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Construction and application of tourism traffic system based on geographic information system

Shuang Liu
Xinyang Vocational Technology College, Xinyang,464000,(CHINA)
E-mail: xiaoshuanger163@163.com

ABSTRACT

This paper explains the tourism traffic geographic information system and its main functions, and introduces the wide application of tourism geographic information system for transportation in the transportation industry from various aspects, carries on the prospect of development in the future. The tourist traffic geographic information system will promote the development of tourism industry has become a symbol of scientific and efficient traffic management. In the system design based on the principles of combining the existing data to construct the tourism transport, by which the planning management information system frame and function modules of the system could be detailed designed, tourism transport related to information system development and application can improve the optimization. Geographic information system is based on computer graphics, combined with the geography of Surveying and mapping, with the development of computer software and hardware, the ultimate development of global application, for example USA government enacted the information superhighway, digital earth strategy, are based on the geographic information system platform based! After the introduction of geographic information system in our country in the last century eighty's, the same is the rapid development, is widely used in the measurement of "forestry and fisheries" municipal transportation and many other industries.

KEYWORDS

Tourism traffic system; Geographic information system; Construction.

INTRODUCTION

Geographic information system has been brought by the staff of the "software" hardware "data and application of the model in several parts. For the operation of the main process of geographic information is divided into geographical data input and storage "output of geographic data operation and analysis and geographical information in three steps, the geographic information system to produce mainly experienced the development from the foundation period" exploit "consolidation period" breakthrough stage and five stage socialization. Analysis of regional planning information system as a decision-making tool in the planning department, analyze the regional achievements management planning and regional development space, plays an irreplaceable role. Tourism transportation is an important issue related to information system which can improve a site by including value-added features such as weather conditions, prices selected, updated exchange rates, destination issues links and other information things. In particular attention should be given to online tourism guest comments or survey forms for the demand of tourism transportation, result in adapting marketing mix variables to the information system related to tourism transportation. They are interdependent and mutually reinforcing, which made the continuous development of statistical information related to tourism development. Tourist traffic is that tourists achieve to move from one location to another location to reach the space transfer process, from the task to solve tourists, from the tourist attractions, as well as from various regions to provide direct or indirect transport services by the use of certain statistical information[1]. The products of statistical information related to tourism transportation, as well as transportation service cannot be stored, nor can they are divorced from production and consumption processes exist independently. But they can only be consumed in the production at the same time. Therefore, tourism transportation infrastructure must have information, and it can guarantee the normal tourist traffic through the effective means to ease tourists with information system. The data layer is the most basic component system, is the underlying database system, the main is to store and manage effectively on the basis of the attribute data and spatial data and basis of the planning result data, mainly through the Access, Excel and other database management and its attribute data, and associated with spatial data; function layer according to the management, visualization and analysis and drawing, sharing function needs to design a planning department; application layer top layer is mainly for the data statistics and analysis, drawing, application system which has the function of combining basic data layer analysis, get the decision-making, to promote the rational planning of tourism transportation system[2]. Tourism enterprises in order to save costs, will the car route optimization, this is one of the main functions of GIS, for the entire travel team go for plan, needs to carry on the statistical analysis of passenger flows, analyzing the changing situation, to develop the best plan.

LITERATURE REVIEWS

In order for a VGI-based strategy to be successful, it is necessary to stimulate the participation of people in the data collection process. To this end, we use a rewarding strategy based on a “do ut des”: users entering useful information gain free tourist services, e.g., archeological data, tips on excursions and tours, opinions and ratings from previous tourists[3]. The national government did not communicate information efficiently to the regional governments, providing information which seemed to support nuclear safety, whilst not clarifying its limitations and not providing information which presented nuclear power as a threat (NAIIC, 2012d and NAIIC, 2012d). In information science, studies of escalation theory have tended to concentrate on information systems failure, researching why people continue to escalate the amount of resources assigned to a project even when the likelihood of success is low (Drummond, 1999, Keil et al., 1994 and Keil et al., 2000). This paper explores the applicability of escalation theory to forms of information failure outside the scope of information systems and it aims to understand if information avoiding behaviors represented an escalation of commitment to maintaining the status quo within the statistical information related to tourism transport. Benefits of statistical information, in development and in reuse, are often predicated on identifying appropriate domain ontology, that are readily available to software developers for tourism enterprises. These can then guide tourism transport work product modeling and verification linked to statistical information. Ontology can also facilitate the interoperability of tourism enterprises’ products (service) and the continuing operation of a correct system[4]. For example, ontologism can be read by future users of a system, and as a joint development element with the tourists, they can be used to validate and improve the quality of tourism management products (service) during various phases of the development process. They can improve the outcome of various requirement engineering activities[5]. For example, they can improve elicitation by bridging common communication gaps between users and developers.

