****

**THE STATE UNIVERSITY OF ZANZIBAR**

**SCHOOL OF SOCIAL AND NATURAL SCIENCE DEPARTMENT OF SOCIAL SCIENCE TUNGUU CAMPUS.**

**PROJECT TITLE: AGRICULTURE MANAGEMENT SYSTEM**

**STUDENT NAME DAIFAT MUSSA OTHMAN**

**REG NO. BITAM/9/21/026/TZ**

This project report is submitted in partial fulfillment of the requirements for the award of a Bachelor Degree in Information Technology Application And Management(BITAM)

Declaration (plagiarism)

I, DAIFAT MUSSA OTHMAN, hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma of the university or other institute of higher learning, except where due acknowledgement has been made in the text

Signature

Name

Date

ABSTRACT

The Agriculture Management System is designed to empower farmers by providing a comprehensive platform for effective crop management. This system allows farmers to input and track post-harvest data, manage expenses, and access detailed information about local stores offering seeds, fertilizers, and other agricultural tools.

Additionally, registered contributors, who are experts in agriculture, can provide valuable insights and guidelines on optimal farming practices, such as the best times to plant and harvest crops to maximize profits. The system aims to enhance decision-making, streamline farming processes, and ultimately improve agricultural productivity.

Dedications

This project is dedicated to all the hardworking farmers who strive daily to cultivate the land and feed our communities. Your relentless efforts inspire innovation and progress in agricultural technology. I also dedicate this work to my family and friends for their unwavering support and encouragement throughout my academic journey.

Acknowledgement

I would like to express my deepest gratitude to my project supervisor, Dr.HUSSEIN SHAABAN for the guidance, support, and insights throughout the project. his expertise and patience have been instrumental in the successful completion of this work.

I extend my sincere thanks to the STATE UNIVERSITY OF ZANZIBAR for providing the resources and knowledge that have empowered me to undertake this project.

I am also grateful to my family for their unconditional love, support and encouragement, which have been the backbone of my academic, project and personal achievements.

Lastly, I thank my colleagues and friends who offered their assistance, encouragement, and constructive feedback during the research and development phases of this project.

Special thanks to the farmers and agricultural experts who shared their experiences and provided the practical insights necessary for shaping this project.

Table of content

List of figure

CITATIONS

Conclusion

CHAPTER 1: Introduction

* 1. INTRODUCTION

Agriculture management system

* 1. PROJECT BACKGROUND AND MOTIVATION

Currently, there are some systems which deals with agriculture

* 1. PROBLEM STATEMENT
* Limited focus on crop cultivation in Zanzibar: The existing system primarily caters to Tanzania and does not provide specific information on crop cultivation in Zanzibar.
* Lack of a comprehensive budgeting tool: The system does not offer a detailed budget template, hindering farmers from effectively managing their expenses.
* Absence of supply for fertilizers and pesticides in Zanzibar: While Barefoot supplies in Tanzania, there's a gap in providing these resources specifically for Zanzibar.
* Language barrier: The existing system is in English, which may not be accessible to all farmers, especially those more comfortable with Swahili.
* Limited emphasis on crop-related information: Agriweb focuses more on animals, leaving a gap in crop-related information and resources.
* Absence of direct input for farmers post-harvest: The system lacks a feature for farmers to input information after harvest, such as yields and profits.
  1. PROBLEMS SOLUTION AND SCOPE

**Problem solution**

* Expansion to include information on crop cultivation in Zanzibar.
* Development of a detailed budget template for crop cultivation to assist farmers in managing their expenses effectively.
* Establishment of a supply chain for fertilizers and pesticides in Zanzibar.
* Translation of the existing system into Swahili for broader accessibility.
* Inclusion of crop-specific information and resources.
* Integration of a feature for farmers to input post-harvest data, such as yields and profits.

