

**DEVELOPMENT OF A PROTOTYPE FOR JOHORE TOURISM
INFORMATION SYSTEM IN WEB ENVIRONMENT**

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DEDICATION

*Dedicated to my beloved,
my parents, brothers, sisters and Soon ...*

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ABSTRACT

Tourism is an information-intensive industry in which its competitiveness today is increasingly determined by the ability to develop and assimilate innovative ways to respond to the dynamic nature of the tourism environment and its new paradigms to provide value-adding tourist services. The study aims to bring about the changes, development and better improvement to the current Johore tourism information system through the effective use of computer technology in terms of information management to provide both value and service to attract more tourists coming to Johore. Based on a use-case driven object-oriented system development methodology, a prototype of Johore Tourism Information System is built. The prototype built incorporates multimedia elements and provide a value-added service to the user based on the characteristic of Decision Support System in which it enable the potential tourist to adjust and access the information according to their own individual needs and can generate a customize trip plan based on the selected destination, budget, departure location and travel priority. The usability test on the prototype shown favourable result though much room for improvement has to be made in order to fully implement the idea proposed in this study.

ABSTRAK

Industri pelancongan merupakan suatu industri yang amat berorientasikan maklumat di mana daya saingnya semakin dipengaruhi oleh kemampuan atau keupayaan untuk menggunakan kaedah yang inovatif bagi menangani sifat industri pelancongan yang dinamik dan memberi perkhidmatan yang tambah-nilai kepada pelancong. Oleh yang demikian, projek ini bertujuan untuk mengkaji dan mengemukakan cadangan bagi meningkatkan lagi kecekapan pengurusan sistem maklumat pelancongan Johor yang sedia ada dan mencadangkan perkhidmatan yang tambah-nilai untuk menarik lebih ramai pelancongan datang ke Johor melalui penggunaan teknologi komputer yang terkini. Metodologi pembangunan sistem berorientasikan objek yang menggunakan pendekatan guna-kes telah digunakan dalam pembangunan prototaip untuk Sistem Maklumat Pelancongan Johor. Prototaip yang dibangunkan tersebut menggunakan unsur-unsur multimedia dan sistem bantuan keputusan untuk memberi perkhidmatan yang tambah-nilai kepada pelancong yang berpotensi untuk menyesuaikan dan mendapatkan maklumat yang diinginkan mengikut kehendak masing-masing. Pengguna akan berupaya untuk menghasilkan suatu perancangan lawatan yang mengambilkira perbelanjaan, keutamaan dan tempat bertolak serta tempat pilihan yang ingin dilawat. Secara keseluruhannya, ujian penggunaan terhadap prototaip yang dibangunkan menghasilkan keputusan yang memuaskan walaupun masih terdapat beberapa kelemahan yang perlu diperbaiki supaya idea yang dikemukakan dalam projek ini dapat diperkembangkan lagi.

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LIST OF ACRONYMS

ASP	-	Active Server Pages
CGI	-	Common Gateway Interface
CRS	-	Computer Reservation System
GDS	-	Global Distribution System
HTML	-	Hypertext Markup Language
MIS	-	Management Information System
DBMS	-	Database Management System
DMSP	-	Destination Management Service Provider
DSS	-	Decision Support System
IIS	-	Internet Information Services
IT	-	Information Technology
JSP	-	Java Server Pages
JTIS	-	Johore Tourism Information System
LSP	-	Lodging Service Provider
OOSE	-	Object-oriented Software Engineering
TPS	-	Transaction Processing System
TSP	-	Tourism Service Provider
TV	-	Television
WWW	-	World Wide Web
UML	-	Unified Modeling Language

