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UTM E-Bookstore

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Abstract

The increase of books' prices prevents some students from buying new books that are usually expensive. Instead they prefer to use secondhand books. In addition to cutting cost of studying, these students can also help in saving the environment by recycling the products. In Universiti Teknologi Malaysia (UTM), students face difficulties in finding secondhand books and lot of effort by student is put in finding the exact book. This is because system that gathers secondhand books information in one place is not available in university. Therefore, UTM E-Bookstore is the proposed as a solution. The main goal of this project is to develop a website as well as an android application that able to aid UTM students to make the process of selling and buying secondhand books becomes easier. Students have the options to offer their books for sale within the system and buyer can do the payment using PayPal. All the information of secondhand books can be gathered in the system, including the book description and the seller information. The features in this system include registering new book, selling books, buying by using PayPal, search for books by title or author, tracking offers and orders, user's wish list, user's shopping cart and checkout. In order to make this system, the first important thing is collecting requirement from expected users. Next, designing the system that completed by some features that make this system different with existing systems. The construction of this system met the expected requirement. The methodology used in this system is Rapid Prototyping. This project is developed using HTML, CSS, and PHP Programming language for the website as well as Java programming language for Android operating system.

Keywords: Online Bookstore, Secondhand Books, Web Application, Android

1.0 Introduction

Our modern lifestyles require high budgets to obtain our needs, such as our clothes, foods, study materials and so on. Saving money starts by changing our life patterns like reducing the number of needs that we purchase constantly. For students, one of the ways to save money is by using secondhand books [1]. But there is no efficient way in UTM for them to offer their books for selling with other students.

Additionally, each student has his own reasons behind selling secondhand books, and it is different from one student to another. For example, a student may not need all the

books he bought; such as books for non-core subjects, and he prefer to sell these books rather than keeping them [2]. On the other hand, students looking for secondhand books have their own reasons as well. For instance, he wants that book as a reference only, and to buy a secondhand book will be a better choice since it is cheaper than buying a new book.

Therefore, a platform which can gather all the information related to secondhand books inside UTM is an efficient way to solve that problem. UTM E-Bookstore is a web-based system and an android application for selling and buying secondhand books among UTM students. UTM students will have an option to offer their physical books for sell to other UTM students or buying a specific book based on their needs. This system will make the search for secondhand books inside UTM easier.

Several objectives are identified so that the development of the system will achieved the aim of the work and these objectives are : (i) to identify problems in existing ways of selling and buying secondhand books among UTM students, and to study existing systems that provide these services, (ii) to design and develop a web-based and an Android application for the proposed system using UML and object-oriented approach, and (iii) to test the developed web-based and the android application for its performance and user acceptance.

2.0 Methodology

To define user requirement and to build UTM E-Bookstore, Rapid Application Development Methodology has been used. Moreover, the minimal software requirements needed in developing and running UTM E-Bookstore are shown in Table 1.

Table 1: Software Specifications

Category	Software
Operating System	Windows and Android
Database System	MYSQL
Programming Languages	PHP for Web based, JAVA for Android application
Coding	Notepad++ for Website. Eclipse 4.0, and Android Studio for Android application
Project Documentation	Microsoft Word 2013
Project Management	Microsoft Project 2010
Interface Design	GIMP, Microsoft Paint
Emulator	Android SDK 24.0

The use case diagram of UTM E-Bookstore consists of three actors; users, admins, and bank. Users are UTM students; and these users who can interact with the system. Besides, Admins are the administrator of the system, many tasks done by the admins such as check new abuses which are coming from users. Also, bank is responsible to complete payment process by verifying user' account information. Figure 1 shows the use case of the system.

