P.O. Box 236, Tororo, Uganda
Gen: +256 - 45 444 8838
Fax: +256 - 45 4436517
Email: info@adm.busitema.ac.ug
www.busitema.ac.ug

BUSITEMA UNIVERSITY

FACULTY OF ENGINEERING

DEPARTMENT OF COMPUTER ENGINEERING

DIPLOMA IN COMPUTER ENGINEERING

FIRST AID ANDROID MOBILE APPLICATION

BY

KABUYE DOUGLAS HOSEA

BU/UP/2014/669

EMAIL: kabuyedouglas53@gmail.com

AND

KWOBA YAZIDI

BU/UP/2014/671

EMAIL: kwobayazidi1@gmail.com

SUPERVISOR:

A PROJECT REPORT SUBMITTED TO THE DEPARTMENT OF COMPUTER ENGINEERING IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DIPLOMA OF COMPUTER ENGINEERING OF BUSITEMA UNIVERSITY.

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DECLARATION

KABUYE DOUGLAS HOSEA Reg. No. BU/UP/2014/669 and **KWOBA YAZIDI Reg. No. BU/UP/2014/671** hereby declare that this project proposal is our original work except where explicit citation has been made and it has not been presented to any institution of higher learning for any academic award.

KABUYE DOUGLAS HOSEA **KWOBA YAZIDI**

Sign…… Sign……

Date: ……... Date…….

APPROVAL

This is to certify that the project report under the title “First Aid Android Mobile Application System” has been done under my supervision and is now ready for examination.

SIGNATURE: …….

DATE: …….

A LIST OF ACRONYMS/ABBREVIATIONS

CPR	Cardio Pulmonary Resuscitation
VHT	Village Health Team
HC	Health Centre
API	Application Program Interface
GPS	Global Positioning System
UI	User Interface
iOS	iPhone Operating System
XML	eXtensible Markup Language
W3C	World Wide Web Consortium
WYSIWYG	What You See Is What You Get
PSD	Photoshop Document
SDK	Software Development Kit
SD	Secure Digital Card
AVD	Android Virtual Device
S/W	Software

ABSTRACT

Accidents can happen to anyone without any prior notice or forewarning. And in some situations they may result in death if they are not handled properly by the first responders who administer the first aid.

This project was therefore aimed at developing an android mobile application that would avail people with knowledge about how to administer first aid, how to handle situations of emergency and how to prepare beforehand for any situations that may occur.

The project is designed to be installed on any mobile phone or application running the android operating system with an interface that can be easily grasped by any one. The work is arranged mainly in six chapters, Chapter one includes the introduction drug locker system for drug store. Chapter two discusses the literature related to the system, Chapter three illustrates the methodologies used in coming up with the working prototype of the system, Chapter four includes system design and analysis, Chapter five is contains the implementation and testing of the system and chapter six contains the summary of the work, discussions and recommendations.

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CHAPTER ONE: INTRODUCTION

BACKGROUND

First aid is the assistance given to any person suffering a sudden illness or injury, with care provided to preserve life, prevent the condition from worsening and/or promote recovery. It includes initial intervention in a serious condition prior to professional medical help being available, such as performing CPR while awaiting an ambulance, as well as the complete treatment of minor conditions, such as applying a plaster to a cut. First aid is generally performed by the layperson, with many people trained in providing basic levels of first aid, and many others willing to do so from acquired knowledge.

There are many situations which may require first aid, and many countries have legislation, regulation or guidance which specifies a minimum level of first aid provision in certain circumstances. This can include specific training or equipment to be available in the workplace (such as automated external defibrillator), the provision of specialist first aid cover at public gatherings, or mandatory first aid training within schools. First aid, however, does not necessarily require any particular equipment or prior knowledge, and can involve improvising with materials available at the time, often by untrained persons.

During the late 18^{th} century, drowning as a cause of death was a major concern amongst the population. In 1767, a society for the preservation of life from accidents in water was started in Amsterdam, and in 1773, physician William Hawes began publicizing the power of artificial respiration as a means of resuscitation of those who appeared drowned. This led to the formation, in 1774, of the society for the Recovery of Persons Apparently Drowned, later the Royal Humane Society, who did much to promote resuscitation [1].

