

The Design and Application of Digital Tourism Service System

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Abstract. In this paper, travel services rely on a travel service network platform, the system is divided into two parts. Foreground is based on personalized recommendation and divided into hotels, travel blog module, Special, theme planning, business travel, interactive community. The background is mainly to manage the entire site, including system updates, maintenance, membership management subsystem management, website information feedback, hotels and other sub-functions. The recommendation supports part mainly includes three parts, in fact personalized recommended module of data resource module, travel plans, travel information retrieval module data resource module is the latter two data support.

Introduction

With the economy boost and elevated living standards, tourism has become one of the major industries in China. On the other hand, the globalization of industries and economies has urged the national tourism industry to evolve in a world-wide environment. In such a situation, it is important to apply the information technology (IT) in tourism industry [1], to increase its sustainability and competitiveness. Moreover, integrating IT into tourism-oriented business leads to more efficient managements and reduced operating cost for service providers. It also contributes to better services for tourists.

People's living standards are getting better and better, the tourists become more and more mature. The personalized services are the target they pursue when traveling. More and more tourists prefer individual travel [2]. However, the mode of travel e-commerce services for the majority of tourists has exposed many problems and has been unable to meet customer demand. Therefore, be able to provide customers with personalized service tailored, new travel site came into being. Collect user data in order to achieve effective implementation of personalized recommendation is one of the key steps, user data, including the user's browsing behavior, operant behavior, purchase behavior, basic user information, such as through these data, the analysis of user interests grasp users to buy tendency, enabling personalized recommendations activities. [3] Therefore, under the network environment, tourism e-commerce website competitiveness imperative theories and methods to enhance personalized service, has a very important theoretical and practical significance.

Currently on the market a more mature map navigation system used by phone users is the local navigation map system. [4] Map data provider preprocessed the spatial map data to the user's own storage space in mobile phones, which have the advantages of fast response. However, as the phone's storage space and processing power is very limited, making a general analysis of functions and services should not be too complex, map data; the amount of information can not be too large, leading to a very limited application.

System design

In this thesis, based on the JSP and SQL server database technology to build a B/S type travel service platform, the tourism webpage uses DIV+CSS mode to undertake the page layout and planning, taking PHP as a client-side scripting language [5], using SQL server as the database user

information storage and analysis, completed the visitors to participate in the tour 's order, through online pay treasure and net realize the payment function, through a variety of technical research and development and application of completed a for tourists in any place, any time, any space can access and choose to travel routes, service, to provide a real-time, security, convenient, efficient travel service platform.

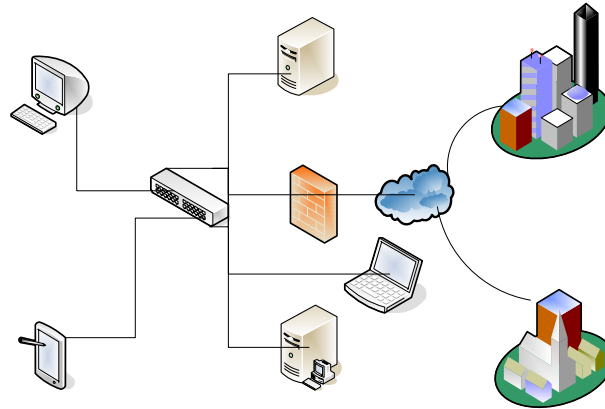


Fig. 1 The network topology of the system

The network topology of the system is shown in Fig. 1. Tourism Information System (TIS) presents the geographic information system applications in the tourism industry, is a multimedia network information system for the acquisition information, storage information, management, transmission information, analysis and application of geography of tourism information. Tourism Information System will be the tourism activities in a variety of spatial objects in digital format in the computer. It presents in its ability to effectively manage and display tourism geospatial information to provide accurate information to services for tourists to scenic spots to provide a platform for propaganda and provide decision support for management supporting.

At present, It is majority collaborative R&D model by the government in the domestic tourism geographic information system, generally invest and different style of administrative agencies to establish different levels of the system makes redundant construction serious; shorter system life cycle; focus on service management; ignore the system interactive. The more competitive tourism industry with the rapid development of tourism enterprises, the more difficulty to monitor and basic data for input work is complicated in the system information. Part of the system is shelved or even abandoned by many factors. Part of the interactive features of the system with running in short period of time and the format permission limitations, leads the information become the bottleneck of the development for updating in performance. Recently, tourism service recommends have about six aspects as shown in Fig. 2.

