Requirement Model for My Bazaar Tax: A Mobile Tax Solution for Night Market Hawkers

Nur Azzah Abu Bakar, Noraziah ChePa, Mohamad Asad Razali

Abstract: ***The introduction of e-Filing system by the Malaysian government has been seemed as a solution to problems that arose due to the use of paper-based income tax filing. The number of taxpayers submitting their Income Tax Return Forms through e-Filing is increasing every year. However, this does not eliminate the need for the Inland Revenue Board Malaysia (IRBM) personnel to pay regular visits to the night market venues in order to assess the eligibility of the night market hawkers to pay tax, and the amount they should be charged. This has been exacerbated by the practice of the hawkers who do not always keep their business record in a systematic manner; most still employ traditional way of keeping the amount of their revenue and expenditure in books or pile of papers. This paper presents the requirement model for MyBazaar Tax, a mobile-based application which is developed as a single platform for the night market hawkers to keep their business records. At the same time, MyBazaar Tax apps will also make the process easy for the IRBM personnel to gather tax-related information from the hawkers. The methodology used in this study consists of four phases: requirement gathering; requirement modeling; prototyping and evaluation. UML notation is used in modeling the requirements through the use of use cases, sequence diagram and class diagram. The model presented in this paper could be used as a reference model for developers in developing similar apps to cater the needs of other small business operators.***

Keywords: ***MyBazaar Tax, e-Filing System, Self-Tax Computation, Mobile Tax Apps.***

I. INTRODUCTION

Taxation is intended to raise the necessary funds for public expenditure, as well as to redistribute income, stabilize the economy, overcome externalities, influence the allocation of resources, while at the same time should be supportive to the economic growth. An efficiently designed taxation aims to achieve desired fiscal policy objectives in the most efficient way, i.e.by limiting undesired distortions, minimizing the cost of tax collection and promoting economic growth. The efficiency of taxation and particularly the tax structure plays important role in achieving economic growth and fiscal consolidation[1]. In 2006, the Malaysian government through its revenue services agency namely Inland Revenue Board Malaysia (IRBM) launched e-Filing system, an application that serves as a platform for electronic tax form submission. E-Filing is one of the many Malaysian e-government initiatives aiming to enhance the efficiency in delivering services to the citizens by government agencies. There has been an upward trend in the adoption of e-Filing since its inception; in 2010, approximately 1.5 million taxpayers in Malaysia had used the system, and the number had increased to 1.7 million in 2011 [2].

Being the entity that collects direct taxes for the government, the IRBM has the obligation to maximize the collection of taxes for the benefit of the country. Despite rapid increases in the number of taxpayers submitting their Income Tax Return Forms via e-Filing, the system does not accommodate those who run street business or the so-called hawkers. These are people who sell products or services at open areas in which cash is the only method of payment. Their business is usually on mobile basis as they do business at several venues, selling mostly household items, food and beverages directly to consumers at affordable price. Street retailing provides employment and livelihood for many people in developing countries [11]. One of the most popular site for hawkers is the night market, or bazaar, which are common in the East and Southeast Asia.

The hawkers' income through street food varies, depending on the type of food they sell and the time spent at the place and costs, ranging from 20 to 75 percent [12]. Determining tax on the night market hawkers has been a challenging task to the IRBM as hawkers do not always keep their sales and revenue information in a proper record; most information are recorded in books or papers which are exposed to damage, being misplaced or lost. Unlike government servants and those working in private sectors or other properly set up businesses, hawkers do not have pay slips or financial statements that can be used by the IRBM to determine the amount of tax they need to pay. Currently, IRBM staffs visit several night markets in order to collect the details of how much the hawkers earned. Often the computation of tax charges is made based on the estimated profit instead of the actual one and therefore is inaccurate. The accurate amount of profit is crucial to IRBM as this will help them to determine the accurate tax charges to be paid by the night market hawkers. This therefore has triggered the need for having a system or apps that is easily accessible by the night market hawkers; this will allow them to keep their record systematically which can later be shown to the IRBM staffs for tax computation purposes.