In modern society, the growth in transportation demand with statistical information is much faster than the growth of urban transport systems, as the resources available for expanding information system capacity remain limited. Therefore, it is necessary to plan and design an effective traffic network. It is, however, a well-known paradox that it is possible to make the network performance worse if traveler behaviors are not considered in the network design. Hence, describing choice behaviors is the basis of network design. This study has been carried out from the perspective of the tourism transport, by which it follows that an analysis of tourism information system from the perspective of tourism consumer demand is also

necessary for tourism transport, as well as a segmentation of website users to describe the characteristics of the target audience.

STUDY BASEMENT

Design of tourism traffic system

The GIS-T can provide the electronic map with rich information content, realize the visualization of data plus self induction coil, video, microwave, infrared and ultrasonic radar data detection means, traffic management department can be mastered easily traffic flow information of each section of the city, traffic peccancy and traffic accident information etc. Through the statistical tools and automatically generate the chart shows, to provide the necessary basis for decision making of travel agencies. The tourist traffic and transportation management of travel agencies can give full play to statistical information, advice, and supervision role based on the technology of statistical information, and the use of modern means of dealing with travel agencies, statistical information has become to be necessary. A complete statistical information-processing work process should include four stages: the statistical design based on statistical information with statistical surveys, statistical collation, statistical analysis and the development and application of statistical data. However, in terns of the current status quo of tourist traffic and transportation management of travel agencies, statistical work is busy with a variety of daily and monthly accounting login work, which not only can not take into account the statistical analysis and the development and application of statistical data, but also can not be convenient and efficient to transform the statistical data to the information of statistical data[6]. As the statistical tools of exploration and innovation are not enough, resulting in the timeliness of statistical information to provide with lagging lack of predictability, affecting the accuracy of decision-making, the main reason is the traditional means of information processing. Therefore, to liberate statisticians to be from the complex to the number of operations, more energy should be carried out to develop and use statistical analysis and statistical data to produce high-quality statistical products, and the application of computer technology for processing of statistical information is essential. The use of the role of System help module is administrators and ordinary users generally. See Figure.1:

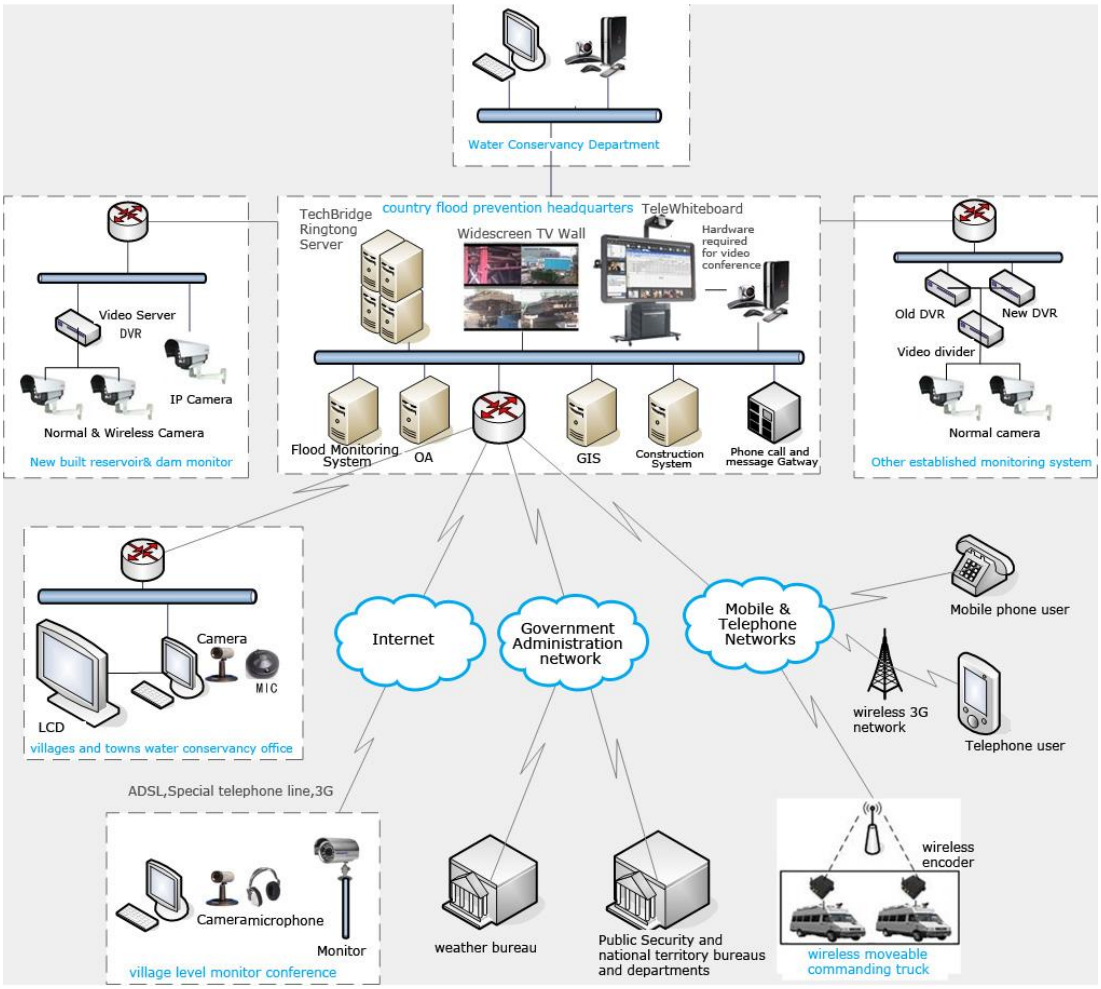

Figure 1 : Traffic accident information of GIS-T

Its function may provide equipment management system for the use of help, displaying system and its version number and other information in fact. System help module moves troops the CHM format document under the system path, which introduces the operating environment of this system and various sub-modules detailed instructions to enable new users to quickly operate the system.

Analysis of system function module

For the tourism and transportation industry, highway "railway and waterway traffic infrastructure needs is banded spatial data or linear spatial data, with the mature of GIS technology, the rapid development of data collection technology, traffic geographic information system in China is also gradually mature process in traffic industry will play a more important role! The various links in the traffic management, in different levels of administration management and government" design "is widely used in the corporate sector. System maintenance module allows keeping a backup of data sent to the hard disk storage. When the data are loss, the hard drive can restore the data after receiving the information[7]. System help module management includes document management, such as Inbox, Outbox, view of fax sent, trash, etc. Contacts and communication group mainly carry on the management for customer contacts and communications group to facilitate fax mass, and to improve work efficiency. The module includes adding contact information, modifying contact information, deleting contact information, newly creating communication group, modifying communication group, deleting the communication group and so on. Personal information setting is mainly to modify the personal information, which includes revising the password, changing contact and so on.