**SCOPE**

1. **Geographical Scope:**
   * The system will cover both Tanzania and Zanzibar, providing information and support tailored to the specific agricultural practices and needs of farmers in these regions.
2. **Crop Cultivation:**
   * The system will extensively focus on crop cultivation, offering guidance on various crops, cultivation techniques, and best practices.
3. **Budgeting and Financial Management:**
   * A comprehensive budgeting tool will be included to assist farmers in planning, tracking, and managing their expenses related to crop cultivation.
4. **Post-Harvest Data Input:**
   * A feature will be integrated to allow farmers to input information post-harvest, such as yields and profits, enabling them to analyze the success of their cultivation efforts and make informed decisions for future seasons.
5. **User-Friendly Interface:**
   * The system will have an intuitive and user-friendly interface, making it accessible to farmers with varying levels of technological expertise.
6. **Education and Resources:**
   * In addition to cultivation and budgeting tools, the system will provide educational resources, and guidelines to empower farmers with knowledge and skills for sustainable and successful crop cultivation.
7. **Collaboration with Local Stores:**
   * Information on reputable local stores for obtaining fertilizers and pesticides will be included, fostering collaboration between the system and trusted suppliers.
   1. OBJECTIVES
   2. FEASIBILITY STUDY REPORT – OPERATIONAL, ECONOMIC, LEGAL AND TECHNICAL FEASIBILITY

* Technically, the project can be performed as there is availability of hardware and software needed, and the one to implement the system is also available with required skills.
* Economically, the system doesn’t need huge amount of money, and it will help to reduce the loss which most of the farmers face due to lack of tracking expenses tools and due to farming in wrong seasons because of lack of information.
* Legally, the system doesn’t have any conflict with legal issues and it is legally acceptable by laws
  1. ORGANIZATION OF THE PROJECT
* Chapter One is the introductory part of the project showing why the project is undertaken. It also presents the problems, the purpose of the study, the scope and limitations.
* Chapter Two is the review of literature.
* Chapter three is Research Methodology. This chapter discusses the methodology of the research the source of data and the procedure for collecting the data, analysis of the data and the system and fixing the requirements specification.
* Chapter Four is System design and so on.

CHAPTER 2: Literature review

2.1) INTRODUCTION

2.2) RELATED WORK

2.3) PREVIOUS SYSTEMS (OR SIMILAR APPLICATIONS)

* <http://www.mkulima.sua.ac.tz/handle/123/753>



Figure :screen shot of existing system from sua

* The system runs on any platform that supports a web browser like desktop, mobile devices, tablets.

CHAPTER 3: Project Methodology

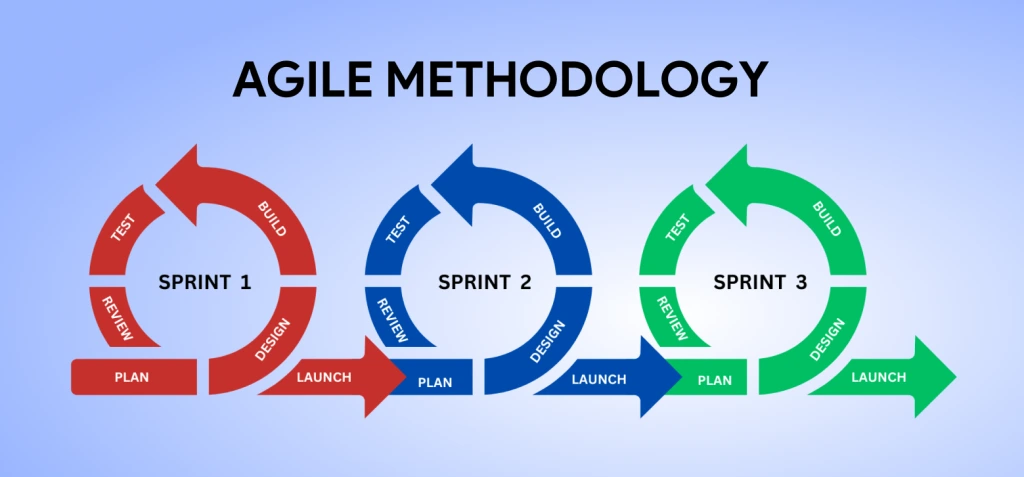
3.1. Introduction

3.2. Software development approach (object oriented or structured)

Object-Oriented Approach

3.3. Software development life cycle model (SDLC)

I used Agile, because agile breaks down larger projects into small, manageable chunks called iterations, also changes can take place at any phase and the highest priority is to satisfy customer.



