Mobile Computing at Sultanah Bahiyah Library: Mapping Physical Book Rack Location Using Handheld Devices

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ABSTRACT

Handheld computers offer the flexibility and mobility to be "ready at hand" tools that can facilitate learning environment. This paper describes an experimental mobile rack locating application. It allows an intelligent way to assist the user of Sultanah Bahiyah Library at Universiti Utara Malaysia (UUM) to locate the exact location of the books by using the local call number using handheld devices. It presents the rack location using the mapping technique. The expert review has been conducted in the development process in finding the usability of the prototype application. A study on user has been conducted in finding how the application has assisting the user in finding books in the library.

ABSTRAK

"Handheld Computer" menawarkan ciri-ciri yang fleksibel dan mobil. Kebolehan seperti ini membolehkan ia dibawa ke mana-mana. Oleh ia menjadi sebahagian daripada pemangkin untuk meningkatkan kemudahan pembelajaran. Kertas kajian ini membincangkan eksperimen aplikasi carian rak buku. Aplikasi ini membantu pengguna-pengguna Perpustakaan Sultanah Bahiyah, Universiti Utara Malaysia (UUM) untuk mencari rak buku dengan lebih tepat dan cepat dengan menggunakan *"local call number"* sebagai input. Sesi temubual bersama pakar telah dijalankan untuk mendapatkan maklumat dan pandangan mereka mengenai aplikasi tersebut yang berkaitan kepenggunaan, terutama sekali dalam proses membangunkan aplikasi ini. Kajian terhadap pengguna juga telah dilaksanakan dalam usaha mengenalpasti samada aplikasi ini benar-benar dapat membantu pengguna-pengguna Perpustakaan Sultanah Bahiyah untuk membuat carian rak buku.

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LIST OF ABBREVIATIONS

PDAs	- Personal Digital Assistants
H/PC	- Handheld Personal Computer
Web-OPAC	- Web Online Public Access Catalogues
UUM	- Universiti Utara Malaysia
PCs	- Personal Computers
SA/SD	- Structured Analysis/Structured Designed
DFD	- Data Flow Diagrams
ERD	- Entity-Relationship Diagrams

CHAPTER 1

INTRODUCTION

Future computing environments promise to free the user from the constraints of stationary desktop computing, yet relatively few researcher are investigating what application maximally benefit from mobility (Abowd et al., 1997). Application for a mobile application should take advantage of contextual information, such as position, to offer greater service to the user. However, the majority emergences of an application and software are focusing on desktop computing systems.

Nowadays, small screen computing devices, such as a Personal Digital Assistants (PDAs), Handheld Personal Computer (H/PC) or cellular phones, enjoy enormous popularity. The phenomenal growth and rising demand as well as reliance of nomadic users to access Internet content anywhere at any time have further driven the future of computers towards to mobile and ubiquitous computing.

As demand for mobility and capability, especially in work and lifestyle increases, handheld devices have offered many types of application in fueling this convergence. Some of them are associates with other technologies to provide more constructive

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