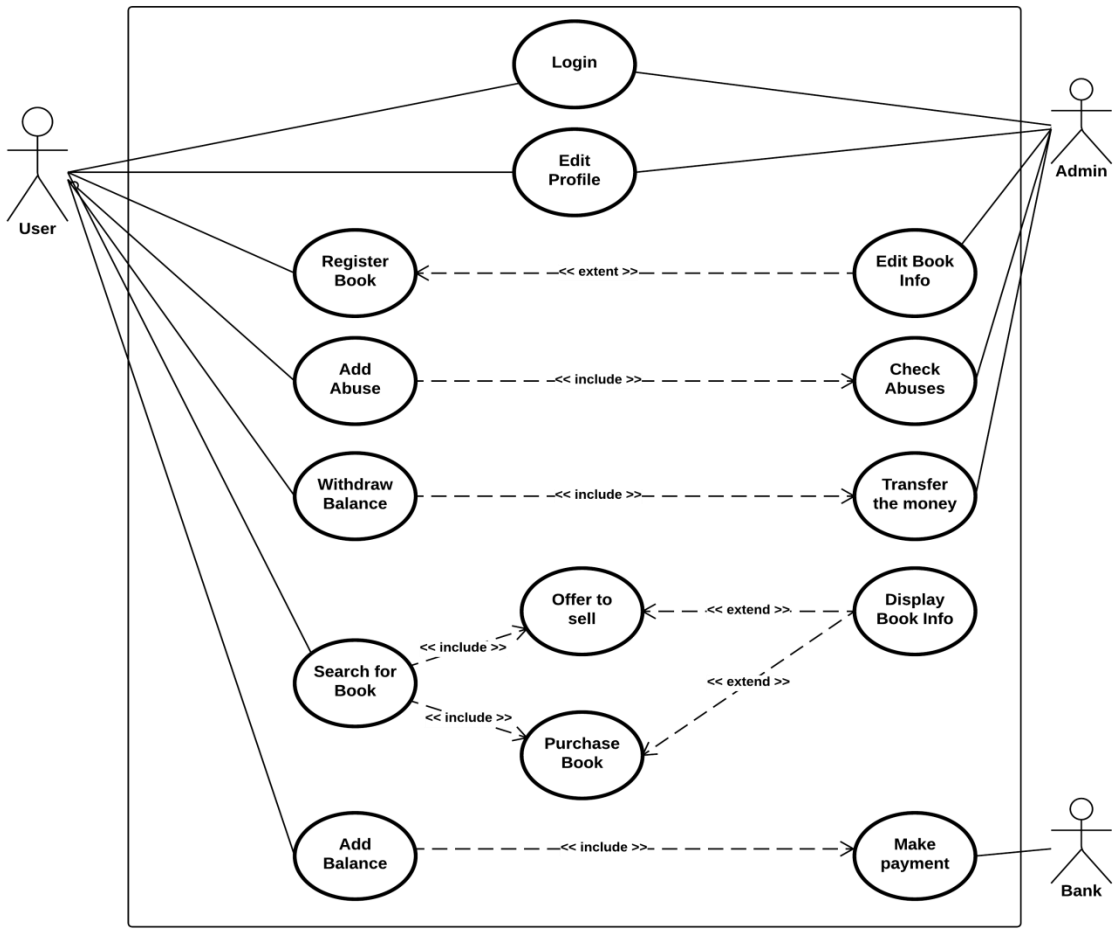

Figure 1: Use Case of UTM E-Bookstore

3.0 Result

The results of UTM E-Bookstore are an Android application and a web-based application. Figures 2 and 3 show the home pages of the system. White box testing has been implemented on register new books' function. In this function, user are required to fill up a form for the registration, and the system will check if all options are valid to be saved in the database. The test is shown in Table 2 and Figure 4 shows how the error messages displayed in the system.

