

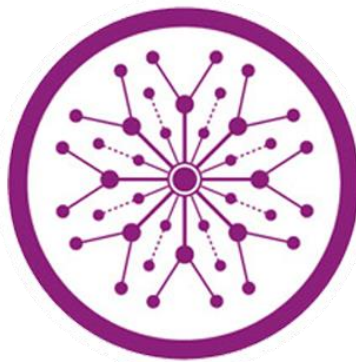
Agri Marketplace

Final Year Project

Session 2018-2022

A project submitted in partial fulfillment of the degree of

BS in Computer Science



Department of Computer Science

Faculty of Computer Science & Information Technology

Superior University, Lahore

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HEAD OF THE DEPARTMENT

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Dedication

I dedicate this project to God Almighty my creator, my strong pillar, my source of inspiration, wisdom, knowledge and understanding. He has been the source of my strength throughout this program and on His wings only have I soared.

This project is especially dedicated to the teachers who helped and guided us to successfully complete this project work.

*This work is dedicated to my respected Supervisor (**Mr. Saleem Mustafa**)*

Acknowledgements

It is by the Grace of Allah Almighty, the Lord and Creator of this Universe. Whose power and Glory all things are accomplished and his Prophet (P.B.U.H) who is, forever, a torch of guidance and knowledge for humanity as whole. We thank to Allah Almighty who made it possible for us to complete this project and to overcome all the difficulties faced during the course of this project. We would like to pay our thanks to our project supervisor **Mr. Saleem Mustafa** Lecturer at Superior University for specialist advice and support. It was due to his knowledge and skill that we were able to handle problems faced during the project. His kind, accommodating, Suggestion, Constant Encouragement and generous supervision made this project easy for us.

Executive Summary

While the demand for foods and opportunity agricultural commodities maintains to increase globally, offer from historical manufacturers and historical areas isn't always projected to live pace. Increasing difficulty concerning destiny foods insufficiency and consequently the hazard to boost agricultural manufacturing in agriculturally-possible land in Islamic Republic of Pakistan to meet foods goals has attracted a surge of funding hobby and activity. This new context creates dangers and opportunities. Inflated funding in Islamic Republic of Pakistan agriculture will deliver macro level monetary improvement blessings and maintain development for hundreds of thousands dwelling in rural areas. Conversely, large-scale land acquisitions may lead to local oldsters dropping get right of entry to important sources on that they depend and can boost up irreversible aid consumption. This report look carefully at environmental issues for the effect capitalist, moreover and social issues collectively with institutional preparations that include sobbuster farmers. The report moreover surveys the hazard for the effect capitalist in lots of Pakistani nations which are focused for the supply of land and water, the volume of the facultative surroundings, and promising manufacturing or marketplace prospects.

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Chapter 1

Introduction

Chapter 1: Introduction

Agri Marketplace could be a B2B cloud-primarily based mostly wholly digital marketplace for actual transactions of meals crops. We've got created an entire digital platform for Farmers and Argo-Industry consumers with distinctive delivered fee offerings an amendment market to shop for & sell, with distinctive offerings blanketed like supply, fantabulous inspections, stable bills and crime support. We have a tendency to square measure introducing block chain era to reinforce meals traceability and property, and coverage insurance for all of the foremost dangers on this agri-business. Developing countries read agriculture pretty otherwise, during which famines and low yield years will dramatically have a sway on the overall meals deliver in a very given region. Thanks to the crucial significance of meals production, the agricultural marketplace panorama is one in every of the utmost studied and developed financial segments.

1.1. Background

The History of agriculture is complicated, spanning returned heaps of years throughout a big kind of absolutely extraordinary geographic regions, climates, cultures, and technological approaches. Over 10,000 years ago, tribes started out execution woodland agriculture. This advanced inside the geographic place vicinity into the domestication of animals (i.e., cattle, sheep, goats, pigs), developing of wheat (all still about 10,000 years ago). As populace dilated dramatically over time (see), consequently did the efficiency of agriculture monetary science. This started out with agricultural upgrades just like the hoe and consequently the plow (**2500 B.C.**), irrigation through canals, and organic blighter control as early due to the fact the bronze and iron ages. This advanced greater inside the middle Ages with the appearance of fertilizers, three discipline techniques, draft horses, and advanced global exchange. Indeed, until the monetary Revolution (18th and 19th centuries) the overpowering majority of the human populace worked lengthy onerous days to provide you with sufficient meals to feed the lots.

1.2. Motivations and Challenges

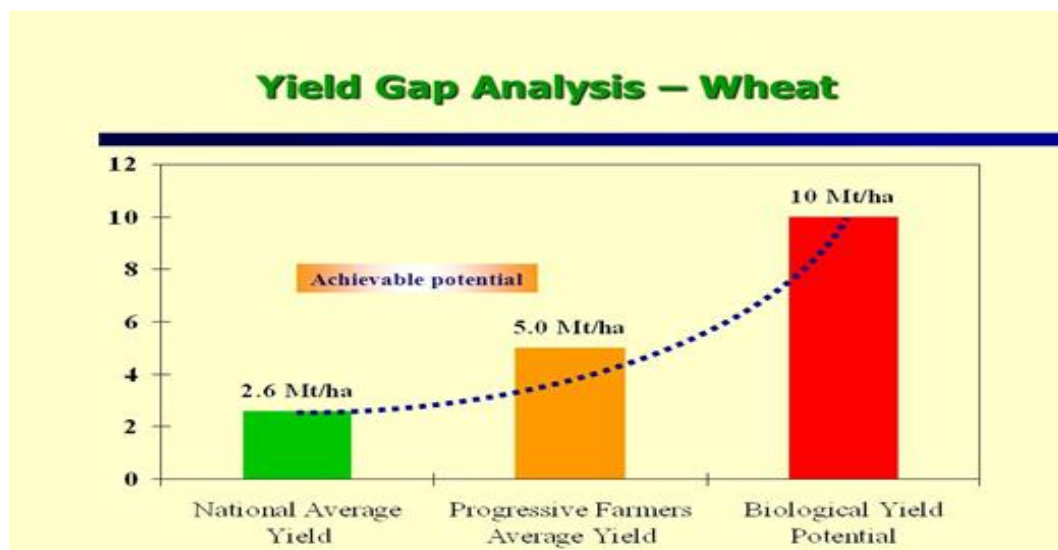
Until recently, most of the world's food has been eaten through those that turn out it. Yet with economic diversification and rural town migration, the quantitative relation of meals makers to meals shoppers may fall considerably even though the worldwide world stabilizes spherical gift day levels. The worldwide world is not sturdy but. It maintains to enlarge and is doing thus while regular predominant meals generating square measures are imminent the foremost that they may turn out for the native and international markets. moreover, no giant new productivity profits square measure anticipated presently, as a minimum currently now not aboard typical R&D trajectories, while the prevailing challenges square measure equally nuanced through the reality that a totally sizeable vary of the new "non-manufacturers" are going to be a district of town dangerous whose cash-strapped governments already war to stable cheap meals provides.

1.3. Goals and Objectives

Ambitious property agriculture dreams should be targeted on disposing of water excellent influences, heading off water overuse and mitigating greenhouse gas emissions in supply chains. Our goals should goal those influences altogether your foremost plants that are essential to the meeting of your very last product as companion diploma ingredient (e.g., row plants are feed for livestock) or due to the fact the product itself (e.g., almonds). Best-in-magnificence goals go beyond the company's direct offer chain and set up to partnering with local useful resource organizations, governments and opportunity stakeholders working to scale back agricultural bad influences and growth superb influences at the bottom. Opportunity ambitious goals can also be mixed with acquisition or sourcing goals.

1.4. Gap Analysis

Yield gap analysis is an increasingly popular concept. It's an effective approach to reveal and acknowledge the biophysical potentialities to satisfy the projected boom in necessitate for agricultural merchandise nearer to 2050, and to assist choice creating on analysis, policies, improvement and funding this is often required. This Special Issue offers the most recent just about ideas, ways and programs of yield gap analysis. The method papers emphasize the wish for ergonomically sound and applicable analyses, from neighborhood to international scales. The fourteen papers supply samples of programs to at least one of a sort crops, weather zones and producing conditions, at numerous abstraction extents and with one in all a sort techniques and records availableness.



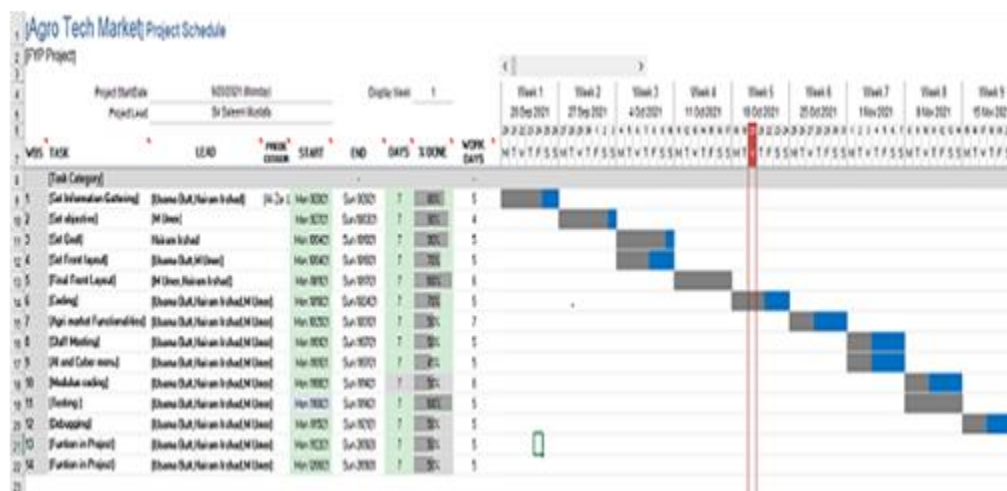
1.5. Proposed Solution

The key problems concerning selling interventions supported the occasion or creation of agro-processing technology region unit that the technology ought to be applicable (in phrases of price, stage of capacity wanted and cultural factors, like their acceptableness to women), and there ought to be marketplace call for the end-product. There is huge revel in in micro-credit score – every practical and dangerous. Opportunity rural finance interventions with direct connectedness to agricultural selling encompass out granger schemes (for enter credit score and selling services) and stock credit score. The achievement of every relies upon on cautious arising with and analysis, and applicable enterprise linkages.

1.6. Project Plan

The marketing facilities for agricultural products in Pakistan are still far from satisfactory level. Our cultivators cannot get merely fees for his or her manufacture attributable to faulty advertising company. Moreover, the chain of middlemen among the makers and final purchasers takes an important proportion in their manufacture. Lack of participation via means of suggests that of individuals, neighborhood bodies, NGOs farmers' company and industrial association. Terribly excessive distinction in fee among the farmers' awareness and client even for the clean manufacture. In processed meals the excessive fee of raw materials, over-the-top spoilage, inefficient and steeply-priced transportation, excessive worth of finance attributable to excessive taxes and obligations leads to low require of processed foods.

