IOT enabled Recognition based attendance Management System

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MS17904124

THE THESIS

SUBMITTED TO

SRI LANKA INSTITUTE OF INFORMATION TECHNOLOGY

IN PARTIAL FULLFILMENT OF THE REQUIREMENTS

FOR THE DEGREE OF

MASTER OF SCIENCE IN INFORMATION TECHNOLOGY

December 2018

Declaration

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The above candidate has carried out research for the M.Sc. in Information Technology Dissertation under my supervision.

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Date: 22/01/19

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Date: 2019/1/22

Acknowledgement

The entire would like to acknowledge and extend our heartfelt gratitude to the following persons who have made the completion of this huge project this much of success. This project would not have been such a great achievement without the support and guidance of key people acknowledged here. Our Supervisor Mr. Anuradha Jayakody for his vital encouragement, assistance and excellent support, Lecturer in charge of the course M.Sc. Research Project Mr. Samantha Rajapakshe for his great coordination effort, our parents and for everyone who provided uncountable help and inspiration to successfully complete my final year project.

Table of Contents

List of Figures

List of Tables

Abstract

Attendance management is a very important task for each and every university or an institute. Most of the institutes doing this attendance marking manually and it is time consuming as well as it many causes to many errors. Therefore, researchers tried to come up with automated attendance systems as a result of this issue. Researchers developed different systems using finger print technology, radio frequency identification (RFID) and face recognition. Many of them used those technologies separately but it is not suitable for places like education institutes.

The purpose of the following research is to design and develop a new system using different technologies together and enable the internet of things to the system. So, this system uses face recognition and radio frequency identification together to come up with a proper solution. The system is using an online MySQL database to store entire data of the system. Python is used to program the system and Open CV is used for face recognition.

One main finding of the research is to identify the student with different angles of face after getting the RFID tag value. When getting attendance, the student should place his or her RFID tag on the reader and then the system identifies the student with the tag value. The system then retrieves student's registration details and start compare student's face with saved faces of that student. If the system identifies the student, then it checks for the subject's time slot to ensure that the student comes to the correct class. If all of them are correct, the system marks attendance for the student and sends a notification e mail to the student so the student can know his or her attendance marked successfully for the class. There is a web application also developed to register courses and subjects on the system and to view attendance details.