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CHAPTER I

INTRODUCTION

1.1 Project Background Introduction

Tourism is one of the most important income sources for the nation. Malaysia, with its natural wonders as well as man-made attractions, has the edge to become a premier tourist destination in Asia despite fierce competition from neighboring countries. Latest reports indicated that tourist arrivals to Malaysia in 1999 has increased 42.9% to 7, 931, 149 persons compared to 5, 550, 748 in 1998 (Tourism Malaysia, 1999). This higher arrival of foreign tourists can be attributed to the aggressive campaigns undertaken by the government that had been in place in the last few years. The allocation for the development of the tourism industry has also been steadily increased in view of Malaysia's vast potential in the business. Indeed, tourism is a big business as it was already the third biggest foreign exchange earner in Malaysia, after the export of industrial goods and primary commodities (NEAC-MTEN, April 2000). Realizing this, the government is sparing no effort in promoting the tourism industry by granting various development and tax incentives to boost the sector, which is fast becoming a lucrative venture for local entrepreneurs.

As information is the life-blood of the travel industry (Sheldon, 1994), effective use of technology is fundamental to the tourism sector. In this new era of digital technology, there is a need for the tourism industry to evolve from the traditional way of operation to digital way of management. With the effective use of the computer technology, a computerized tourism system can increase the effectiveness of information management.

Hence, in this project, the study aims to bring about the changes, development and better improvement to the current Johore tourism system through the effective use of computer technology in terms of information management to provide both value and service to attract more tourists coming to Johore.

1.2 Background of The Problem

Tourism industry in Johore plays a vital role and carries heavy responsibilities which need to be given immediate attention. With the rapid development in the tourism industry in this country, Johore Department of Tourism has been given the authority and responsibilities to encourage and promote Johore as a popular tourists destination.

As tourism is a very information-intensive industry as in few other areas of activity, the generation, gathering, processing, application and communication of information are important for day-to-day operations as they are for the tourism industry (Poon, 1993).

For Johore Department of Tourism, generally, the current system is still being carried out manually and consumes a great deal of time and effort to get things done. Tourism information are updated annually to produce the product inventory book which consists of detailed information about the tourism sector in Johore. Besides producing the product inventory books, the department is also responsible for producing, designing and distributing the tourism brochures of the Johore state at every six months. In addition, Johore Department of Tourism is also promoting Johore through advertisement and electronic media, which include radio, TV and recently, the world wide web (WWW). The general current promotion strategies is shown in Figure 1.1

