for organic farming.

training, etc.

APPROACH

List what is needed to complete the project.

1. A person with basic coding skills in any preferred programming language. (for creating a website)
2. A person with a degree qualification. and license. (delivery)
3. A person with basic designing knowledge in UI/UX.

BENEFITS

In bullet points, list the benefits that this project will bring to the organization.

1. Soil is one of the most important deciding factors about the type and quality of crops growing on a farm. A farmer's farm can't flourish if they don't know about the background of the farm, soil. We help them know their soil better, all the while providing them with resources best suited for their soil.
2. Increases agriculture productivity and lowers production costs.
3. Lessens chemical application in crop production.
4. Reduces environmental and ecological impacts.

Result

Thus, the project team was formed, the project is described, the business case was prepared and the problem statement has arrived.



Department of Networking and Communications

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	2
Title of Experiment	Identification of Process Methodology and Stakeholder Description
Name of the candidate	DURGA CHANDANA SREE M
Team Members	REDDY JYOTHI SRI D AARHEE PHUKAN ROSHNI DEVI JAMMULA
Register Number	RA2011028010099 RA2011028010108 RA2011028010092 RA2011028010104
Date of Experiment	22-03-22

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	10	

Staff Signature with date

Aim

To identify the appropriate Process Model for the project and prepare Stakeholder and User Description.

Team Members:

Sl No	Register No	Name	Role
1	RA2011028010099	DURGA CHANDANA SREE	Rep/Member
2	RA2011028010108	REDDY JYOTHI SRI D	Member
3	RA2011028010104	ROSHINI DEVI JAMMULA	Member
4	RA2011028010092	AARHEE PHUKAN	Member

Project Title: ONLINE ORGANIC-FARM MANAGEMENT SYSTEM

Methodology: We use agile methodology.

Stakeholders of the project.

Stakeholder Name	Activity/ Area /Phase	Interest	Influence	Priority (High/ Medium/ Low)
Farmers(end-user)	Usage of resources	high	high	1
UI/UX designers	front end	high	high	6
Website developers	Back end (coding)	high	high	5
Project manager	Manages the overall outcome	high	med	3
Content writers	Updating data	med	med	8
employee	Delivering resources	med	med	9
Finance manager	In charge of bank account transactions	high	med	2
Industrial suppliers	Get resources	high	high	4
Lab tester	Test the soil ph	med	med	7

Result

Thus the Project Methodology was identified and the stakeholders were described.



Department Of Networking and Communications

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	3
Title of Experiment	System, Functional and Non-Functional Requirements of the Project
Name of the candidate	DURGA CHANDANA SREE M
Team Members	REDDY JYOTHI SRI D AARHEE PHUKAN ROSHNI DEVI JAMMULA
Register Number	RA2011028010099 RA2011028010108 RA2011028010092 RA2011028010104
Date of Experiment	29-03-20022

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
	Total	10	

Staff Signature with date

Aim

To identify the system, functional and non-functional requirements for the project.

Team Members:

S No	Register No	Name	Role
1	RA2011028010099	DURGA CHANDANA SREE M	Rep/Member
2	RA2011028010108	REDDY JYOTHI SRI D	Member
3	RA2011028010104	ROSHNI DEVI JAMMULA	Member
4	RA2011028010092	AARHEE PHUKAN	Member

Project Title: ONLINE ORGANIC-FARM MANAGEMENT SYSTEM

AGROLIFE!

System Requirements:

Requirement	Requirement Specification	Department	Name of business users	Status
1	Machine with 8 GB Ram Processor: quad-core 64 bit OS	Technical team	all members	available
2	Aws cloud storage	Technical team	all members	pending

3	Language-c coders	Technical team	Aarhee	available
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Functional Requirements:

Requirement	Requirement Specification	Department	Name of business users	Status
1	The site should allow the users to log in with their registered credentials.	Deployment	Durga Chandana sree	pending
2	The site should display previous order details.	Deployment	Aarhee	pending
3	The site should allow users to direct them to the payment page	Deployment	Reddy Jyothi sri D	pending
4	It allows users to change the credentials when necessary	Deployment	Roshni devi	pending
5	The site allows users to track their order details.	Deployment	Roshni Devi	pending

6	The site allows the users to provide their valuable feedback regarding the product quality	Deployment	Durga Chandana sree	pending
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Non-Functional Requirements

Requirement	Category	Requirement specification	Name of business users	Status
1	Security	Provides secured transactions that include OTP as authentication verification.	Reddy Jyothi sri	pending
2	Low Latency of data	Data is updated on the interface without delay	All members	pending
3	Performance	The site response time should be minimum.	All members	pending
4	Availability	The site should be available all the time.	All members	pending
5	Usability	The site interface should be user-friendly, and navigation should take place smoothly.	Durga chandana sree	pending

Result

Thus the requirements were identified and accordingly described.



Department of Networking and Communications

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	4
Title of Experiment	Prepare Project Plan based on scope, Calculate Project effort based on resources and Job roles and responsibilities
Name of the candidate	DURGA CHANDANA SREE M
Team Members	REDDY JYOTHI SRI D AARHEE PHUKAN ROSHNI DEVI JAMMULA
Register Number	RA2011028010099 RA2011028010108 RA2011028010092 RA2011028010104
Date of Experiment	18.04.2022

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

Aim

To Prepare Project Plan based on scope, Calculate Project effort based on resources, Find Job roles and responsibilities

Team Members:

SI No	Register No	Name	Role
1	RA2011028010099	DURGA CHANDANA SRI M	Lead
2	RA2011028010108	REDDY JYOTHI SRI D	Member
3	RA2011028010104	ROSHINI DEVI JAMMULA	Member
4	RA2011028010092	AARHEE PHUKHAN	Member

1. Project Management Plan

Focus Area	Details
Stakeholders	<p>Our stakeholders would include</p> <ul style="list-style-type: none">A. Farmers: The end users of the websiteB. UI/UX designers: They are the stakeholders who work in the front end. They design the user interface of the app.C. Website Developers: They work in the back end. They help in coding.D. Project Manager: He/he manages the overall outcome of the project.E. Content Writers: They help in updating the data.F. Employee: They play a major role in delivering the resources.G. Finance Manager: He/she is responsible for bank account transactions.H. Lab Tester: He/she is responsible for testing the soil ph.
Communication Management	All the important details and information shall be sent to official group of the team with a label informing the urgency of a message all the deadline shall be informed and communicated well in advance.
Procurement Management	In a strategic approach to optimizing organizational spend the team will invoice sourcing, requisitioning, ordering, inspection and reconciliation.

2. ESTIMATION

2.1 EFFORT AND COST ESTIMATION

Activity description	Sub task	Sub task description	Effort in hours	Cost in INR
Design the user screen	1. E1R1A1T1 (Effort requirement activity task) 2. E1R1A1T2	Conform the user requirements (Acceptance criteria) Integrating the backend functionality of the screen components	5 7	20000 30000
Identify the data source for displaying transaction page and details	1. E1R1A1T1 2. E1R1A1T2	Go through the transaction details and documents Document	7 4	40000 20000

Effort (in hrs)	Cost (INR)
2	700

2.2 Maintenance and support cost (Op Ex)

Category	Details	Quantity	Cost per qty per annum	Cost per item
People	Designer, website developer, coder and tester	5	3,000,000	50,00,000
Liscence	Operating system Data base	15	15000	200000
Infrastructure	Server, storage and network	10	10000	500000

3. PROJECT TEAM FORMATION

3.1 Identification of team members

Name	Role	Responsibilities
1. Durga	UI/UX designer	Provides the user interface for login and transaction
2. Reddy	Website developer	Works in the backend and helps in the coding
3. Roshini	Project manager	Manages the overall outcome of the project
4. Aarhee	Content writer	Helps in updating the data
5. Durga	Employee	Plays a major role in delivering the resources
6. Reddy	Finance manager	Responsible for bank account transactions
7. Roshini	Lab tester	Responsible for the testing the soil ph

3.2 Responsibility assignment matrix

RACI matrix	Team member	Team member	Team member	Team member
Activity	Name (BA)	Name (Developer)	Name (Project manager)	Key business user
User requirement documentation	Durga	Durga	Durga	Durga
Front end	Reddy	Reddy	Roshini	Aarhee
Back end	Roshini	Reddy	Roshini	Durga
Tester	Reddy	Durga	Aarhee	Roshini

A	Accountable
R	Responsible
C	Consult
I	Inform

Result :

Thus, the project plan was documented successfully.



