



DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY

SCHOOL OF COMPUTER SCIENCE AND IT

DEPARTMENT OF COMPUTER SCIENCE

PROJECT TITLE

MAZAO APP

A project submitted to the Department of Computer Science in the School of Computer Science and Information Technology in partial fulfillment of the requirements for the award of the degree of Bachelor in Computer Science, Dedan Kimathi University of Technology 2022

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Declaration

This proposal is my original work and has not been presented for a degree in any other University

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MUOKI DENIS NZANGI

Signature

Date 16/06/2022

This proposal has been submitted for examination with my approval from the university supervisor

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Abstract

In today's life, almost everyone is using smartphones. Many are aware of android applications. Smartphones have become companions in daily human operations. In this paper, the features and functions of the application have been discussed. Mazao app is an application aimed at connecting farmers and buyers in agribusiness. The app is aimed at carrying out agricultural business. The farmer will be able to post his goods on the app then the seller can look for the product he needs and decide if she will buy the commodity or not. The app has functionalities like user registration and login, payment of goods through M-Pesa, and farmers can upload the products they sell for the buyer to buy. It also has a chat activity between the farmer and seller.

The application will be developed using incremental methodology as there is a need to satisfy all the users' requirements daily. It is revolutionary and will be a success factor in task achievement. The application is focused more on agribusiness but, in the future, can be integrated and used in selling various products that humans need every day.

Acknowledgments

I would sincerely like to acknowledge the Administration of DEDAN KIMATHI UNIVERSITY OF TECHNOLOGY for providing resources like the internet, a peaceful environment, and the opportunity to practice the skills learned in our previous academic years to come up with this project. Moreover, I would like to acknowledge Mr. David Opondo for the excellent work he has been doing by guiding and advising on the process of coming up with various requirements necessary for developing the MAZAO APPLICATION. I would also like to express my sincere gratitude to the entire team in the Computer Science Department. They supported me with scientific guidance, advice, and encouragement; they were always helpful and enthusiastic, inspiring me in my work. I take the privilege to express my sincere thanks to my fellow students for their input and motivation.

CHAPTER ONE: INTRODUCTION

Mazao app aims to connect farmers and buyers to do business. The app is aimed at carrying out agricultural business. The farmer will be able to post his goods on the app then the seller can look for the product he needs and decide if she will buy the commodity or not.

1.1 BACKGROUND

The project I am about to take aims to solve the small-scale farmer problems. The project aims at connecting the farmer and the seller. The farmer will be able to upload his products online, and then the buyer will be able to purchase them. The farmer can sell the product to his online customer who views the good and is interested in buying. When the seller searches for which products to buy online, he can look at the products he needs to buy and purchase them.

In recent years, the business has been done online, which is a perfect place where all the customers can sell their products online and the broad market. Online can reach many people and therefore improve living standards. Many people in the village are facing a problem with how to market their products. Due to a lack of market, farmers face many challenges because no one is addressing them. If the farmers could get a platform to sell their products, it would be excellent because their products would not be wasted.

Some companies have tried to make applications to help farmers sell their produce online, but the system is not working efficiently. Mainly because it does not allow the power to only pay when the service is delivered and does not provide chat activity and google maps to locate the customer.

1.2 PROBLEM STATEMENT

Many farmers have been facing problems marketing their products and reaching a broad market. Due to these reasons, they cannot reach a broad market, so their farm produce ends up going to waste or selling at losses. The issue of marketing farms' produce, especially online, is very important. Marketing is crucial in any business, and it decides how the business will grow. If the issue of the farmers reaching a broad market is solved by this app. in the future, there might be problems in farm produce because farmers will fear that losing their money may lead to decreased investing in agriculture because they did not reach a broad market. Hence, they incurred huge losses. Implementing an app that will work as a marketplace for the farmer will matter because he will be able to sell his product to the market. When many goods and services are sold, it helps in improving a county's economy and per capita income. This change is significant for the country and small-scale farmers because they will be able to earn a living from their produce, and their living standards will change.

In terms of cost, the application will not have many resources. To develop the application, one needs the following tools: a computer, an android studio, the internet, a database, and a programmer. The project is cost-efficient because it doesn't because it does not need many resources in order to implement. My claims are backed by how I have seen many farmers complaining that in Kenya, there is no market where they can be able to sell their agricultural products. In Kenya, especially in rural areas, farmers can sell their products.

In the above problem, the solution to reaching a broad market will be introducing an app that will act as a market to reach more audiences to the farmer's product. The solution will help to solve a problem that many farmers are currently facing.

1.3 RESEARCH OBJECTIVES

1.3.1 General objective

The main objective of this project is to develop an app that will enable the farmer to sell his farm produce online and reach as many customers of his produce as possible.

1.3.2 Specific Objectives

- I. The seller and buyer must register for the application.
- II. The seller and buyer can log in to the application after registration.
- III. Implement google maps which can be able to connect both of them. The seller can view the location of his buyer, and the seller can view the location of the buyer.
- IV. The application should provide a chat activity between the buyer and seller.
- V. The application should have a payment system using M-Pesa on it. The app will calculate the total, and the buyer will pay using M-Pesa.
- VI. The seller, i.e., the farmer, should be able to upload his goods images to the app and their prices for the customers to see and decide if to buy.
- VII. Buyers can view the goods available and decide whether to buy them or not.