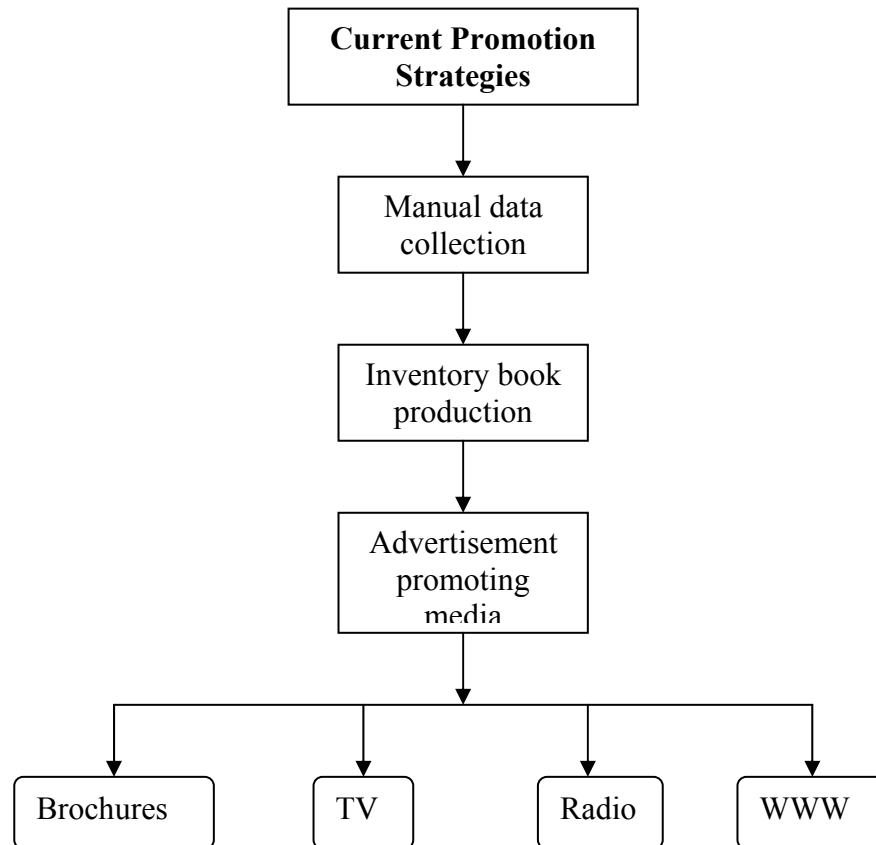


Figure 1.1: Current Promotion Strategies

Due to many problems and lack of efficiency in providing information, especially by traditional and manual methods, there is a need to develop a computerized tourism system to increase the efficiency of information management of the department. Furthermore, by utilizing the most advance technology offered by the Internet, a web-based tourism system is another alternative to stand alone computer based information system to provide high quality and accurate information to the worldwide tourist.

1.3 Statement of The Problem

Concluding from the background of the research problem, the whole scenario can be presented by the following main research question:

Can we develop a complete tourism system in the web environment that could increase the efficiency of information management of the current Johore Tourism system and provide a higher value-added service to the potential tourist?

By following the main research question, there are a few supporting research questions that need to be addressed:

- i) What improvement could be made to the current tourism information system managed by Johore Department of Tourism?
- ii) What are the possible solution to address or reduce the current problem faced by the department?
- iii) What type of value-added service can be provided to the tourist?
- iv) What methodology or approach should be followed for the development of the system?
- v) What features, in terms of content, are useful to a potential tourist visiting the tourism web site?

By adhering strictly to the main research question and the supporting research question listed above, an applicable solution to the problem would be produced, which would increase the efficiency of information management and provide value-added service to the potential tourist.

1.4 Objectives of Study

As a guideline to conduct this research, the objectives for this study are outlined as the following:

- i) To design and build a prototype for Johore Tourism System in the web environment in order to improve the efficiency of the current tourism information management system.
- ii) To design and build an online tourism guide consisting of multimedia

elements to promote Johore tourism

- iii) To develop a trip planner tool which incorporates decision support system characteristic to aid the potential tourist in direction for traveling in Johore.

1.5 Scope of Study

In order to be able to achieve the objectives stated above, the scope of the study is limited to the following:

- i) The study involves conducting research and analyzing the current operating tourism information management system managed by Johore Department of Tourism in order to identify and suggest improvement to the current tourism information system.
- ii) The study involves research on literature background regarding the Decision Support System (DSS), Management Information System (MIS), web-based application and tourism system.
- iii) The system is intended for the usage of potential tourist, management staff of the Johore Department of Tourism and tourism service provider including lodging and destination services provider.
- iv) The system is designed to involve the management and handling of the databases and also included the report generation by the management staff of Johore Department of Tourism.
- v) The system is designed to provide a value-added service based on the characteristic of Decision Support System in which it will able to provide the potential user to generate a customize trip plan based on their selected destination, departure location, and budget. This features targeted non-package tour tourist that has interest to travel and explore by themselves.
- vi) The study involves the requirement analysis, design, development and testing of the prototype to evaluate its usability.
- vii) The system is based on web-based application and built in the Windows environment.

By determining the scope of the study, the subsequent processes in developing the proposed system as the solution to the research problem would be more easier and has clearer defined boundary, which in turn act as a guideline in developing the system.

