

WIRELESS BARCODE SCANNER FOR SELF-CHECKOUT

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This Report Is Written As A Partial Fulfillment Of Terms In Achieving The Awards For
Bachelor Of Electronic Engineering (Computer)

Faculty of Electronic and Computer Engineering
Universiti Teknikal Malaysia Melaka

JUNE 2015



UNIVERSITI TEKNIKAL MALAYSIA MELAKA
FAKULTI KEJURUTERAAN ELEKTRONIK DAN KEJURUTERAAN
KOMPUTER

BORANG PENGESAHAN STATUS LAPORAN

PROJEK SARJANA MUDA II

Tajuk Projek : WIRELESS BARCODE SCANNER FOR SELF-CHECKOUT

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To my lovely parents, my brother and sister who give me encouragement to success in my studies and not to forget special thanks to all my lecturers and friends that give me guideline and support during my study in

UTeM

ACKNOWLEDGEMENT

Firstly I would like to forward my utmost gratitude to my supervisor, Mr. Nor Azlan Bin Mohd Aris because give me guideline and inducement to complete my PSM (Projek Sarjana Muda). Special thanks to En Shafiq b Roslan as a master student who also guide me and gave me many information to perform my project.

I would like to send my appreciation to all lab management, especially to the technicians who give corporation for me to complete my project.

Lastly I would like to thanks to all person who involve directly and indirectly during the project research. I hope that my report will be source for other student in the future.

ABSTRACT

This project to build the system including the Graphic User Interface (GUI) as the software and the barcode scanner as hardware. The GUI represent as the Point-Of-Sale system that connected to data base and server after the barcode scanner scan the barcode. The POS running as Web application make easier to customer update the purchasing item before checkout and in function wirelessly and memoryless. This the new method to minimize the problem occur during the checkout in the big mall where the current system need the customer queue in the checkout counter and the cashier need to scan the item purchase by the customer one by one. This situation produce the bad effect to the customer as need to long queue and wasting their time. The production of user interface generated by Notepad ++ and simultaneously launch and display system in the form of web application (WEB) using Dreamweaver. Online connection are needed to launch a Web Hosting by name nauskymall.com allowing data can be uploaded, updated and accessible anywhere and anytime. The resulting system is a Point-Of-Sale (POS) that calculates and updates on sell and buy in large supermarkets. Result of this project, POS use interface can be connected to the scanner barcode and can update data in real-time. Users or customers will only have to login by entering your email and password you registered by admin. POS also be used in smart phones to purchase online for some merchandise only.

ABSTRAK

Projek ini untuk membina sistem termasuk yang Grafik Antara Muka (GUI) sebagai perisian dan pengimbas kod bar sebagai perkakasan. GUI mewakili sebagai sistem Point-Of-Sale yang disambungkan kepada pangkalan data dan server selepas pengimbas kod bar yang mengimbas kod bar. The POS berfungsi sebagai aplikasi web untuk memudahkan pelanggan mengemaskini pembelian item sebelum checkout dalam fungsi tanpa wayar dan tanpa memori. Kaedah baru ini untuk mengurangkan masalah berlaku semasa checkout di pusat membeli-belah yang besar di mana sistem semasa pelanggan perlu beratur di kaunter pembayaran dan juruwang perlu mengimbas pembelian item satu per satu. Keadaan ini menghasilkan kesan yang tidak baik kepada pelanggan sebagai sebab untuk beratur panjang dan membuang masa mereka. Pengeluaran antara muka pengguna yang dihasilkan oleh Notepad ++ dan pada masa yang sama melancarkan dan sistem paparan dalam bentuk aplikasi web (WEB) menggunakan Dreamweaver. Sambungan talian yang diperlukan untuk melancarkan Web Hosting dengan nama nauskymall.com membolehkan data boleh dimuat naik, dikemaskini dan boleh diakses di mana-mana dan bila-bila masa. Sistem yang dihasilkan adalah (POS) Point-Of-Sale yang mengira dan kemas kini di jual dan beli di pasar raya besar. Keputusan ini projek, POS penggunaan antara muka boleh berhubung dengan kod bar pengimbas dan boleh mengemas kini data dalam masa nyata. Pengguna atau pelanggan hanya perlu login dengan memasukkan e-mel dan kata laluan anda

didaftarkan oleh admin anda. POS juga boleh digunakan dalam telefon pintar untuk membeli dalam talian untuk barang-barang dagangan sahaja