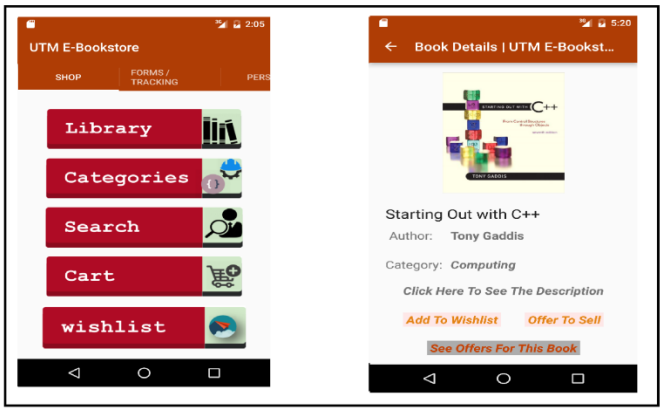

Figure 2 Android' Home Page for UTM E-Bookstore

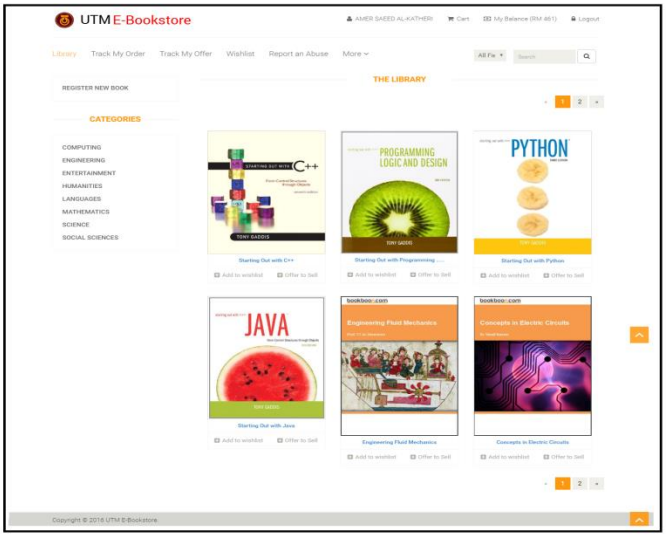

Figure 3 Web-Based' Home Page for UTM E-Bookstore

Table 2: Test case of Registering New Book

Test Procedures	**The Expectation of Test result**	**Test Result**	
		Successful	**Unsuccessful**
Option left empty	Display Error Message, and user has to fill it up	*	
Upload a word document in cover page field	Display Error Message, and the form is not processing until an image fill is uploaded.	*	
Book Title exist in the system	Display Error message, and forward the user to that book	*	

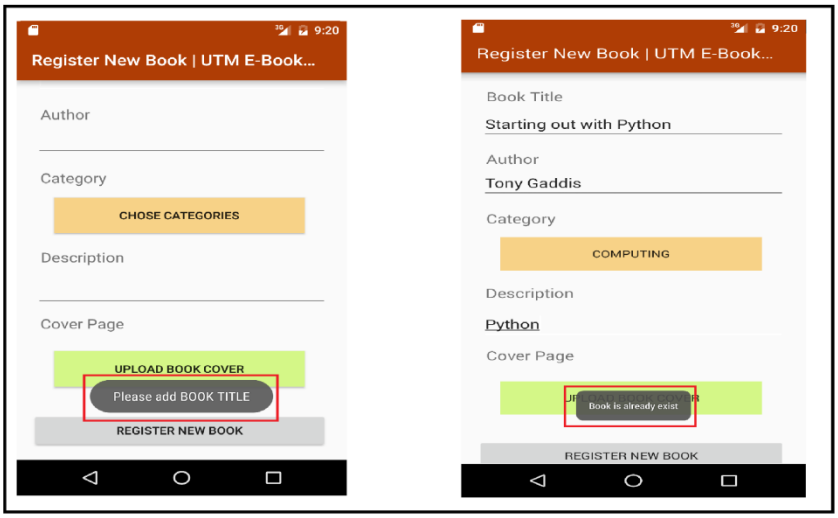

Figure 4 Error Messages in Android Application

4.0 Discussion

The purpose of this project is to provide a web-based and an Android application for UTM students which can help them to ease the process of selling and buying secondhand books among them anytime without having the difficulties of the current way of exchanging. Comparative study of bookstores has conducted and documented and based on the findings, UTM students face a number of difficulties on selling their books to others. This comparative study was conducted in order to gather the user requirements for UTM E-Bookstore system.

Also, the system analysis and design has helped in achieving a clear flow about the design features prior to develop the system that could be executed smoothly and able to fulfill the requirements. Finally, the testing and implementation of the system has been done. The testing was done in three categories and they are Black Box Testing, White Box Testing and Input Validation Testing.

5.0 Conclusion

UTM E-Bookstore is a combination of a web-based and an android application, developed by using latest technologies which are HTML, CSS, and PHP Programming language for the web-based as well as Java programming language for Android application. The main goal of this project to make the process of selling and buying secondhand books easier within UTM students. The features of this system include selling books, buying by using PayPal, search for books, tracking offers and orders, user's shopping cart and checkout.

References

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[2] Room to Read, 2000. The Ultimate Book Swap. Available at: http://www.roomtoread.org. [Accessed March 13, 2015].