

# Event Registration System

Abstract— Registration, ticketing, and valid certificates are a series of work that must be done by event organizer. The registration, ticketing, and certificate issuance stages are often carried out using conventional or manual methods using stationery, print, and paper media. The conventional method is often an obstacle that causes the program to run less smoothly. This problem can be overcome by applying e-registration technology and QR Code as a substitute for tickets and e-certificates. Cellular technology such as smartphone can be the right solution for event organizers to overcome these obstacles. The application of an ***event registration system (e-Vent) that combines e-registration technology and QR Code as validation of registration and certificates is an effective and easy solution in implementing the stages of procuring an event.*** With E-Registration, data on participants who have registered will be stored in the database and will be displayed using the QR Code as the entry ticket sent to the participant's email. With this, QR Code readers can access data quickly to validate event participant data. The process of filling out the registration form can be done anywhere and anytime and the registration verification process can be done more quickly and accurately through this e-Vent system. The e-Vent system is designed using the FAST method and uses CodeIgniter as a development framework for web admins and Android Studio as a tool for developing QR Code reader validator applications

## Introduction

The development of increasingly advanced and rapid information technology has now spread in almost all fields such as education, event organizer, business, health, and government. Information technology has enhanced the ability to exchange knowledge, and accelerate the flow of information and communication [1]. In addition, its use can also have a positive impact on business productivity and performance [2]. This technology plays a very important role to ensure the organization runs more effectively and efficiently, one of which is when an event is held. One series of activities in organizing an event is the registration of participants. Registration is done to collect prospective participant data regarding the event to be held. An organization that organizes an event or event requires a registration process for participants to take part in the event. Therefore, a registration process that is fast, precise, and easy is needed so that the event is held as expected.

Registration is one of the important aspects that are needed by the organization when conducting an activity or event such as a seminar, show, conference, etc. Registration will always be required for prospective participants to participate in an activity by entering their data. Meanwhile for the organizers, registration is needed to monitor participants'

personal data and the number of participants who attend certain events. With this registration process, event organizers can also confirm to participants who have filled in their personal data regarding the certainty of attendance. The registration process that is done manually requires more costs for the purchase of stationery and registration paper so that it tends to be inefficient and there may be problems when registering. The use of paper is also very risky for possibilities such as being torn, burned, destroyed by water, or may be lost due to misplacement. Meanwhile, the process of validating participants with signatures when re-registration using paper media can take a long time especially if the number of participants reaches hundreds. The need for places for registration and registration staff can also incur additional costs. With the adoption of e-registration, it is expected that event organizers will benefit in terms of ease of error correction, more accurate and consistent data recording, easy data retrieval, storage, access, confirmation, avoiding unauthorized data access, reducing paper usage, increasing portability / mobility in data recording and backup, and shorter processing time. From the user side, it is expected that users will be more facilitated in the registration process [3]. The current trend in the use of information technology, especially smartphones, has touched almost all people. This telecommunications technology is developing very rapidly following the needs of the community for practical and flexible media to support their daily activities. With the widespread use of smartphones, this can be an opportunity that the smartphone can be used for the registration system at an event. One of the features of a smartphone that is interesting to use is the camera features. The camera feature that has been installed in almost all smartphones can be used for the application of a validation system by using it as a QR (Quick Response) Code reader. QR Code is one of the popular technologies because it is cheap, easy to produce, and easy to use when compared to other technologies [4]. The transformation from the manual registration process that was changed to mobile technology through the e-Registration system and validation using the QR Code will make it more effective and efficient. This transformation can be the right solution by developing an e-Vent mobile application that utilizes website technology as e-Registration and QR Code simultaneously. e-Vent is a registration system that uses QR Code technology as proof of validation of event registration and website technology as a place of registration.

This e-Vent system will be used as a registration form that can store participant data so it is more efficient because it does not require paper and saves on site costs because registration is done through the website. Invitations or event entry tickets as proof of registration will be in the form of a QR Code image that will be sent via e-mail after participants register. For participant validation, the organizer only needs to scan the participants' QR Code using the QR Code Scanner through the smartphone camera.