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CHAPTER 1

INTRODUCTION

1.1 Background

Trading system today are involves many other electronics to help people to and the payment become more efficient. Payment used by scanning the barcode on the product and the customers waiting in line for the cashier to scan product they want pay. Self-checkout are one part of the initiative to make the customer no longer to queue to make payment, they just scan the barcode by them self and get the new barcode for the total purchase price of the product that they had purchase. In order to pay the total price of their purchase they just go to cashier and scan the new barcode of the total amount that they had to pay. This method allows customer to make payments quickly without queuing while cashier is scanning the barcode product to other customers.

The implementations are focus in hypermarket such as Mydin Mall which is the recorded huge number of customer. So we purpose one customer for one trolley that installed the barcode scanner and the small computer for data server. These situations are the company need supply the trolley with barcode scanner to provided convenients way of payment to reduce complaint and customer friendly environment especially during peak hour.

Before the selection product, the customer just need login to the data server to make sure that trolley and barcode scanner are belong to them. After that, the customer can select the product what they want to purchase. Then if they choose one product and confirm to buy it, they just scan the barcode of the product then put the product inside the trolley. At the same time the barcode are represent for that item are save in data server and calculated. After all finished to choose the product and the data server already calculate the total among, the customer just print out the new barcode. The cashier just scan the new barcode that represent as the total amount purchase and pack the purchased item.

The data server are use the system architectures that are used to develop this system are XAMP which is the combination of Apache Web Server, MySQL Database Server, PHP and PhpMyAdmin. In addition, this system can improve the business or can be one of the marketing plan to attract the customer to come to the hypermarket. Moreover the online shopping are really famous because it really easy compared to the conventional shopping cause by time to finish the shopping at real time. Within this system the attraction to conventional shopping can rose steadily just because easy in product chosen, payment and packaging.

1.2 Objectives

- To design Point-Of-Sale (POS) the system for self-checkout.
- To build wireless barcode scanner with screen attached for customer scanning the barcode by them self.
- To analyse the performance of the wireless barcode scanner connection within the self-checkout system.
- To analyse the performance of the wireless barcode scanner and the POS system and the database.

1.3 Work Scope

The scopes for this project are to build the barcode scanner with embedded screen. The barcode scanner are connecting to the data server wirelessly as an online database system for barcode database using Apache data server, PHP and MySQL. This web-based inventory system that will store all data inventory (hardware and software) of the computers and other devices in the supermarket automatically, using barcode scanner. The system is designed to simplify business transaction. The customer will have to scan their selected item to be bought and the data will be sent to the data server to be calculated for the total price. The system are designed consider as no cancelation for product chosen.

1.4 Problem Statement

Problem statement for this project are:

- During the payment, the cashier need to scan barcode for each product that the customer purchase while the other customer are wait for their turn.
- Long queue
- Wasting time