Department of Networking and Communications

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	5
Title of Experiment	Prepare Work breakdown structure, Timeline chart, Risk identification table
Name of the candidate	DURGA CHANDANA SREE M
Team Members	ROSHNI DEVI REDDY JYOTHI SRI D AARHEE PHUKAN
Register Number	RA2011028010099 RA2011028010104 RA2011028010108 RA2011028010092
Date of Experiment	25-04-2022

Mark Split Up

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2	Viva	5	
Total		10	

Staff Signature with date

Aim

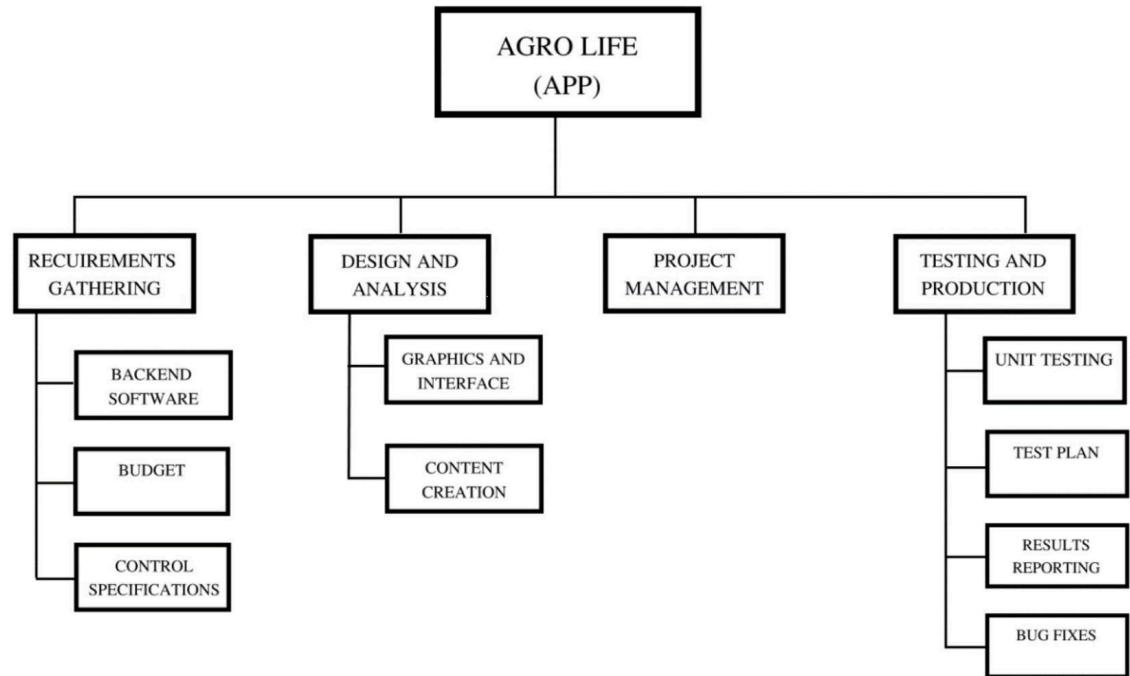
To Prepare Work breakdown structure, Timeline chart and Risk identification table

Team Members:

Sl No	Register No	Name	Role
1	RA2011028010099	DURGA CHANDANA SREE M	Rep
2	RA2011028010108	REDDY JYOTHI SRI D	Member
3	RA2011028010104	ROSHNI DEVI	Member
4	RA2011028010092	AARHEE PHUKAN	Member

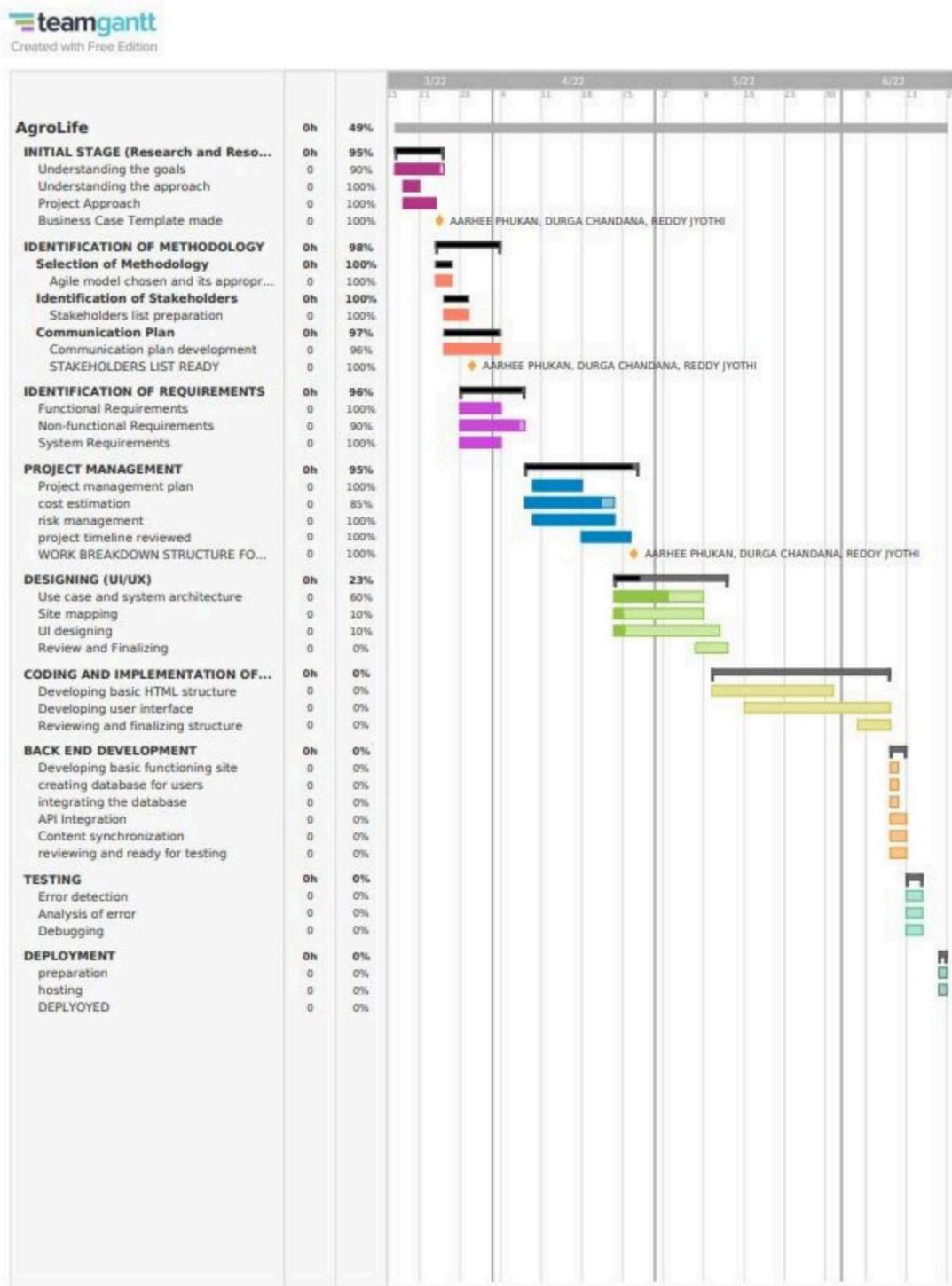
WBS – Examples

WORK BREAKDOWN STRUCTURE



- ▶ 0.0 AGRO LIFE (app)
- ▶ 1.0 Requirements Gathering
 - 1.1 Backend software
 - 1.2 Budget
 - 1.3 Control specifications
- ▶ 2.0 Analysis & Design
 - 2.1 graphics and interface
 - 2.2 Content creation
- ▶ 3.0 Project Management
- ▶ 4.0 Testing and Production
 - 4.1 Unit testing
 - 4.2 Test plan
 - 4.3 Results reporting
 - 4.4 Bug fixes

TIMELINE – GANTT CHART



RISK ANALYSIS – SWOT & RMMM

SWOT ANALYSIS

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none">❖ User-friendly design❖ Quick sign up and quick transaction process.❖ User can go through the ordered details whenever necessary.❖ Seasonal discounts are provided for the regular users of the app.❖ User can change the credentials in case he/she forgots the password.	<ul style="list-style-type: none">❖ Updation of new organic product takes time because government should approve the product.❖ Delivery may delay for one or two days. It depends upon the area where the user is living.❖ Transaction page may take some time to load because of the buffer and server issues.❖ Lab testers may take time to test the soil if they are more number of users.
OPPORTUNITIES	THREATS
<ul style="list-style-type: none">❖ Agrolife has a great opportunity compare to other farming websites because of the organic products and seasonal discounts.❖ New technology.❖ Online transactions.❖ In this app we regularly update the version of the app so it is reliable feature of our app.❖ Innovative marketing stratergies.	<ul style="list-style-type: none">❖ New entrants (Websites)❖ Security regarding the transactions.❖ Fraudulent activities

RISK MANAGEMENT FRAMEWORK

RISK	CATEGORY	PROBABILITY	IMPACT	STRATEGY
User and functional requirements.	Product definition	40%	2	Mitigate
Users of the app may not have the technical background	Customer risk	50%	1	Accept
The app may not be compatible with user devices.	Technological risk	10%	3	Avoid
The cost for soil testing labs may be more	Business impact risk	30%	3	Mitigate

IMPACT:

- 1.Catastrophic – causes serious damage
- 2.Critical – very important
- 3.Marginal – not very important
- 4.Negligible – unimportant, causes fewer consequences

Risk Management Framework- Risks And Mitigation ...