1.7. Gantt chart



Chapter 2

Software Requirement Specifications

Chapter 2: Software Requirement Specifications

2.1. Introduction

2.1.1. Purpose

In Pakistan there are **43.55%** of low-schooling people anywhere majority rely upon existence as farmer and additionally the dreams of farmers for information in agriculture are extraordinarily several. So far, farmers have totally used agricultural data for generations. So the User centered desires Engineering (UCRE) method is needed as a technique of classifying farmer's data dreams that are extraordinarily several Associate in nursing packaged into an incorporated agricultural data utility fashion model. The effects of the equipment fashion received usability length via way of means of **80.32%** and correctness via way of means of **79%** so, it illustrates a first rate exceptional fee of the equipment supported the requirement for application and accuracy of information at the McCall method testing.

2.1.2. Document Conventions

No	Requirement	Category	No	Requirement	Category
1	Seed Information	Normal	8	Cultivation Information	Normal
2	Fertilizer Information	Normal	9	Agrotechnology Information	Exciting
3	Pest Information	Normal	10	Weather Information	Normal
4	Machine Information	Exciting	11	Planting Calendar	Normal
5	Production Center	Exciting	12	Consultation Information	Expected
6	Land Suitability	Expected	13	Farm Records	Normal
7	Suitability of Varieties	Exciting	14	Agricultural News	Expected

For example, State whether or not priorities for higher-stage necessities are assumed to be inherited via way of means of unique necessities, or whether or not each requirement declaration is to have its own priority.

2.1.3. Intended Audience and Reading Suggestions

- Farmers are studied as: people that plantings at the land to develop and convey food, animal feed, or completely different patron products; and enterprise specialists WHO guide agricultural production. Analysis diagnosed for this target market focused on farming practices with inside the important a region of the North yank continent, but blanketed at the smallest amount many studies from all geographic areas. Few analysis diagnosed specific crop(s) applicable to the examine space. Regionally specific records more or less watershed dangers. Farmers investigate agricultural chemical dangers with inside the context of localized things.
- Substantive neighborhood data to guide claims that exact BMPs area unit environmentally powerful and economically very good as compared to in-location practices.
- Data more or less soil and conservation blessings to be derived from adoption of preciseness farming techniques.

2.1.4. Product Scope

Agriculture is a production plant where the free gifts of nature such as land, water, air, soil energy, etc. are used as inputs and then converted into a single primary unit that is crop plants and their yield which are indispensable for human beings. Those primary units are consumed by animals and are converted into secondary units like milk, meat, eggs, wool, honey, silk, etc.

- Provides employment
- Significant contribution in country's exports
- An important source of resource mobilization

2.1.5. References

1. Bashir, R., Mehboob, I., & Bhatti, W. K. (2015). Effects of online shopping trends on consumer-buying Behavior: an empirical study of Pakistan. **(Journal of Management and Research)**

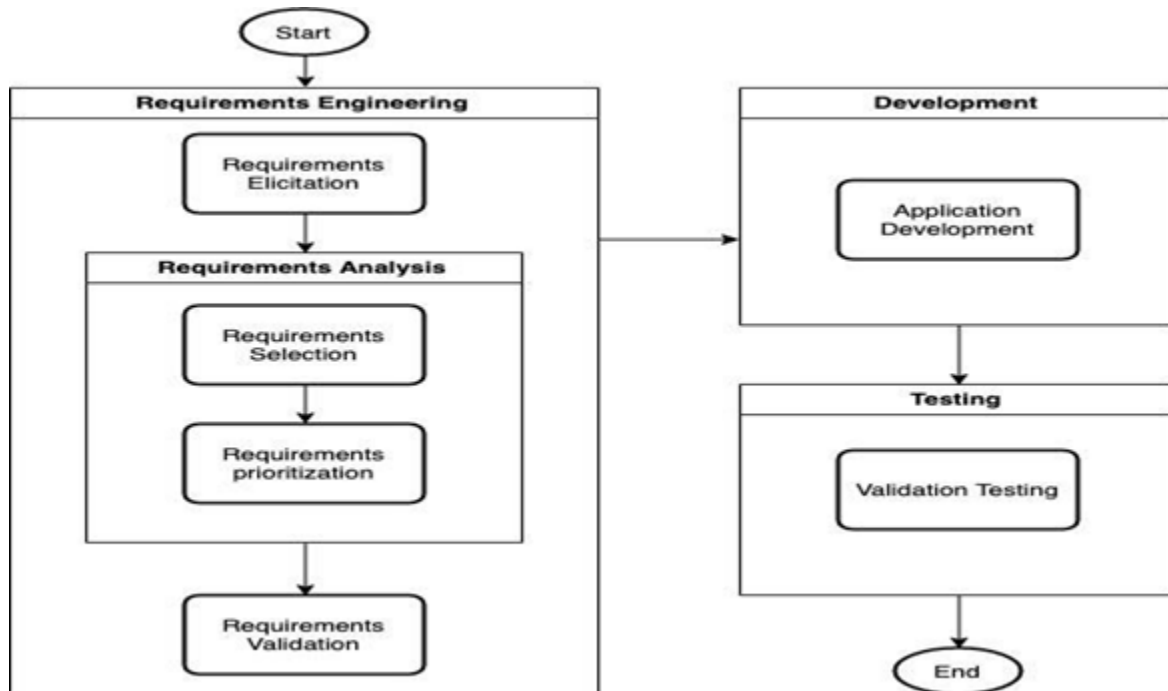
2. Belanger, F., Hiller, J. S., & Smith, W. J. (2002). Trustworthiness in electronic commerce: the role of privacy, security, and site attributes. (**The Journal of Strategic Information Systems**)
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2.2. Overall Description

2.2.1. Product Perspective

In most Pakistan, Asia and the occupied nations, about 90 % of rural households are somehow engaged in agriculture. On average, they derive 70 % to 50 % (Asia, Latin America) of their household income from agricultural activities (Davis, Winters et al. 2010). To market these income opportunities, the expansion of agricultural transportation infrastructure often focuses on the development of market access for smallholders to improve their marketing opportunities and supply of operational resources. A better infrastructure can improve the variety and quality of the transportation services offered. It can even help dismantle monopolies and redistribute traders' profit margins in favor of farmers. Roads allow families living nearby to boost the economy through processing and direct marketing. Agricultural products are processed and sold to passers-by travelers.

2.2.2. Product Functions



2.2.3. User Classes and Characteristics

There are 4 kinds of users for the proposed solutions.

- **Administrators:** Administrators are the ones who can add or administer the categories for the products, and administer the all-websites information's. Administrator has the full privilege of the website.
- **Sellers:** Sellers are the farmers and they can sell their productions through online after the registration. After the registration the farmers can login to the system by entering login id and password.
- **Customer:** Customers can buy products through online. The customers can send purchase request to check the quality of the products.
- **Worker:** Workers can receive various work requests from multiple farmers and they can also reject or approve a request depending upon their interest.

2.2.4. Operating Environment

The negative effects are serious and might include soil, water and pollution and degradation, but agriculture poses a flood risk, as an example by trapping greenhouse gases in plants and soil, or by adopting certain agricultural practices. By reducing it, it's going to have a positive impact on the environment. Changes in stuff prices and input costs are a serious concern for farmers. They recognize that commodities are subject to promote (supply and demand) changes, weather and price fluctuations caused by government subsidy programs. However, this step requires you to think broader and explain the impact of consumer preferences, manufactured goods, technological changes, and macroeconomic policy changes on your business.

2.2.5. User Documentation

Better infrastructure can improve the diversity and quality of the transport services on offer; it can also break up monopolies, thereby helping to redistribute traders' profit margins to the benefit of agricultural producers. Roads enable families living close to them to boost their economy through processing and direct marketing: agricultural produce can be processed and sold to passing travelers.

2.2.6. Assumptions and Dependencies

- A national initiative to combat obesity and other human health problems will lead to increased demand and consumption of fruits and vegetables by US consumers.
 - The “baby boomer generation” is increasingly interested in foods rich in nutrients and dietary supplements, which will lead to an increase in demand for soft fruits
 - Consumers demand lower cost and higher quality berries.
 - Consumers are increasingly demanding annual access to soft fruits. This could open up the US market to foreign supply.
 - Overseas production of berry crops can adversely affect the berry crop industry.
 - To be sustainable, we need a berry crop processing industry.
 - Significant year-over-year sales growth strengthens strategic relationships within the berry growing industry.

2.3. External Interface Requirements

2.3.1. User Interfaces

The purpose of this research is to disseminate agricultural information to create people illiterate through the most recent technology. Farmers play a very important role in our lives by providing food, but we receive little help to boost their methods through innovative and efficient agriculture. Most framers are literate and difficult to show new growth techniques. Additionally, the system isn't being noticed by farmers because decision makers don't concentrate to local knowledge and concepts. During this context, illiterate people need a platform to share their ideas and data. This research website may be a mode for providing farmers with information on weather, seeds, pesticides, trade group issues, current prices, updates, and agricultural banking services. This experimental evaluation includes a gaggle of 10 novice users comparing the usability of the primary prototype evaluated by Neilson's heuristics.

2.3.2. Software Interfaces

Advanced technologies such as robots, temperature and humidity sensors, aerial photography, and GPS technology are routinely used in agriculture today. These advanced equipment and precision agriculture and robotic systems make businesses more profitable, efficient, safe and environmentally friendly. "Smart farming" means using technologies such as **IOT**, robotics, drones, and **AI** to manage farm operations and improve the number and quality of products while optimizing the human labor required for production. It is a new concept to point to.

2.4. System Features

The agriculture system is simply how for farmers to use the resources available for sustainable agriculture to satisfy their needs. He's trying to guard and take care of the environment. These factors include: Available water, land, meadows, farmlands, forests; climate, landscapes, etc. The dominant pattern of agricultural activity and family life. These include crops, livestock, trees and aquaculture.

2.5. Other Nonfunctional Requirements

2.5.1. Performance Requirements

The performance is measured in terms of the value of production at constant prices and at current prices. It focuses on the measurement of the whole sector (agriculture) and its sub-commodity groups (crops, livestock, poultry and fisheries) and commodities.

2.5.2. Safety Requirements

Agriculture is one of the most dangerous of all economic sectors, and many farmers suffer from occupational accidents and health problems each year. It is also the most important sector for employment of women in many countries, especially Africa and Asia. Agriculture employs about 1 billion workers worldwide, more than one-third of the world's workforce and about 70 percent of the world's child labor.

2.5.3. Security Requirements

Security incidents may be accidental or intentional. Animals, farm workers and machinery can easily access the agricultural environment and cause accidents. Additionally, intelligent systems include heterogeneous devices and software from different manufacturers installed between growth areas and also the cloud. These particular characteristics can result in multiple security breaches and may result in incidents that endanger intelligent systems. Nevertheless, this subject has not been considered on most systems that are used thus far. System design must consider compatibility with different devices, protocols, subsystems, and multiple access methods. Smart Agriculture uses Machine-to-Machine (M2M) communications and devices manufactured by various vendors. However, most security mechanisms are designed for the communication model employed in TCP / IP networks. These mechanisms typically ignore the presence of multiple heterogeneous devices communicating at the identical time. Safety features designed for TCP / IP networks can break relationships between smart farming devices and reduce their efficiency. Multiple access methods and heterogeneity impede security, interoperability, network coordination, and increase security vulnerabilities.

