Implementing learning

BY

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# Research Area

Interaction of farmers with contents on an e learning system

Learning on new ways of doing things is usually an interactive process. In an e-learning system the farmers are expected to interact with contents on the web application interface on a computer in order to learn the new methods of farming.

On a wider scope the research area is Human Computer Interaction (HCI). HCI is a multidisciplinary field of study focusing on design of computer technology and in particular the interaction between humans as users with the computers. ("What is Human-Computer Interaction (HCI)?", 2019)

# Declaration

**Declaration by Student**

I hereby declare that this proposal is my original work and has not been presented in another university or institution for consideration for any certification.

Sign ……………… Date………………………

James Njoroge Njuguna

**Declaration by Supervisor**

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

Sign ……………… Date………………………

Mrs. Nancy Macharia

# Dedication

I dedicate this research to my inspiring parents for their efforts, sacrifices, mentorship, and guidance through this course.

I also 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 research.

# Acknowledgement

First, I therefore take this opportunity to express my sincere gratitude to the Almighty God for this far He has brought me and for providing me with the opportunity to carry out this research activities.

I also like to acknowledge the work of my supervisor, Mrs. Nancy Macharia for guidance and support in coming up with the correct research format.

I would also like to thank my parents for their moral and financial support throughout the research period.

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# Abbreviations and Acronyms

A.S.K Agricultural Society of Kenya

# Operation Definition of Terms

Vertical farming - practice of growing produce in vertically stacked layers. The practice can use soil, hydroponic or aeroponic growing methods. Vertical farms attempt to produce food in challenging environments, for example where arable land is rare ("What is vertical farming? - Definition from WhatIs.com", 2019)

Hydroponic methods- it is a method of growing plants without using soil instead uses a mineral nutrient solution in a water solvent, allowing the nutrient uptake process to be more efficient than when using soil. ("What is Hydroponics? - Definition from MaximumYield", 2019)

Aeroponic- methods considered a form of hydroponics that involves constantly misting water and nutrient solution onto plant roots ("What is Aeroponic System? - Definition from MaximumYield", 2019)

# Introduction

Agricultural Society of Kenya (A.S.K) is an organization whose objective is to promote agriculture in Kenya. This objective is achieved through hosting of agricultural shows in fifteen different zones in Kenya. These shows provide a forum for the exchange of agricultural and agribusiness ideas as well as new technologies in agriculture as they emerge.

A.S.K shows gives opportunity to farmers to showcase their products. People come to these fora to learn new techniques to exploit the productivity in agribusiness. (“ASK – About A.S.K”, 2019)

# Problem statement

Two third of people living in Kenya make a living from agriculture, most of them are smallholder farmers. This industry plays an important role in food security, employment creation and poverty alleviation. Agriculture sector accounts for 65 percent of Kenya’s total exports and provides more than 18 percent of formal employment therefore the growth of national economy be correlated to growth and development in agriculture. (“Kenya at a glance | FAO in Kenya | Food and Agricultural Organization of the United Nations”, 2019)

Lack of information remains number one problem facing smallholder farmers. Most miss new improved methods of farming, proper information regarding cheap but effective farming practices such as crop rotation and use of green manure, proper pest control practices. There is limited access to extension service which is critical and it is required in transforming farming to a more modern and commercial agriculture to promote household food security improve income and reduce poverty. Inadequate research-extension-farmer linkages to facilitate demand driven research and use of improved technologies constrains efforts to increase agricultural productivity. These situations have hindered most farmers from keeping pace with changing technological advances. ("Challenges Facing Agriculture and Farming in Kenya", 2019)

# Proposed solution

Build a web based electronic learning system for farmers on groceries production whereby farmers, extension officers and other agricultural officers are registered . Farmers can access several courses on how to go about vertical groceries. Extension officers can also post documents on cultivation guide farmers on best farming practices.