1.5 Methodology

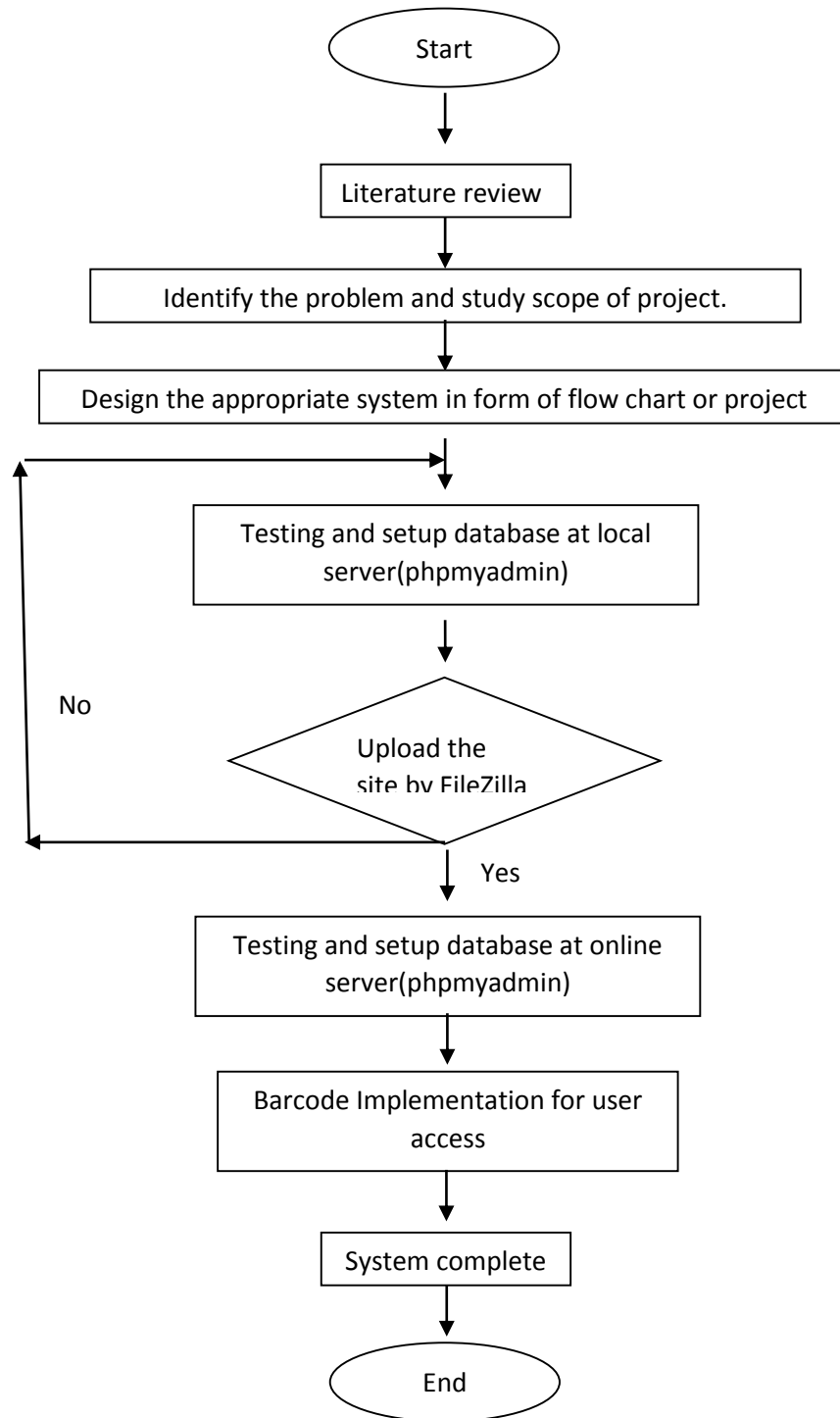


Figure 1.0: Project Flowchart

CHAPTER 2

LITERATURE REVIEW

In this chapter two emphasizes about the project's background and other relevant input and information which is related to the project. All the input and information were gathered from previous research paper (journals), internet, product manual and etc.

Nowadays, there are many software and interface being used to do the own web page. Database also can be creating, so from that the detail can be managed by web designers. All this method can be handle or manage in proper way and more secure. The chapter starts with brief discussion on dreamweaver8 (PHP), MySQL (phpMyAdmin), FileZilla and 000webhost.

2.1 Online Database

Online database is a database that created by the programmer to link with network that is internet. Normally, the software is designed to manage the database and to create the database itself [1].

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2.2 PHP



Figure 2.1: PHP Logo[2]

PHP is a general-purpose scripting language that is especially suited to server-side web development where PHP generally runs on a web server [2]. Any PHP code in a requested file is executed by the PHP runtime, usually to create dynamic web page content. PHP is the language that being used to communicate with MySQL database, and PHP, Dreamweaver takes care of much of the complex coding on behalf by offering an extensive suite of server behaviors [2].

It can also be used for command-line scripting and client-side GUI applications. PHP can be deployed on most web servers, many operating systems and platforms, and can be used with many relational database management systems. It is available free of charge, and the PHP Group provides the complete source code for users to build, customize and extend for their own use [3].

PHP primarily acts as a filter, taking input from a file or stream containing text and PHP instructions and outputs another stream of data and most commonly the output will be HTML [3].