Chapter 3

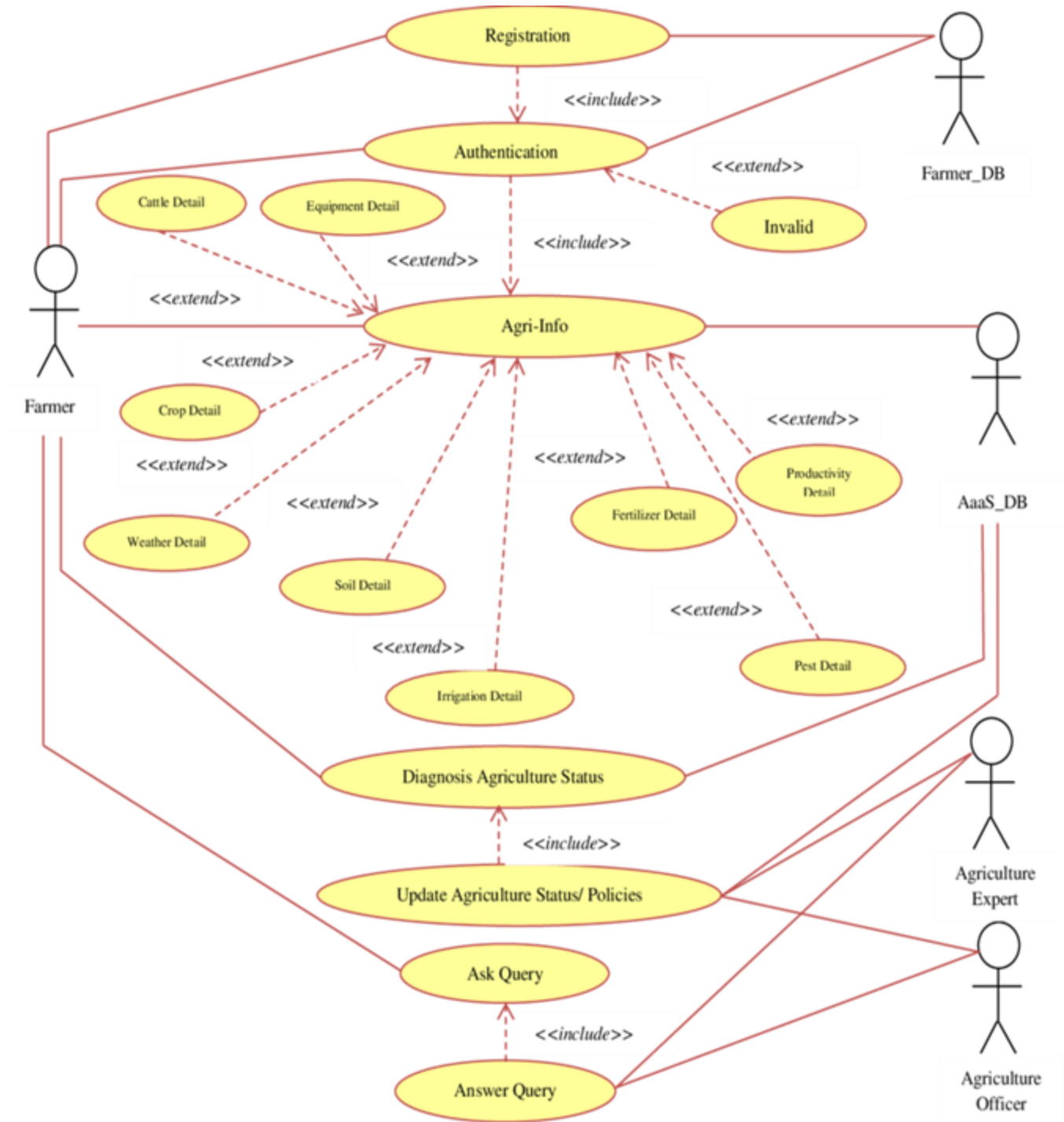
Use Case Analysis

Chapter 3: System Analysis

Farming analytic thinking (FSA) should cause insight within the functioning of farming systems and help to develop various alternative scenarios for development. New similarly as old developments in research technologies and farm dynamics are wont to improve FSA. Technical options are considered through a Quantified Land Evaluation (QLE) approach distinguishing three levels of inputs. With optimal inputs, a constraint free environment is assumed so potential production is achieved. At the second level, water limited conditions are assumed with optimal nutrient supply, and at the third level, water likewise as nutrient constraints may occur.

Economic conditions at the farm are investigated with the help of a Farm Household Survey (FHS). This survey also yields a wealth of agronomy, farming and sociological information. Higher cognitive process processes are studied, giving more insight into the factors which contribute towards certain conclusions made by the farmer.

3.1. Use Case Model



3.2. Use Case Descriptions

- Use Case ID:
- Use Case Name:
- Feature ID
- Stake Holder:
- Description:
- Diagnosis Agriculture status:
- Update Agriculture Status:
- Ask Query:
- Answer Query:
- Place Order:
- View Oder :

