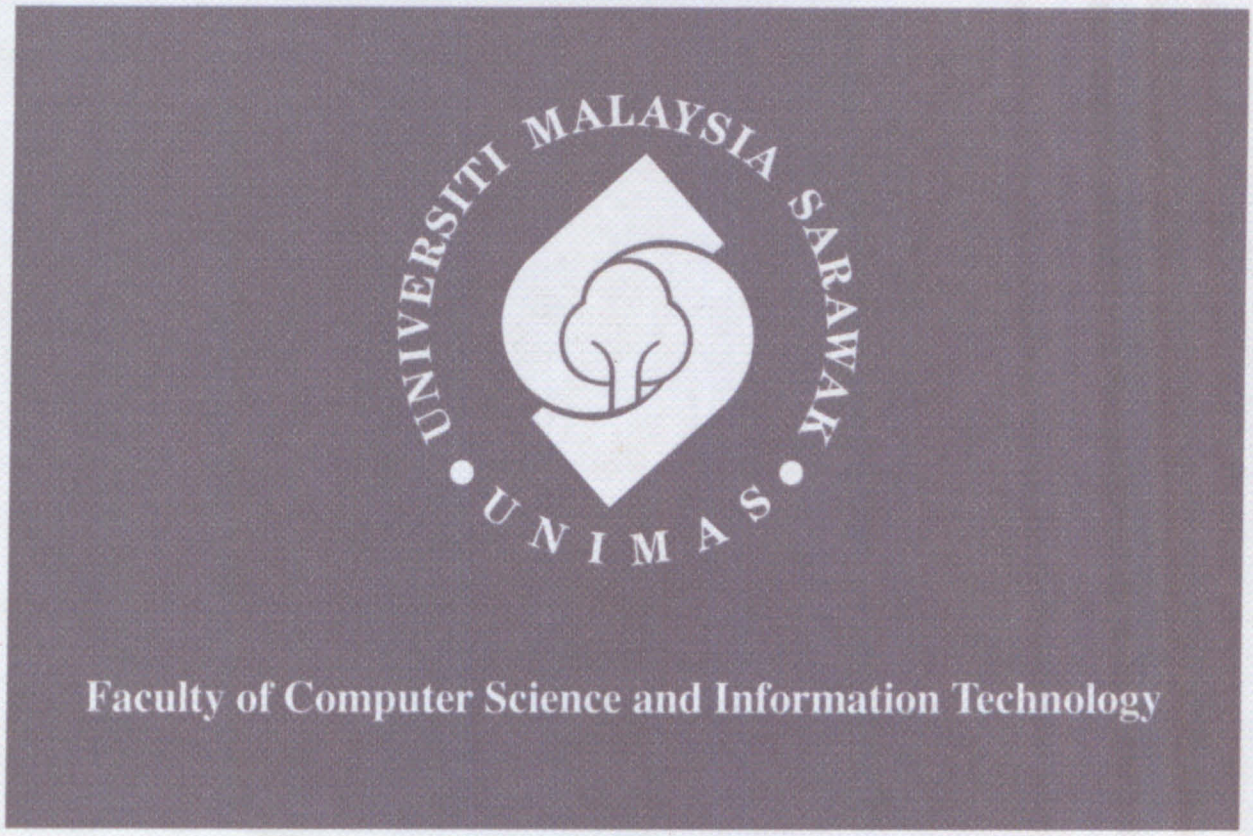

MOBILE WEB APPLICATION FOR GROCERY BUDGET PLANNING

Qurratul-Ain Binti Abdullah

Bachelor of Computer Science with Honours
(Software Engineering)
2015

MOBILE WEB APPLICA RY BUDGET PLANNING

QURRATUL-AIN BINTI ABDULLAH

This project is submitted in partial fulfillment of the

requirements for the degree of

Bachelor of Computer Science with Honors

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Faculty Computer Science and Information Technology

UNIVERSITI MALAYSIA SARAWAK

2015

APLIKASI WEB MUDAH ALIH UNTUK PERANCANGAN BAJET RUNCIT

QURRATUL-AIN BINTI ABDULLAH

Projek ini merupakan salah satu keperluan untuk

Ijazah Sarjana Muda Sains Komputer dengan Kepujian

(Kejuruteraan Perisian)