Response	Strategy	Examples
Avoid	Risk avoidance is a strategy where the project team takes action to remove the threat of the risk or protect from the impact	<ul style="list-style-type: none"> Extending the schedule Reducing/removing scope Change the execution strategy
Transfer	Risk transference involves shifting or transferring the risk threat and impact to a third party. Rather transfer the responsibility and ownership	<ul style="list-style-type: none"> Purchasing insurance Performance bonds Warranties Contract issuance (lump sum)
Mitigate	Risk mitigation is a strategy where the project team takes action to reduce the probability of the risk occurring. This does not risk or potential impact, but rather reduces the likelihood of it becoming real.	<ul style="list-style-type: none"> Increasing testing Changing suppliers to a more stable one Reducing process complexity
Accept	Risk acceptance means the team acknowledges the risk and its potential impact, but decides not to take any preemptive action to prevent it. It is dealt with only if it occurs.	<ul style="list-style-type: none"> Contingency reserve budgets Management schedule float Event contingency

Slide 1 of 5

FIGURE 28.2

Sample risk table prior to sorting

Risks	Category	Probability	Impact	RMMM
Size estimate may be significantly low	PS	60%	2	
Larger number of users than planned	PS	30%	3	
Less reuse than planned	PS	70%	2	
End-users resist system	BU	40%	3	
Delivery deadline will be tightened	BU	50%	2	
Funding will be lost	CU	40%	1	
Customer will change requirements	PS	80%	2	
Technology will not meet expectations	TE	30%	1	
Lack of training on tools	DE	80%	3	
Staff inexperienced	ST	30%	2	
Staff turnover will be high	ST	60%	2	
Σ				
Σ				
Σ				

Impact values:

1—catastrophic
2—critical
3—marginal
4—negligible

Result:

Thus, the work breakdown structure with timeline chart and risk table were formulated successfully.



Department of Networking and Communications

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	6
Title of Experiment	Design a System Architecture, Use Case and Class Diagram
Name of the candidate	DURGA CHANDANA SREE M
Team Members	REDDY JYOTHI SRI D AARHEE PHUKAN ROSHNI DEVI JAMMULA
Register Number	RA2011028010099 RA2011028010108 RA2011028010092 RA2011028010104
Date of Experiment	10-05-2022

Mark Split Up

S.No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

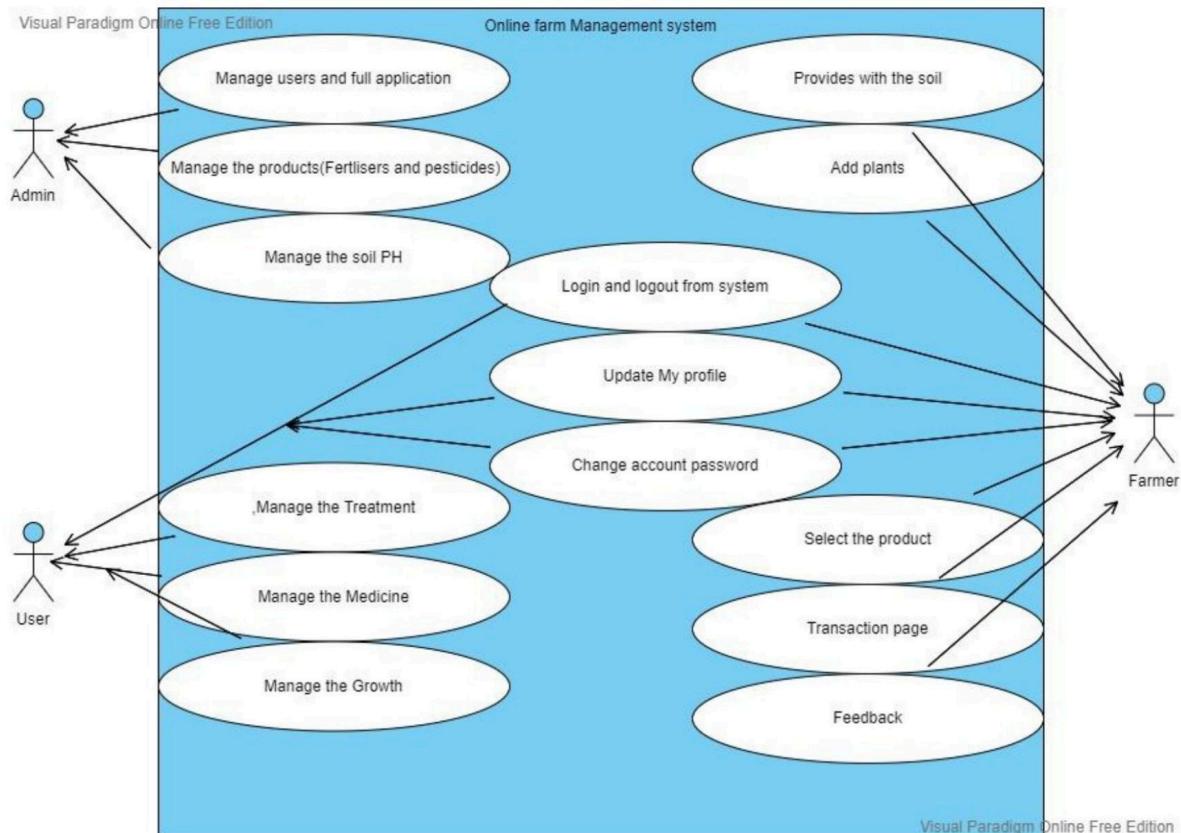
Aim

To Design a System Architecture, Use case and Class Diagram

Team Members:

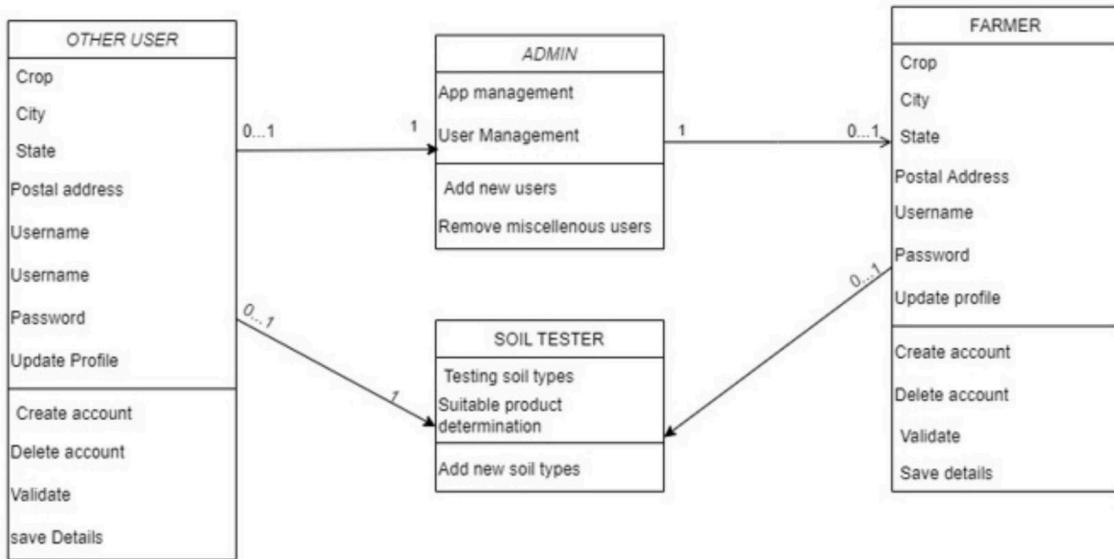
Sl No	Register No	Name	Role
1	RA2011028010099	DURGA CHANDANA SREE M	Rep
2	RA2011028010108	REDDY JYOTHI SRI D	Member
3	RA2011028010092	AARHEE PHUKAN	Member
4	RA2011028010104	ROSHNI DEVI JAMMULA	Member