1.6 Theoretical Framework

Figure 1.2 illustrates the theoretical framework of this study which is consists of three layers: data sources layer, process structure layer and user layer. Each of these layer will describe as below:

i) Data Sources Layer

The data sources layer consists of two main components, which are tourism service provider and the Johore Department of Tourism acting as the destination marketing organization for the government. The tourism service provider included in this study is comprised of two categories, which are lodging provider and destination management services provider. The types of data input from these data sources are further discussed in Section 3.4 under Subject and Data Sources.

ii) Process Structure Layer

The process structure layer presents the structure of the system functionality on how the inputs from the data sources layer are being transformed into the desired output. By using interactive web forms to input data, the data are retrievable, structurized and updateable to the database. The updated data would provide the content to generate web pages from web page templates using a Hypertext Markup Language (HTML) page generator to generate the HTML code that form web pages. Most of the web pages are for navigation use only by the user layer according to their interest whereas the Trip Planner page enable the user to interact with the system by requesting the system to generate a trip plan based on their preferences which include destination, budget, types of accommodation and departure location.

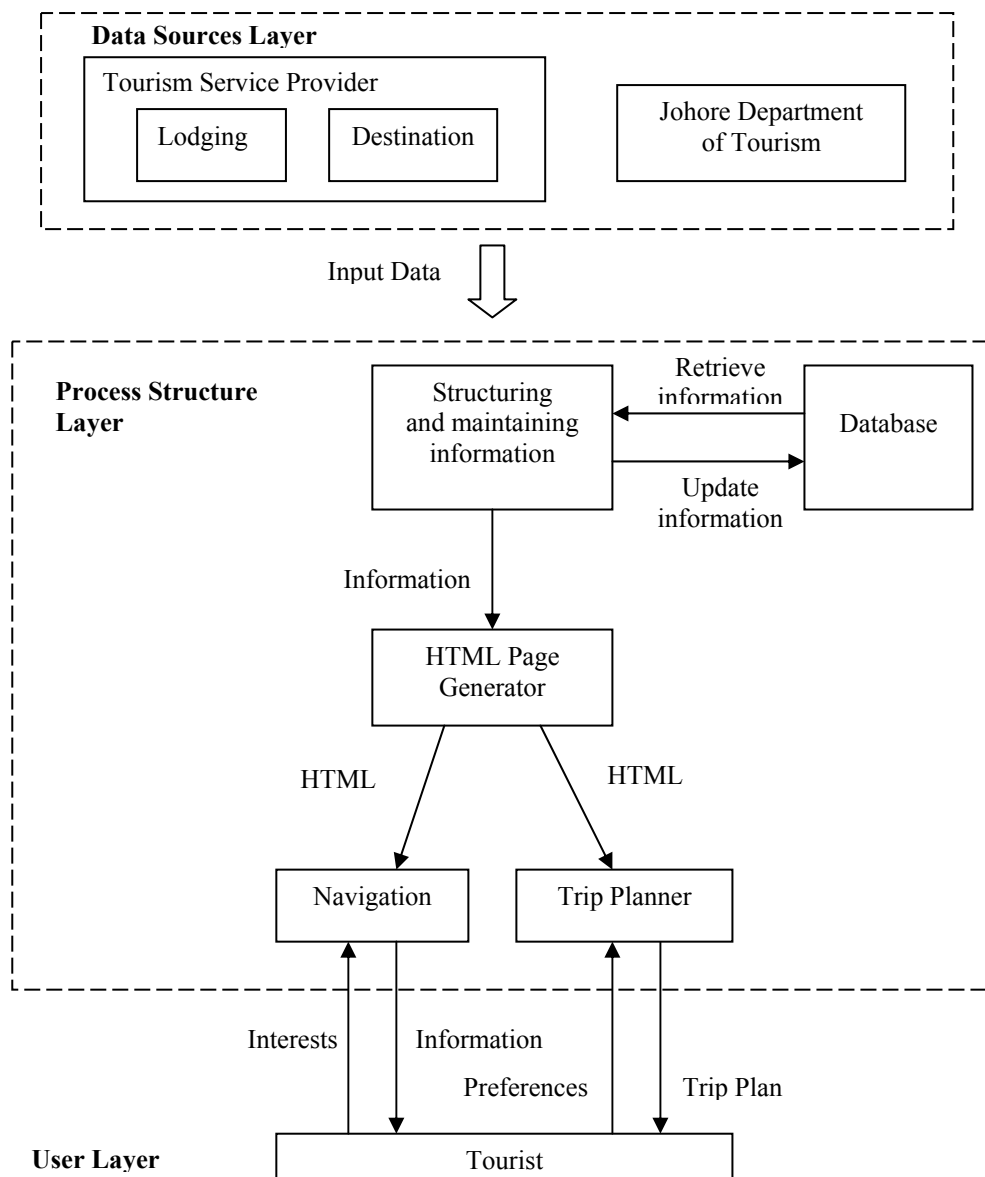


Figure 1.2: Theoretical Framework

iii) User Layer

The targeted user layer for this tourism information system is the public Internet user which might be the potential tourist of Johore.

1.7 Contribution of Study

This study intend to help and facilitate part of the management work by Johore Department of Tourism. An understanding on how the current system works to promote tourism in Johore is important in order to identify and suggest improvement that could be achieved by taking the full advantage of the computer technology. Generally, this research study tries to contribute to the following aspects:

- i) To facilitate, improve and thus reduce the cost of the information management system of the Johore Tourism Department.
- ii) To further promote the growth of tourism industry in Johore by implementing the web-based system to provide fast, accurate information and value-added service to the worldwide tourist.

1.8 Limitation of Study

For this study, the tourism system is designed to be as effective as it can be in terms of providing high quality of content to the web site user. However, due to time factor, only substantial amount of data will be collected for constructing and evaluating the usability of the prototype. Sources of data will be based on the fastest and most convenient method that is available. These include the sources from the Johore Department of Tourism and web sites of the tourism service provider involved. Hence, the actuality and reliability of the data collected might be affected, as real-time data have to rely on frequent update from the sector involved.