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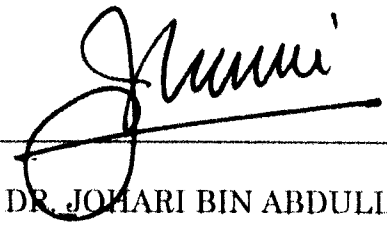
Signature : 

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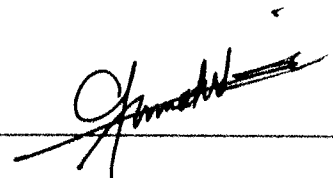
Signature : 

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Dedicate, to everyone who made this to happen,

To my dear parents

Hj. Abdullah Bin Dris & Hayati Binti Drahman,

To my siblings

Nur Aziemah, Nur Alia Fauzia, Qisthina Azmina and Arsyil Ad-deen,

To my strongest supporter

Ariff Asraf Bin Rajeli,

And finally

To all my trustworthy best friends and supportive batch mates

Intake September 2011/2012

Thank you for being all the way throughout this journey

All praise to Allah SWT

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ABSTRACT

Grocery shopping can be a real hassle, especially for shoppers with specific preferences, or an interest in saving money. In recent years, the basic shopping list has evolved into a variety of tools and mobile applications, each with different improvements over the classic pen and paper version. In this project, a mobile web application that consolidates all the available information and tools into a single, intuitive shopping assistant and providing price comparison across different items and stores. The effectiveness of this solutions will be evaluated by analyzing through online surveys and data gathered from willing users on the effects of the proposed system on their habits and spending. This mobile web application will have the potential to benefit everyone who grocery shops, in particular those people with financial concerns.

ABSTRAK

Membeli barangan runcit boleh menjadi sesuatu yang sukar terutamanya kepada para pembeli yang mempunyai keutamaan yang tersendiri atau mempunyai kepentingan untuk berjimat cermat. Kebelakangan ini, senarai membeli-belah telah pun berkembang dengan beberapa kaedah lain dan juga sebagai salah satu aplikasi mudah alih, masing-masing dengan peningkatan yang berbeza berbanding dengan penggunaan pen dan kertas yang menjadi sesuatu yang agak lama. Dalam projek ini, aplikasi web mudah alih yang menggabungkan semua dalam satu, dan alat intuitif yang membantu membeli-belah, serta menyediakan perbandingan harga untuk barangan dari kedai yang berbeza. Keberkesanan aplikasi ini akan dinilai dengan membuat tinjauan dalam talian dan data yang dikumpul daripada pengguna akan dibandingkan dengan melihat kesan terhadap tabiat dan perbelanjaan mereka. Aplikasi mudah alih mempunyai potensi dan bermanfaat kepada semua yang membeli barangan runcit, khususnya mereka yang mempunyai masalah kewangan.

CHAPTER 1: INTRODUCTION

1.1 Introduction

People often shop for groceries by listing all the item that they want to make sure they won't forget what they should buy. Some of the written list also easily misplaced and have to rewrite everything back. At the end of the day, precious time is lost using this manual approach.

In order to solve the problem, the spreadsheet and editable PDF type of grocery list was created to enable user to manage and sorts the grocery list in an efficient way. User may download the spreadsheet template and it works with Microsoft Excel, Google Docs, and also Open Office. To use the spreadsheet, user may select items from the completed grocery list and print the list to be affixed at the refrigerator. User also can print the blank list or custom spreadsheet if it does not meet their needs and simply jotted it down. When user need to buy something, they can easily select the item from the list or write it without thinking too much about what they should buy before they go for groceries shopping.

Using spreadsheet, it may work efficiently to make sure user would not forget what they should buy when they shop for groceries. They can just take the list before they go for groceries shopping and replaced the list with the new one. But, the spreadsheet does not works well if user want to shop after work. They might forgot to bring the list of items thus it take time for them to remember all the items. Using spreadsheet is also a waste of time and difficult for some people as they have to open the spreadsheet, edit, save, print the list and select the item from the printed list before they go shopping.

Nowadays, many tasks can be done on mobile devices such as a smartphone. The existence of various application help us to manage and organize task in our daily life in easier and faster way. This idea has been brought to create an application which help the

user to organize and manage their list of item in a fastest way to replace the spreadsheet grocery list.

The Grocery List Mobile Application is an application which help user to organize and keep track their shopping list in their smartphones. Most of grocery list applications features grocery shopping into to-do-list and user also can manage their list by create new list, edit list and delete list. Besides, grocery list mobile application including grouping for different products, the ability manually enter product information or scanning it in with a barcode, price information and price history on products and a few other things.