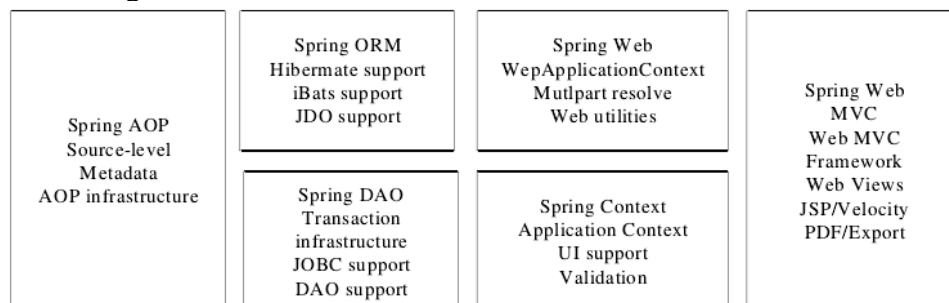


Fig. 2 Tourism service recommends

Part code of tourism service recommends:

```
from operator import itemgetter, attrgetter
```

```
from math import sqrt
```

```
def load_data():
```

```
    filename user movie='data/u.data'
```

```
    filename movieInfo='data/u.item'
```

```
    user movie={ }
```

```

for line in open(filename_user- movie):
    (userId, itemId, rating, timestamp)=line.strip().split('\t')
    user movie.setdefault(userId,{ })
    user movie[userId][itemId]=float(rating)
movies={ }
for line in open(filename_movieInfo):
    (movieId, movieTitle)=line. split(' I') [0:2]
    movies [movieId]=movieTitle
return user mome, momes
def average rating(user):
    average=0
    for a in user movie[user].keys():
        average+=user_ movie[user][u]
    average=average*1.0 / len(user_ movie[user].keys())
    return average
def calUserSim(user_ movie):
    #build inverse table for movie user
    movie— user={ }
    for ukey in user_ movie.keys():
        for mkey in user movie[ukey].keys():
            if mkey not in movie_ user:

```

All needs are spawned an online map services, navigation system, mobile phone research and development. Over the past two years, electronic technology, network technology, communication technology, computer technology, space information technology, there has been rapid development, especially the application of 3G and 4G networks proposal of the concept. Rapid popularity of smart phones, making the network transmission and terminal handling capacity have a substantial increase, the previous bottleneck was gradually diluted, real-time navigation mobile phone mapping service has also been a preliminary application. There are already people in advanced countries through mobile devices to access certain online geo-spatial data server but these servers can only provide a narrower range of map services, such as travel services, transportation management, and emergency services applications. These services are relatively easy to use, but its functionality and performance, both could be improved, especially in the map information of the personalization need to be greatly improved.

The realization of the system

This thesis designs and develops the tourist information system based on the B/S frame after the detail requirement analysis. The requirement analysis is to find the shortage of the existing system, aiming at these problems and the insufficiency the design and development of the tourist information system is more consequential. Finally, we develop the tourism information system based on the B/S model and the ASP.NET technology.

The feasibility analyses are necessary before the requirement analysis, such as the technical feasibility, the economic feasibility, the operation feasibility and the social feasibility. Then the general requirements analysis of the system and the analysis of the information data flow are given. At last we analyze are the non-functional requirements of the system, such as practicality, safety, reliability, maintainability and portability.

In the process of the system design and development, the overall design of the system are given, including the system network topology design, the system structure design and the software and hardware platform design, then we give the system more detailed function module design, including the scenery resource function module, the hotel resource function module, the restaurant resource t function module, the tourist fine function module and the users' information of the system function

module. At last system's database design and the important database table are given. For example, Fig. 4 is a process of tourism spots arrangement diagram.

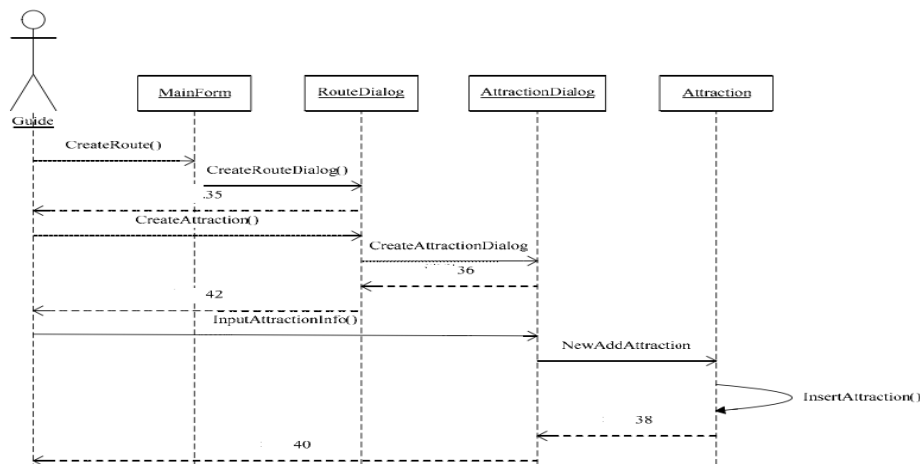


Fig. 4 Tourism spots arrangement diagram

In the development process of the travel information management system, we pay more attention to the new technology. The tools ASP.NET which Microsoft development and the tools SQL server 2008 database are selected. The database management based on B/S structure can make the software structure more reasonable and make the system more security, more maintainability, more reusability and more extensibility.

This research shows that: In content, the needs for personalized information service vary in different stage of travel. And the needs for personalized information service increase because of the mobile terminals characteristics such as interest, time, and location, especially obvious before and during the travel. In influence, factors: Social influence, Performance expectations, Efforts to expect, personalized scene factors, Individual creativity can positively influence factor Personalized needs of tourist information service on mobile, perceived risk can negatively influence the needs. The main contribution of this page is: It considered the timing, space based on the factors and content accuse to Personalized needs of tourist information service on mobile, established a service system by taking the user role and service role in construction

Conclusions

This topic based personalized recommendation technology, data layer and effective use of user operation data mining and discovery of user interest. Application layer, Business Package, user demand for travel developed hotel reservations, travel blog, and more. This system to meet the individual needs of the consumer, and provide personalized service.

Acknowledgements

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