

THE IMPLEMENTATION OF RADIO FREQUENCY
IDENTIFICATION (RFID) TECHNOLOGY
IN A HOTEL INVOICE BILLING SYSTEM

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**THE APPLICATION OF RADIO FREQUENCY IDENTIFICATION (RFID)
TECHNOLOGY IN A HOTEL MANAGEMENT SYSTEM**

**By
Loh San San**

**A thesis submitted in partial fulfillment of
the requirements for the award of the degree of
Bachelor of Applied Science
(Physics, Electronics and Instrumentation)**

**DEPARTMENT OF PHYSICAL SCIENCES
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DECLARATION

I hereby declare that this thesis entitled “The Application of Radio Frequency Identification (RFID) Technology in a Hotel Management System” is the result of my own research except as cited in the references.

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THE APPLICATION OF RADIO FREQUENCY IDENTIFICATION (RFID) TECHNOLOGY IN A HOTEL MANAGEMENT SYSTEM

ABSTRACT

Radio Frequency Identification (RFID) is a tool that performs automatic collection of data, which are similar tools as bar codes and credit cards with magnetic stripes on them. The RFID technology can automatically gather data that might not be collected otherwise. Besides that, it is also capable in higher speed of operation. Consequently, RFID is used to improve system operations and solve several very complex and time-sensitive problem. In particular, a basic RFID system is composed of three parts: RFID tags, RFID readers, and processing software. In this paper, a hotel management system with the application of RFID is designed, developed, evaluated and optimized. The objective of the system is to enhance operational efficiency and make it shorter period for customers' waiting time for the billing processing. The main functions of the program are to detect the walk-in time or walk-out time and record the expenditure of customers. In fact, the hotel card is not only function as a key; it can also act as a payment card. Meanwhile, the programming software, such as C Language, My Sequence/Structured Query Language database (MySQL database) and Active Server Pages Web Net (ASP. Net) are learned and explored as to enhance the knowledge of software and hardware implementation during the research project. Hence, throughout this study, it is able to demonstrate the significance and benefits of using RFID technology specifically in the hotel management system.

APLIKASI IDENTIFIKASI FREKUENSI RADIO (RFID) TEKNOLOGI DALAM SATU SISTEM PENGURUSAN HOTEL

ABSTRAK

Identifikasi Frekuensi Radio (RFID) merupakan satu alat yang menjalankan pungutan data secara automatik, yang mana ianya juga menjalankan fungsi seperti kod bar dan juga kad kredit dengan jalur magnetic. Di samping itu, teknologi RFID juga boleh mendapatkan data yang tidak boleh dikumpul secara automatik. Selain itu, teknologi RFID berupaya beroperasi dengan kelajuan yang tinggi. Justeru, RFID mampu meningkatkan operasi sistem dengan menyelesaikan beberapa masalah yang rumit dan masalah berkaitan dengan pengurusan masa. Khususnya, satu asas sistem RFID digubah tiga bahagian: penanda-penanda RFID, pembaca-pembaca RFID, dan perisian pemprosesan. Dalam penyelidikan ini, satu sistem pengurusan hotel menggunakan aplikasi RFID telah direkabentuk, dikemaskini dan dinilai. Objektif sistem ini adalah untuk meningkatkan kecekapan operasi dan menjadikan tempoh masa memproses urusaniaga lebih singkat dan efisien. Fungsi-fungsi utama bagi program ini adalah untuk mengesan masa pelanggan masuk atau masa tinggal di samping mencatatkan perbelanjaan pelanggan. Oleh itu, kad hotel bukan hanya berfungsi sebagai kunci bilik, ianya juga bertindak sebagai kad bayaran. Sementara itu, perisian pengaturcaraan, seperti Pengaturcaraan C, Pengkalan data MySQL Dan Halaman Pelayan Aktif Jaringan (ASP.Net) dipelajari sebagai satu cara bagi meningkatkan pengetahuan perisian dan pelaksanaan perkakasan sepanjang projek penyelidikan. Sebagai kesimpulannya, kajian ini dapat membuktikan kepentingan dan faedah-faedah teknologi RFID khususnya dalam sistem pengurusan hotel.