USE CASE DIAGRAM:



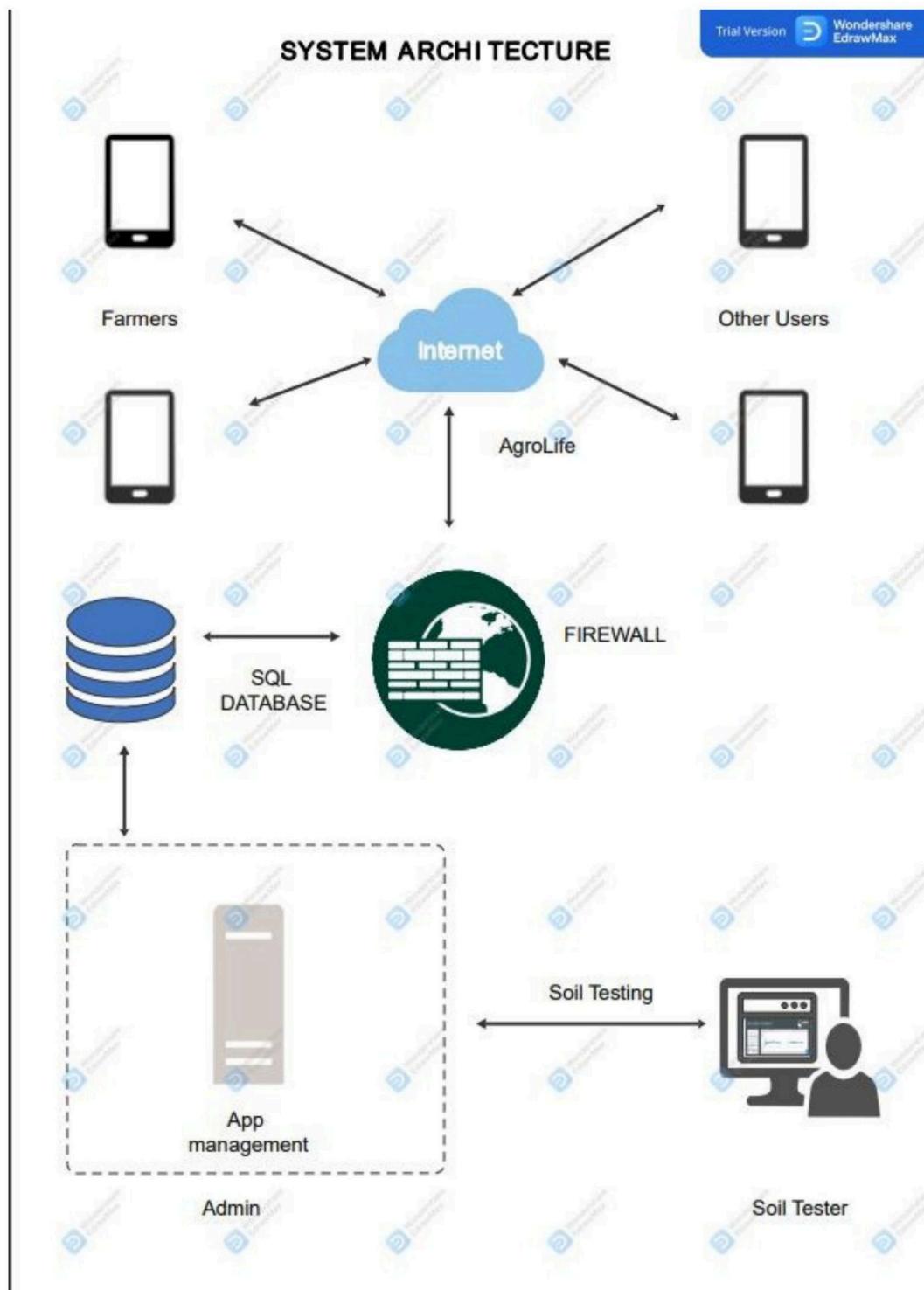
(done with creately)

CLASS DIAGRAM :



(created with draw.io)

System architecture :



(Done with EdrawMax)

Result:

Thus, the system architecture, use case and class diagram created successfully.



School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	7
Title of Experiment	Design a Entity relationship diagram
Name of the candidate	DURGA CHANDANA SREE M
Team Members	REDDY JYOTHI SRI D AARHEE PHUKAN ROSHNI DEVI JAMMULA
Register Number	RA2011028010099 RA2011028010108 RA2011028010092 RA2011028010104
Date of Experiment	16-05-22

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

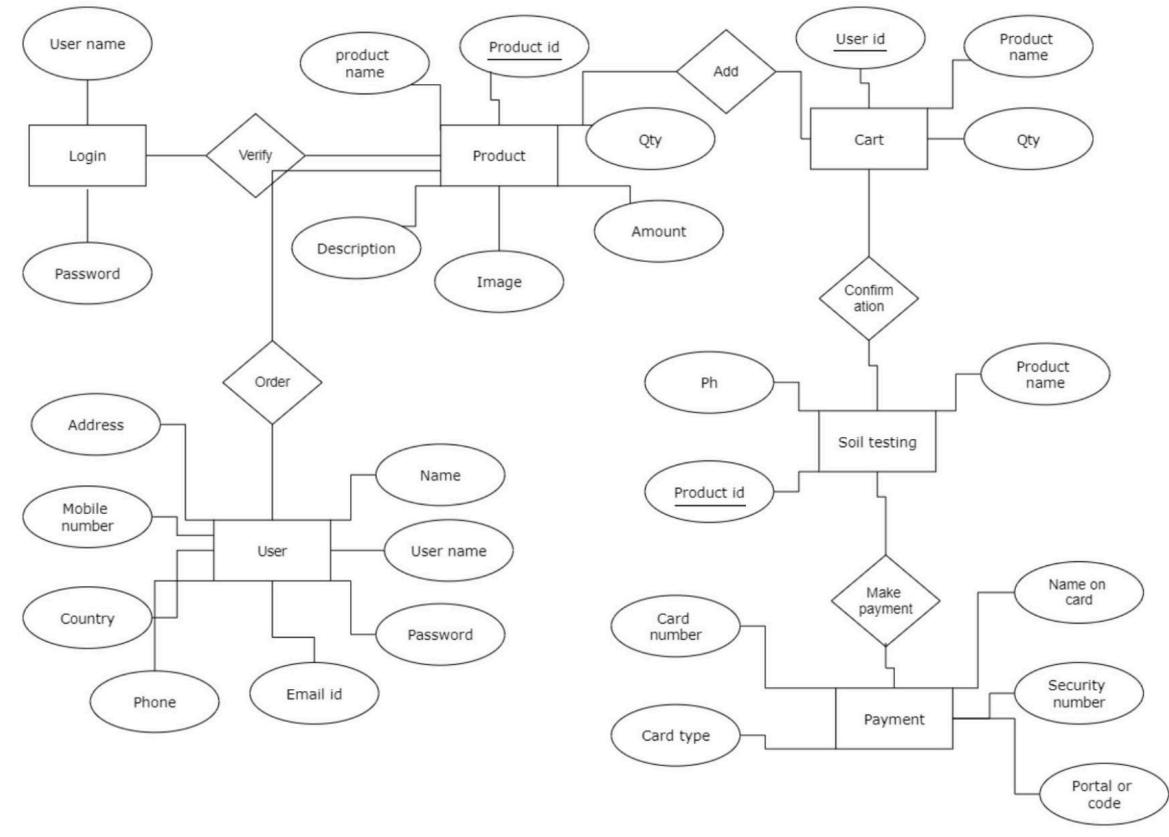
Aim

To create the Entity Relationship Diagram

Team Members:

S No	Register No	Name	Role
1	RA2011028010099	DURGA CHANDANA SREE M	Rep
2	RA2011028010108	REDDY JYOTHI SRI D	Member
3	RA2011028010092	AARHEE PHUKAN	Member
4	RA2011028010104	ROSHNI DEVI JAMMULA	Member

ER Diagram – AGRO LIFE (mobile app)



Result:

Thus, the entity-relationship diagram was created successfully.