Originally designed to create dynamic web pages, PHP now focuses mainly on server side scripting, and it is similar to other server side scripting languages that provide dynamic content from a web server to a client [3].

PHP also commonly used as the P in this bundle Apache and MySQL. WAMP packages (Windows/ Apache/ MySQL / PHP) has been used to do this project.

2.3 MySQL



Figure 2.2: MySQL Logo

MySQL is a relational database management system .That runs as a server providing multi-user access to a number of databases. MySQL is a popular choice of database for use in web applications, and is a central component of the widely-used LAMP web application software stack LAMP is an acronym for Linux, Apache, MySQL, PHP. Its popularity is closely tied to the popularity of PHP. MySQL is used in some of the most frequently visited web sites on the Internet. [4]

MySQL is written in C, and C++. Many programming languages with language-specific APIs include libraries for accessing MySQL databases. [4]

The official MySQL Workbench is a free integrated environment developed by MySQL that enables users to graphically administer MySQL databases and

visually design database structure. MySQL Workbench replaces the previous package of software:-[4]

- Database design & modeling
- SQL development — replacing MySQL Query Browser
- Database administration — replacing MySQL Administrator

2.3.1 Third-party

Several other third-party proprietary and free graphical administration applications are available that integrate with MySQL and enable users to work with database structure and data visually. Some well-known front ends are: [4]

- phpMyAdmin — a free Web-based front end widely installed by Web hosts worldwide, since it is developed in PHP and requires the LAMP stack or WAMP.
- MySQL ships with a suite of command line tools for tasks such as querying the database, backing up data, inspecting status, performing common tasks such as creating a database, and many more.

2.3.2 Deployment MySQL

MySQL can be built and installed manually from source code, but this can be tedious so it is more commonly installed from a binary package unless special customizations are required.

It is still most commonly used in small to medium scale single server deployments, either as a component in a LAMP based web application or as a standalone database server. Much of MySQL's appeal originates in its relative simplicity and ease of use, which is enabled by an ecosystem of open source tools such as phpMyAdmin.

2.4 PHP and MySQL works together

PHP and MySQL work very well together. This dynamic partnership is what makes PHP and MySQL so attractive for web database applications development. Whether have database full of information that want to make the available to users(such as product catalog)or database waiting to be filled up by users(for example, a membership database), PHP and MySQL work together to implement the application.[4]

One of PHP's strongest features is its ability to interact with databases. It provides functions that make communicating with MySQL extremely simple .Use PHP functions to send SQL queries to the database. Do not to know the details of communicating with MySQL, PHP handle the details. Just need to know the SQL queries and how to use the PHP functions.

When time in a username and password, although it seems that had logging in to the phpMyAdmin, but actually not. The authentication systems are a function of the MySQL server. Merely using phpMyAdmin (which is running on the web server) as an interface that sends our username and password information to the MySQL server. Strictly speaking, it does not log in to phpMyAdmin, but through phpMyAdmin [4].

This is why phpMyAdmin is very useful interface, authentication are often referred back to their MySQL server's administrator, because a lost MySQL user or password is not really a phpMyAdmin problem.

2.4.1 Reason of choosing PHP/MySQL

All the languages supported by Dreamweaver are good, but it's a good idea to pick one and get to know it well. Once you have become proficient at one server-side language, can be find the transition to another a lot easier, because they share many elements in common. Strictly speaking, it is possible to mix different server-side technologies in the same website, as long as the server supports them. The hybrid in PHP was run the Web's most widely available server-side language MySQL is also reputed to be the most popular open source database because PHP is a server-side language, it needs to work in connection with a web server. More often than not, found that it in combination with Apache, the software that runs more than two out of every three web servers .Apache, PHP, and MySQL run on just about every operating system[4].

2.5 Macromedia Dreamweaver8



Figure 2.3: Dreamweaver Logo [5]

Dreamweaver is a powerful web page creation and web site management tool. It offers numerous, sophisticated functions that can be used to create professional quality web sites. Because of this, it's one of the most popular web authoring tools among web designers [6].

Dreamweaver also allows users to preview websites in locally installed web browsers. It provides transfer and synchronization features, the ability to