

# Fixed Asset Reconciliation using Android Application

Chaitanya Sathe<sup>1</sup> Kunal Pawgi<sup>2</sup> Rohan Pathak<sup>3</sup>

<sup>1,2,3</sup>Department of Computer Engineering  
<sup>1,2,3</sup>MMCOE, Pune

**Abstract**— Asset reconciliation is a six monthly or yearly process performed by every organization. Current asset reconciliation systems are complicated and time consuming. This project emphasizes on providing simple & efficient asset reconciliation system. This project has three main components Android Smartphone, Server & Computer. The system will generate QR i.e. Quick Response Code code for various assets and tagging will be done respectively. The authenticated person will create a task and the scanning of the QR codes will be done through the android Smartphone, after scanning the information will be displayed on the screen of the Smartphone. If required the status of the asset will be updated and send to the server. Reports will be generated based on the updates made to the database on the server.

**Key words:** Asset reconciliation, QR coads, basic QR code

## I. INTRODUCTION

Asset reconciliation is the process which refers to the process of ensuring that sets of records are in agreement. So this is a very important task in every organization to keep a tab on its assets. So that the organization can do its auditing, calculate depreciation and many other accountable tasks smoothly. In many organizations asset reconciliation is done using a barcode scanner & a laptop. Using barcode scanner along with the laptop is very tedious and time consuming process in the organization. To simplify this process designing a system for fixed Asset Reconciliation using Android Application. And due to capacity constraint of Barcode use a QR code which can store up to 4, 296 alphanumeric characters.

### A. GOAL:

A figure of a QR code having the text “Fixed Asset Reconciliation using Android application” is shown below.



Fig. 1: A basic QR Code

Fixed asset reconciliation using android application helps to simplify the process of asset reconciliation in an organization. It reduces the time required for the same by using android application instead of barcode scanner along with the laptop. Handling of android smartphone is easy and it is user friendly. Scanning and storage of data can be done simultaneously with minimum hardware requirements.

### B. Details about Quick Response Code:

Maximum character storage capacity (40-L) character refers to individual values of the input mode/data type			
Input mode	Max. characters	bits/char	possible characters, default encoding
Numeric only	7,089	3½	0, 1, 2, 3, 4, 5, 6, 7, 8, 9
Alphanumeric	4,296	5½	0–9, A–Z (upper-case only), space, \$, %, *, +, -, ., /, :
Binary/byte	2,953	8	ISO 8859-1
Kanji/kana	1,817	13	Shift JIS X 0208

Fig. 2: Storage Space in QR codes

QR code is a type of encoding technique i.e. it is used for data abstraction. Retrieving data from QR code is decoding the pattern.

There are different types of QR code available which we can use to store data in it. Version 1 to 50. The only difference is the storage capacity. Version 1 can store up to 25-50 characters and version 50 up to 1,264 characters of ordinary/ASCII text. They also differ in the look; the QR code that has large amount of data has too many squares.



Fig. 3: Version 40 QR Code

Fig.3 shows a version 40 QR code. One of the most promising advantage of QR code is that its error correction capacity. It can bear up to 30% damage i.e. if a QR code is slightly damaged then the information stored in it will not be lost, it can be successfully retrieved. There are different error correction levels for different types of QR code.

## II. PROPOSED SYSTEM

An Android Phone having a fixed focus camera to scan the QR code. When the QR code is scanned through the mobile app the information is retrieved & it is displayed on the screen. This task of scanning will be done by the scanning person, the information retrieved from the QR code will be thoroughly inspected by that person & change/modify the details if necessary. For example - If certain asset is moved from one particular position to another one, then the location information will be updated.

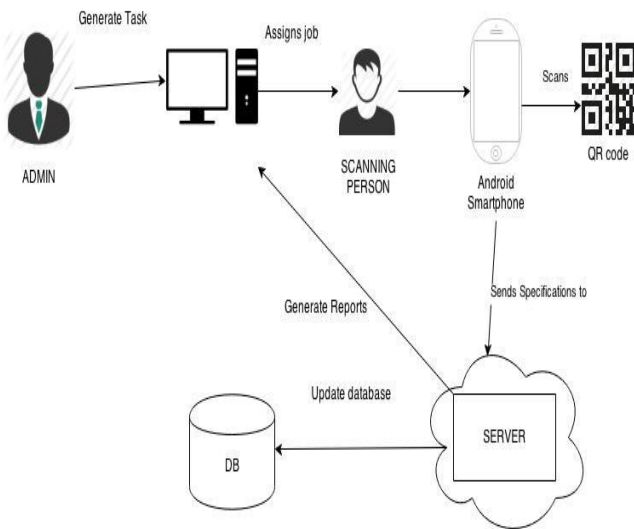


Fig. 4: System Architecture

So when all the modifications (If needed) are finished he will update the record in the database. Even if he is not having internet connectivity, the updates will be stored in local SQLite database in android OS, once Internet is back, the records will be updated in the master table on the server.