School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	8
Title of Experiment	Develop a Data Flow Diagram (Process-Up to Level 1)
Name of the candidate	DURGA CHANDANA SREE M
Team Members	REDDY JYOTHI SRI D AARHEE PHUKAN ROSHNI DEVI JAMMULA
Register Number	RA2011028010099 RA2011028010108 RA2011028010092 RA2011028010104
Date of Experiment	17-05-22

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	

Total	10	
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Staff Signature with date

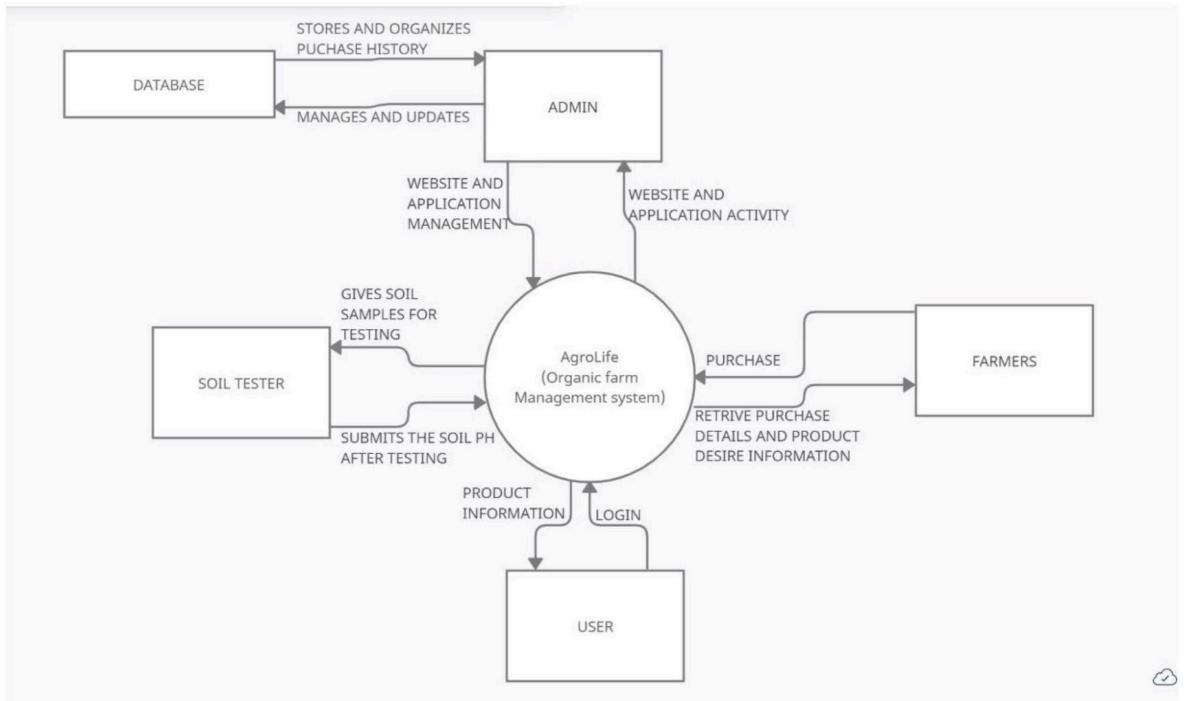
Aim

To develop the data flow diagram up to level 1 for the <Agro life – mobile application>

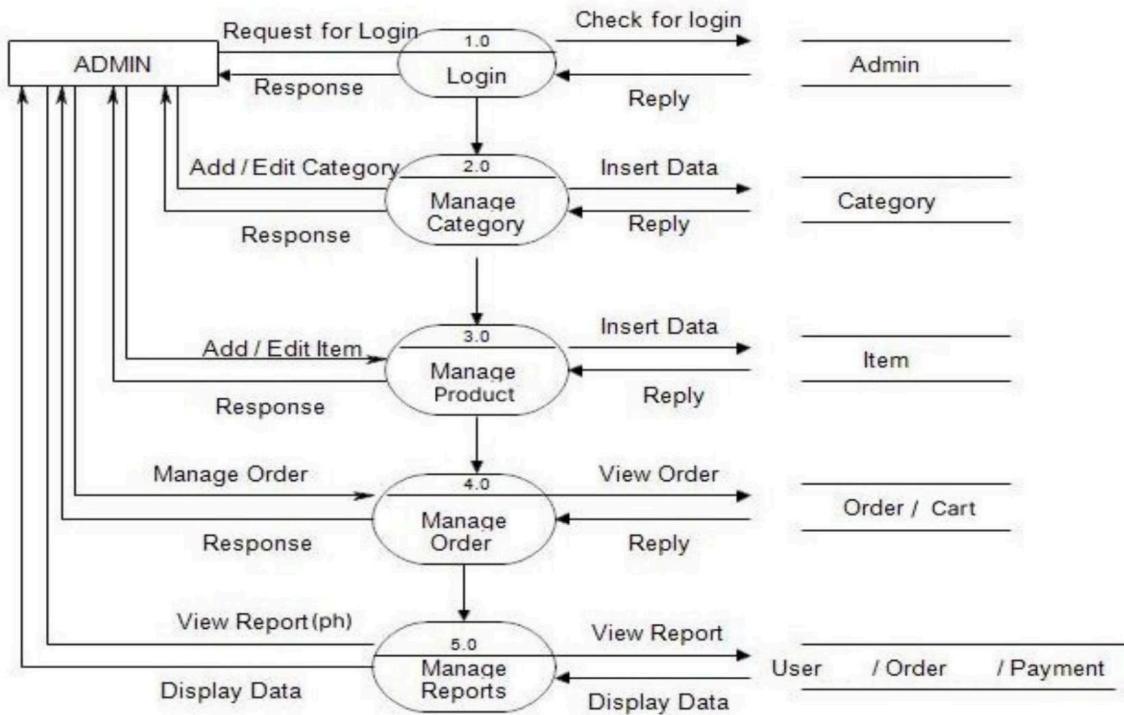
Team Members:

S No	Register No	Name	Role
1	RA2011028010099	DURGA CHANDANA SREE M	Rep
2	RA2011028010092	AARHEE PHUKAN	Member
3	RA2011028010104	ROSHNI DEVI JAMMULA	Member
4	RA2011028010108	REDDY JYOTHI SRI D	Member

DATA FLOW DIAGRAM LEVEL-0 AGRO LIFE



DATA FLOW DIAGRAM LEVEL-1 AGRO LIFE



Result:

Thus, the data flow diagrams have been created for the Agro life (mobile application).



School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	9
Title of Experiment	Design a Sequence and Collaboration Diagram
Name of the candidate	DURGA CHANDANA SREE MANDAPATI
Team Members	AARHEE PHUKAN REDDY JYOTHI SRI D ROSHINI DEVI JAMMULA
Register Number	RA2011028010099 RA2011028010092 RA2011028010104 RA2011028010108
Date of Experiment	25-05-2022

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

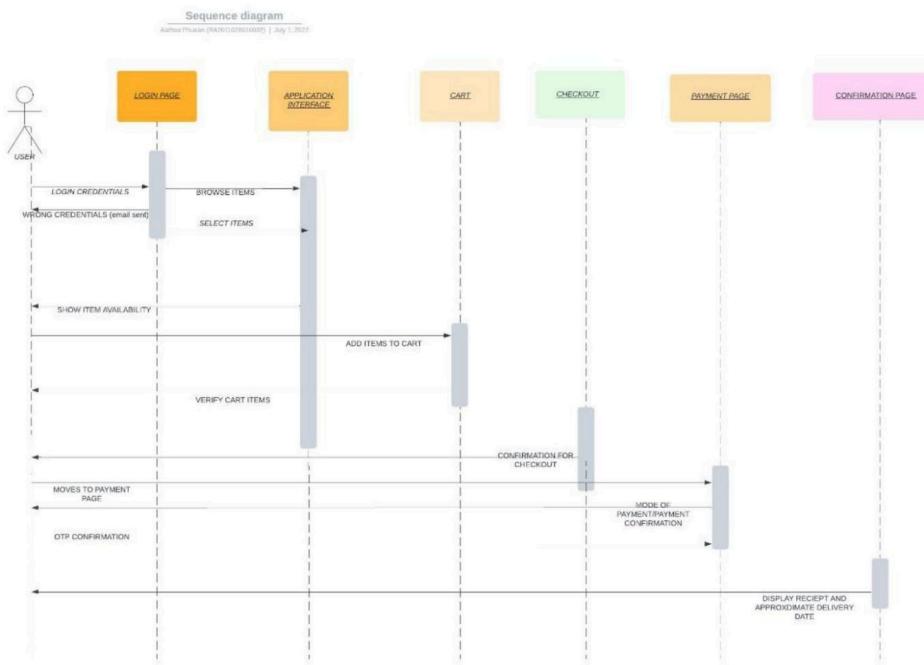
Aim

To create the sequence and collaboration diagram for the AgroLife.