3.4. Software development tools

1. For designing: draw.io
2. System development platform:
3. DBMS: PostgreSQL
4. Front-end tools: react
5. Back-end tools: spring boot

3.5. Information Gathering and Analysis

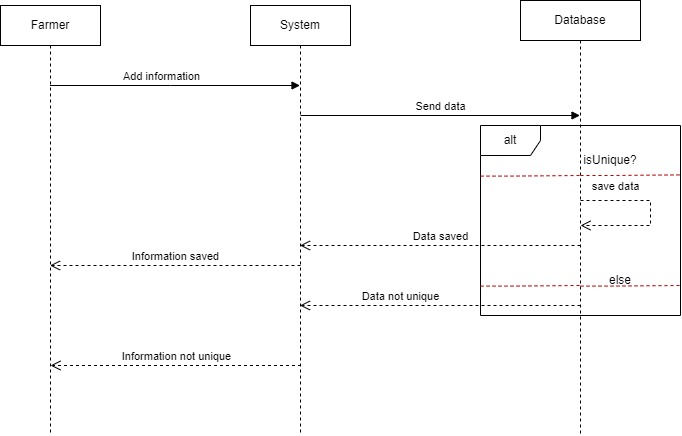
3.6. System Analysis

**USE CASE DIAGRAM**

****

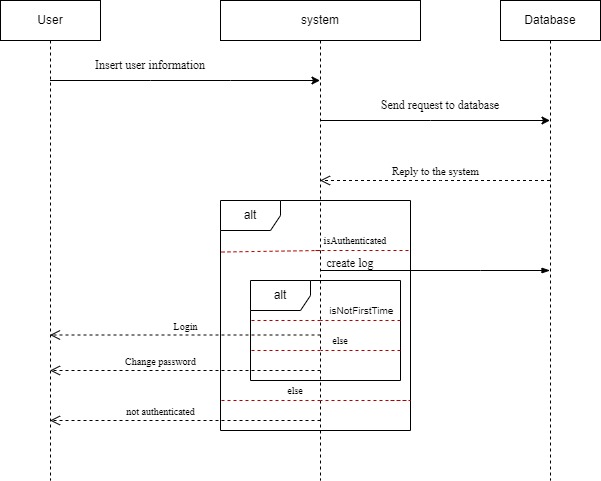
**SEQUENCE DIAGRAM**

Farmer self registration UML Sequence diagram



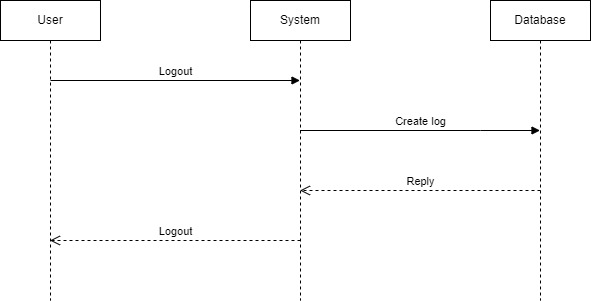
Narration

Login UML Sequence diagram



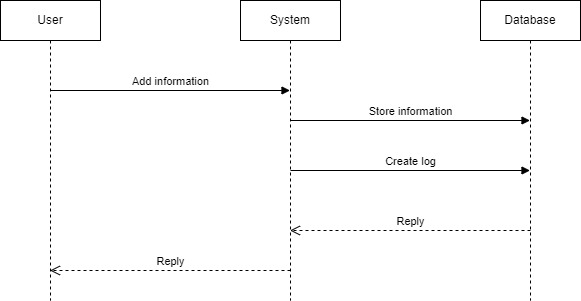
Narration

Logout UML Sequence diagram



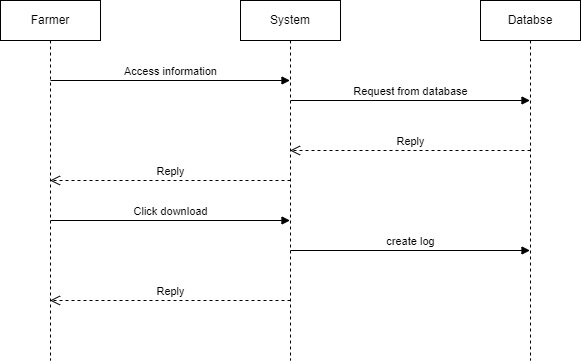
Narration

Manage Data UML Sequence diagram



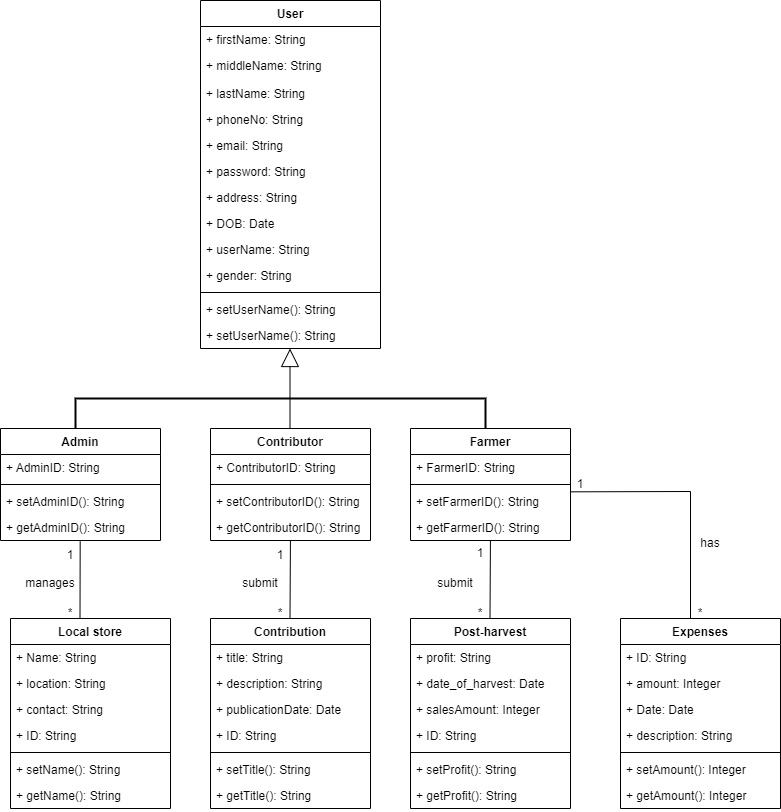
Narration

Download UML Sequence diagram



Narration

**CLASS DIAGRAM**



CHAPTER 4: System Analysis

4.1. Existing System

4.1.1. Existing System Description

The organization sends experts to the villages where people farms and then they start to teach the farmers on how to farm well they go there for some times and then they provide knowledge for that time, but this way consumes much time

4.1.2. Business Rules

4.2. Requirements Specification

4.2.1. Functional Requirements

* Farmers should be able to create accounts, log in securely, and manage their profiles.
* User roles should be defined, such as regular farmers, administrators, and contributors.
* farmers should be able to input expenses related to crop cultivation.
* Farmers should be able to input data post-harvest such as sales and profits.
* It should include directory of local stores.
* Farmers should be able to give comment related to local store.