1.4 JUSTIFICATION

In recent years, e-commerce has hit the market, and many products have been sold online. For this reason, there is a need to create an application for agribusiness so that they can sell their goods online. There is a need to move agribusiness online so that the business can receive wide attention and people can purchase agricultural goods online. The application will be used by most people aged between eighteen years and sixty-five years because these generations understand more about e-commerce and trust it. People above sixty-five years may have little knowledge about it, but they have not appreciated it because they were born and it never existed.

1.5 SCOPE

The main scope of the project is to develop an application that will be able to ensure people can purchase farm produce from the app. Also, the seller can upload images of the goods he is selling. The application will be opened to those who use android smartphones and will be able to purchase or sell goods in the app.

The outlined scope will be:

1. Primary users of the app will be buyers and farmers aged between 18-60 years

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2. The application will only be running on phones powered by android.

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION

The field is vast in software and application development, with almost every area explored. Many online applications do not address the issue of brokers and have been the main problem regarding farmers selling their farm produce. Farmers can get their fair share after selling their farm produce if a third party is removed from the market. Apps that can help farmers sell their products are small, and many are websites. There is a need to develop an android app that the farmers can use to market their produce. Also, in the current generation, in which people own smartphones, it will be possible to sell the product online, and many youths like buying their products using online apps.

2.2 CASE STUDIES

2.2.1 Case 1: Mkulima young

Mkulima Young is an app where young people can sell their goods, and customers can also purchase them back. The app is suitable for app farmers willing to sell their products online. When one goes into the play store and downloads the app, it looks good, but it has one problem. It does not show the geographical location between the farmer and seller. An example is if a buyer needs to buy Sukuma wiki and it is highly perishable, he will need a nearby person who is nearby and can deliver duct during the same day. This is what my application is aimed at. Also, the seller must know the distance between the farmer and sell to avoid inconveniences if the product comes from far.

2.2. 2 Case 2: Mkulima Bora

Mkulima bora is an app that connects farmers and sellers in Kenya online. The above app does not have many functionalities which can enable the farmer to connect to many other farmers online with their customers. It has no google map, enabling the farmers to locate the buyers who need to

buy their product (Sharma, 2019). These are the main objectives of my application, which is to locate the location of farmers and sellers to start the business, which the Mkulima app does not have. Also. It does not have a chatting activity where the farmer and seller can chat about the good he is offering and his advantage to the customer.

2.2.3 Case 3: Shamabadunia

It is a map that focuses on farmers selling their farm produce online. It is well managed, and the farmer can see all the online products and he can decide which products the farmer can be able to buy. However, the app lacks one functionality I am focusing on implementing: chat activity. Before a buyer buys a product, he needs to talk with the farmer and talk more about the product he is focused on buying. These will enable the buyer to know more about the product and if it is suitable for a person who suffers from a particular disease or not.

2.2.4 Case 4: Soko farmers app

In this app, the farmers are focused on selling their products online. The app provides a chat message, and buyers can view which products were posted online by the farmer and have a chat. He can decide then which product makes him happy and buy it. However, the app has no google maps where he can see the distance of the seller. This becomes difficult for them to communicate and know when he will receive the product. The map activity I have implemented so that the customer and seller can view the location of each of them and make the business easy to carry out. These will make the business move faster and serve many clients.

2.3 Research Gap

From the case studies obtained from extensive research on eCommerce in the agricultural sector, import features needed to be added. One of the gaps to be filled is the existence of location using google maps which will map buyers to the nearest farmer. Finally, there is a lack of chat activity between the farmer and buyer. The buyer needs to acquire information about the product he intends to buy.

2.4 Proposed Methodology

In order to fill the existing gap, there is a need to develop an android application that will be used and available to everyone (Stonehem,2016).). The application will be developed using Java programming language and will cater to all needs of farmers in selling their produce to buyers. The application will utilize Firebase as a database for storing all the information regarding the application.

2.6 Conclusion

In the application which I have reviewed above, the Soko farmers app, shambadunia, mkulima young, and mkulima bora show some defaults on them. Some of them, like shamba Dunia, have implemented google maps which the others have not. Some of them have implemented chat activities while others have not. The maze app will have all these activities on it (Hair et al., 2021). The app will be efficient to use and make the business run smoothly.

CHAPTER THREE: METHODOLOGY

3.1 INTRODUCTION

Like any other project to be developed, software development follows specific steps to realize the desired goal and arrive at the final system. Software methodology is the series of processes followed to develop the software. It, therefore, explains the life cycle of a piece of software. Many approaches are taken in choosing a methodology to be used based on time, complexity, and how iterative the software is intended to be. In developing this application, incremental is opted.

3.2 FACT-CHECKING TECHNIQUE

Fact-finding is a collection of data and information based on a given technique. In developing the project, information was obtained by sampling existing documents, research, and questionnaire. Most ideas implemented were through user feedback and review of existing applications through the play store platform.