The advantage of implementing e-Vent for participants is that participants have the flexibility to register. Participants can register anywhere and anytime as long as they have a smartphone. The convenience and time savings in re-registering are also obtained by participants because proof of registration in the form of a QR Code can be shown via a smartphone. Therefore, participants do not need to wait long to re-register because they only need to display the QR Code into the scanner camera or QR Code Scanner so that participants can directly enter the event. For the committee, the advantage of implementing e-Vent is saving in terms of costs, time and human resources needed. The committee will save

costs from using paper for registration and credit fees for attendance confirmation needs because it is done through the system. The committee also does not need a location to open registration stands and registration staff so that costs can be reduced. Deletion of invitations, tickets, or ID cards can be done because they have used the QR Code sent via e-mail to each participant. The participant's certificate will be in the form of a softcopy that is sent to the participant's e-mail, reducing the cost for printing the certificate. The re-registration process will take less time, thereby reducing the buildup of participants at the registration desk.

Based on the description above, it can be concluded that the event registration system developed aims to help organizations manage registration of participants more easily, quickly, precisely, and efficiently than manual methods. Losses and problems that arise when using manual methods can be avoided by using this registration system in terms of cost, time, and resource as well as the security of participant data which is certainly more secure

Event is an activity that collects a set of target people in a certain space and time, then a meeting takes place whose message is communicated to those people. The event describes different activities for different purposes [5]. Registration is a process, method, act of registering, recording names, addresses, etc. on the list. Registration is the process of recording the identity of the registrant into a storage media used in the registration process

Adoption can be defined as the decision to make full use of innovation as the best available action. Whereas adoption of innovation is a process in which an individual switches from first knowledge about innovation to a decision to adopt or reject and to confirm this decision [6]. E-registration is also known as electronic registration or web-based registration or even online registration. This online registration system replaces manual processes such as registering via telephone, mail, or directly at the event using paper forms [7]. In addition, depending on the underlying model, documents can be digitally signed [8]. Event Organizer are parties responsible for managing events such as festivals, social events such as gatherings, meetings, conferences, etc [9].

Below Figure shows the registration of participants in an event until the acceptance of event certificates by participants

However, conventional registration method has several weaknesses and problems. Analysis of problems that arise from convention method and the solution offered such as:

1. **Problem:** During registration, Event organizers tend to still use paper as a media for participant registration so that potential participants must come or even queue to register for the event. In addition, the use of paper has the potential to be damaged or lost.

2. **Solution offered:** The application of a website-based online event registration system so that prospective participants can register wherever and whenever they are without having to queue. Prospective participants who have registered online through the web will receive e-tickets and QR codes via email. The event committee also does not need to archive registration paper or form again because all participant registration data has been stored in the system database.
3. **Problem:** During Re-registration, Event organizers tend to still use paper as a participant registration media, causing participants to come or even queue to enter the location of the event. Again, the use of paper has the potential to be damaged or lost.

**Solution Offered:** The application of the online event registration system also provides a QRCode Reader feature for event organizers to replace conventional verification methods such as participant presence form using paper. QR codes obtained by participants after registering will be shown to the event committee during the registration process to verify their attendance. With the transition of the registration process from the paper media presence method to attendance verification by scanning the QRcode participant using the QR Code Reader, it is expected that the participants' queuing time and the user of presence attendance paper can be reduced.

4. **Problem:** For ticketing, events held still tend to use physical tickets which require the committee to issue ticket printing costs. Physical tickets purchased by participants after registration must be taken when attending the event as proof of registration. Such physical tickets have the potential to be lost or damaged so that they can harm participants in terms of material.

**Solution offered:** The application of an online event registration system provides an e-ticket in which there is also a participant's QR code to replace the physical ticket. The e-ticket was sent to the participant's e-mail according to the e-mail registered. When participants attend the location during the event, Participants only need to show the e-ticket to the event committee. The QR code listed in the e-ticket will be scanned using the mobile app to verify participants' attendance. By utilizing QRCode and its Reader tools, it is expected to reduce physical ticket loss or damage.

5. **Problem:** In terms of certificate given, current events tend to provide physical certificates for participants as proof of participation. These physical certificates require the committee to spend printing cost. In addition to printing costs, the committee needs to distribute certificates to all attendees after the event ends. This creates a process that is not efficient in terms of time and cost. The committee must look for participant certificates when distributing them, at the same time participants must provide time to queue again after the event ends in order to get a certificate.
6. **Solution Offered:** The application of an online event registration system provides participant e-certificate features. When the participant's QRcode has been scanned by the committee using a QR Code Reader and its presence has been verified, the participant can download the e-certificate from the website by entering the full name that has been registered and the registrant's ID listed on the

e-ticket. With the presence of the e-certificate feature, the committee does not need to share certificates one by one with participants and does not need to pay the cost of printing certificates and participants do not need to queue again to the committee table to obtain certificates.

After analysing problems and offering solution, conventional registration process can be simplified using the help of event registration system. The flow of the event registration process that uses QRCode on e-Vent shown