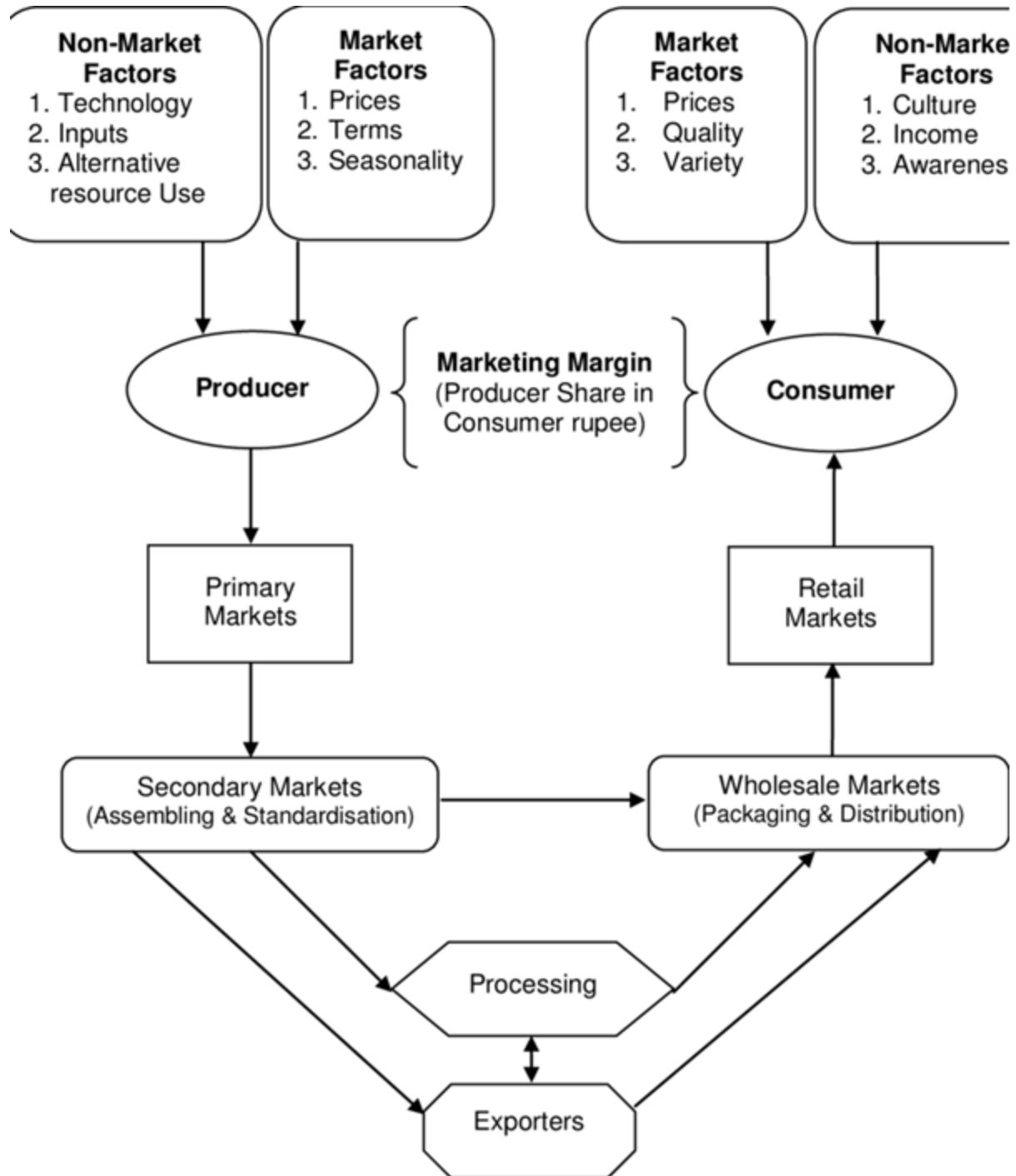
Chapter 4

System Design

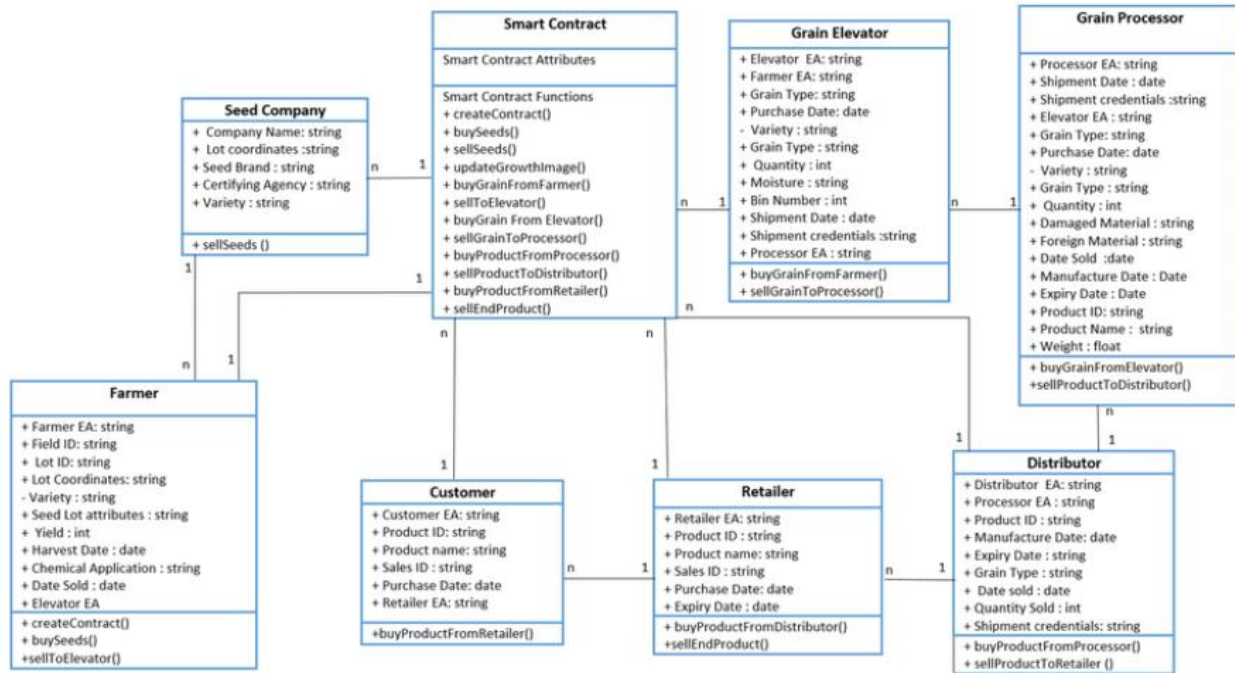
Chapter 4: System Design

Impact the Project is Aligned with Improvement of Agriculture Produce Markets and Strengthening of Institutional Capacity ^a			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
Outcome Volume of agriculture products auctioned at new market increased	By 2025 a. Transaction of agriculture produce increased to XXX tons (2019 baseline: zero) b. Number of new markets approved by PAMRA increased to XX (2019 baseline: zero)	PAD quarterly market activity reports	Extreme climate events or lack of cooperation by market intermediaries may restrict supply to project market
Output 1. Modern holistic wholesale agriculture markets established	By 2024: 1a. At least XX modern markets with innovative operations, management systems, and gender-design features ^b established (2019 baseline: zero) 1b. Value of agriculture produce auctioned increased to \$XXX millions (2019 baseline: zero)	Market management companies' reports, and PAD field surveys and monitoring reports	Inability to attract private sector market operators Issues with land acquisition can hinder or stop project progress
2. Capacity of PAMRA to regulate agriculture markets enhanced	By 2022: 2a. Rules and Regulations, with gender-inclusive provisions, for modern wholesale markets issued By 2023: Technical training provided to core staff of PAMRA, PAD, market management companies and market facility users to manage, operate, and maintain the markets: (XX individuals, including XX female)	PAMRA's quarterly regulatory reports	Delay by government in institutionalizing regulatory regime for private-run markets can hinder regulator capacity building
Key Activities with Milestones			
1. Modern holistic wholesale agriculture markets established 1.1. Procurement plan and consultant mobilization (Q3 2021). 1.2. Operating and management systems design completed (Q1 2022). 1.3. Undertake construction and installation of fixtures (Q1 2022–Q3 2023). 1.4. Commission and hand over of wholesale markets to market management companies (Q4 2023). 2. Capacity of PAMRA to regulate agriculture markets enhanced 2.1. Secure government approval for timelines for assisting in preparation of rules and regulations (Q1 2021). 2.2. Secure government approval on roadmap, timelines and target stakeholders for training and capacity development activities. (Q1 2021).			
Project Management Activities			
Set up project management office with required staff by Q3 2021. Set up project performance management system by Q4 2021. Prepare project completion report by Q4 2025.			

