

Developing Integrated Tourism and Travel System in China

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Abstract

China has a lot of tourism objects. Tourist visits from year to year have increased. The government, especially the tourism office, needs to collaborate to maintain and increase the growth of the number of tourists visiting China. This study aims to integrate information services from other parties collaborating to support tourism activities. Related parties are the tourism office, hotel, travel & tour agent, and tourism destination. The integration of information is intended to facilitate access to information by tourists following their needs. Observations run at the tourism office and destination in three different locations to obtain the needed information in Beijing, Chengdu, and Guilin. Object-oriented modelling is used for system analysis and development. A prototype is developed, integrating information between tourism office, hotel, Travel & Tourism Agent, and tourism destination. With the integration of such information, each party will obtain a marketing benefit, income, and other benefits.

Keywords: social, networking, education, evaluation

I. INTRODUCTION

China tourism and hotel industry is segmented by Type of Tourism into Inbound Tourism and Outbound Tourism, and Hotel into Economy and Budget Hotels, Mid-Scale Hotels, Upper Scale Hotels, Premium, and Luxury Hotels and Others (Shared Living Spaces, Rented Apartments, Service Apartments, etc.). The report offers market size and forecasts for China's tourism and hotel industry in Value (USD million) for all the above segments

The tourism is one of the key contributing sectors to the China's economy and is largely dominated by the inbound tourism. The comprehensive contribution of China's tourism industry to the total Gross Domestic Product (GDP) has steadily increased over years. The overall contribution of the tourism industry to the total GDP is an important indicator of socio-economic development and industrial structure observation. In 2019, the comprehensive contribution of China's tourism industry to GDP was CNY 10.94 trillion,

accounting for 11.05% of the total GDP, reaching a record high since 2014 from 10.39% in 2014 to 11.05% in 2019. However, despite the increase in tourist arrivals, the occupancy rate of rooms in hotels also declined. In addition information from stakeholders between tourism office, hotel, travel & tourism agent and tourism destination has not seen any cooperation and collaboration in exchange and information integration. The intended collaboration is the integration or exchange of information from the tourism, hotels, travel & tourism agent and tourism destination. Such information is used on the website of each party [1].

1. Tourism

Tourism is travel for pleasure or business; also the theory and practice of touring, the business of attracting, accommodating, and entertaining tourists, and the business of operating tours. [2] The World Tourism Organization defines tourism more generally, in terms which go "beyond

the common perception of tourism as being limited to holiday activity only”, as people “traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure and not less than 24 hours, business and other purposes”. [3] Tourism can be domestic (within the traveler’s own country) or international, and international tourism has both incoming and outgoing implications on a country’s balance of payments.

A “web service” is a generic term for a software function hosted at an addressable network location. In this general sense, it can imply a Cloud-based service, a Utility service, or even a departmental application [4]. Web service concept articulated for three types:

SOAP (“Simple Object Access Protocol”) Is an exchange protocol used by independent applications from every platform, with XML language.

WSDL (“Web Services Description Language”) using XML format with methods.

UDDI (“Universal Description, Discovery, and Integration”) standardizes a solution of distributed Web service directory, the publication and the exploration allow.

However, the JSON community often uses a more general term when describing JSON-based services. JSON web services use the term in its generic sense. [5]

II. RESEARCH MODEL

System development is done by following the Waterfall stages of Software Development Life Cycle [6] there is an increasing demand for more rigorous and systematic approaches to develop security critical software systems across the globe. The complexity of the software system is rapidly raising due to the inclusion of properties like security and reliability. The process of software development complicates with the raising complexity of the software system. As a result, formal methods are currently used to model complex security critical systems. Literature reveals that formal methods can be applied at various points through the development process. Their tools can provide automated support, needed for checking completeness, traceability, verifiability, reusability and inconsistency management of requirement specification, which is the backbone of entire SDLC. Accordingly, there appears a need for a critical review of these formal methods. The

paper presents a brief discussion on various formal methods particularly Z-method, B-method, VDM, OBJ, Larch and Communicating Sequential Process etc. along with their strengths and weaknesses followed by a comparative study on the basis of the review results. The present research work may help the software developers to provide their recommendations for using formal methods at different stages of software development and particularly for requirements phase, based on the specific requirements of an organization.

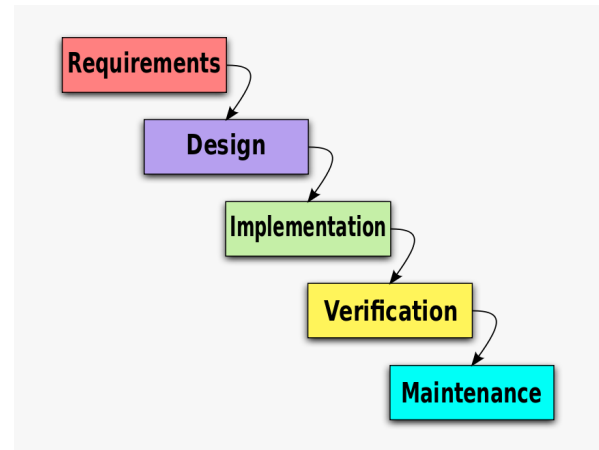


Figure 1. Waterfall system development

The waterfall model is a breakdown of project activities into linear sequential phases. Each phase depends on the deliverables of the previous one and corresponds to a specialization of tasks. The approach is typical for certain areas of engineering design. For example, software development tends to be among the less iterative and flexible methods, as progress flows in primarily one direction (“downwards” like a waterfall) through the phases of conception, initiation, analysis, design, construction, testing, deployment, and maintenance.

