DESIGN AND IMPLEMENTATION OF A MOBILE MEDICINAL PLANTS MANAGEMENT INFORMATION SYSTEM

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Abstract

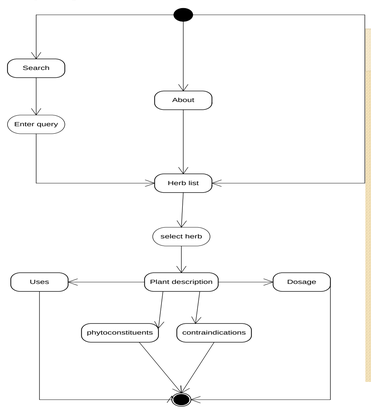
The fast developing research tools based on omics-technologies, on novel pharmacological methods and our fast developing biotechnological capabilities offer unique opportunities to advance our knowledge on Medicinal and Aromatic Plants (MAPs). Mobile healthcare services and applications can aid in providing better preventative care and monitoring of chronic diseases. Despite the usefulness of MAPs, lack of timely information about them has put many users in the dark. This project therefore provides a solution to the above situation by implementing a mobile medicinal plants information system that allows individuals access information about MAPs without even having to be constantly connected to the internet. Software engineering tools used included MySQL, Wamp Server, J2ME and PHP.

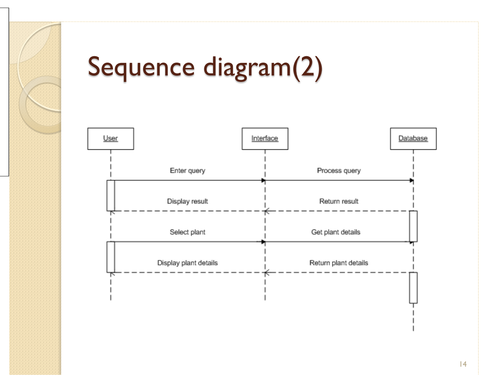
Introduction

In economically developed countries and under the label Complementary and Alternative Medicine (CAM), such plants are part of the conscious selection of what people use to prevent and cure a wide range of diseases. Simultaneously, we witness a continuous development of novel uses of aromatic and other useful plants (WOCMAP, 2013). Mobile healthcare can improve geographic coverage by providing information and connectivity to healthcare professionals anytime and anywhere (Richard, 2010). Those in the medical community have seen a dramatic rise in apps designed to aid them in their medical practice, and these mobile medical apps have the potential to revolutionize the practice of medicine (William, 2012). The application of mobile technology to medicinal plants information system provides the opportunity to present accurate and useful information about medicinal plants for the users of the system.

Methodology

The project was developed and implemented using software engineering tools such as UML, J2ME, MySQL, PHP (serves as the API between J2ME and MySQL database). The CLDC configuration and MIDP profile of the J2ME were used in the project design.



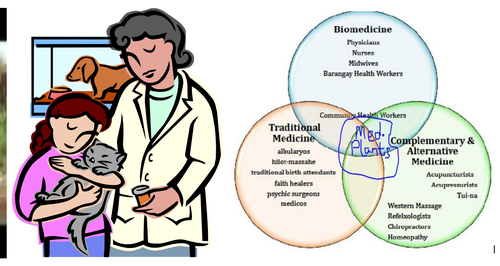


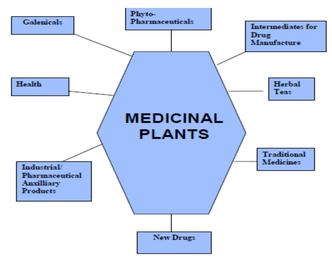
Conclusions

More than 50% of drugs used in modern medicine are of plant origin. About 80% of Africa's population rely on medicinal plants for their health needs confirming that medicinal plant preparations have been identified as alternative remedies for several diseases. Filling the gaps in our knowledge about the contributions, both quantitative and qualitative, of medicinal plants in local diets could contribute to a greater appreciation of the value of forest ecosystems per se. Providing vital information on MAPs using mobile technology prevents people from misusing medicinal plants and locate them easily by taking advantage of modern technology's ubiquity, availability, portability, and mobility. This system, if properly utilized, will go a long way in bringing solutions to the health needs of individuals. It will further enlighten consumers and pharmaceuticals of medicinal plants' use for different purposes including clues and discovery of novel therapeutics.