In 1859 Jean-Henri Dunant witnessed the aftermath of the Battle of Solferino, and his work led to the formation of the Red Cross, with a key stated aim of "aid to sick and wounded soldiers in the field". The Red Cross and Red Crescent are still the largest provider of first aid worldwide. The Red Cross is, along with the St. John organisation, the most recognized championing agency of first aid [2].

Uganda's health system is divided into national and district-based levels. At the national level are the national referral hospitals, regional referral hospitals and semi-autonomous institutions including the Uganda blood transfusion services, the National Medical stores, the

Uganda public health laboratories and the Uganda national health research organization (UNHRO) [3].

The lowest rung of the district-based health system consists of village heath teams (VHTs). These are volunteer community health workers who deliver predominantly health education, preventive services and simple curative services in communities. They constitute level 1 health services. The next level is health centre 2 which is an outpatient service run by a nurse. It is intended to serve 5,000 of the population. Next in level to HC2 is HC3, in patient, simple diagnostic and maternal health services. It is managed by a clinical officer. Above a HC3 is the HC4, run by a medical doctor and providing surgical services in addition to all the services provided at HC3. HC4 is also intended to provide blood transfusion services and comprehensive emergence obstetric care [3].

A human resources for health policy is in place to guide recruitment, deployment and retention of health staff. In spite of this, shortages of health workers persist. There is one doctor for every 7,272 Ugandans. The related statistic is 1:36,810 for nurse professionals. The shortages are worse in rural areas where 80% of the population resides, as 70% of all doctors are practising in urban areas [4].

77% of Ugandans live within 5 km of a health facility. The health sector is on track to meet three out of eight core health service indicators in the Health Sector Strategic Investment Plan (HSSIP). Targets for antennal care attendance, delivery in health centre, malaria prophylaxis in pregnancy and early infant diagnosis of HIV are lagging behind national targets [4].

From the above statistics, you can see that very few people have access to the meagre health resources available and even these are not up to standard. Consequently, there are many cases of easily treatable diseases that result in death due to inaccessible health care and knowledge.

Considering the widespread adoption and use of mobile technologies, new and innovative ways to improve health and health care delivery are opening up. Mobile applications can help people manage their own health and wellness, promote healthy living and gain access to useful information when and where they need it.

Hence there is a need for a system that can make health care knowledge available to people in case of any emergence so that first aid can be applied to the victim or knowledge on how to handle any medical situation. And with the insurgency of mobile phone technologies in the population, the system can easily be deployed on the systems that are accessible by all.

PROBLEM STATEMENT

Due to the inaccessibility of health facilities in Uganda and the lack of knowledge of how to handle certain medical situations, people die from relatively easy to cure ailments like snake bites and other minor issues that can be solved with the application of first aid to the affected party. This project aims at designing a first aid mobile application system which will contain a database of offline instructions on how to handle most of the common emergencies and accidents like snake bites, cuts, burns, fractures, near drowning, faced in everyday interaction with the environment to prevent severe consequences and death.

OBJECTIVES

MAIN OBJECTIVES

It was to develop a first aid mobile application based on the android operating system that will reduce number of deaths from ignorance about first aid administration and inaccessibility of health facilities.

SPECIFIC OBJECTIVES

- To study and review the existing first aid mobile application systems.
- Analyse and determine the requirements of our first aid mobile application system.
- Design and develop the proposed system using set standard procedures.
- Implement the proposed system on devices running the android operating system.
- Test and validate the proposed system to ensure its functionality is flawless

JUSTIFICATION

According to the World Health Organization, 2.9% of all deaths in Uganda were caused by road accidents and 30% of all deaths to children under the age of five were caused by injuries. These deaths could have been prevented if the proper first aid was applied to the causalities immediately and saved lives. Hence the need for a mobile system with which people can access first aid information and help in case of emergencies quickly and reliably.

SIGNIFICANCE

The designed system ensures that knowledge about first aid administration will be at the users' fingertips in case of any emergency. Thus the number of fatalities from late administration of treatment will be reduced greatly to the users of the application. And due to

the high influx of mobile devices running the android operating system, deploying and usage of the application will be quick and simple.

TECHNICAL SCOPE (CONTENT)

This system only operates on the android mobile platform from API 19 onwards. The system has a database that is used to store information regarding first aid practices for offline references. It will have the user interface where the user can interact by selecting from a list of the common ailments and a form to input signs of distress to know the illness.

TIME SCOPE

The time of the project is expected to take a period of eight months starting September 2015. The time scope is further explained by the time frame table in the appendix.

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