1.2 Problem Statement

There are plenty of grocery list mobile applications which allow user to list out what they want to buy in an easier an interactive way. Somehow it only creates a list of items, displays the price of the item, price history, and other features. Some of the applications have the unique features but not everyone know how to use it and not everyone know what the importance of the features. The application also does not have feature to calculate the total amount spent, compare price of items at different grocery stores, and suggest which grocery store offer the best price of selected items.

Expenditure on food and non-alcoholic beverages formed the largest component, accounting for about 23% of total household expenditure based on data of household consumption by purpose from Bank Negara Malaysia (2010). It shows that the expenditure on grocery items among Malaysian are higher and proper expenditure planning and budget allocations are less being applied.

The existing grocery list applications which are OurGroceries, Tomatoes, and Grocery King were unable to manage the budget for time taken and amount spent by user

each time they go for grocery shopping. It only list out the item with the price of the item without calculating how much the customer has spent their money for the available period.

The existing mobile applications as mentioned also does not suggest the best price item to the user by comparing price from various stores. Without knowing which grocery list offer the best price of selected item, user will buy item without checking how much budget they have and this will cause overspending. In that application, user also cannot find the location of the nearest store and which store offer the best price item. Besides that, the item price also manually entered by the user itself.

1.3 Objectives

a) To design and develop a mobile application which allow user to manage their grocery list.

b) To help users to budget for their grocery spending based on time period and maximum limit.

c) To suggest to the users, the best price for a set of products, and the location of the store.

d) To promote savings to user while shopping for groceries.

e) To include an interactive system which allows users to create, manage and manipulate the list as needed.

1.4 Methodology

Methodology described as methods and procedures used by the project developer to carry out their project. It is one of the main part in software development as it will guide the developers along their way on conducting their project.

There are a lot of methodology used in developing a software. Somehow, Mobile application are more preferable using rapid software development technique. Due to the new opportunities and competitive environment, new software applications are developed quickly nowadays. Based on other methodology, rapid software development are design to produce useful software quickly which suit the best for this project.

For this project which is Grocery Budget Planning Application, the methodology chosen is Agile Methods. Agile Methods are one of rapid software development techniques and suitable for small or medium-sized system which is convenient for mobile application (Sommerville, 2007). The agile method that is chosen to build this application is extreme programming.

Extreme programming which considered as an agile method is chosen as this project have to be done in a short period of time. Extreme programming include several practices which is incremental planning, simple design, test-first development, coding, continuous integration, and testing. In planning phase, the requirement are gathered and recorded on story cards and the stories to be included in a release are determined by the time available and their relative priority (Mannaro, 2008). The developers break these stories into development tasks.

For the design part, simple design is carried out to meet the current requirements. While for the test-first development, an automated unit test framework is used to write tests for a new piece of functionality before that functionality itself is implemented (Sommerville, 2007). While for the coding part in extreme programming, developers should working in pairs, checking each other's work and providing support and only one pair integrates code at one time. The integration should be done often to make sure all the code has passed unit tests.

Lastly, for testing in extreme programming, all code must have unit tests. Unit Tests provide a safety net of regression tests and validation tests so that you can refactor and integrate effectively. Creating the unit test before the code helps even further by solidifying the requirements, improving developer focus, and avoid creeping elegance.

1.5 Scope

The development of Grocery Budget Planning Application will enable all its user to manage their groceries. However, there are some limitations in the proposed application.

The proposed application will not cover all aspects and features existing in the current grocery list mobile application. Only a few features that will be retained in the Grocery Budget Planning Application which is to-do list, manage list (create new list, edit list and delete list). Everyone who always shop for groceries and want to manage their budget for grocery shopping can use this mobile application.

1.6 Significance of Project

Without grocery list mobile application, user have trouble to organize their grocery list with pen and paper. They used to forget what they wish to buy and probably will buy the wrong product as mention by others. In order to solve the problem, Grocery Budget Planning Application can help you save time at the grocery. This application offer built-in databases to quickly add item to the list, create favorite list, synchronize list with other people, and other functions.

Grocery Budget Planning Application is a must have application where user can keep track their monthly and weekly expenses for grocery shopping. The price of the items at different stores also will be updated monthly in this application. With this kind of idea,