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The mainstream of research on taxation, as discussed in [3]focus on issues related to the following: transfer pricing; cross-border transactions and e-commerce; dispute resolution; review of tax legislation and structure; indirect taxes; stakeholders expectations; tax compliance and e-filing; hidden economy, audit and presumptive tax; tax education and taxation as a tool for environmental sustainability. In the context of e-Filing research in Malaysia, researches are directed towards measuring the level of acceptance [4], user satisfaction [5], intention to use[2],[6],[7] and risk [8]. Obviously, past researches are lacked of focus on issues pertaining tax computation for the night market hawkers. This study attempts to address the issues by developing a mobile-based solution which can be accessed via mobile phones that run on Android and IOS platforms.

The growing use of mobile phones have shaped the way people access the applications, be it the games, educational contents, entertainment and many others including those related to tax. Bowden-Davis [9] and [10] list a number of mobile tax apps available on the market to ease the taxpayers in filing their taxes. This include IRS2Go, TaxACT, TaxSlayer, Bloomberg BNA, TaxCaster, MyTaxRefund, Ask A CPA, SnapTax, H&R Block and TurboTax. However, the review of these apps does not give a very positive results with many of them are not the recommended apps. Furthermore, these apps were designed for the taxpayers residing in the United States who definitely are paying tax under different tax provision compared to the Malaysian taxpayers.

In light of the above, the objective of the study are set as follows: (1) to gather the requirements of the proposed solution; (2) to model the requirements of the proposed solution; (3) to develop the proposed solution based on the requirement model and (4) to evaluate the proposed requirement model. This paper presents the outcomes of the first two objectives. The rest of this paper is organized as follows: Section 2.0 presents the methodology used, followed by Section 3.0 which discusses the requirements specification for the proposed solution. Finally, the conclusion is presented in Section 4.0.

II. METHODOLOGY

This study is carried out according to the four sequential phases as shown in Figure 1.

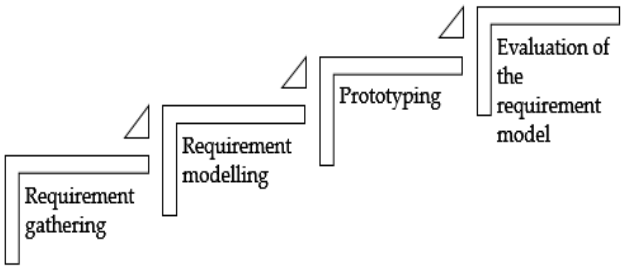

Fig. 1 Phases of the study

The first phase involves gathering the software and user requirements from two sources, i.e. the stakeholders and the literature. The interview technique is used to collect the requirement from the stakeholders, who are the IRBM enforcement personnel and the night market hawkers. The outcome of this phase is the Requirement Specification which is further explained in Section 3.0. The literature provide initial insights into the requirements based on the examination of the existing systems or apps.

The second phase involves modeling the requirements. UML notations are used to model the requirement. These requirements are presented as Use Case Diagram, Class Diagram, and Sequence Diagram. Section 3.0 discusses these models in further details. Discussion on the third and fourth phases is beyond the scope of this paper. The Conclusion section briefly mention the ongoing development of the prototype of the proposed solution, i.e. MyBazaar Tax apps.

III. REQUIREMENT SPECIFICATION FOR MYBAZAAR TAX

MyBazaar Tax serves as a platform for the night market hawkers to systematically record their capital, expenses and profits. At the same time the apps will also assist them in determining whether they have taxable earnings; if so, it will calculate the amount of tax they need to pay. It will also benefit the IRBM enforcement team in a sense that they no longer need to dig into pile of paper-based records in order to compute the tax.

There are eight functions that have been identified for MyBazaar Tax as listed in Table 1.