3.2.1 Research

The information related to the system is published in the sources like newspapers, magazines, journals, and documents. This record review helped the analyst get valuable information about the system and the organization. A study was conducted on the system's operation in books, online articles, and related productions.

3.2.2 Questionnaires

Questionnaires were administered to obtain information from people concerned with the system's usage and those living in different areas. The questionnaires were in google forms since the target group uses smartphones and digital platforms. This is the cheapest source of fact-finding. A set of questions were prepared and sent to the target group through emails, WhatsApp, and other digital platforms.

3.2.3 Existing documents

Existing documents and online journals review the working of a farm app and its limitations. These sources were used to determine what users require and existing problems when planning and scheduling their day.

3.3 System methodology model

The proposed android application was developed using the incremental model methodology, and requirements will be broken down into multiple standalone modules software development cycles in the incremental. Incremental development is done from analysis design, implementation, testing/verification, and maintenance. Each cycle passes through the requirements, design, coding, and testing phases. Moreover, each subsequent release adds function to the previous system until all designed functionality has been completely implemented.

The following are the phases of the incremental model:

1. **Requirement analysis:** In the requirements analysis phase of the incremental model, basic requirements and specifications of the software are collected. This phase involves understanding the functional requirements of the system. I collected all the requirements of the software and the user.
2. **Design and development:** In this phase, the system functionality and the development method are successfully finished.
3. **Testing:** The testing phase also checks the performance of each existing functionality. Several testing methods are used under this phase to check the behavior of each categorized function and system and respond.
4. **Implementation:** This phase enables the coding phase of the underdeveloped system. This phase includes the final coding of the system in the design and development phase and testing the functionality during the testing phase. After completing this phase, the product working is then enhanced and upgraded to the final system product.

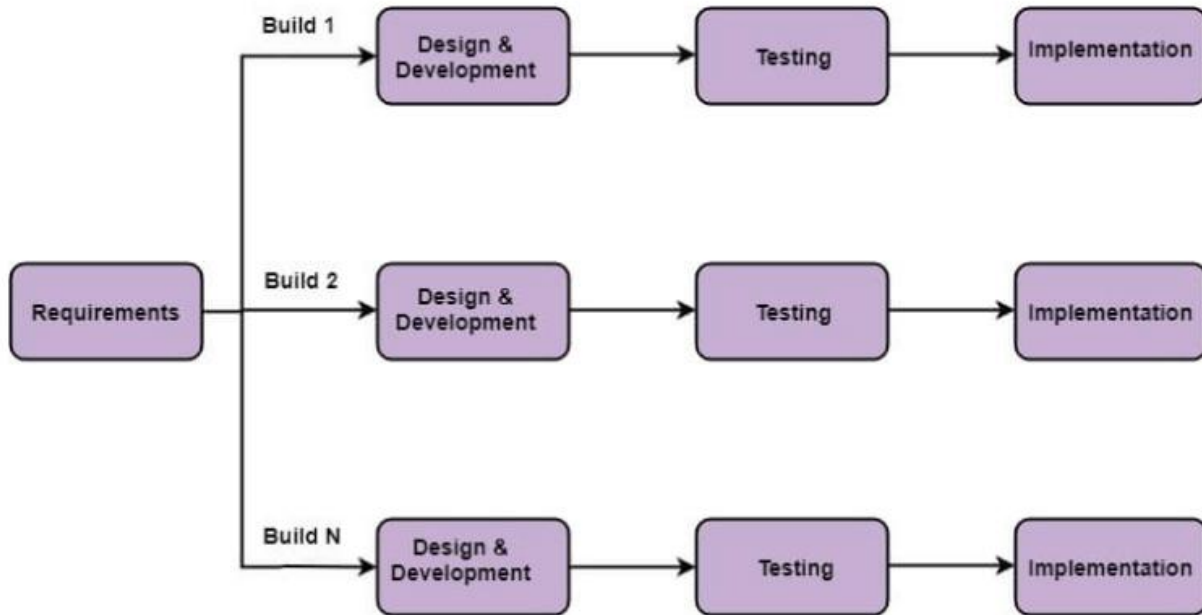


Figure 1: Incremental methodology model

3.4 Target population

This development project targets literate android smartphone users, especially those aged 18 years-60 years who more often go shopping in supermarkets and big malls. The target population is farmers and buyers who consume farm produce.

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Appendices

Appendix 1: Resources

This application will be developed using android studio and tested using a smartphone. Therefore, the resources which are required in development include:

Hardware

Laptop

Smartphone

Camera

Software

Android Studio

Java JDK

Firebase

Appendix 2: Budget

ITEM	DESCRIPTION	COST
Laptop	At least 3rd Gen, at least 8GB RAM	Ksh. 50000
Smartphone	Android supported, 3GB RAM	Ksh 15000
Travel cost	Going to farmers and buyers to collect data.	Ksh. 110000
Database	Firebase Realtime subscription	Ksh. 3000
TOTAL	Ksh. 79000	

Appendix 3: Gantt chart

