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## **mTickets Booking Application Using J2ME**

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mTickets booking application using J2ME / Shuhaila Azidin

**SHUHAILA HJ AZIDIN**

**This report is submitted in partial fulfillment of the requirements for the Bachelor  
of Computer Science (Computer Networking)**

**FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY  
KOLEJ UNIVERSITI TEKNIKAL KEBANGSAAN MALAYSIA  
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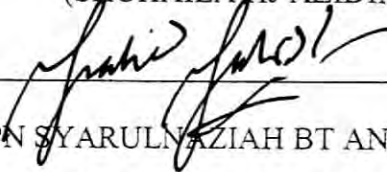
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## DEDICATION

To my God, Allah SWT

To my greatest idol, Rasulullah SAW

To my beloved parents, Hj Azidin Ismail and Jamaliah Shapie

To my family – brothers and sisters

To all my friends

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## ABSTRACT

The main objective of mTickets Booking Application is to fulfill the requirement of *Projek Sarjana Muda* in 26 weeks. The project will involve the m-commerce concept. M-commerce means transactions using wireless device and data connection which result in the transfer of value in exchange of information, service or goods. Mobile commerce is creating widely new opportunity both for mobile device and services. Nowadays, people can see the prospect of employing M-commerce into entertainment industry, the mTickets Booking Application was created to allow users booking the movie tickets through their Personal Digital Assistant (PDAs) or mobile phones so it could enhance the value of business. mTickets Booking Application is programmed using J2ME which is considered the powerful wireless programming technology. The entire problem that have been analyzed in the Project Planning and Analysis Requirement phase are applied the waterfall model as the method solution. All the information in the application is stored in a database that was developing by MySQL. The application is in English language firm as the main user requirement.

## ABSTRAK

*Objektif utama pembangunan aplikasi mTickets ialah untuk memenuhi keperluan bagi kursus Projek Sarjana Muda dalam tempoh 26 minggu. Projek ini melibatkan konsep m-commerce. M-commerce adalah transaksi menggunakan perkakasan tanpa wayar dan perhubungan data yang membolehkan pertukaran data dilakukan dengan baik. M-commerce membuka peluang yg luas kepada peralatan dan perkhidmatan telefon (mobile). Prospek M-commerce dapat dilihat dalam industri hiburan, jadi aplikasi mTickets dibangunkan untuk membenarkan pengguna menempah tiket wayang menggunakan "Personal Digital Assistant (PDA)" ataupun telefon mobile dan secara tidak langsung dapat meningkatkan nilai dalam perniagaan. Aplikasi mTickets diprogramkan menggunakan J2ME kerana ia merupakan teknologi program tanpa wayar yang baik. Masalah yang dikenalpasti akan dianalisa dalam fasa pertama kajian projek dan analisa keperluan system, dengan menggunakan pendekatan model air-terjun sebagai metod pembangunan projek. Semua rekod system ini akan disimpan di dalam pangkalan data MySQL. Sistem ini dibangunkan dalam Bahasa Inggeris sebagai bahasa interaksi utama antara pengguna.*

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**LIST OF ACRONYMS**

<b>ACRONYMS</b>	<b>FULL TERMS</b>
1. KUTKM	Kolej Universiti Teknikal Kebangsaan Malaysia
2. FTMK	Faculty of Information Communication Technology
3. SDLC	System Development Life Cycle
4. DFD	Data Flow Diagram
5. ERD	Entity Relationship Diagram
6. J2ME	Java 2 Micro Edition



## CHAPTER 1

### INTRODUCTION

#### 1.1 Overview

In recent year, the proliferation of mobile computing devices (laptop, handheld digital devices, personal digital assistants [PDA], and wearable computer) has driven a revolutionary change in the computing world. The nature of ubiquitous devices makes wireless network the easiest solution for their interconnection. This has led to rapid growth in the use of wireless technologies for the Local Area Network (LAN) environment. Mobile telecommunication emerged as a technological marvel allowing for access to personal and other services, devices, computation, and communication, in any place and at any time through effortless plug and play.

#### 1.2 Project Background

Mobile commerce is creating widely new opportunity both for mobile device and services. M-commerce means transactions using wireless device and data connection which result in the transfer of value in exchange of information, service or goods. Nowadays, people can see the prospect of employing M-commerce into entertainment and industry.

For this project the domain is on M-commerce worldwide. From the current issue, in year 2000, more than 10 million PDAs were sold. The most capable Personal Digital Assistants (PDAs) used today are more powerful than many of the desktop computers that were in just five short years ago. Their characteristics are small size, portable, and limited processing power. But, with the development of technology, the generation of power processing PDAs will be available soon. With the wireless technology, people can do everything on PDAs as they have done with the computers. There are certain of applications were written for this kind of devices but not many. For this project, an application was created called 'mTickets Booking' that allows users to book the movie tickets through mobile phone or PDAs.

Two key factors that are consider when decided to implement a wireless and mobile application.

**Usage:** How will the device or application are used? Usage and content determine the necessary complexity of the device, the level of security and reliability needed, and whether or not the application needs continuous, immediate access to data. This usage will be explained later.

**Amount of data:** How much data must be exchanged between the device and the central data repository? Is the data cumbersome, with intense bandwidth requirements? This factor determines which connectivity technologies would be the most fitting to use.

## 1.2 Problem Statement

Phones represent a new forum of money and ticket that will continue to reduce the importance of physical cash and paper tickets in the global economy. Paper tickets face slightly differently form of problem. They required some form of pick-up or delivery even when they are purchased online. Movie tickets also present a unique set of problems. For example after making reservation on a site, users either print out the

tickets or pick them at the movie theaters right before the movie starts. The former requires movie theaters to read the tickets, probably in the form of a bar code, with scanners. Below are some problem statements that can be state here:

i) Long line at tickets windows.