Table. 1 List of functional requirements for MyBazaar Tax

Requirement	Use Case(s)	Use Case ID
To create new record that consists of business data, i.e. the capital, expenses and profit.	Add new record	MBT_01
To store data that has been entered by user.	Save	MBT_01_01
To manage records. Three functions are allowed, i.e. to view, update or delete records.	Manage record	MBT_02
To view records that have been entered by user.	View data	MBT_02_01
To change records that have been entered by user.	Update data	MBT_02_02
To delete records that have been entered by user.	Delete record	MBT_02_03
To calculate the tax to be imposed based on the business data that have been entered by year.	Calculate tax	MBT_03
To create and display the graph of performance on monthly or yearly basis.	View statistic	MBT_04

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Figure 2 illustrates the use case diagram of these functions in which there is only one actor involved, i.e. the hawker. The use cases are as follows: (MBT_01) Add New Record; (MBT_01_01) Save the record; (MBT_02) Manage Record; (MBT_02_01) View the saved records; (MBT_02_02) Update the save records; (MBT_02_03) Delete the saved records; (MBT_03) Calculate Tax; (MBT_04) View Statistics. The Add New Record function allows users to enter the amount of capital, expenses and profits; Manage Record function allows them to view, edit or delete the existing records; Calculate Tax function calculates their taxable earnings, and if any, what is the amount; View Statistics function displays their profit in graphical forms so as to allow them to see their monthly or yearly performance. This function will also make easy the process of determining hawkers' eligibility to be taxed by the IRBM.

Besides the above functions, Tutorial is viewed as one of the requirements as the literature gives insights into the needs to provide clear information for references in order to gain system acceptance. For example, Nor' Azimaton et al. stated in [4] that one of the factors that influenced the acceptance of e-Filing is because it contains unambiguous information; every item that needs to be filled in has an explanation and is easy to understand.

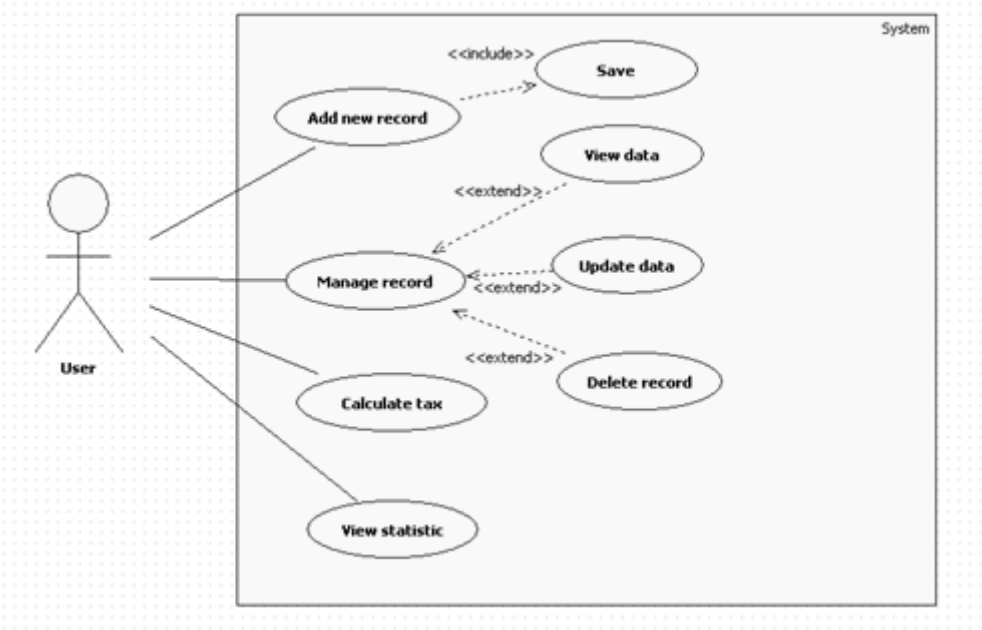

Fig. 2 Use case diagram for MyBazaar Tax

Figure 3 to 7 illustrates the flow of how MyBazaar Tax should work.