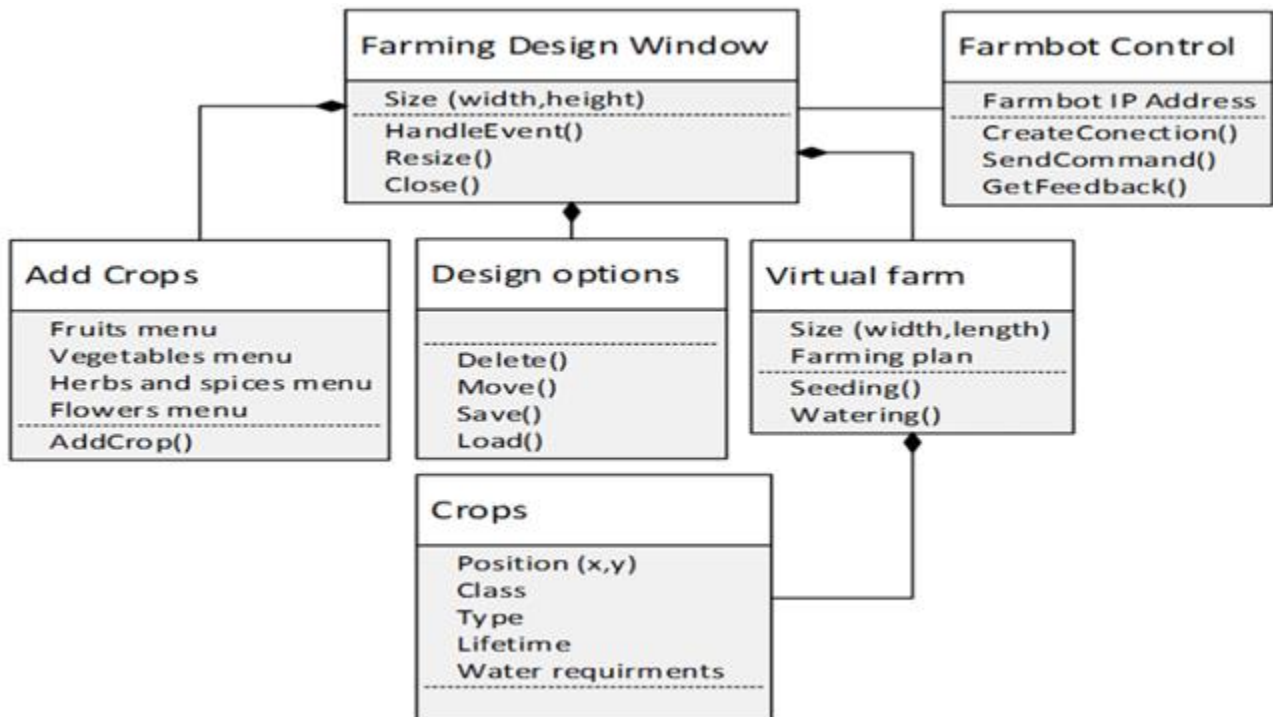
4.1. Architecture Diagram



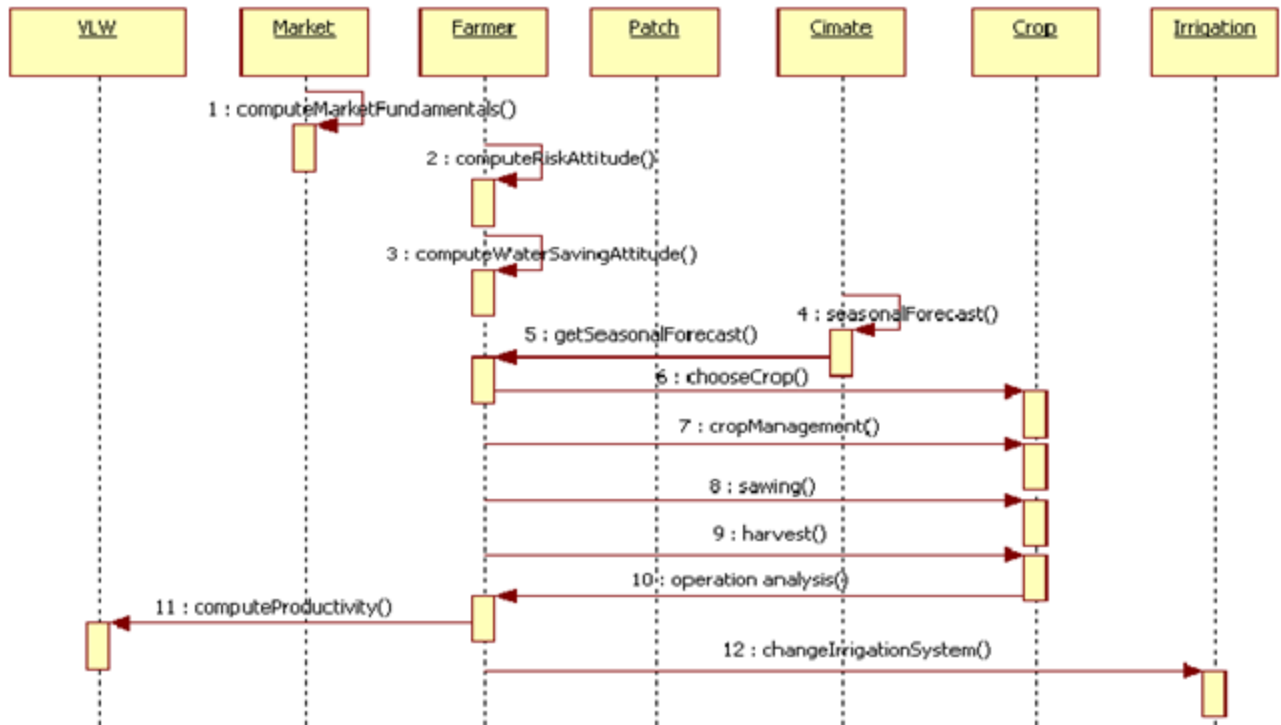
4.2. Entity Relationship Diagram



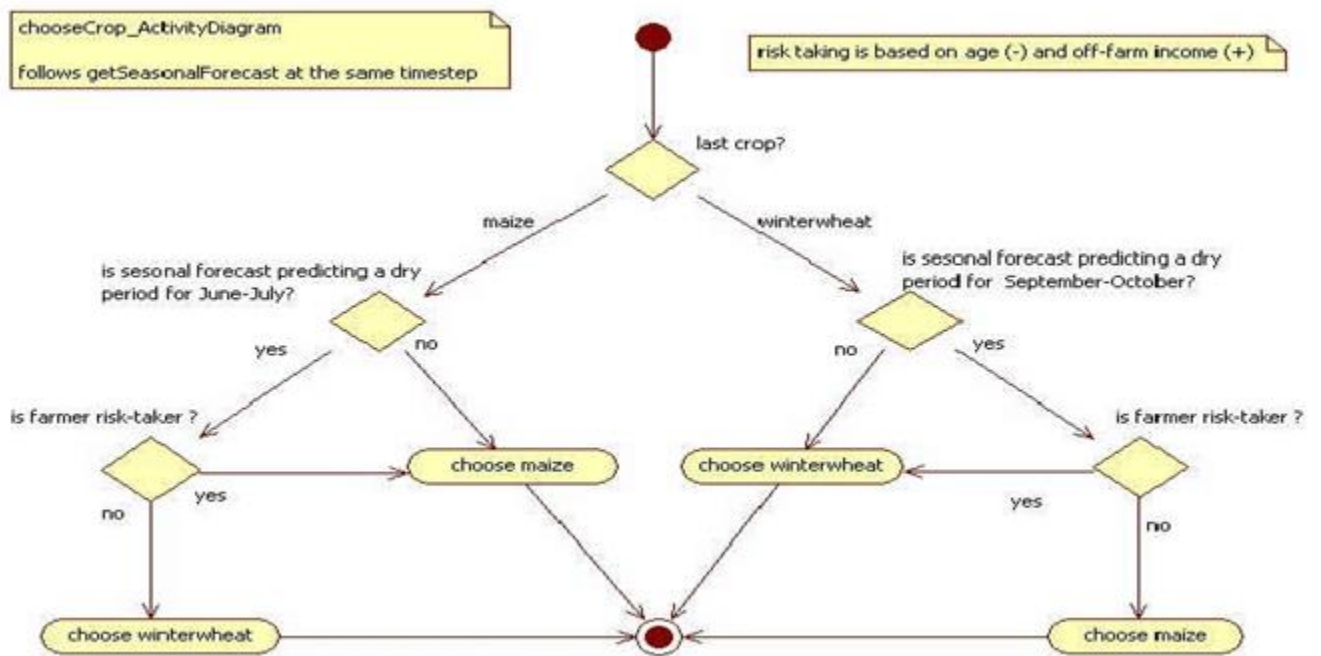
4.3. Class Diagram



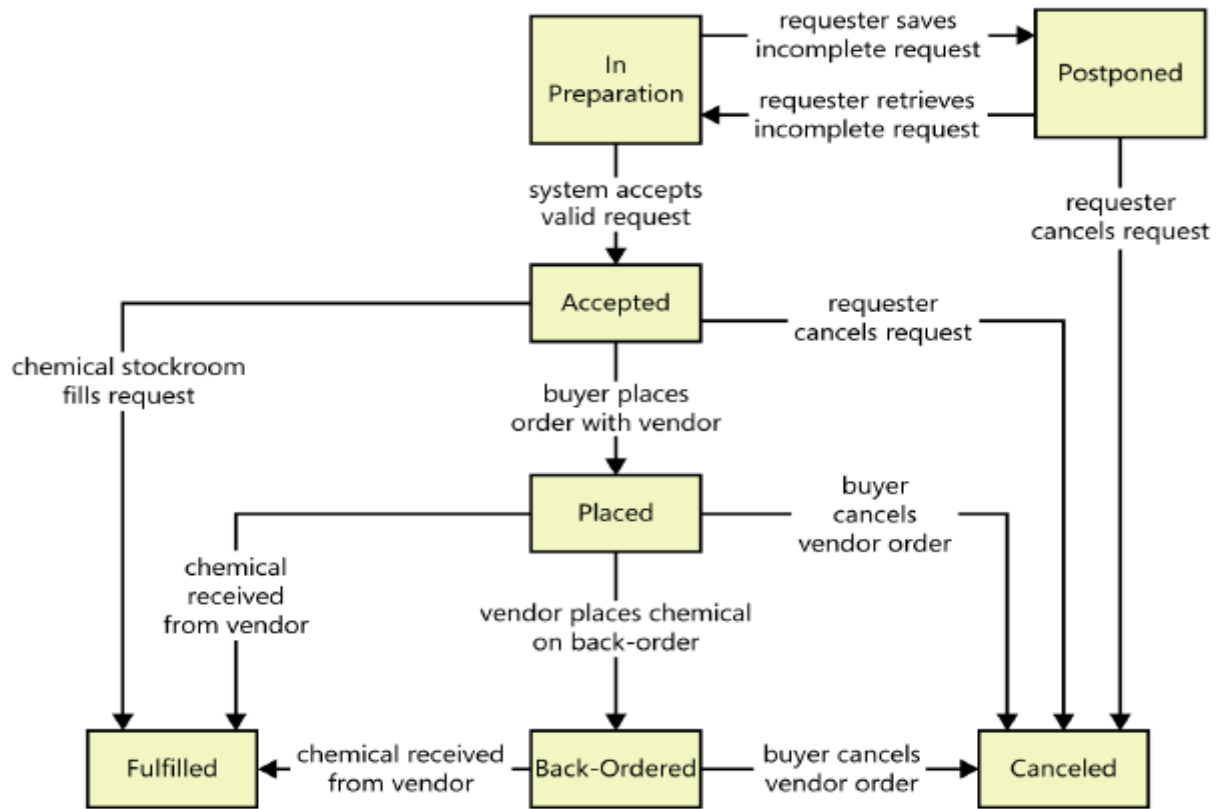
4.4. Sequence / Collaboration Diagram



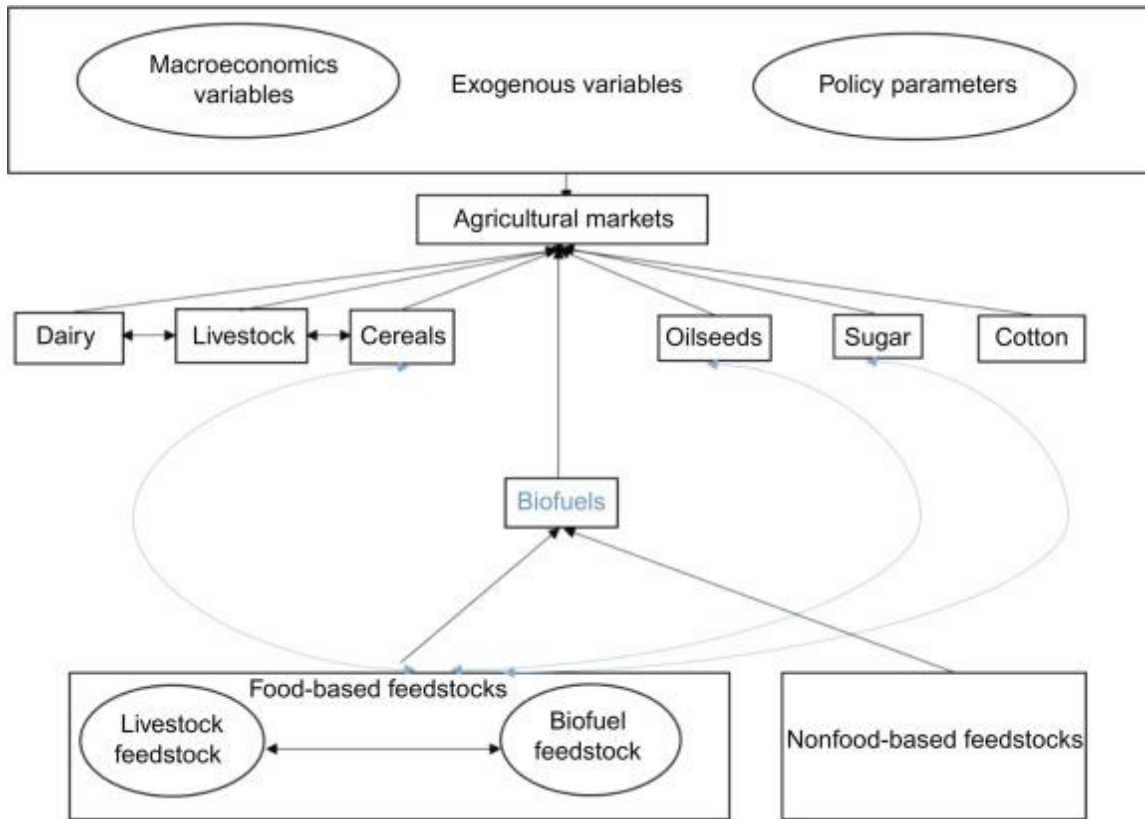
4.5. Activity Diagram



4.6. State Transition Diagram



4.7. Deployment Diagram



4.8. Data Flow diagram [only if structured approach is used - Level 0 and 1]



Chapter 5

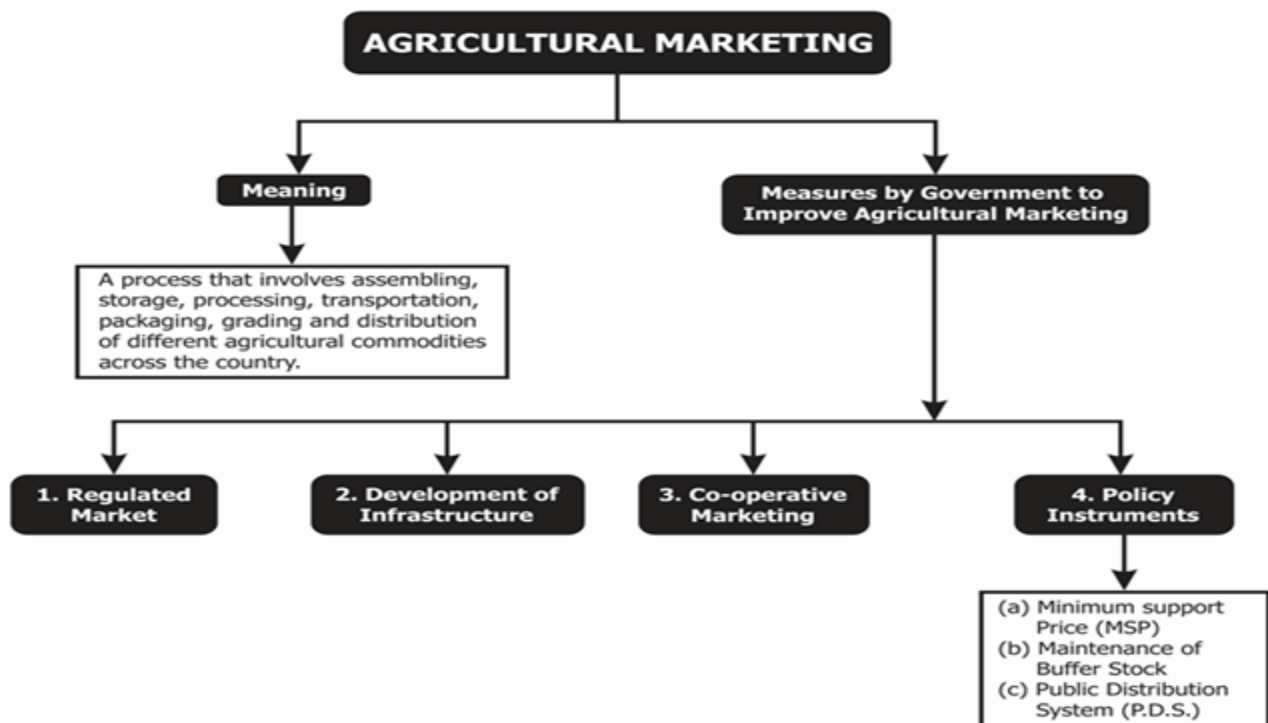
Implementation

Chapter 5: Implementation

The agriculture markets have the potential to act as a strong tool for improving the economic viability of agriculture, for reduction of rural poverty and for achieving sustainable agriculture development. It's to be noted that with effective implementation of the recommendations given during this report by the concerned departments and therefore the agencies, agricultural markets will achieve nationwide integration enabling the country to satisfy the challenges posed by liberalization of trade. The inception report detailed the subsequent crops / agricultural produce to be included as a part of this study that detailed crop-wise study was conducted within the detailed analysis report.

- Wheat
- Rice
- Maize
- Cotton
- Sugarcane
- Mangoes
- Citrus
- Vegetables

5.1. Important Flow Control/Pseudo codes



Pseudo codes:

```

src > app > Components > about-us > about-us.component.ts > AboutUsComponent > constructor
1  import { Component, OnInit } from '@angular/core';
2  import { MatDialog } from '@angular/material/dialog';
3  import { Title } from '@angular/platform-browser';
4  import { LoginComponent } from '../login/login.component';
5  import { SignupComponent } from '../signup/signup.component';
6
7
8  @Component({
9    selector: 'app-about-us',
10   templateUrl: './about-us.component.html',
11   styleUrls: ['./about-us.component.css']
12 })
13
14 export class AboutUsComponent implements OnInit {
15   constructor(public dialog: MatDialog, private title: Title) {
16     this.title.setTitle('Agri Martekplace - About')
17   }
18
19   ngOnInit(): void {
20     window.scrollTo(0, 0);
21   }
22   signIn(){
23     const dialogRef = this.dialog.open(LoginComponent);
24
25     dialogRef.afterClosed().subscribe(result => {
26       console.log(`Dialog result: ${result}`);
27     });
28   }
29   signUpDialog(){
30     const dialogRef = this.dialog.open(SignupComponent);
31
32     dialogRef.afterClosed().subscribe(result => {

```

5.2. Components, Libraries, Web Services and stubs

Library:

<https://material.angular.io/components/categories>

Components:

- Button card
- Date picker
- Dialog

- Form Fields
- Input
- Menu
- Snack bar
- Tabs

Web Services:

<https://angular.io/guide/http>

5.3. Environment Factors

Agriculture can have a significant impact on the ecosystems that surround it. These environmental impacts of agriculture are the effects of different agricultural practices and can vary widely from country to country we are looking at. However, in most cases the impact is negative. It also depends heavily on the types of agricultural practices used in different parts of the world.

