

**DEVELOPMENT OF A CLINICAL REGISTRATION SYSTEM
USING RFID**

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ABSTRACT

This paper presents on the development of a prototype Clinical Registration System using RFID. The system developed was to enhance the management system in clinic and mainly proposed for PusatPerubatanAngkatanTentera (PPAT) in Kem 5 RejimenSempadan (5 RS). Most clinics nowadays are still using the traditional method that is, using pen and card and some clinics are already implement a computerized registration system at their clinic. This latest registration system can be developed to offer more benefits by interfacing it with RFID technology. The new designed system only requires patient to scan their RFID card when registering at the counter and their personal information will automatically be updated in the system. To achieve this, both hardware and software, including database is developed suite to its objectives to show its functionality. The main development tools used for this system are ATMEGA328, Ethernet Shield, RFID module, Arduino IDE 1.0, PHP script, apache and MySQL server.

Keyword: Arduino, RFID UART, Ethernet shield, SPI, PHP, MySQL database

TABLE OF CONTENTS

CHAPTER	PAGE
DECLARATION	i
ACKNOWLEDGMENT	ii
ABSTRACT	iii
TABLE OF CONTENT	iv
LIST OF FIGURES	vii
LIST OF TABLES	ix
LIST OF ABBREVIATIONS	x

CHAPTER 1 : INTRODUCTION

1.0	INTRODUCTION	1
1.1	BACKGROUND OF STUDY	2
1.2	PROBLEM STATEMENT	4
1.3	SIGNIFICANCE OF STUDY	5
1.4	SCOPE OF WORK	6
1.5	OBJECTIVE OF PROJECT	7
1.6	ORGANIZATION OF REPORT	8

CHAPTER 2 : LITERATURE REVIEW

2.0	LITERATURE REVIEW	9
2.1	AVR MICROCONTROLLER	10
2.1.1	ATMEGA328 MICROCONTROLLER	12
2.2	RFID MODULE RDM6300 UART	15

CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

Radio-frequency identification (RFID) use a wireless non-contact system that uses radio-frequency electromagnetic fields to transfer data from a tag attached to an object, for the purpose of automatic identification and tracking. There are two types of RFID systems which is passive and active system. A passive RFID tags do not have a transmitter; they simply reflect back the energy (radio waves) that are coming from the reader antenna. While for the active tags, they have their own transmitter and a power source, usually a battery. A radio transmitter that is in the RFID chips emits a coded identification number when queried by a reader. The tag contains electronically stored information that can be read up to several meters away.

Technologies of identification by radio frequencies (RFID) have been used extensively in many applications and experienced a fast development. In the field of healthcare it is expected to be one of its major growth areas. Other than that, we can see many RFID systems are used in asset tracking, payment system, security and access control, retailing, toll system, and many more.

Most clinics in Malaysia to be specific are still using manual approach in their registration. There are few clinics going into the computerized era but none has implemented it with RFID technology. To develop a clinical registration system using RFID, both software and hardware are needed to communicate to each other to make it as one complete system.