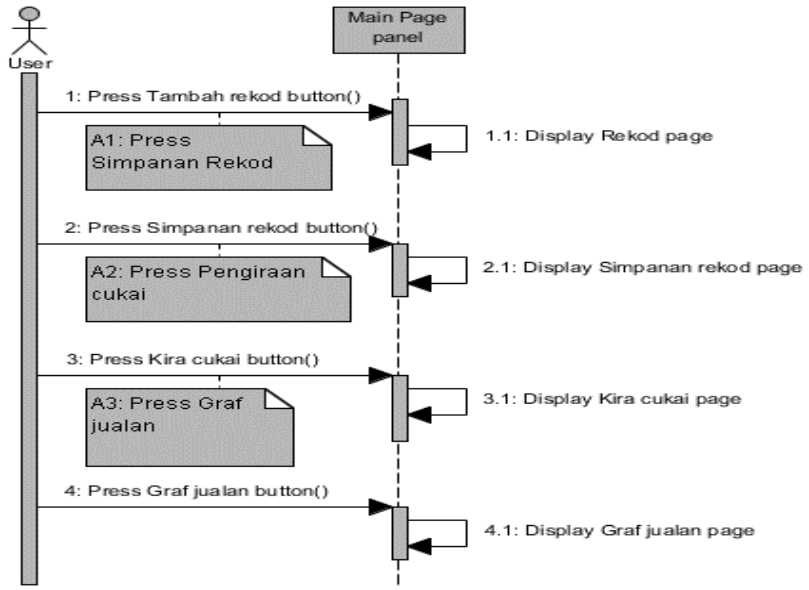

Fig. 3 Sequence diagram for the main page

Figure 3 shows the flow at the main page where users are given four options consisting of Add New Record, Manage Record, Calculate Tax and View Statistics. The flow of Add New Record process is detailed in Figure 4. Once the capital, expense and profits are entered, users need to press the Save button and these details will be stored in the database.

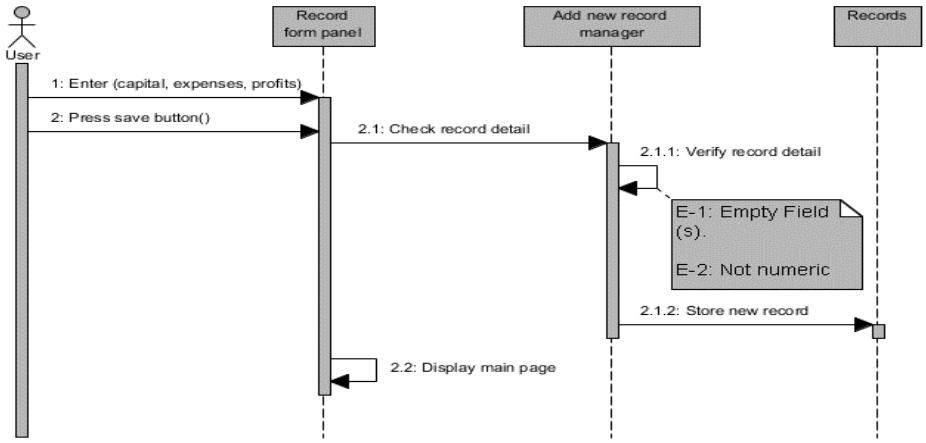

Fig. 4 MBT_01 Add New Record

This function helps users to systematically keep their business data on one platform which is easy to be retrieved when needed. It eliminates the use of a physical book or papers which subject to loss or damage. Keeping records in a manual fashion does not help in easing the computation of total expenses and revenue. It is also difficult and time consuming for the hawkers to present the evidence during the IRBM team visit. This function must be simple and easy for the hawkers. Hence, only three fields are required to be filled in, i.e. the amount of capital for the day, the expenses and total collection at the end of the day which is termed in MyBazaar Tax as profits. This is in line with the current practice the hawkers are familiar with in order to reassure continuous use once the apps is installed on their devices. Changing the original flow of work has long been identified as one of the reasons users refuse to use the new system or apps.