The waterfall development model originated in the manufacturing and construction industries, where the highly structured physical environments meant that design changes became prohibitively expensive much sooner in the development process. When first adopted software development, there were no recognized alternatives for knowledge-based creative work.

1. OOAD

Object-Oriented Analysis and Design are used to explain the system analysis and design used

in this research. The stages used in this study are Use Case, Use Case Diagram, Class Diagram, and User Interface.

2. Web Services

Web services are used in this research to integrate or collaborate data between the parties that collaborate.

3. JSON

JSON is used as a method of integrating data from one..

III. RESULTS AND DISCUSSION

The system design can be seen in Figure 2, as follow:

The use case in Figure 2 describes the actor who accesses the official tourism office website, where the data displayed in the website is information belonging to his own tourism office, as well as the information presented from the hotel, travel & tour agent, and tourism destination resulting from the integration and collaboration of information.

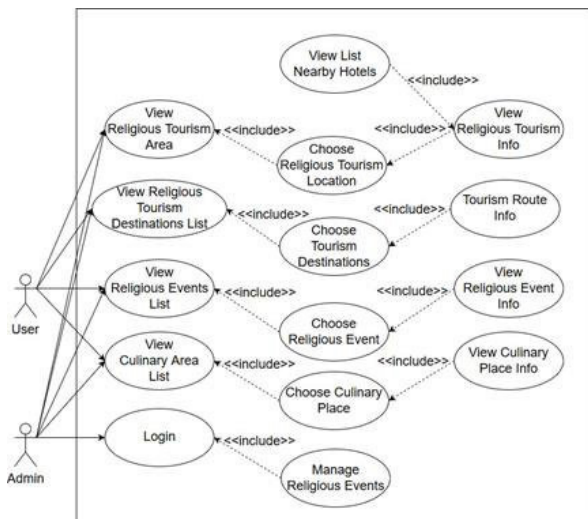


Figure 2. Use case diagram of travel agent

The use case in Figure 4 describes the actor who accesses the Travel & Tourism Agent website, where the data displayed in the website is information owned by Travel & Tourism Agent itself, as well as displaying information from the Office Tourism, Hotels and Tourism Destination in accordance with the results information Integration and collaboration..

The use case in Figure 3 describes the actor who accesses the Hotel website, where the data displayed on the website is owned by Hotel's own information, as well as displaying information from Office Tourism, Travel & Tourism Agent, and Tourism Destination in accordance with the results of integration and collaboration.

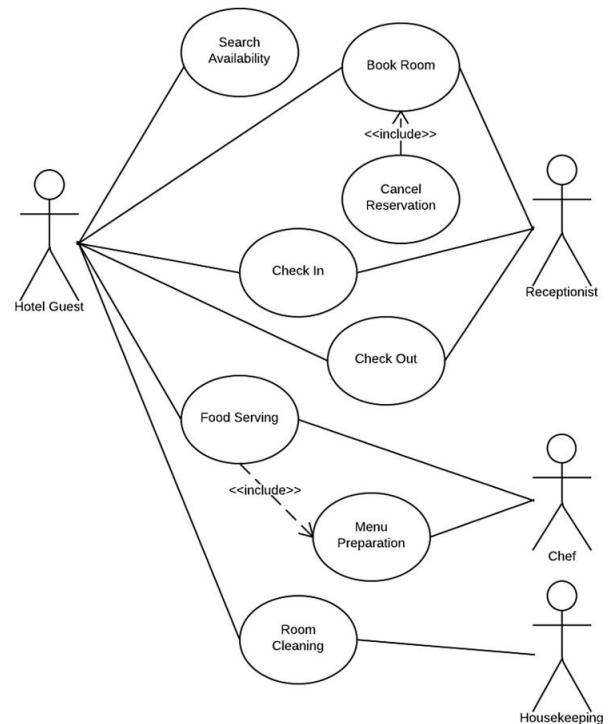


Figure 3. Use case diagram of hotel

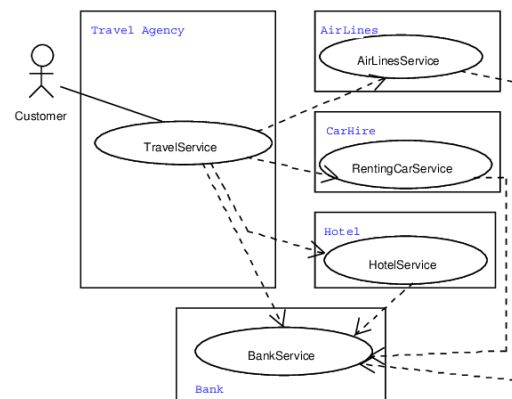


Fig. 4. Use case diagram of tourism destination

The use case in Figure 4 describes the actor who accesses the Tourism Destination website, where Tourism Destination itself owns the data displayed on the website, as well as displaying information from Office Tourism, Travel & Tourism Agent, and Hotels by the information of the integration result and collaboration.

IV. CONCLUSION

Integrated websites at the provincial level will make it easier for visitors to access information by choosing between office tourism, Hotels, Travel & Tourism agents, and Tourism destinations. Information from each party collaborating on rich information channels is very important to the visitors. It will help in terms of the marketing and promotion of each party [8]. The effective and efficient databases of the web need to be integrated based on their standard functions despite their supporting respective specific functions. Integrated data will always be synchronized every time visitors access the website to provide accurate and up-to-date information.

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