Another limitation of the study is the trip planner tool which will be developed in the proposed system can only cover certain departure location only within Johore due to time constraint and the compexity of the calculation algorithm if more departure location are allowed in the trip generation process.

1.9 Constraint of Study

In this study, there are few constraints that are unavoidable in developing the system. First, the constraint lies with the data security aspect. The detail of what exactly data collection required by Johore Department of Tourism are not being described fully. This might affect the usability of the proposed system as it is based on interpretation on the explanation and some documents to develop the system.

Another constraint lies with the department's objectives and functionality. For this study, the tourism system is designed to be as effective as it can be as a comprehensive tourism guide for the web site user. However, as to conform to the Johore Department of Tourism objective and functionality, the proposed system should act as the information provider on behalf of the state government only and does not include any commercial activity or business transaction. Besides, e-commerce in Malaysia has not reach its mature stage yet. Thus, what the proposed system can do is only to combine the information available and link them to the desired web sites that do provide such outstanding features for the interested user. However, another constraint do exist as to be an effective web site, it depends greatly on the respective tourism sector whether they could provide such powerful features such as online checking for availability and booking features for their prospective customer.

1.10 Report Organization

The organization of this report is mainly divided into nine chapters. Chapter One is the introduction to give an overall view of what this study is all about. This includes; the background of the problem, the statement of the problem, the objective and scope of the study, the theoretical framework of this research, the contribution, limitation and constraints of the study and terms of references used in this report.

Chapter Two of this report discusses the literature background concerning the design of the tourism information system. This includes; the background study

and review on Management Information System (MIS), Decision Support System (DSS), internet, web-based application, tourism system concept, and case study on existing tourism system.

Chapter Three, discusses the methodology of the research that will be used to develop the proposed system while Chapter Four will present and discuss about the analysis of the current system and based on the analysis, the architecture of the proposed system is constructed. Chapter Five will go into detail of the development process of the proposed system while Chapter Six discuss about the system implementation based on the design from Chapter Five. The testing of the proposed system, JTIS will be discussed under Chapter Seven while the second last chapter, Chapter Eight will present the discussion on the overall system development including its advantages, limitation and recommendations. Finally, Chapter Nine will concludes this study.

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