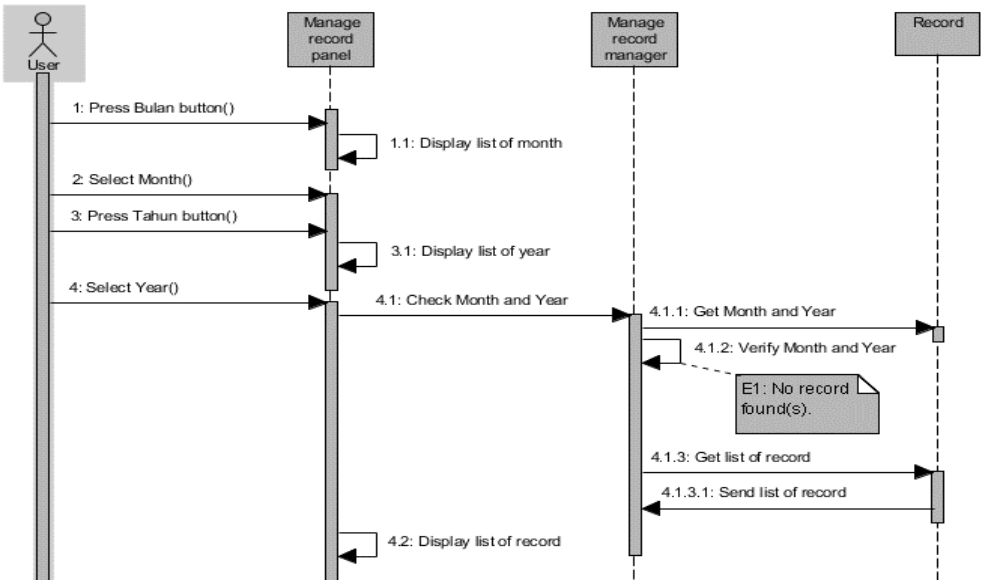

Fig. 5a MBT_02 Manage Record

The ability to manage the existing record is also made as mandatory functional requirement for MyBazaar Tax. Users can view, update or delete the previously entered record. Figure 5a above shows the flow for searching the required record by month or year. The list of month and year will be displayed on the screen and user just need to select the month and year they require.

As shown in Figure 5b, records for the selected month and year will be displayed once the user press the View button. Users need to slide the record if they want to update or delete it.