- These environmental impacts of agriculture are the result of various agricultural practices and can vary widely from country to country we are looking at.
- Many important environmental issues are associated with agriculture, including climate change, dead zones, genetic engineering, pollutants, deforestation, land degradation and waste.
- Deforestation is a major side effect of agriculture and has a significant impact on the planet and the environment. It is defined as the massive deforestation of our planet, causing land damage around the world.
- Irrigation, the process of adding a controlled amount of water to plants, can also cause a variety of environmental problems. It can lead to the depletion of the environmentally essential groundwater layer.

5.4. Tools and Techniques

- Angular Framework
- Visual Studio
- Microsoft VISIO

5.5. Best Practices / Coding Standards

```

export class SharedService {
  locationSource = new BehaviorSubject("City");
  currentLocation = this.locationSource.asObservable();

  userSource = new BehaviorSubject("");
  currentUser = this.userSource.asObservable();
  constructor() { }

  public changeLocation(location: string): void{
    this.locationSource.next(location);
  }
  public getUsername(username: string): void{
    this.userSource.next(username);
  }
}

```

```

<!DOCTYPE html>
<html lang="zxx">
<head>
  <meta charset='utf-8'>
  <meta http-equiv='X-UA-Compatible' content='IE=edge'>
  <title>Page Title</title>
  <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
  <link href="https://fonts.googleapis.com/css2?family=Material+Icons"
    rel="stylesheet">
</head>
<body>
  <app-header></app-header>
  <router-outlet></router-outlet>
  <app-footer></app-footer>
</body>
</html>

<button class="raise primary" *ngIf="isShow" (click)="gotoTop()"><mat-icon>arrow_upward</mat-icon></button>

```

```
    ])  
    export class CreateProductComponent implements OnInit {  
        selected = 'code';  
        emailFormControl = new FormControl('', [  
            Validators.required,  
            Validators.email,  
        ]);  
  
        fieldArray: Array<any> = [];  
        newAttribute: any = {};  
  
        eventArray: Array<any> = [];  
        eventAttribute: any = {};  
  
        constructor(private title: Title) {  
            this.title.setTitle('Create Product Request')  
        }  
  
        ngOnInit(): void {  
            window.scrollTo(0, 0);  
        }  
  
        addRow(){  
            this.fieldArray.push(this.newAttribute)  
            this.newAttribute = {};  
        }  
  
        deleteRow(index: any) {  
            this.fieldArray.splice(index, 1);  
        }  
    }  
}
```

5.6. Version Control

Version 1.1

Chapter 6

Testing and Evaluation

Chapter 6: Testing and Evaluation

In this project, we present a strategy for Final Year Project (FYP) monitoring and assessment that considers the inclusion of the professional skills required within the particular technology degree. This proper monitoring and clear evaluation framework provides the users with valuable support for the project implementation yet as for improving the standard of the projects, thereby reducing the tutorial drop-out rate. The FYP is structured around three milestones: project definition, project monitoring and project completion. Skills are assigned to every milestone per the tasks required therein phase, and an inventory of indicators is defined for every phase.

An **Agri market place** website connects many of us with one another. From vendors to farmers, and businessmen to laymen. Functional testing enables organizations to check apps across web, mobile, or enterprise desktop platforms that need frequent manual testing. Companies are, consequently, ready to enhance the user experience, remove functional bugs, deliver output data effectively, test units of every systems and clear identification of various functions. Moreover, functional testing also aids in smoke, acceptance, and system testing.

6.1. Use Case Testing

In the infrastructure and agriculture industry, usability testing plays a significant part in retaining and satisfying customer needs. Our capabilities in hallway, program, A/B, remote usability, and user experience testing aids companies realizing greater profits within the infrastructure and agriculture industry. We single out bugs timely, ensure accuracy of results, test apps with users, refine readability, and enhance web accessibility to deliver an immaculate user experience.

Performance testing helps in assessing product readiness, comparing system configurations, identifying problem sources, making informed decisions, and evaluating quality of an IT system against performance criteria to call some. With our performance testing capabilities, thrive within the era of digital technologies with an app that has no bugs or defects whatsoever.

The screenshot displays the Agri Marketplace website interface. At the top, there are navigation links for 'About Us' and 'Contact Us', and user options for 'Sign In', 'Sign Up', and 'Lahore'. Below the navigation bar, there are buttons for 'Products', 'Offers', 'Tracking Order', and 'Create your request'. The main content area is divided into two sections: 'Information' and 'Contact Us'. The 'Information' section lists contact details: a phone number (+92 311 1222742), an email address (ask@agrimarketplace.pk), and a website URL (www.agrimarketplace.pk). The 'Contact Us' section features a 'Send Us Your Message' form with input fields for 'First name', 'Last name', 'Email', 'Select an option', 'Contact Number', and 'Subject'. A message input field is also present, with a character count of 0/7. A green 'SEND' button is located at the bottom right of the form.

6.2. Equivalence partitioning / Boundary value analysis

Equivalence splitting is a software testing or black box technique in which the tester splits a set of conditions into groups that can be considered equivalent (similar behavior). The split equality class is applicable to all test levels.

Boundary value analysis (**BVA**) is a black-box testing technique used to check for errors in the boundaries of an input domain. The name comes from the boundary, which means the boundary of the area. Therefore, BVA focuses primarily on testing both valid and invalid input parameters in certain areas of the software component.

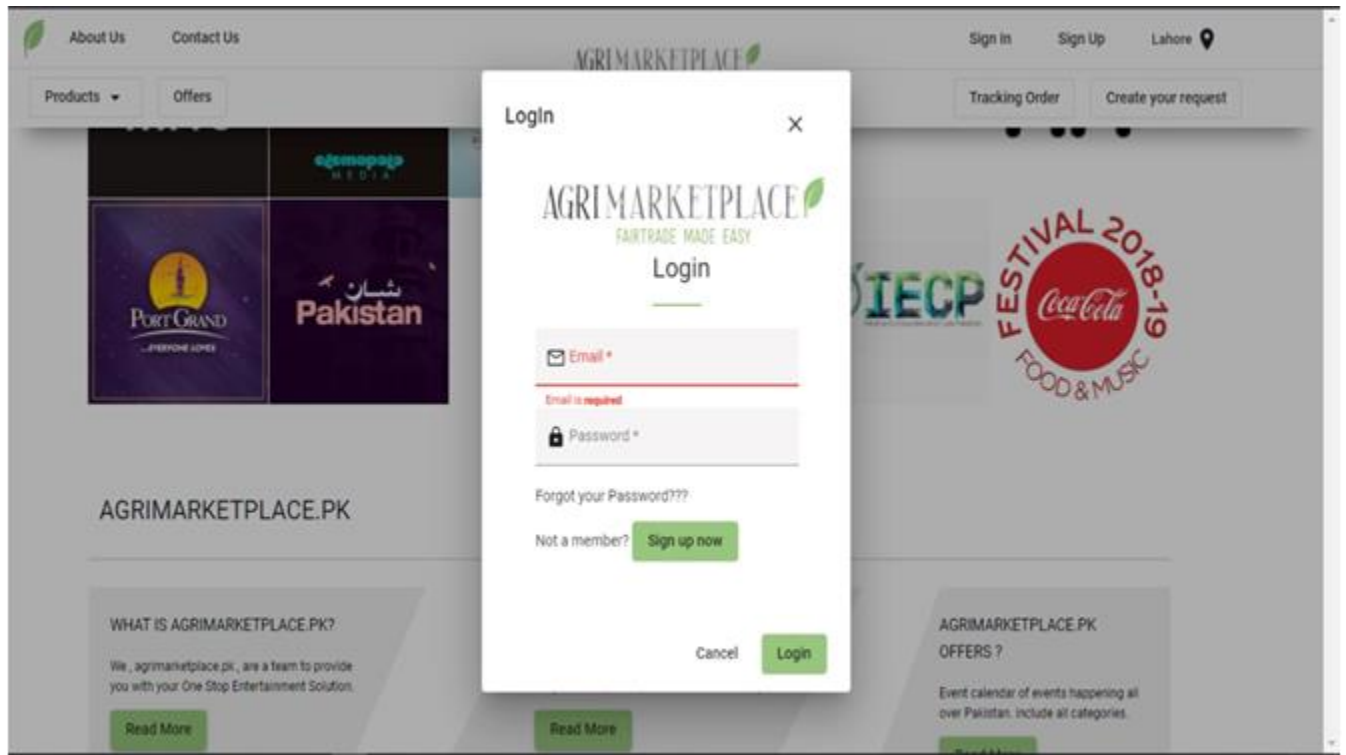
We verify the following Boundary Value Test cases:

TC001: Validate AGE by entering 20 [Min-1]: Invalid Boundary Check

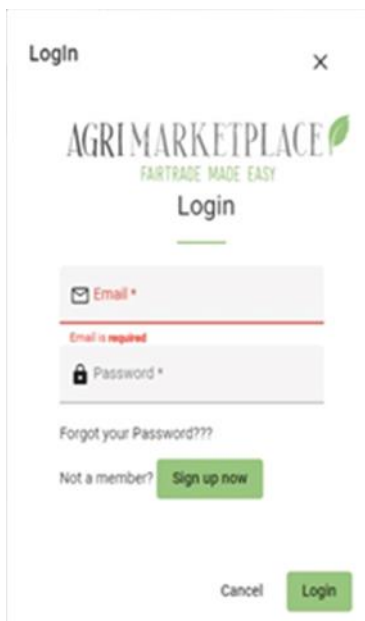
TC002: Validate AGE by entering 21 [Min]: Valid Boundary Check

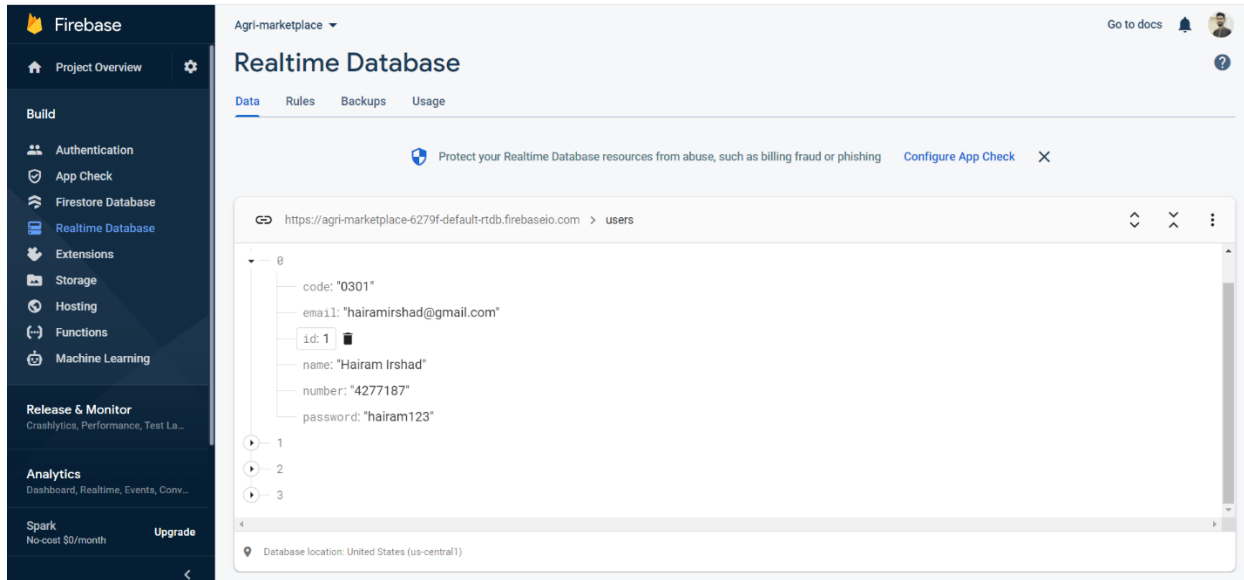
TC003: Validate AGE by entering 60 [Max-1]: Valid Boundary Check