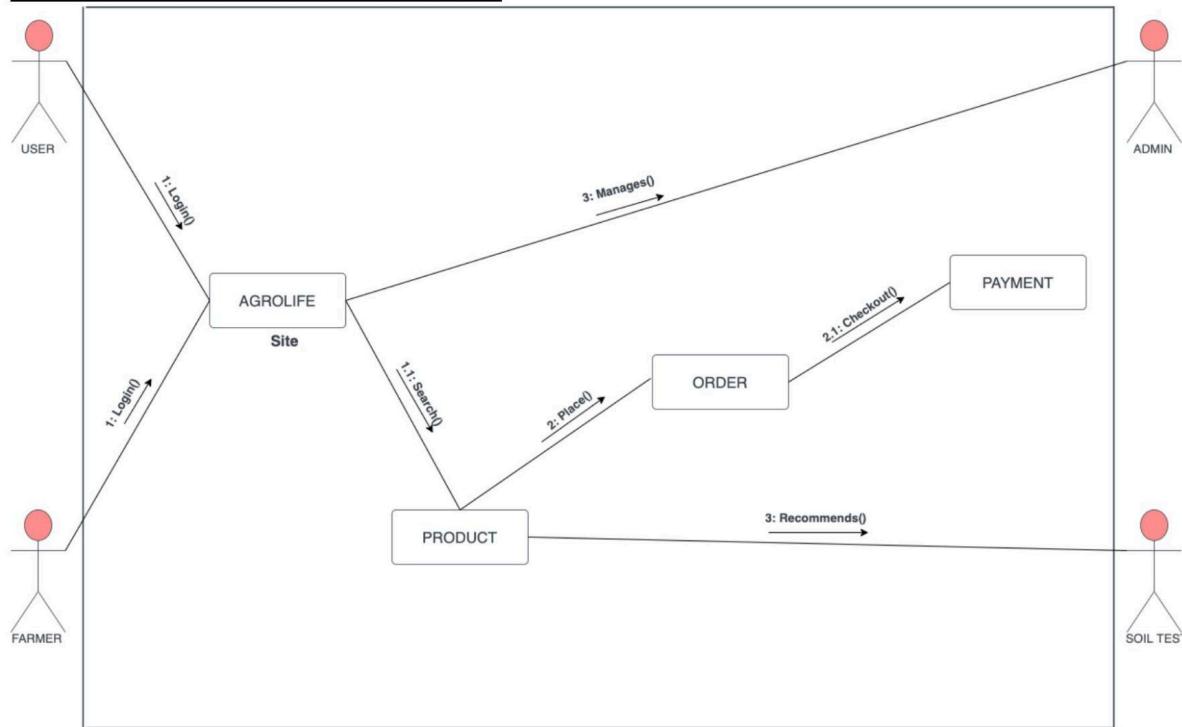
Team Members:

S No	Register No	Name	Role
1	RA2011028010099	DURGA SHREE MANDAPATI	Rep/Member
2	RA2011028010092	AARHEE PHUKAN	Member
3	RA2011028010104	ROSHINI DEVI JAMMULA	Member
4	RA2011028010108	REDDY JYOTHI SRI D	Member

SEQUENCE DIAGRAM:



COLLABORATION DIAGRAM



Result: Thus, the sequence and collaboration diagrams were created for AgroLife.



School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	10
Title of Experiment	Develop a Testing Framework/User Interface
Name of the candidate	DURGA CHANDANA SREE M
Team Members	AARHEE PHUKAN ROSHNI DEVI JAMMULA REDDY JYOTHI SRI D
Register Number	RA2011028010099 RA2011028010092 RA2011028010104 RA2011028010108
Date of Experiment	10-06-22

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

Aim

To develop the testing framework and/or user interface framework for the <project name>

Team Members:

S No	Register No	Name	Role
1	RA2011028010099	DURGA CHANDANA SREE M	Rep/Member
2	RA2011028010092	AARHEE PHUKAN	Member
3	RA2011028010104	ROSHNI DEVI JAMMULA	Member
4	RA2011028010108	REDDY JYOTHI SRI D	Member

Executive Summary:

- The Scope of testing of our agro life application includes Testing API integration with consistent data with Computed-Generated tests ,making test cases for different modules to check if the code can withstand boundary cases that can arise if an exception arises. Eg: Test for payment portal or for selecting the pesticides and fertilizers.
- The objective of this testing includes testing of all modules and to check if any exception exists in any of the modules.
- Regression(Re-running the test cases after change) testing would be important part of software practice that would ensure our application still functions as expected after any code changes,updates, or improvements.
- Lastly critical path testing would be aimed at exploring the functionality used by typical daily activities.

Test Plan:

We as team have decided that the testing will follow top-down approach, as it will go well with Agile method of software development. With this method the testing can begin at the start of the project with continuous integration between development and testing. Agile Testing methodology will be continuous and helps us finish our projects before deadline. We will 1st go through the components , then test the archetype and then other minute details. After completing the functional testing we will move on to non-functional testing.

Scope of Testing

The scope of testing for Agrolife application includes testing API integration with consistent data along with Computed-Generated test cases, making test-cases for different modules to check if the code can withstand boundary cases can arise if an exception arises.

Functional Testing

Our application Agro life is done with four stages:

Unit Testing	Unit testing is the first level of testing and will be performed by the developers themselves. It is a process of ensuring individual components of piece of software at the code level are functional and work as they were designed to.
System testing	System testing is a black box testing method used to evaluate completed and integrated system, as a whole , to ensure if it meets specific requirements.

Integration testing	After each unit is thoroughly tested, it is integrated with other units to create modules or components that are designed to perform specific tasks or activities. The integration of the various modules are tested in the phase.
Acceptance testing	Acceptance testing is the last phase of functional testing and it is used to access whether or not the final piece of software is ready for delivery. If not, user feedback is taken and following changes are made.

Modules and the aspects they will be testing

User interface testing	The testing of this particular module code will consist of checking if the application displaces all the required buttons and check if the settings panel is in line with the main screen. The layout and search bar should be placed in a user friendly manner .
API Integration	The testing of the code of this module deals with the connectivity and processing of different applications. We will check that how much traffic that the website can handle, in short the number of applications running simultaneously to provide data such as scraping tool
Payment	The need of this module is to ensure the security reliability and performance of payment gateway by encrypting and securing the payment

	details between user and merchant while providing a smooth payment experience.
Backup	In this module, we will be checking if the backup is being made and is being retrieved as and when the user wants to.

Non-Functional

Performance testing	It is an non functional testing technique used to determine how an application will behave under various conditions
Security testing	With the presence of cloud base testing platforms and cyber attacks, there is a growing concern and need for security of data being used and stored in software. It is an non functional and software testing technique used to determine if the information and data in a system is protected.
Data latency	It is an key metric that helps to determine the effectiveness of the application this makes the faster delivery of the data that is much more important.
Availability	This application is available in whatever browser we are using. As it is an user friendly application. Logging in is effective.

Types of testing, methodology, tools

<u>Category</u>	<u>Methodology</u>	<u>Tools required</u>
Functional requirements	Manual	<ol style="list-style-type: none">1. Acceptance testing2. White box testing3. Black box testing4. Unit testing5. System testing6. Integration testing
Non functional requirements	Manual User or crowd validation	<ol style="list-style-type: none">1. Authentication2. Security3. Data latency4. Performance5. Availability

Result :

Thus, the testing frame work/the user interface, frame work has been created for AGROLIFE.



School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	11
Title of Experiment	Test Cases
Name of the candidate	DURGA CHANDANA SREE MANDAPATI
Team Members	AARHEE PHUKAN ROSHINI DEVI JAMMULA REDDY JYOTHI SRI D
Register Number	RA2011028010099 RA2011028010092 RA2011028010104 RA20110280108
Date of Experiment	14.06.2022

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

Aim

To develop the test cases manual for the AgroLife.

