Automated Financial Management System with an Android Application

M.D.T. Gunathilaka (mdtgunathilaka@gmail.com)[1], W.A.C. Weerakoon[2]
[1] ICT Centre, University of Kelaniya, Sri Lanka.
[2] Department of Statistics & Computer Science, University of Kelaniya, Sri Lanka.

Abstract

A financial company who offers both daily and monthly loans to their customers had to increase their functionality in an efficient manner to full fill the higher demand. The solution was to introduce an automated financial management system to their company by automating their manual process. The main objective of this project was to develop a main system with an android application to use in the company. The main system included the features to input, edit, update, and store the details such as customer, collector, package and loan. Further, it was required to send massages to collectors' smart phone or Tab, update the system database using incoming massages form collectors' smart phone or Tab, and generate reports. The android application includes features to manage a database in smart phone or Tab, update device database using incoming messages from the main system, send messages to update the system database and generate an invoice through a Bluetooth printer. Therefore, there were two parts in this project. The first part was to design and construct the main system, which was located in the head office. This was implemented using Java Standard Edition. By using the main system, owner or manager can handle the activities done inside the office. When a loan was issued to a customer, the particular details are stored in the main system and send to the mobile phone of the field collector via SMS using a GSM modem. Further, the details received via SMS to the modem from field collectors are used to update the MySQL system database. The second part was to build the android application using Dalvik Virtual Machine on Linux Kernel to use in field collectors' mobile phone. Furthermore, the application is automatically updated with the details received from the main system located in the head office. While field collectors are collecting loans, they can access the details through the application and they can print an invoice using a Bluetooth printer to issue for the customer. Further, the collection details are stored in the device and are sent to the main system via SMS. The two parts were connected through a mobile network. Since, they have to use this android application in the areas with lower or no internet facilities, online solutions could not be provided. Although, the internet facility is not available, the main system and the application can be upgraded with software agents using JADE or JaCa like platforms. Further, system testing was conducted by the colleagues using about 100 test cases. In addition to that, the customer acceptance testing was conducted according to the criteria defined by the company. Hence, it was able to prove the completeness and the functionality of the entire system. Finally, with the automated system, they were able to improve the performance of the company by saving the human and physical resources and removing the unnecessary queues in the head office.

Keywords: *Financial Management System, Android Application, Message Transferring*