TC004: Validate AGE by entering 61[Max+1]: Invalid Boundary Check



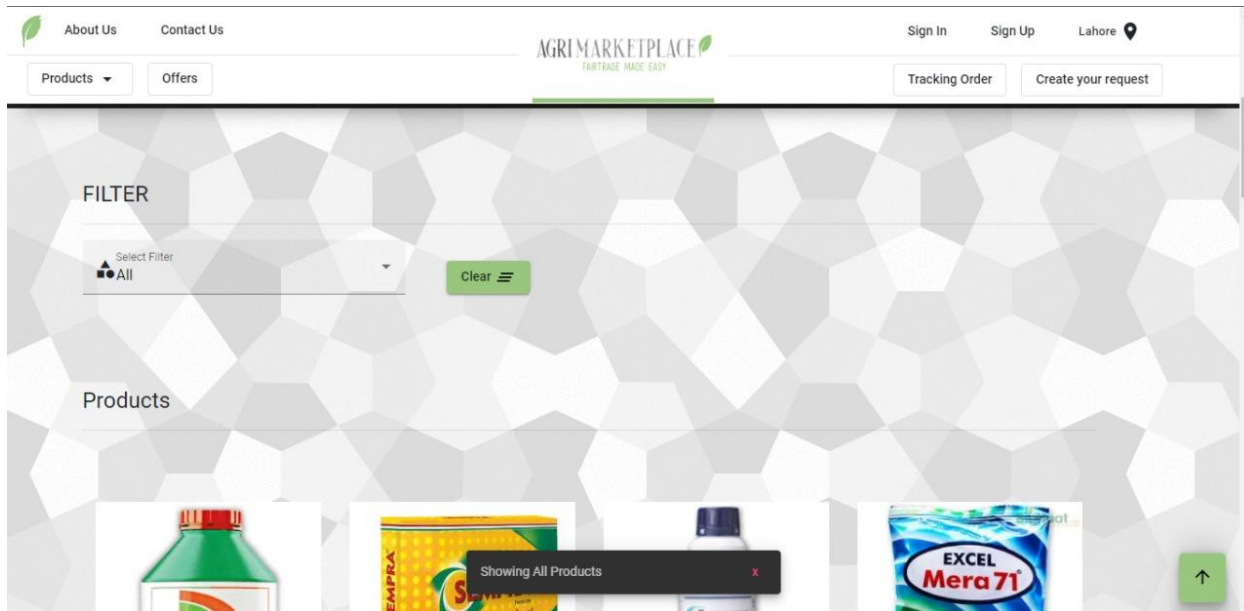
6.3. Data flow testing

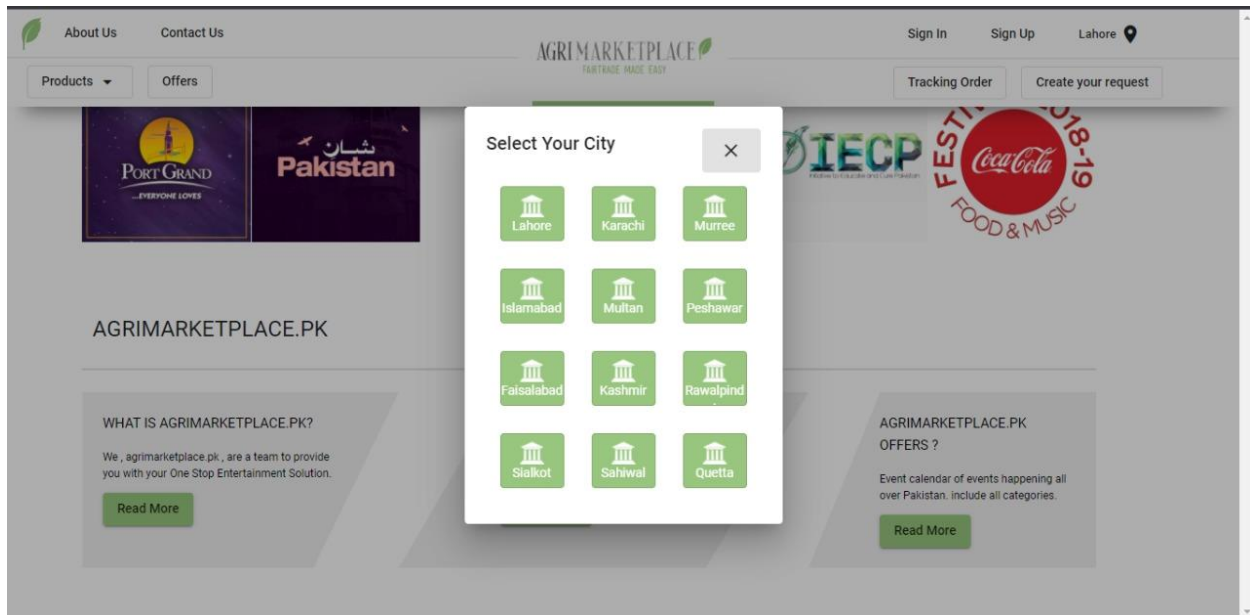




6.4. Unit testing

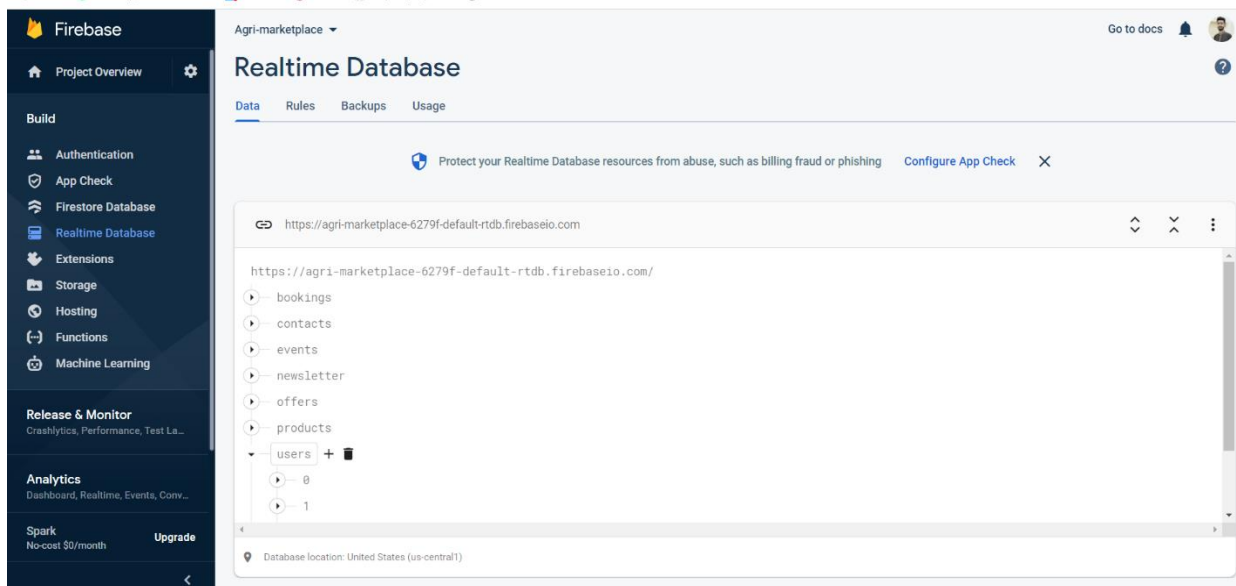
Unit testing could be a style of software testing where individual units or components of a software are tested. The aim is to validate that every unit of the software code performs obviously. Unit Testing is finished during the event (coding phase) of an application by the developers. Unit Tests isolate a bit of code and verify its correctness. A unit is also a personal function, method, procedure, module, or object.