Team Members:

S No	Register No	Name	Role
1	RA2011028010099	DURGA CHANDANA SREE M	Rep/Member
2	RA2011028010108	REDDY JYOTHI SRI D	Member
3	RA2011028010104	ROSHNI DEVI JAMMULA	Member
4	RA2011028010092	AARHEE PHUKAN	Member

Test Case Functional Test Cases

Test ID (#)	Test Scenario	Test Case	Execution Steps	Expected Outcome	Actual Outcome	Status	Remarks
TS_AG_REGISTRATION_001	New user registration	Accept valid user information	<ul style="list-style-type: none"> Enter Correct email but incorrect phone number Enter Incorrect email but correct phone number Enter Correct email and phone number 	<ul style="list-style-type: none"> Prompt invalid user Prompt invalid user User should be taken to the next page to enter more personal information and information about the farm. 	-	-	In progress
TS_AG_LOGIN_002	Verify Login functionality of application login page	If User data is valid	<ul style="list-style-type: none"> Enter Correct Username but incorrect password Enter Incorrect Username but correct password Enter Correct Username and password 	<ul style="list-style-type: none"> Prompt invalid user Prompt invalid user User should be taken to the next page for entering more user details 	-	-	In progress
TS_AG_TRACKING_004	Verify order tracking	If order tracking is timely	<ul style="list-style-type: none"> Shows packing stage, doesn't show shipped and delivery stage. Doesn't even update packing. Packing and shipping updated but delivery not updated. 	<ul style="list-style-type: none"> Shows problem in shipping. Shows order not packed. Shows not delivered yet. 	-	-	In progress

			<ul style="list-style-type: none"> • Each step from ordering to delivering is updated immediately on the Track order page. 				
TS_AG_SOILTEST_005	Soil collection process	Soil eligibility for soil testing.	<ul style="list-style-type: none"> • Soil details entered doesn't match. • Soil contaminated before testing. • No disparity in soil. 	<ul style="list-style-type: none"> • Soil deemed ineligible for testing. Asked to re-enter details. • Soil deemed ineligible for testing. • Soil accepted for testing. 	-	-	In progress

Non-Functional Test Cases

Test ID (#)	Test Scenario	Test Case	Execution Steps	Expected Outcome	Actual Outcome	Status	Remarks
TS_AG_NF_001	Security	Check application security	Bugs, errors and virus checks are conducted on the application.	Provides secured transactions that include OTP as authentication verification.	-	-	In progress

TS_AG_NF_00 2	Low Latency of data	Check speed of data updation.	Changes are made in the back end and the updation time for each code is recorded. Code having least data latency chosen.	Data is updated on the interface without delay	-	-	In progress
TS_AG_NF_00 3	Performance	Check response time.	Changes are made in the back end and the response time for each code is recorded. Code having least response time is chosen.	The site response time should be minimum.	-	-	In progress
TS_AG_NF_00 4	Availability	Check site and application availability.	-	The site should be available all the time.	-	-	In progress
TS_AG_NF_00 5	E-mail connectivity	Check email sending speed.	Application is run by beta testers.	The site should respond fast and send required email responses.	-	-	In progress

Result: Thus, the test case manual has been created for the AgroLife.



School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	12
Title of Experiment	Manual Test Case Reporting
Name of the candidate	DURGA CHANDANA SREE M
Team Members	REDDY JYOTHI SRI D AARHEE PHUKAN ROSHNI DEVI JAMMULA
Register Number	RA2011028010099 RA2011028010108 RA2011028010092 RA2011028010104
Date of Experiment	14-06-2022

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	

Total	10	
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Staff Signature with date

Aim

To prepare the manual test case report for the AGROLIFE

Team Members:

S No	Register No	Name	Role
1	RA2011028010099	DURGA CHANDANA SREE M	Rep/Member
2	RA2011028010108	REDDY JYOTHI SRI D	Member
3	RA2011028010104	ROSHNI DEVI JAMMULA	Member
4	RA2011028010092	AARHEE PHUKAN	Member

Category	Progress Against Plan	Status
Functional Testing	Amber	In-Progress
Non Functional Testing	Amber	In-Progress

Functional	Test Case Coverage (%)	Status
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User Registration	100%	Completed
Login id	100%	Completed
Order tracking	30%	In-Progress
Adding products to the cart	70%	In-Progress
Errors when screen sizes vary	0%	0

Non-Functional	Test Case Coverage (%)	Status
Security	50% (Working Prototype)	In-Progress
Data latency	50% (Working Prototype)	In-Progress
Performance	50% (Working Prototype)	In-Progress
Availability	50% (Working Prototype)	In-Progress
E-Mail Connectivity	50% (Working Prototype)	In-Progress

Summary : The test cases have been conducted by dividing them into two categories namely Functional and non-functional test cases. All the test cases are presently in progress. The results and the report so far obtained have been attached above.

Result :

Thus, the test case report has been created for the **AGROLIFE**



School of Computing

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

Experiment No	13
Title of Experiment	Provide the details of Architecture Design/Framework/Implementation
Name of the candidate	DURGA CHANDANA SREE MANDAPATI
Team Members	AARHEE PHUKAN REDDY JYOTHI SRI D ROSHINI DEVI JAMMULA
Register Numbers	RA2011028010099 RA2011028010092 RA2011028010104 RA2011028010108
Date of Experiment	30-06-22

Mark Split Up

S. No	Description	Maximum Mark	Mark Obtained
1	Exercise	5	
2	Viva	5	
Total		10	

Staff Signature with date

Aim

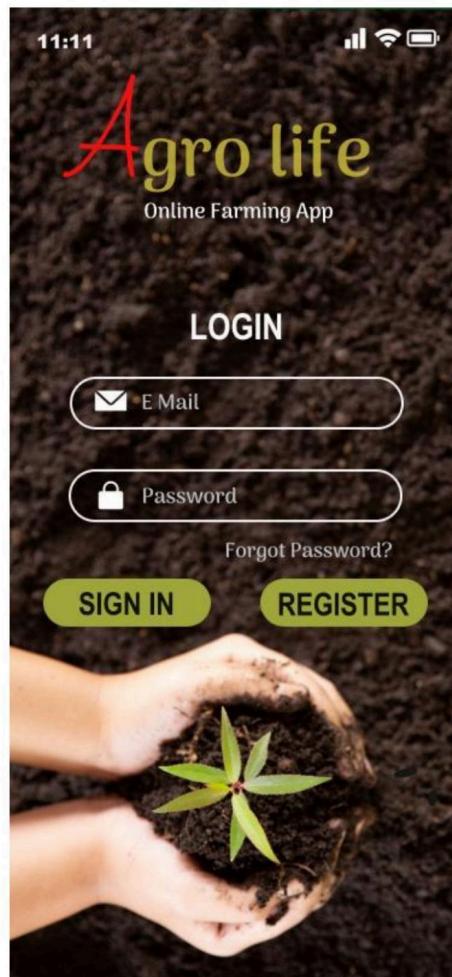
To provide the details of architectural design/framework/implementation.

Team Members:

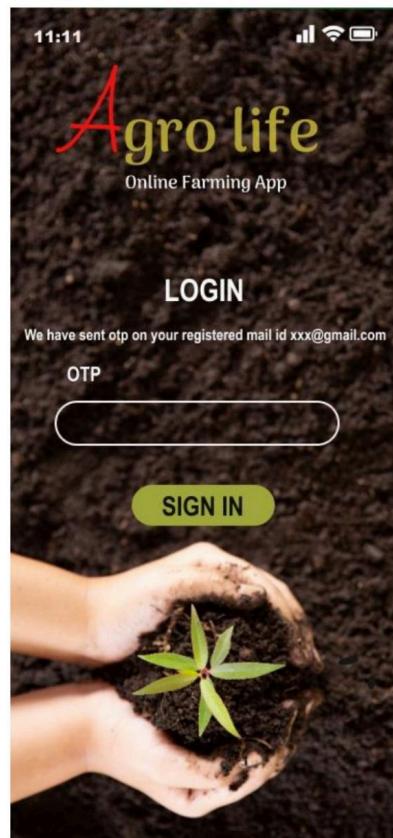
S No	Register No	Name	Role
1	RA2011028010099	DURGA CHANDANA SREE MANDAPATI	Rep/Member
2	RA2011028010092	AARHEE PHUKAN	Member
3	RA2011028010104	ROSHINI DEVI JAMMULA	Member
4	RA2011028010108	REDDY JYOTHI SRI D	Member

Full documentation with the coding User interface of Agrolife – a mobile application.