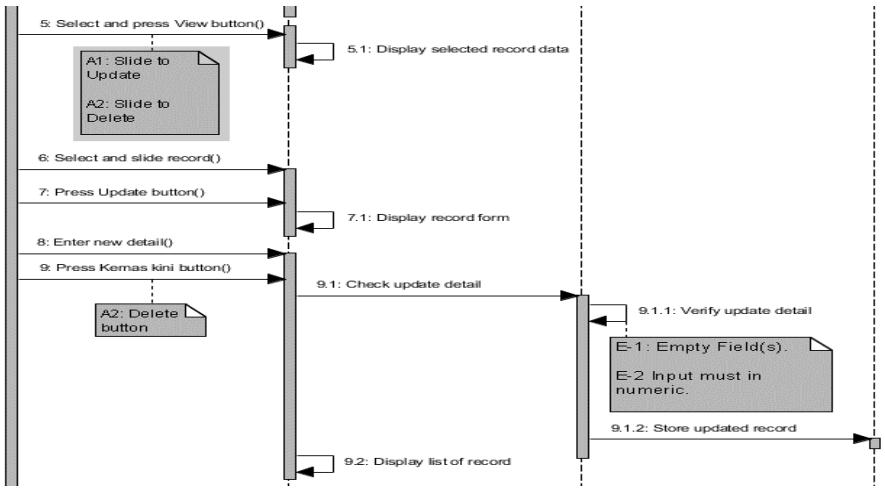

Fig. 5b MBT_02_02Update Record

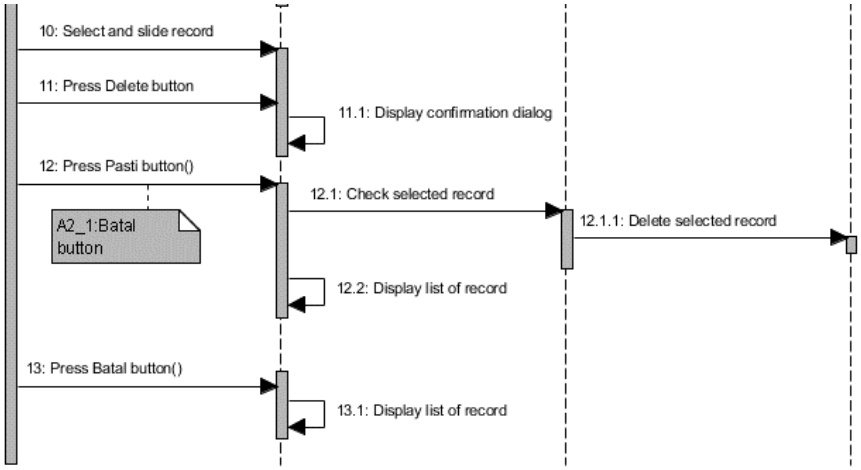

Fig. 5c MBT_02_03 Delete Record

The Delete Record function (Figure 5c) offers some means of control when users choose to delete certain records. Records will only be deleted from the database when users click the confirmation button.

The flow of Calculate Tax process is as illustrated in Figure 6. Once the user click on Calculate Tax option, he will be required to select the year for the tax computation. Should the user is eligible for tax, the amount will be displayed on the screen. The advantage of this is that it makes easy for the hawkers to estimate how much tax they need to pay.

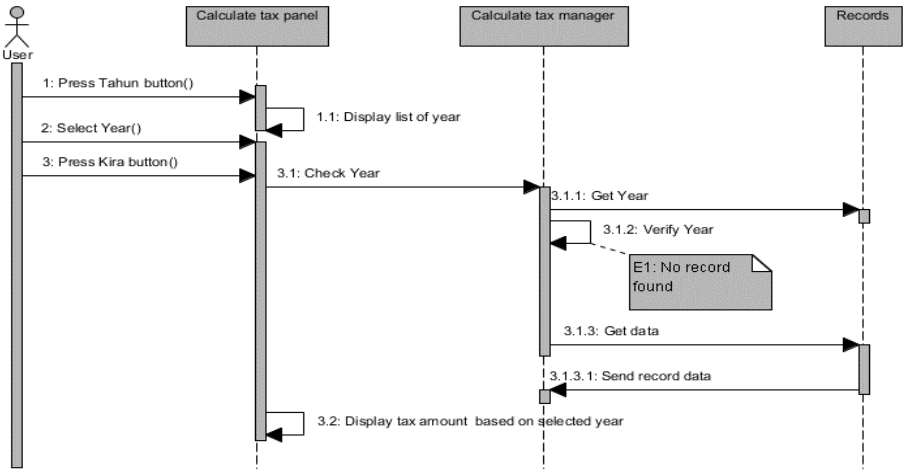

Fig. 6 MBT_03Calculate Tax

Figure 7 illustrates the flow for View Statistics function. This is where users can see the patterns of their performance in graphs, either on monthly or yearly basis. Data for generating this graphs come from the data entered by users in Add New Record function.

