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COLLEGE OF COMPUTING & INFORMATION SCIENCES

Appointment and Workload Management System

by

CS 18 - 11

Department of Computer Science
School of Computing & Informatics Technology

A Project Report Submitted to the
School of Computing and Informatics Technology for the Study Leading to
a Project Report in Partial Fulfilment of the requirements for the
Award of the Degree of Bachelor of Science in
Computer Science of Makerere University

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Declaration

We, Group CS 18 - 11, do hereby declare that this Project Report is an original and has not been published and/or submitted for any other degree award to any other University before.

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Dedication

We dedicate this report to the Almighty God who gave us the knowledge and ability to continue with our project successfully. We further dedicate it to our parents and guardians for their unceasing and selfless support throughout our stay in this university.

Acknowledgement

We are deeply indebted to our project supervisor Dr. Ngubiri John whose unlimited steadfast support, guidance and inspirations have made this project a great success. In a very special way, we thank him for all the knowledge and support he rendered unto us to see that we succeed in this challenging study.

Special thanks goes to our friends and families who bared with us during the hectic moments and stress we went through during the course of our Final Year Project.

We thank the school for giving us the grand opportunity to work as a team which has indeed promoted our team work spirit, interpersonal and communication skills. We also thank the individual group members for the unending team spirit, will and solidarity that was exhibited during the course of the project.

Contents

Chapter 1

Introduction

1.1 Background

Over the years, numerous health facilities such as hospitals and clinics have been established in different locations of the country due to the enormously high demand for their services. Most of these health facilities provide services that involve scheduling appointments for patients to see health specialists.

With these services, many complaints arise from various patients when it comes to lining up in long queues to be able to schedule appointments with health specialists. Patients are told to first fill appointment forms after which they have to wait for hours to get a response on whether their appointments have been successfully scheduled or not. For cases of unsuccessful scheduling, patients have to wait for days to be able to get their appointments confirmed.

When it comes to workload distribution among doctors, it has been noted that some doctors have been overwhelmed by the number of patients they are supposed to work on whereas others are left free. This has been caused by the ability of patients to be able to select the doctor that they want to see depending on the services that they have ever received and on recommendations from family or friends.

1.2 Problem Statement

Agriculturalists at Namulonge Research Center have over the years adopted the traditional manual counting of whiteflies which solely depends on observers skill. The whole process is very tedious considering that the whiteflies are very small and volatile so it is possible to lose track of the numbers. In

addition, a single cassava leaf usually has very many whiteflies on it which increases the difficulty in counting and consumes a lot of time. The fact that these flies reside on the back side of the cassava leaves makes the process all the more complicated because in the event of turning the leaf, the flies keep flying away which is really frustrating. The researchers handle large volumes of data from many sources and in such a case, data should be easy to collect manage and used to curb the spread of cassava mosaic disease but this has not been easy with the manual method. Coming up with a technique to automatically identify and count the whiteflies based on computer vision will be of great benefit to both the researchers and agriculturalists because it will ease and fasten their tasks.

1.3 Main Objective

The main objective of the project was to develop a real time on-line system that manages appointments scheduled by patients, and the distribution of workload for doctors within a particular health facility.

1.3.1 Specific Objectives

The specific objectives of the study were:

i. To carry out a maiden study on the literature of related and/or existing medical appointment scheduling systems to identify the necessary requirements for the system.

ii. To design the prototype that illustrates the main functionalities of the system.

iv. To implement the designed system prototype.

v. Finally, to carry out testing and validation of the implemented system.

1.4 Scope of the study

The system limited itself to a mechanism whereby the appointments scheduled by patients are assigned to the available doctors automatically depending on the current state of workload for each doctor at the time of scheduling the appointment. This ensures the even distribution of workload for each doctor during their assigned shifts. The system supplements the automation of even workload distribution as part of appointment scheduling in a health facility.

1.5 Significance of the study

The Appointment and Workload Management System is significant in a way that it provides basic knowledge regarding services provided by health facilities. With this system once completed and in place, patients will not have to make long queues just to make an appointment for acquiring a health service. This reduces the amount of time spent by patients in the whole process of seeing a health specialist. Being able to uniformly distribute workload among doctors within a health facility will help to improve their efficiency and workability. The system will also provide room for further study within this area, and also provide future reference literature for students that intend to develop similar/related systems.

Chapter 2

Literature Review

2.1 Introduction

The main purpose of this chapter is to present a review of some of the related/existing appointment scheduling systems currently used by some health facilities, together with a few user reviews/comments on their functionalities which are separated into the system's strengths and weaknesses. The chapter also provides a comparison of these systems with the Appointment and Workload Management System.

2.2 Related Systems

2.2.1 Eclipse

ECLIPSE Practice Management Software has been in daily use at thousands of locations for over 20 years. ECLIPSE includes medical scheduling features such as appointment management, facility scheduling, patient records, patient scheduling and recurring appointments. It also includes patient management features such as historical reporting and patient flow management.

Strengths:

Eclipse is easy to use and easy to teach to new users. Software seems to run quickly and customer service is always great and comes with training videos which are a huge plus as well. [3]

Weaknesses:

Electronic health care records and single page scanning is not intuitive, requiring a lot of time spent for each patient. More training has to be offered for this aspect of the software. [5]

2.2.2 Reservio

Reservio is an appointment scheduling software that is carefully optimized for over 70 business categories (free to try). It helps to organize patient schedules, save time spent on phone and gives useful information about the health facility and its patients.

Strengths:

Nice, modern looking interface, easy for both doctors and patients to use, and provides quick response with queries. [4]

Weaknesses:

There is poor customer care most especially with the email remainder option because it was not functioning. I tried to get access to the help center not once or twice but four times but in vain, they did not respond. [2]

2.2.3 Jituzu

Reservio is an appointment scheduling Jituzu is a powerful platform that enables service provider professionals to better engage their clients. Secure online scheduling, messaging, and appointment reminders. One can make communicating with patients easier with the Jituzu mobile App - connecting health facilities with their patients anytime and anywhere.

Strengths:

I really like the simplicity of the pages. The different categories are easily distinguishable in terms of form and purpose. I like that the system holds CC and debit info in a secure way. Response time on submissions of CC and debit info are very good. [1]

Weaknesses:

The calendar could be shaded differently to help with visibility. I have trouble tracking across from the left where the hours are marked to the day I am setting an appointment. [1]

2.3 Comparison with the Appointment and Workload Management System

The Appointment and Workload Management System will take into consideration the simplicity of the interfaces which will be easier to understand by users with no need of further tools such as video tutorials or user manuals that are used with related systems. The systems interfaces will cater for user visibility by clearly differentiating between valid and invalid dates (past dates and days on which all doctors are fully occupied will be considered

invalid) on the calendar during appointment scheduling, which is not catered for in some related systems identified above such as Jituzu. The proposed system will also be an improvement of the existing systems by providing a new feature that ensures even distribution of workload among doctors in a facility during appointment schedules.

2.4 Conclusion

Basing on the existing systems stated above, the proposed system will comprise of not only their strengths but as well as an improvement to their weaknesses.

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