1. Login page



If the user is unable to login it redirects to the below page



For new user login :



2. Home page and other pages



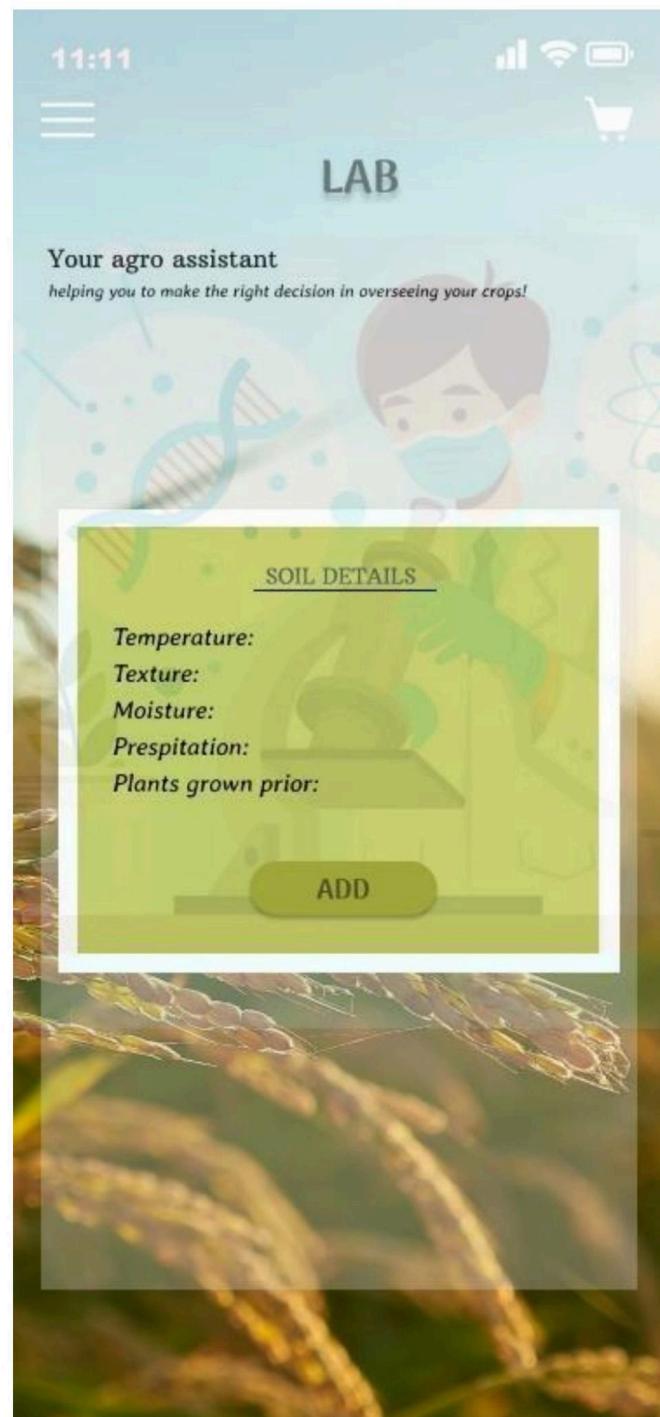
The image displays three sub-screens from the same mobile application, each showing a list of products under a specific category:

- INSECTISIDES**: Shows four identical items: "Neem oil 455/-" with a minus button, a central "1", and a plus button.
- MANURES**: Shows four identical items: "Neem oil 455/-" with a minus button, a central "1", and a plus button.
- PESTICIDES**: Shows four identical items: "Neem oil 455/-" with a minus button, a central "1", and a plus button.

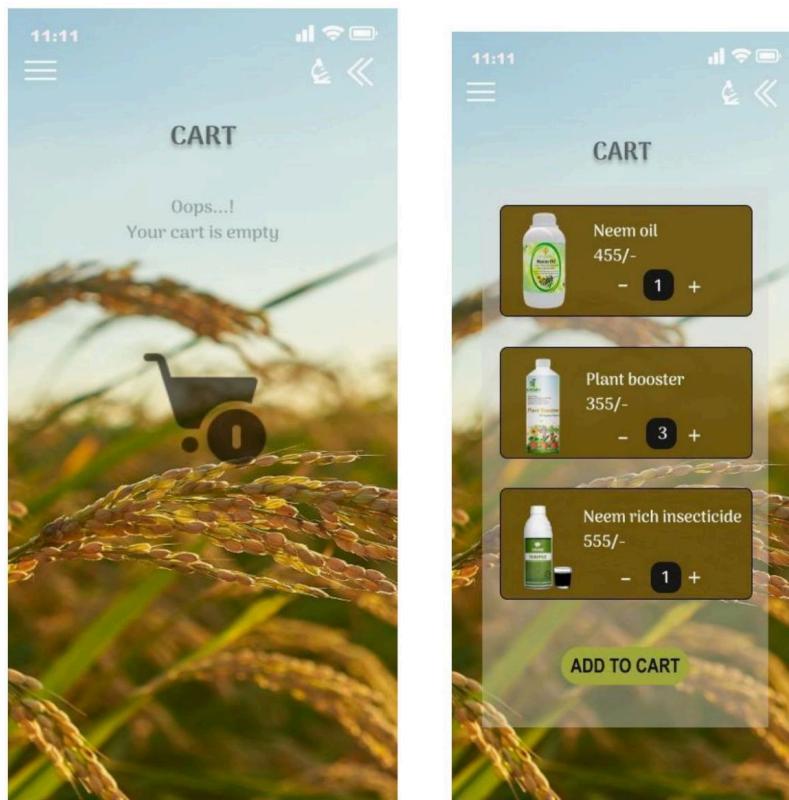
Each product item includes a small thumbnail image of a white bottle with a green label.

3. Lab page

It takes the input of soil details for further suggestions.



4. Cart page



5. Payment page



Result: Thus, the details of architectural design/framework/implementation along with the screenshots were provided.

CONCLUSION

Hence the complete details of the project “Agrolife- online farming application is done and verified. Software and hardware functionalities are specified. a prototype is designed for the execution of the application.

APPENDIX

CODE:

```
1. Home page
height: 812px;
width: 375px;
left: 80px;
top: 509px;
border-radius: 0px;
/* home d */
position: relative;
width: 375px;
height: 812px;
background: #191919;
/*search*/
height: 45px;
width: 337px;
left: 19px;
top: 126px;
border-radius: 41px;
/* Group 17 */
position: absolute;
width: 337px;
height: 45px;
left: 19px;
top: 126px;
```

```
2. Cart
height: 812px;
width: 375px;
left: 1887px;
top: 1397px;
border-radius: 0px;
/* cart WITH ITEMS */
position: relative;
width: 375px;
height: 812px;
background: #191919;
/* Group 20 */
position: absolute;
width: 282px;
height: 118px;
left: 45px;
top: 183px;
/* Rectangle 16 */
```

```
box-sizing: border-box;
position: absolute;
width: 273px;
height: 118px;
left: 52px;
top: 333px;
background: rgba(105, 80, 6, 0.92);
border: 1px solid #000000;
border-radius: 8px;
/* Rectangle 17 */
box-sizing: border-box;
position: absolute;
width: 273px;
height: 118px;
left: 52px;
top: 482px;
background: rgba(105, 80, 6, 0.92);
border: 1px solid #000000;
border-radius: 8px;
```

3. Payment

```
/* payment */
position: relative;
width: 375px;
height: 812px;
background: #191919;
/* Group 18 */
position: absolute;
width: 156px;
height: 38px;
left: 110px;
top: 106px;
filter: drop-shadow(0px 4px 4px rgba(0, 0, 0, 0.25));
/* Group 14 */
position: absolute;
width: 178px;
height: 53px;
left: 99px;
top: 239px;
filter: drop-shadow(0px 4px 4px rgba(0, 0, 0, 0.25));
/* All your transactions are securely done with AgroLife. */
position: absolute;
width: 235px;
height: 14px;
left: 70px;
top: 627px;
```

```
font-family: 'Averia Libre';
font-style: italic;
font-weight: 400;
font-size: 10px;
line-height: 144.52%;
/* or 14px */
text-align: center;
color: #000000;
```