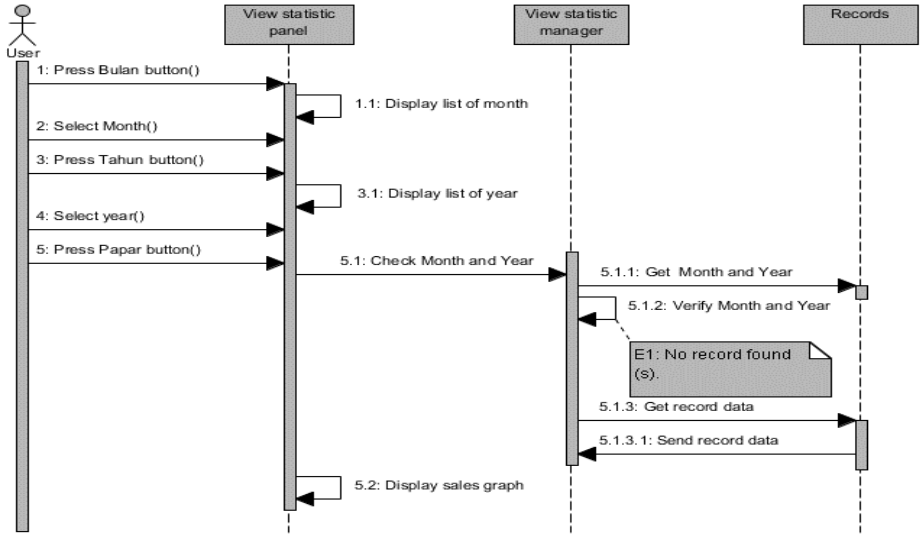

Fig. 7 MBT_04 View Statistics

Model Validation

At time this paper is written, the low-fidelity design of the prototype has been accomplished; the prototype can now be run on mobile devices using Android 4.0 Ice Cream Sandwich and above. This development is part of the phases required to validate the proposed model. Further development is in progress using Ionic framework and Angular JS. Latest development of the prototype involve some changes in naming the functions. Figure 8 illustrates the Home interface consisting of all four main functions (i.e. MBT_01, MBT_02, MBT_03 and MBT_04), and of Add New Record and Calculate Tax functions. To date, the Add New Record, View Record and Calculate Tax functions work according to the flow proposed in the above model.

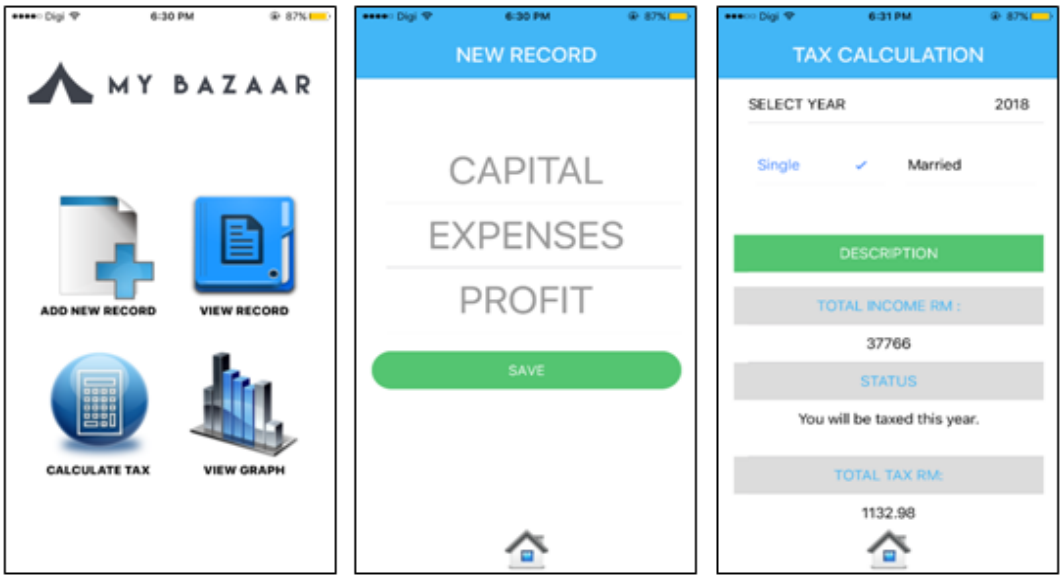

Fig. 8 Interface of My Bazaar Tax Prototype

IV. CONCLUSION

MyBazaar Tax requirement model has been created to support the night market hawkers to systematically keep their business records while at the same time assist them and IRBM personnel with regard to tax computation. It is a simple flow of record keeping and management process that is expected to be user friendly to users. Current work includes prototype development to validate the requirement model presented in this paper.

It is important to note that My Bazaar Tax is an offline apps and users do not need any credential login details. Hence, business records are still kept personal by individual hawkers on their mobile devices;

however, since records are kept in the database it becomes easier to locate them. Although there still a need for IRBM personnel to visit the night market venues, the features provided in this apps can expedite and reduce the hassle to gather the tax-related information from the hawkers. Future work should attempt to provide an online version of this apps where data could be stored on a server which will make them possible for direct access by the IRBM personnel.

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