* It should include information on crop varieties, cultivation techniques, pest management, and safety measures.

4.2.2. Non-functional requirements

* **Fault Tolerance:** Implement mechanisms to handle system failures gracefully, ensuring minimal disruption to users.
* **Response Time:** The system should provide quick responses to user interactions, with minimal latency.
* **Scalability:** The system should be scalable to handle an increasing number of users and data over time.
* **Throughput:** Ensure that the system can efficiently process a large number of simultaneous transactions.
* **Access Controls:** Define and enforce access controls to ensure that users can only access data and functionalities relevant to their roles.

4.2.3. Performance Requirements

4.2.4. Software and Hardware Requirements

A PC which has the following:-

**HARDWARE:**

* RAM 4-8GB.
* Core i5
* Hard disk …GB

**SOFTWARE:**

* **FRONT END TOOLS:**

HTML, CSS, BOOTSRAP, REACT.

* **BACKEND TOOLS:**

Java, spring boot.

**DATABASE:** PostgreSQL

**IDE:** Visual Studio Code.

**OPERATING SYSTEM:** Windows11.

**BROWSER:** Chrome.

4.2.5. Preliminary Product Description

CHAPTER 5: System Design

5.1. Architectural design

5.2. Proposed software architecture

5.3. Database Design

5.4. User Interface Design

5.5. Access control and security

CHAPTER 6: System implementation and testing

6.1. Technologies

6.2. Database implementation

6.2.1. Internal Schema of database (database schema)

6.2.2. Data Dictionary

6.3. Testing

6.4. User Interfaces

6.5. Strength ad Limitation of the system

6.5.1. What is covered from requirements

6.5.2. What is not covered

CHAPTER 6: Conclusion, Recommendations Challenges and References

8. References