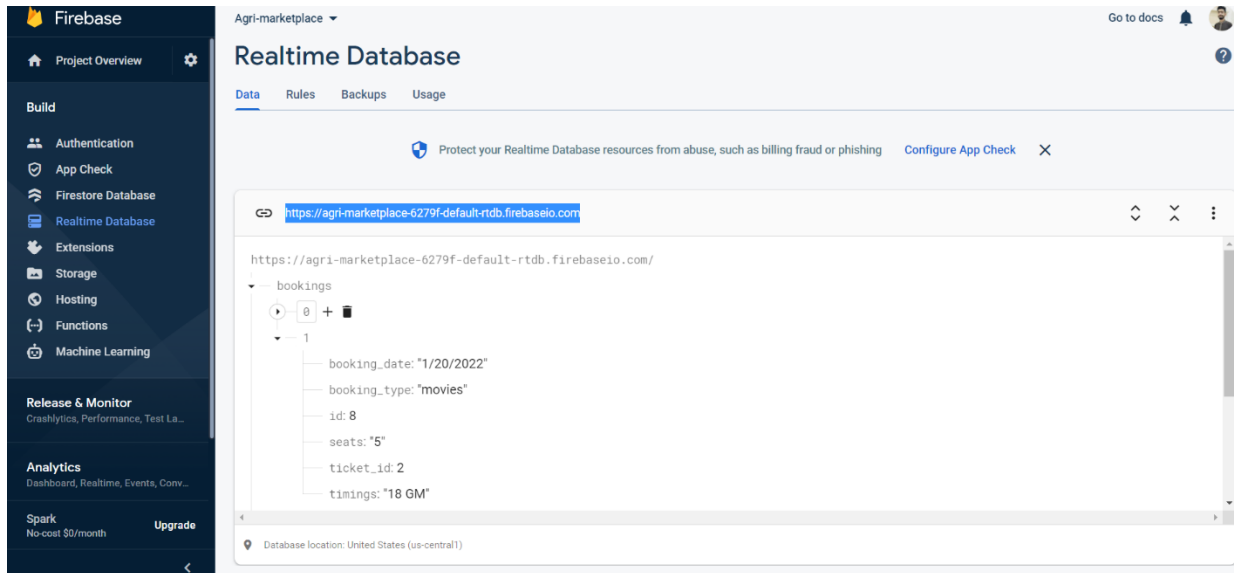


6.5. Integration testing

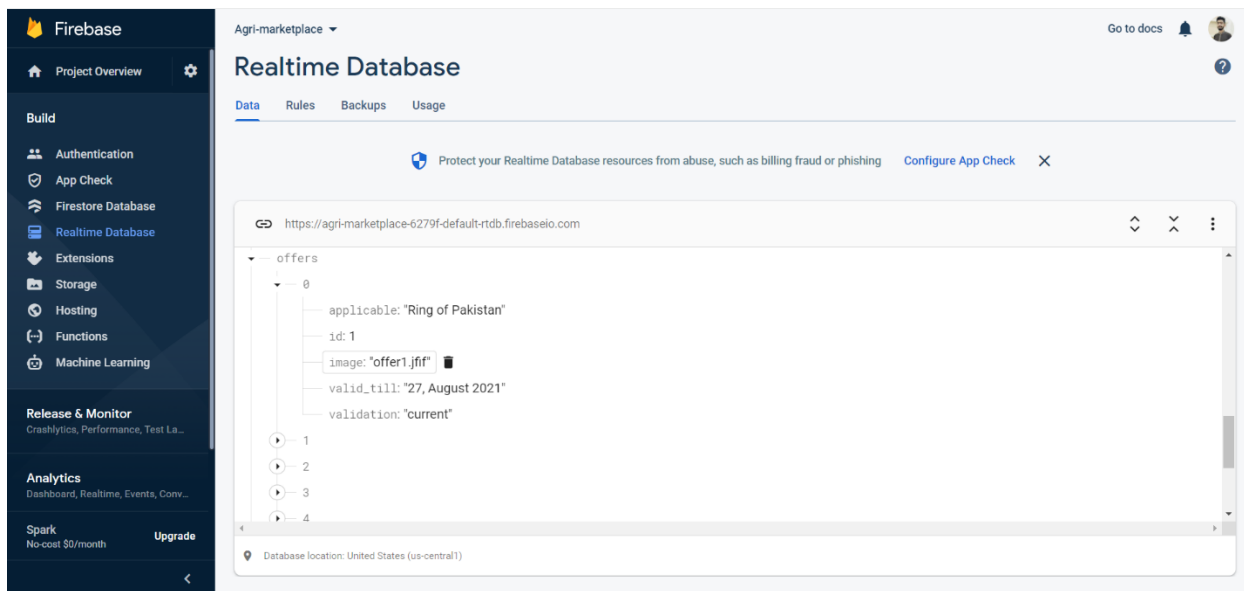
All data store testing:



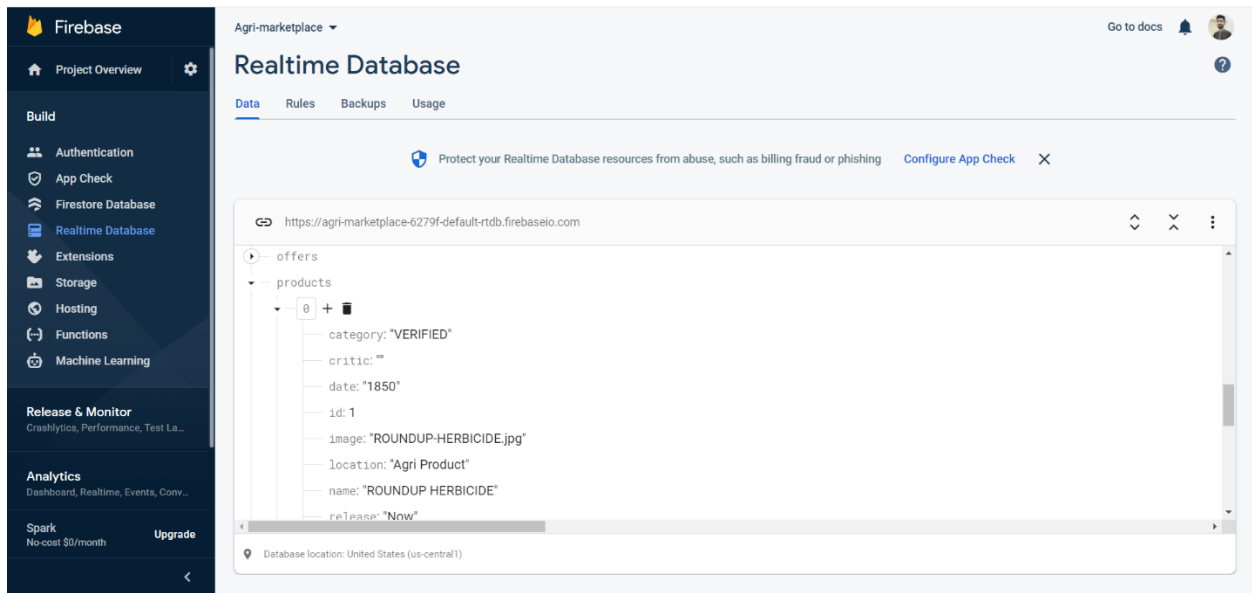
Test Booking data testing:



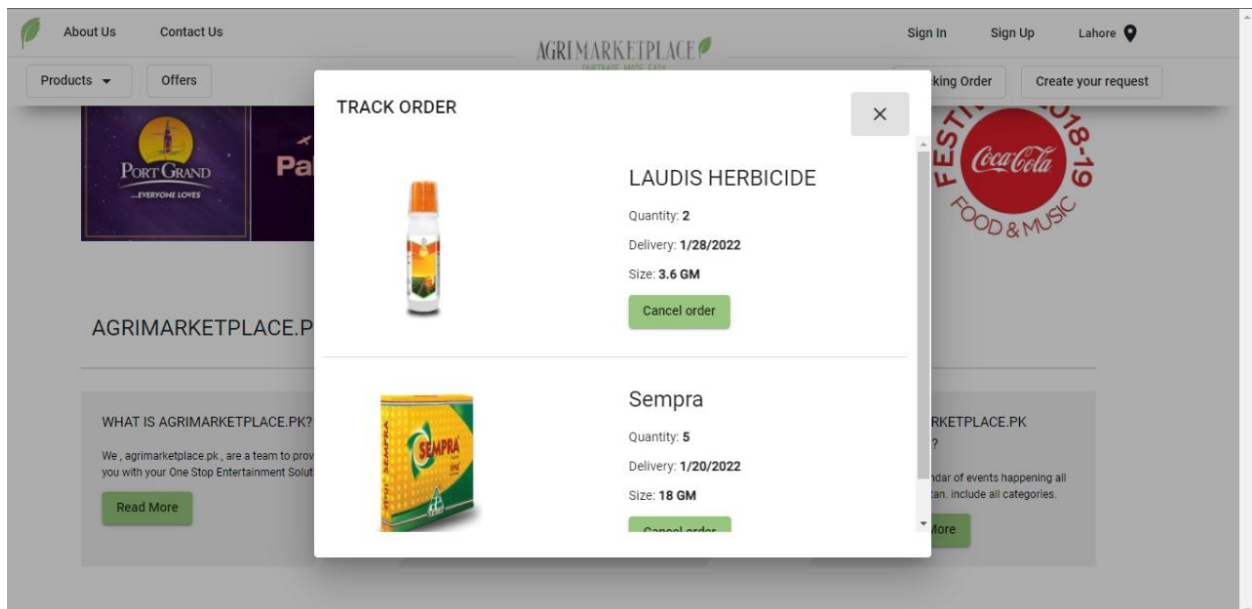
Offers products Test data:



Products Test Data:




6.6. Performance testing



Navigation: About Us, Contact Us, Sign In, Sign Up, City, Products, Offers, Tracking Order, Create your request

POPULAR PRODUCTS

[View All Products](#)



OUR PARTNER ORGANIZERS

[↑](#)

Navigation: About Us, Contact Us, Sign In, Sign Up, Lahore, Products, Offers, Tracking Order, Create your request

Information

- +92 311 1222742
- ask@agrimarketplace.pk
- www.agrimarketplace.pk

Contact Us

Send Us Your Message

First name	Last name	Email
Select an option	Contact Number	Subject
Message 0 / 7		

[SEND](#)

Chapter 7

Summary, Conclusion and Future Enhancements

Chapter 7: Summary, Conclusion & Future Enhancements

7.1. Project Summary

While the demand for food and other agricultural commodities continues to increase globally, supply from traditional producers and traditional regions is not projected to keep pace. Increasing concern about future food scarcity and the opportunity to boost agricultural production in agriculturally-viable land in Pakistan to meet food needs has attracted a surge of investment interest and activity. This new context creates risks and opportunities. Increased investment in Pakistan agriculture can bring macro level economic development benefits and livelihood improvement for millions living in rural areas. Conversely, large-scale land acquisitions may result in local people losing access to critical resources on which they depend and can accelerate irreversible natural resource consumption.

7.2. Achievements and Improvements

Access to scrub, reliable energy enables farmers and agribusinesses to extend food production and interact in value-added processing. It also allows farmers living in off-grid areas to exchange expensive diesel generators with new and cleaner technologies, like solar food dryers and solar water irrigation. The solar agricultural market continues to be within the early stages of development and barriers include the relatively technology costs, limited awareness of the advantages, lack of appropriate policy incentives and limited access to finance for farmers and suppliers to form solar technologies more cost-effective.

We support enterprises that adopt, develop and market sustainable, cost-effective solutions for agricultural production, post-harvest and storage processing, including solar pumping, cooling, chilling and drying. These technologies lead to saved costs, increased yields and native value capture for farmers or local agro enterprises. Our advice to businesses includes markets entry, product pricing, sales strategies, market assessments, payment solutions, route-to-market strategies and also the agricultural value chain.

7.3. Critical Review

This critical review identifies main problem about how could existing trends in agricultural advisory service structure and therefore the influence of potential digital developments on Agricultural transfer organization within the future. The components of the review are:

- A review of the recent development of Agriculture Technology Transfer Agency in Pakistan.
- A conceptual framework of major trends within the digitalization of agriculture which transform the way technological transfer can move rapidly through online platform adopted by farmers in their farming activity.
- An observation of recent digital agriculture learning platform provided by some provider in Pakistan, including government, university and general public where farmers can independently learn, practice and increase their technology and new knowledge adoption.

7.4. Conclusion

This section presents a summary of the most conclusions lessons identified from the evaluation. a typical element to most projects and programs is that the delay in startup and implementation caused by the delay within the preparation of designing Commission Proforma number 1 and number 2 (PC-1s and PC-2s), appointment of project staff by the IA, setting up PIUs, procurement of necessary equipment, and engagement of consultants. Routine progress and impact monitoring and evaluation are generally weak in most of the world institutions, which reduces their capacity for reactive management and also the quantification of project outputs and outcomes. The dearth of increased provision for ongoing O&M for infrastructure constructed by projects which becomes the responsibility of presidency also affects long run sustainability and will impact on long term benefits and outcomes.

7.5. Future Enhancements/Recommendations

By **2030**, it's expected that the world's population will grow to just about 9 billion; thus increasing our need for food by quite one hundred pc. Currently, 1 in 8 people, or 842 million, struggle with hunger each day. Even more so, roughly 1 billion people within the world are food insecure, meaning they lack access to a sufficient quantity of affordable, nutritious food. While agriculture has evolved so as to satisfy these intensely growing food demands, farmers will must increase food production by 70-100 % to satisfy global nutrition needs.

We already know that there's relatively little available land on which to cultivate food. The Food and Agriculture Organization of the United Nations (**FAO**) projections indicate that 80 % of the extra food required to fulfill demand in **2030** will must come from land already under cultivation.

The result's that our farmers and food producers must produce those higher yields using the identical (or less) acreage than they use today while wishing on fewer natural resources.

Project

by Agri MarketPlace

Submission date: 04-Jul-2022 12:15PM (UTC+0500)

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