

The Analysis Of History Collection System Based On Android Smartphone With Qr Code Using Qr Code Case Study: Museum Lampung

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Abstract-This scientific writing is to describe and explain the activities that related with using quick respon (QR) qode on collection history so it can be known as the advantages and disadvantages that exist in the system History Collection. The purpose of this analysis is to evaluate the advantages and disadvantages of the use of Quick Response (QR) Code for Collection System History at the museum Lampung as well as to study the QR Code.

Keyword-Collection History, QR Code, Android SmartPhone

1. Introduction

Lampung Museum is one of the government institutions that located in Bandar Lampung and the function is to provide information and knowledge of history to visitors. The Representatives of schools and educational facilities often make this Lampung Museum as one of the resorts to make their children can learn the history and see the Lampung relics of prehistoric man in Lampung. By coming to the museum, visitors are not only traveled, but also can learn about the collections through the collection that available information contained beside of glass containers in the collection at the Museum of Lampung. Such information is called History Collection.

Based on the questionnaire that author was handed out to visitors, 72% of respondents answered that the information can be given only limited to the contents of the History Collection to write a history of a collection so that visitors can not obtain the maximum information about the collection at that museum. Collection history system with Base Paper can not support all the visitors there to see if the conditions are in the crowded museum visitors.

Quick Response (QR) Code is a two barcode dimensional that has the ability to store data or more information than the one- barcode dimensional(Revelation, 2012). QR code

is a type of matrix code or two-dimensional was developed by Denso Wave, a division of Denso Corporation which is a Japanese company and published in 1994 with the main functionality that can be easily read by the scanner. Unlike the bar code, which only stores information horizontally, QR codes are capable of storing information horizontally and vertically, and therefor.

automatically QR codes can hold much more information than a barcode. QR codes have gained international standardization and standardization of the Japanese form of ISO/IEC18004 and JIS-X-0510.

Android is an operating system on smartphones that use an open platform makes it easy to develop applications developers, because Android is open has a good free apps, trial. Additionally developer applications developed can be used for all devices that use the Android OS (Tresnani, 2012).

2. Basic Theory

The authors gives limit of the issues to be addressed in this study is only on systems analysis History Collection using Quick Response (QR) Code without changing the existing system.

2.1 collection history

Information to the base paper containing material information about the collection and the complete background

and can be a source of research and publicity materials. Every Collection History records only a single object or a small entity group.

(Directorate of Museums, MANAGING MUSEUM COLLECTION, 2007: 11)

2.2 QR Code

QR Code (Quick Response) is a form of evolution of one barcode-dimensional into two-dimensional (2D). The use of QR codes has been very prevalent in Japan This is because the ability to store data that is larger than the bar code so as to encode information in Japanese kanji because it can accommodate the kanji letter. QR codes were first developed by Denso Wave, which is a Japanese company. Barcode difference with QR Code QR Code capability that is capable of storing information horizontally and vertically so that the QR Code can store more information than with Barcode.

QR Code function, such as:

1. Saving the address or identity
2. Storing URL
3. Saving a Phone Number
4. Storing Text

The presence of this code allows the audience to interact with the mixed media through mobile phones effectively and efficiently. Users can also generate and print their own QR codes for others to visit one of several encyclopedias QR code.

QR codes can be used on phones that have a QR code reader application and have internet access GPRS or Wi-Fi or 3G to connect the phone to the destination site via the QR code. Customers, which in this case is to enable mobile users only need a QR code reader program, pointing the camera at a QR code, QR code readers next program will automatically scan the data that has been embedded in the QR code. If the QR code contains the website address, so customers can directly access the site without having to type the address of the first destination site.

Picture 2.3 QR Code

QR code is a type of matrix code or two barcode-dimensional bar code that was developed by Denso Wave, a division of Denso Corporation which is a Japanese company and published in 1994 with the main functional that can be easily read by the scanner. An only the bar code, which only stores information horizontally, QR codes are capable of storing information horizontally and vertically, therefore automatically QR codes can hold much more information than a barcode. QR codes have gained international standardization and standardization of the Japanese form of ISO/IEC18004 and JIS-X-0510.

