Chapter 1
Introduction

1.1 Background

Inventory management is the practice overseeing and controlling of the ordering, storage and use of components that a company uses in the production of the items it sells. Inventory management has been used as a decision-making in countless firms and has been extensively studied in the academic and corporate spheres. The purposes of inventory system are to know the details of the items including code, name, condition, location of items and the year of purchase. It is also to make easy for manage the item.

Usually, creating inventory list can be done two ways either manually or computerized. Manually inventorying is usually written data with handwriting on the data books. It has many disadvantages. One of them is when the admin staff input the data, it is prone to be typographical errors.

A number of institutes and companies are moving from manually collecting and processing data to a computerize system. Computerize system has many options. Word processing or spreadsheet program (e.g. Microsoft Office®) can be utilized to do the task but it has disadvantages. Manually entering data into the spreadsheet can take a very long time especially if users have a lot of data to enter. It is also possible to view or edit the important data which should not be shown. This is very adverse for the institutes or companies.

This project aims to develop a web based application and mobile application to collect and process inventory data for Computer Engineering Department, Rajamangala University of Technology Thanyaburi (RMUTT), Thailand. Quick Response (QR) code will be used to encode the inventory ID and other related information in order to give general information of the particular item where the mobile application can display either online or offline. Inventory management will be done on web based application where an authorized staff can handle the inventory lists along with QR Code.

1.2 Objectives

1.2.1 To develop an inventory management system.

1.2.2 To track an item inventory in department.

1.2.3 To give general information of the item.

1.3 Scope and Limitations of the Study

The scope of this Project is:

1.3.1 The case study of this project lies in Department of Computer Engineering, RMUTT.

1.3.2 The users of this system are Admin Staff, Department Staff and Inventory Staff. Whose permissions and functions are stated as the following:

1) Privilege of Administrative Staff

- Manage user account – Add, edit, and remove account.

2) Privilege of Department Staff

- View inventory information

- Inform new location of item

3) Privilege of Inventory Staff

- Manage new inventory item – Register new item

- Search inventory item – View and Edit general item information, remove item, and print out QR Code.

- Get notification – New location found, and recently added/updated item.

- Manage repair item – Add repair of item, and view history repaired item.

- Manage sell item – Add sell of item.

- Manage transfer item – Add transfer of item.

- Manage price item – Add price of item.

- Manage report – Report notification, report item in year, report new item in year, report of item repair, report of item sell, report of item transfer, and report of item price

- Configuration – Setting company information, and department staff information, title name, and item category.

1.3.3 Details of Web Application

1) Administrative Staff

- Manage user account – Administrative can add new account, edit and remove an existing account.

2) Inventory Staff

- Manage new inventory item – Staff can register new item which is get from buy or transfer from other department.

- Search inventory item – Staff can search requested item by an option with type on textbox show the result. Then, staff can view an item's details, delete an item, and print an item's QR code sticker.

- Get notification – Staff will get notification on Main Page that show an updated information of an item.

- New location found table, used to display the latest items that have been informed by informer using Mobile Application which is found in the new location.

- Recently Added/Updated Item table, used to display the latest items that have been registered by Inventory Staff.

- Manage Repairer Items – Staff can add new information item that want to be repaired and also can view the history of repaired item.

- Manage Items Sell – Staff can add new information item that want to be sell.

- Manage Transferred Items – Staff can add new information item that want to be transferred.

- Manage Item Price – Staff can add new information of item price that has obtained from configuration.

- Manage Report – Staff can make a report of additional information of item. They can add selected item that want to be reported.

- Report of item in year – Report for selected item that stored in a year.

- Report of new item in year – Report for new item that have been added in the system.

- Report of item repair – Report for item that have been repaired.

- Report of item sell – Report for item that have been sell.

- Report of item transfer – Report for item that have been transferred.

- Report of item price – Report for item price that has obtained by configuration.

- Configuration – Staff can set up any configuration of the system. The configuration are Company, Department Staff, Title Name, and Item Category.

- Company configuration, used to set the information of company that has cooperated with own Department by adding information of company itself.

- Department Staff configuration, used to set the information of Department Staff users by adding information of user account.

- Title name configuration, used to set a title name for Full Name of User Account.

- Item category configuration, used to set the information that related about the price of item.

    1.3.4 Details of Mobile Application

        1) Department Staff

- View inventory information – Staff can view general information of item that have been scanned by using Mobile Application.

- Inform new location of item – Staff can inform new information of item location which is found in the new location.

        2) Inventory Staff

- Staff can view general information of item that have been scanned by using Mobile Application.

1.4 Expected Result

1.5.1. This research was obtained an image processing based system that is able to scanning the QR Code.

1.5.2. The program would be useful for the Department of Computer Engineering.

1.5.3. The program could help the Inventory Staff to support the process of inventorying.