CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

In this section, the method and software development tool used to develop the Inventory Management System (IMS) will be discussed. The method used to develop the software will be explained in details together with figures and flow charts.

3.2 METHOD TO DEVELOP IMS SOFTWARE

First, a condition will be set on the software based on the usage of the software. Then, the features of the software are determined based on the needs. Next, a data flow diagram is created to determine the flow of data from server to user. The software development tools is chosen based on the limitation and features. Then, the software flow chart is created based on the limitation and features. Next, the conceptual design of the GUI is created to visualize how the software will looks like when it is done. Next the GUI will be built with the full function including the QR Code Encoder and Decoder follow by the creation of database. The software will be debugged until it can run smoothly. Lastly, a survey form is created to gather data on user satisfaction and the software will be tested by 10 persons and then fill up the survey form.
3.3 DETERMINE THE CONDITION FOR SOFTWARE

A condition is set to act as the boundary of the software so that it will only function within the boundary based on the usage of the software. According to the objective of this project, the software will be used within companies of SMEs and biomedical field. Hence, it is assumed that the software will be used locally, within the company and there is only one storage area since the company is not too large. Next the software will be made available only on the server computer to register the check in/ out of the item and check the status of items to prevent multiple access at the same time which will cause the data to overload.

Figure 3.1: Method to develop Inventory Management System (IMS) Software
3.4 DETERMINE SOFTWARE FEATURE

The features of the software are determined based on the expected outcome and the result of the research done in chapter 2 literature review. First, the software have to be user friendly so that it is easily understand and can be used by the user without the needs of training. Next, the basic feature of the software is to register item for both check in and check out. Besides that, user can add in description to help user to recognize the item. The database will be updated in real time. In addition, users will able to scan the QR code on the item to determine and extract the item information and status at any time from the server computer. The database is MySQL database that will be hosted by a free software XAMPP. Moreover, there is a low stock reminder function to remind the user that the item quantity of the certain item is lower than the 5 so that the user can restock accordingly.

3.5 DETERMINE THE SOFTWARE DEVELOPMENT TOOLS TO BE USED

A research have been done on the current IMS software in the market, and the following table 3.1 is a list of IMS software available in current market. Based on table 3.1, it can be concluded that the language used to develop the software is normally separated into two group C programming(C, C++, C#) and JAVA programming. As listed in table 3.1, most of the software is windows based which means that they are developed using C, C++, or C# language that runs on windows platform. There are a few of the software is developed using JAVA which can be website based or android based. JavaScript can be added in PHP to run on website and JAVA language can be used to develop Android apps or even to make windows based apps.