

CHAPTER 1 INTRODUCTION

1.1 Background of Study

Now days, holding events such as seminars, training courses and similar events are very rapid. These kinds of events provide people activity that they need. In these events the presence of participants becomes an important point as the indicator of the success of the event and the can becomes a reference for the next event. The need for attendance management system as well as attendance reports are important in every event.

There are several ways to track the participant attendance in an event such as manual system and automatic system. In the practical manual system cost are cheap and the resource can easily be found. But it takes longer time to perform tracking and hard to perform attendance management. Another way is automatic system that used special hardware or tools to perform the tracking and management. It gives faster and more efficient to do the process. But it cost more than manual system and sometimes the resources are difficult to get.

The growing need for attendance management systems encourages the development of attendance systems. There are many automatic attendance systems that have been implemented, the system using different media as a ticket, such as using fingerprint, NFC card or barcode. Each method of attendance system has advantages and disadvantages in the application such as the needs of supporting devices.

Another media that can be implemented in the system is a two-dimensional barcode or called QR code (Quick Response Code). QR code was developed in 1994 by a Toyota subsidiary, Denso Wave to help track

the production of spare parts. After more than a decade the use of QR is becoming more popular. Unlike barcodes, QR code is more difficult to read with the naked eye and data can be stored longer. In a single-line barcode can only store 20 numerical digits while QR code can store 7,089 numeric characters and 4,296 alphanumeric characters, and 1,817 kanji characters. This number are more than enough to store information that needed in a piece of ticket.

QR code is not something new. The use of it is common in China, Japan, Taiwan, Korea and Hong Kong. QR code has been implemented in several field such as advertisement, fast-food restaurant and car industry. QR code also utilized in some research such as Application Design of Toll Payment using QR [5] and mobile based payment system. [6]

How the event works is observed to get the business process. From it we will gather the system requirement using Goal Oriented Requirement Engineering (GORE) methodology. This method gets the requirement that derived from business process to goal tree and finally got the system requirement.

1.2 Problem Identification

Based on the background, the author can identify the problems for the development of this application, are as follows:

Based on the background, the author can identify the problems for the development of this application, are as follows:

1. How the system can provide alternative way in registration, attendance validation and data aggregation?
2. How QR Code can be implemented in the system?
3. How to design and build online attendance management system using QR Code technology?

1.3 Purpose of Study

The purpose of this study are as follows:

1. This study aims to know how QR code can be implemented in mobile event management system.
2. This study aims to know how mobile phone can read QR Code information.
3. This study aims built mobile event management system.

1.4 Limitation of Study

Some limitations in this study are as follows:

1. The application only tested Android operating system version 5.0 (Lollipop).
2. The system only cover registration, attendance validation and data aggregation.
3. Study limited to event that held at Esa Unggul University Jakarta and Nanjing Xiaozhuang China.

1.5 Benefits of Study

The benefits of this research are as follows:

1. This application provides alternative ticketing system using QR Code technology.
2. This application provides user event information and registration.
3. This application provides alternative solution for event organizer to manage attendance data in event.

1.6 Research and Methodology

The methodology used in this research is observation and Goal Oriented Requirement Engineering to gather the system requirement as for the development, the Rapid Application Development (RAD) software development methodology is used. In the development of systems that use the RAD method, there are the following stages [1]:

a) Planning Phase

At this stage the requirement will be determined. Using Business process driven Requirement Engineering requirement is derived from business process which is gathered by observation method.

b) Design Phase

At this stage is done design process – define the process that will occur in the system to be created. At this stage the authors use UML as a tool to simplify research and application design.

c) Construction Phase

At this stage, the implementation of program coding in accordance with requirements and designs that have been specified previously. In this study Android Studio used as an IDE (Integrated Development Environment) to create applications for the Android operating system.

d) Implementation Phase

At this stage testing the applications that have been made. Testing is done by black box method on all parts and functions of the application.

1.7 Writing Structure

The systematics of writing this thesis is divided into five chapters, as follows:

CHAPTER I INTRODUCTION

This chapter discuss the background of the study, problem identification, and limitations of the study, goals and benefits of the study.

CHAPTER II THEORETICAL BASIS

This chapter discuss theoretical basis and literature review that related to this research.

CHAPTER III RESEARCH METHODOLOGY

This chapter discuss the methodology that used in this research. Start from requirement gathering method, software development method and testing.

CHAPTER IV DISSCUSSION

This chapter discuss the result of the analysis and design into code to build a working application, and testing to find out whether the application is working.

CHAPTER V CONCLUSION AND SUGGESTION

This chapter discuss the conclusion of this thesis and suggestions for further research.

1.8 Schedule

Scheduling of this thesis will be planned and implemented as follows:

Table 0.1 Schedule

No	Activities	March	April	May

		2	3	4	1	2	3	4	1	2	3	4
1	Analysis of the requirements	■	■	■								
2	Design				■							
3	Prototype					■						
4	Coding						■	■	■	■	■	
5	Testing						■	■	■	■	■	
6	Documentation											■

The process of arrange this thesis takes approximately 11 weeks, with the first week starting on March 6th, 2018 until May 31st, 2018