Background

The pharmacological treatment of disease is said to have begun long ago with the use of herbs (Schulz *et al*., 2001). Globally, medicinal and aromatic plants (MAPs) are used widely (WOCMAP, 2013). More than 80% of the world's population use medical treatments based on plant remedies (Kasirajan et al. 2007; Heimall and Bielory, 2008; Cho-Ngwa et al. 2010; Mafimisebi and Oguntade, 2010; Li et al. 2011; Omogbadegun et al. 2011). MAPs form a numerically large group of economically important plants which provide basic raw materials for medicines, perfumes, flavors and cosmetics. MAPs serve as sources of Synergic medicine, Preventive medicine, and a future medicine bank to discover.



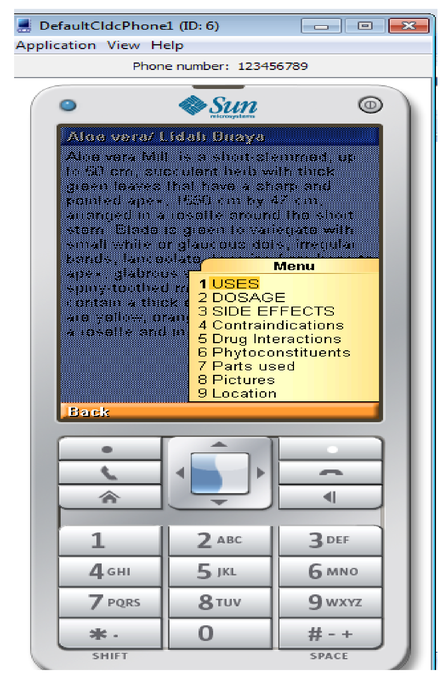


The use of MAPs has been based on trial and error, but today, extensive scientific researches have helped in arriving at precise, correct and efficient use of these plants. There exists the problem of misuse of medicinal plants, a lot of people misuse medicinal plants due to lack of information. Difficulty is encountered in finding comprehensive information on medicinal plants at a global level (Ling et al. 2009; Gaikwad, 2011).

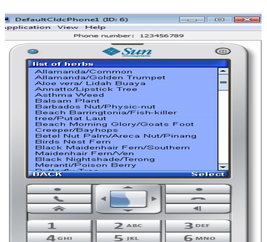
Objectives

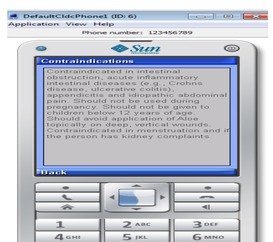
- To make available, useful and effective information on MAPs on a mobile platform.
- To design a system that will have a wide database of MAPs and the uses to which they can be put to and how to administer it
- To make the system easily accessible by implementing it on a mobile platform to allow individuals make use of it anytime and anywhere (ubiquity).

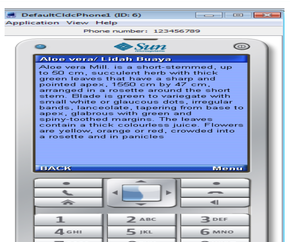
Model application



Results







Future work

- Exact locations of the plant should be made accessible to the user and possibly, how to reach the locations through Global Positioning System (GPS) integration.
- The system should be implemented to support more platforms

Acknowledgement

Dr David O. Oyedepo, Prof. Charles O. Uwadia, Prof. Charles K. Ayo, Prof Victor Mbarika, Dr. Nicholas A. Ikhu-Omoregbe, Dr. (Mrs) Taiwo Abioye, Mr. Gbenga Oyedeko, Global Health Workforce Alliance, IntraHealth, Covenant University's Computer & Information Sciences Department's Software Engineering & Intelligent Systems Research Cluster.

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