The ability to make reservation over the mobile Internet will have a dramatic effect on the world's cinema system. Most cinemas have long lines at their tickets windows, particularly in the weekend when people are in holiday. The ability to make or change their ticket reservations from their phones will enable user to make these changes while they are on their way to the cinema and thus avoid the wait in line. An additional benefit is lower personnel costs for cinema companies.

ii) Tickets sell out very quickly

Movie tickets present a unique set of problems. Allowing users to make these reservations on phones provides users with an additional amount of convenience. Not only will mobile services probably attract those people who prefer the mobile to PC Internet, it also accommodates those PC internet users who do not plan their entire day before they leave the house. These people can make their reservations while outside their home and then use their phone as a ticket.

iii) Difficult to get a good seat

The popularity of this application will probably depend on how crowded movie theaters (cinema) are. If people can get seats without making reservations, they will probably not bother with reservation. An alternative is to offer reserved seats and charge an additional fee for these seats. This would enable some people to arrive just before movie starts and still get a good seat.

## 1.4 Objectives

Movie Tickets Booking aims to provide a solution to this problem. The main objectives are:

### 1.4.1 To allow users to make reservation on phones

Allowing users to make these reservations on phones provides users with an additional amount of convenience. Not only will mobile services probably attract those people who prefer the mobile to PC Internet, it also accommodates those PC Internet users who do not plan their entire day before they leave the house. These people can make their reservations while outside their homes and then use their phone as a ticket.

### 1.4.2 To make use of wireless communication technologies combined with mobile computing.

This project combined wireless and mobile technologies, and shows how to apply these technologies in this project. This project is also to demonstrate how to build a complete end-to-end mobile commerce system for ordering movie tickets, using J2ME MIDP for a wireless front end and a J2EE application server and a relational database at the back end.

### 1.4.3 Security, scalability, and reliability issues

Studying how this application is designed and built to enhance understanding of the problems of mobile enterprise applications and their solutions.

## 1.5 Project Scopes

The scopes of mTickets Booking Application are defined as follows: -

### i) Users

Tickets Booking System application developed for this project is aimed specifically at user whose want to booking a movie tickets. This application can add value to the business of the customers. The system also can be study with detailed as fast as possible because the system provides the good environment society and user friendly. It is very understandable and flexible. As a user who uses this application, they don't have to worry of forgetting to bring along their tickets and waiting for a long queues. The system is suitable for all level of ages; either kids or parent can join the system.

### ii) System Functional

Movie tickets booking are end-to-end mobile commerce system for ordering movie tickets, using J2ME MIDP. The system has provided function like login interface, select city for movie tickets reservation, select movie listing online, select date and time, booking the tickets. The login interface offer for user to login the username and password to get access to the application. The system has provided with the latest article for movies.

## 1.6 Project Significance

Nowadays, wireless communication technologies combined with mobile computing. This combination make user get the benefit from the project especially for the people whose want to booking the tickets.

The world of wireless devices is expanding very fast. Ten percent of the world population now owns a cell phone and people looking at their PDA are a very common sight. Over forty percent of enterprise employees use mobile devices. Until recently this wireless world did not provide a generic and easy way to develop applications that could be used by all these devices.

Mobile communications were very expensive and therefore out of the reach of the average person. However, with the advancements made in the electronics industry and in particular, micro-electronics, handsets gradually became much smaller in size and as well as this they became much cheaper due to the mass production of the electronic components they are made up of. And as the uptake of these cheap handsets started to grow, the price of using them started to fall as well.

This huge growth of mobile handsets led to the mobile telecommunication operators developing and offering to the customer an ever-increasing number of services. And it is these services that make a project such as a Movie Tickets Booking possible.

This began with the development of small and lightweight laptop computers, up to the development of the modern Pocket PC. It was with the development of Pocket PC's that projects such as a Movie Tickets Booking became possible. Therefore by combining these two technologies (Mobile Communications and Portable Computing) we can design and develop a movie tickets booking project to accommodate the user's needs. The details of the design and development of such a project will be discussed later in the project.

Movie Tickets Booking was developed using J2ME because:

- Security (supports https protocol for e2e security)
- No gateways (lower costs, simpler testing)
- MIDlet GUI offers uniform behavior across devices

- Adopted by handset manufacturers and carriers globally
- “Write once, run everywhere”

On the other hand, J2ME are restricted by a simple principle that untrusted code be placed in a sandbox, where it can play safely without doing any damage to the real world. When a midlet or other piece of untrusted code is running in the sandbox, there are a number of restrictions on what it can do. The most obvious is that it has no access whatsoever to the local file system or system resources.

3G is the generic term used for the next generation of mobile communications systems. 3G systems will provide enhanced services to voice, text, and data but will be known for their high speeds and multimedia data services. As 3G becomes more widely available in the United States, home banking, ecommerce, and online trading applications will be modified for the mobile environment and videoconferencing. The wireless terminal will be the personal gateway to the world of voice, data, video, mobile Internet, and interactive multimedia communications.

## 1.7 Expected Output

The expected output from this project is in this mTicketing application, customers may perform the following functions using a mobile device:

- User can create an account with which they can sign on to the application.
- User can browse personalized listings of theaters, movies, and show times.
- User can book the ticket for the movie during the limitation time.

## 1.8 Conclusion

The chapter in this report follows a sequence that simplifies throughout the project stages. The next chapter will discuss the literature review of the wireless communication technologies combined with mobile computing, technology in enterprise network, and concentrating mainly in project environments. The following chapter will discuss the methodology or the stages that have been taken throughout the project. The next section will reveal the discussion and finding that have been obtained from the data and information gathered right through the project. The final chapter will discuss the significance or contribution, as well as the conclusion of this project.