# Objectives

* To register farmers, extension officers and other agriculture expert allowing them to share information about various farming practices on the web platform.
* To ease communication whereby farmers and extension officers can link up for on farm training sessions held
* To Increase awareness on modern ways of farming that are cost effective to the farmers
* To improve groceries production through training on new and improved methods of farming thus ensuring that the farmer has sufficient income
* To increase awareness on the importance of training in crop farming activities and the required inputs

# Research Questions

* Do you have an access to internet connection?
* Which device do you use to access internet from?
* How frequent do you access internet?
* Do you engage in farming activities?
* What type of farming do you engage in?
* Do you have access extension officers?
* How often do you use extension officers’ services?

# Justification

* Improving farm yields to the Kenyan farmer thus increase income. After a farmer learns the new and improved methods of farming and apply them the farmer will be able to make more produce per given area.
* The system will improve delivery of higher quality products, as farmers will have learnt the best on farm practices and proper handling of produce thus reducing loss.
* It is in line with one of the big four agendas that is having a food secure country. ("The Big 4 - Empowering the Nation", 2019)

# Methodology

## 1.6.1 The unified Process

An iterative and incremental, architecture centric and use-case driven approach in developing software.

It has the following key features:

1. It is component based, commonly being used to coordinate object oriented programming projects.
2. It uses UML a diagrammatic notation for object oriented design.
3. The design process is anchored, and driven by use cases which help keep sight of the anticipated behaviors of the system.
4. It is architecture centric and its design is iterative and incremental via a prescribed sequence of design phases within a cyclic process.

## 1.6.2 Phases of Design Cycles

Design in the unified Process proceeds through a series of cycles, each of which has the following phases:

Inception:

Produces a commitment to go ahead and by the end of this phase a business case should have been made, feasibility of the project assessed, and the scope of the design should be known.

Elaboration:

Leads to a working specification of the system and the end of this phase a basic architecture should have been produced a plan of construction agreed, all significant risks identified, and those risks considered to be major should have been addressed.

Construction:

Produces beta-release system and the end of this phase a working system should be available, sufficient for preliminary testing under realistic conditions.

Transition:

Introduces the system to its intended users.

# Resource Requirement

## Hardware

### Laptop

* Laptop with the following specifications
* Processor core i3
* 4GB DDR3-1333 RAM
* 320 GB hard drive
* Operating system Windows 10 Pro

## 1.10.2 Software

* Word processors - Microsoft office word for developing the proposal document.
* Spreadsheet – Microsoft office Excel generating Gantt charts
* Microsoft office Power Point for presentation purposes

## Other Requirement

* Stationery
* Printing of the proposal document
* Internet for research purposes

# Budget and Budget Justification

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Model number** | **Item definition** | **PRICE PER UNIT** | **NO. OF UNITS** | **TOTAL** **(KSH)** |
|  | laptop | 25,000 | 1 | 25,000.00 |
| HUAWEI E5573Cs-322 | modem | 5,400 | 1 | **5,400.00** |
|  |  |  |  |  |
|  |  |  |  |  |

Table 1: BUDGET AND BUDGET JUSTIFICATION

# Project Time Plan

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Description** | **Duration**  **(Weeks)** | **Proposed Start date** | **Proposed Finish date** | **Actual Start Date** | **Actual Finish Date** | **Deliverables** |
| 1 | Project Identification | 1 | 14/1/19 | 18/1/19 | 21/1/19 | 25/1/19 | Problem statement definition |
| 2 | Draft Proposal  Writing | 1 | 28/1/19 | 1/2/19 | 29/1/19 | 1/3/19 | Draft Proposal |
| 3 | Final Proposal | 1 | 4/2/19 | 6/2/19 |  |  | Final Proposal |
| 4 | Literature Review | 1 | 11/2/19 | 15/2/19 |  |  | Literature review report |
| 5 | Data collection  And analyses | 2 |  |  |  |  | Requirements specification |
| 7 | System design | 3 |  |  |  |  | System design |
| 8 | System Development | 3 |  |  |  |  | Working System |
| 9 | Testing | 1 |  |  |  |  | Working System |
| 10 | Project Report | 1 |  |  |  |  | Project Report |

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