QR Code has several advantages than types of barcodes. Advantages possessed by QR Code is as follows:

1. Large capacity.
2. Easy to read.
3. Ability to save kanji letter.
4. Can be read from a variety of directions.
5. Small size.
6. Resistant to dirty and broken.
7. Can be divided.

QR Code is a matrix symbol that shaped like cell structures arranged in a box shape. QR Code structure can be seen in Figure 2.3 Here is an explanation of the structure of QR Code:

1. Finder Pattern: three identical structures located at each corner of QR Code except the bottom right corner of a 3x3 matrix of black modules are surrounded by white module module then black again to detect the position of the QR Code.
2. Alignment Pattern: The pattern for correcting distortion of the QR Code.
3. Timing Pattern: a pattern to identify the central coordinates of each cell in the QR Code with black and white patterns are arranged alternately.
4. Quiet Zone: Space required to read QR Code. Quiet zone is easier detected symbol of an image using a CCD sensor.
5. Data Area: Data from QR Code will be stored or encoded in the data area. QR

Code on a black cell represents a binary "1" and the white cell
Android 2.3

According to Nazruddin (2011, p.

1) Android is a mobile device that includes an operating system, middleware and Linux-based applications. Android is a software-based computer codes that can be distributed openly (open source) so that developers can create their own applications that can be used for a variety of Android-based smartphones. Android was initially developed by a company called Android Inc, And in 2005 the company is in acquisition by Google Inc. Android smartphones include in kernel based on, user interface glass, end-user applications, application frameworks, multimedia support, and many more. User application was built based on the Java programming language. Moreover applications that are built are also based on Java.

3. Walking systems

1. Lampung museum create a team of procurement collection
2. Curator collect prospective collection of objects commonly called the Culture things
3. From every culture thing are held collection documentation (collection of written information, sound recordings, video recordings relating to the background of objects of cultural heritage)
4. After the documentation phase of the survey team conducted the research methods conducting collection museology approach to get at the cultural aspects of the region
5. Results surveying team will continue to examine every collection with data collection and analysis activities with a particular method on a particular type of collection
6. Research any collection activities will be continued with the procurement team doing research manuscript into a book published by the museum
7. The next phase of the conservation objectives for collection care, rescue,

repair, and protect the collection from damage, either by natural or human

Data Flow of Document

4. Analysis and Testing

Authors make use case flow of QR Code to describe the process flow of a Collection history QR Code that can be used by visitors. This use case flow tells how a Collection history can be used QR Code to be accessed by visitors Lampung Museum.

a. Team Museum:

Museum team can perform many activities, such as:

1. Creating curator team
2. Surveying the cultural heritage objects
3. Documentation and submission of manuscripts
4. Maintenance History Collection

b. Visitor:

Visitors can perform some activities, such as:

1. Scanning the QR Code
2. Storing the necessary data

c. Admin:

Admin can perform the following activities:

1. Saving History Collection to server
2. Collection history process into a QR Code

3. Maintenance QR Code

Visitor Questionnaire

Authors tested the QR Code to find the resistance of a QR Code to scan. This testing needs to be done, Because QR Code to find the resistance in order to obtain the advantages and disadvantages of the QR Code.

4. Conclusion

After the authors performed an analysis of the system that running on a particular of system collection History Lampung museum, the authors take a decision that the use of QR Code can improve system performance at the Collection history. The following table shows the ratio that can improve the performance of the History Collection.

Variable Percentage (%)
Ease lvl 18
Able to provide more complete
information 19
User number 10
Resilience QR Code 21
Total 68

Most visitors Lampung Museum said that they get the information from the paper collection of information while the other also argue that the information provided was really minimal. Visitors also expect the collection of information is presented in digital form so that can make it easier to be got by anyone and the paper must be has more complete information. The authors take a decision on the use of QR Code History Collection can provide more complete information and also easy of access without having to record again. QR Code also has other advantages that can be accessed horizontally and vertically. moreoveer, the authors found that there is a weakness in the QR Code, which the QR Code was partially destroyed or damaged most of the QR Code can not be accessed.

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