The QR code generation part will be done on the computer; this work will be mostly done by administrator. The QR code tagging to various assets in the company will be done by the Tagging person.

### III. PROPOSED SYSTEM FEATURES

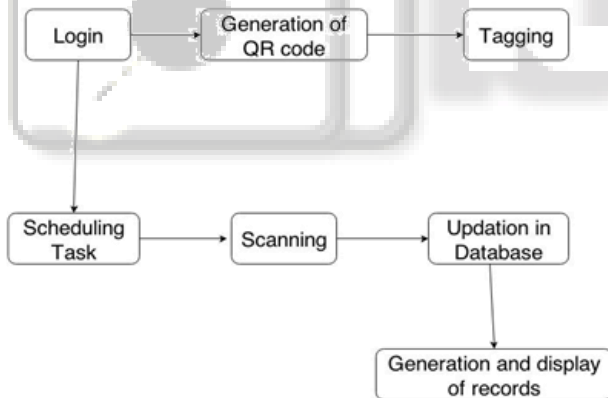


Fig. 5: Functional Diagram

#### A. Administrator Login:

In login screen, the authorized administrator will login to the system using username and password. Admin will analyze total no. of types of the assets for generation of QR codes.

#### B. QR Code Generation:

Admin will generate appropriate types of QR codes for the corresponding assets in an organization.

#### C. Tagging:

Admin will assign the task of tagging of assets using QR codes to responsible person in the company.

#### D. Scanning:

In this method, authorized person will perform the task of scanning the QR codes tagged on the assets. After retrieving

the information about the assets, updates are made in the database depending upon the current state of the asset.

#### E. Report Generation:

Based on the information in the database about current task, reports will be generated.

### IV. IMPLEMENTATION DETAILS

In this project we are using many programming tools & IDEs. For programming on computer we are using Eclipse IDE (Keplar). All the non-mobile programming is done in Eclipse such as JSP(Java server pages), Server Installation, and basic java codes for QR generation, etc.

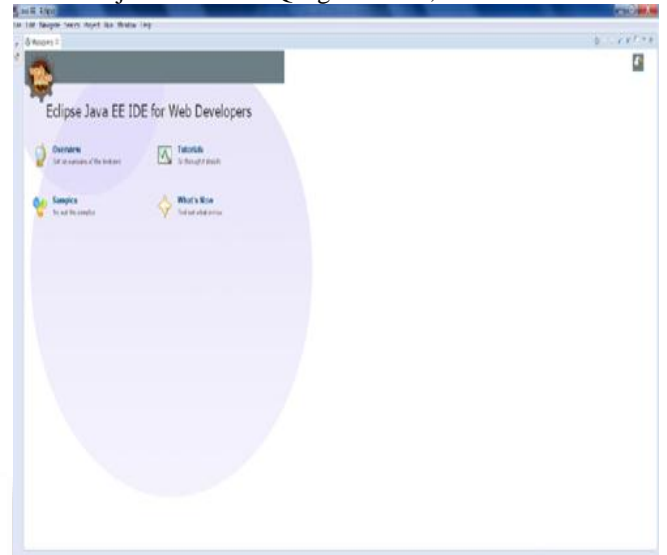


Fig. 6: Eclipse Integrated Development Environment

For Android application development we have used Android Studio. The scanning person will use the app which is developed under Android studio. The scanning of QR code can be done via a ZXing API i.e. an Application Programming interface. There is an official camera optimized scanning app by Google, with the help of that QR code scanning can be done correctly.

For data storing purpose we have used MySQL database for storing master table on server. For local database in android we have used SQLite to store data. SQLite is an inbuilt database in Android which can store up to 100,000 records. MYSQL runs on the server computer, so practically speaking it can store as many records you want till the computer is out of memory.

### V. FUTURE SCOPE

This application can be deployed in variety of organisations working in different domains. The scanning of assets in automobile workshops and huge power plants becomes easy due to user friendly android application. It enables authorisation and assignment of tasks as required for different workgroups and individuals. It is easy to configure and deploy. It is web and mobile compatible. It is widely applicable to all industries.

### VI. CONCLUSION

The Fixed Asset Reconciliation using Android Application is meant to simply and accelerates the process of asset

reconciliation. Android Smartphone is easy to handle and use. Based on the data collected during reconciliation process various reports are generated which helps in the analysis of the company's financial status.

#### REFERENCES

- [1] Puchong Subpratatsavee, Narongrit Janthong, Preeyawal Kuha, Chanchira Chintho ,“HC2D Barcode reader using embedded Camera in Android Phone”,2014.
- [2] Jianghong Yuan, Eryang Chen, Leilei Li, ,“Optimization of RS error-correcting decoding algorithm for QR code - Verified in android phone”, 2012.