System database design

In view of the resources page shows all the Resources Planning Atlas nodes, this resource information can be displayed in the list of resources. In the resource list window, use of keywords or code query to find all kinds of resources in the list in different columns describe various resource which information, select a resource can delete, modify the resource information, at the same time in resource view and delete, modify the information resources in the view of resources[8]. Using the tools of ORACLE provided by the Enterprise Manager Console and PLSQR Developer is very convenient to design, develop, deploy and manage the database. The use of statistical information for tourism Enterprise Manager Console to design, develop, deploy and manage is of visualization. The statistical input information, statistics query information, tourism and transport sector information, user information, etc in database were stored in different tables. Among them, statistical input information table and so on. See Figure2:

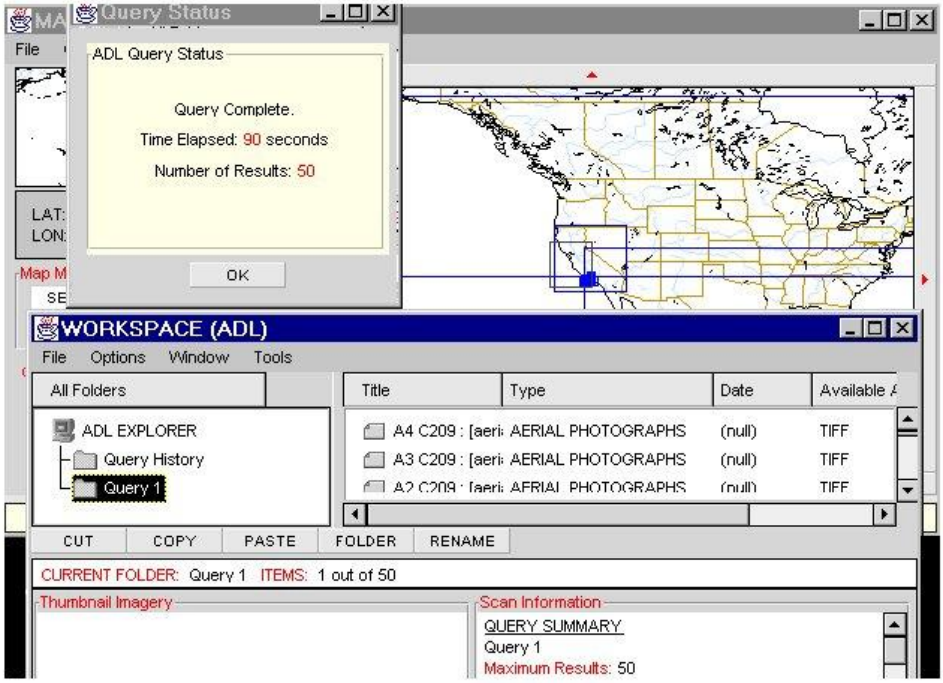

Figure 2: System database design with GIS-T

System Development Environment

In the map view page, according to the demand of map finishing, analysis and mapping; spatial distribution using the spatial query to find resources, find the region to highlight the flashing display, display the attribute information area, and to find the regional operation by scaling, can only display the search to regions[9]. Traditional server scripting languages, such as

statistical information and other information system, are embedded in the HTML code for the interpretation or implementation of methods to compile a script prepared by the server from the server platform to generate HTML by the implementation of these codes. The application of statistical information thoroughly broken this tradition, whose implementation has to go through translator-editor twice: from scripting language to MSIL (Microsoft Intermediate Language, Microsoft Intermediate Language) and from MSIL to machine code, getting rid of the interpreted language. It uses a structured web pages, through the Code Behind technology to enable separate the logical code and the performance code, by which the two codes do not affect each other[10]. The concept of server-side events is added in, changing the pattern of scripting languages to be closer to Windows programming. Planning analysis drawing module: it is the system of population, economy, society, natural environment, resources and other aspects, including maps, vector, images, pictures, such as grid format data display, analysis, mapping, is the system one of the core module. Mainly includes the map display, query, graphics and other functions. Map operation function mainly to form layers, such as topography, rivers, vegetation, soil and other factors, the system can on the displayed map coding series, finishing, including zoom, roaming, add legend, display scale; query function mainly through the spatial query and Expression Query (combination query, fuzzy query) to find out the attribute data or distribution; mapping function mainly from the repository read data (spatial data, statistical data), by symbol the system call layer element symbol library, which is based on statistical index data and geographical map, by calling the statistical mapping Wizard (histogram, pie chart, fan charts etc.), statistical selection structured symbols and graphics fields, using a different color and the parameters of the thematic mapping. See Figure3:

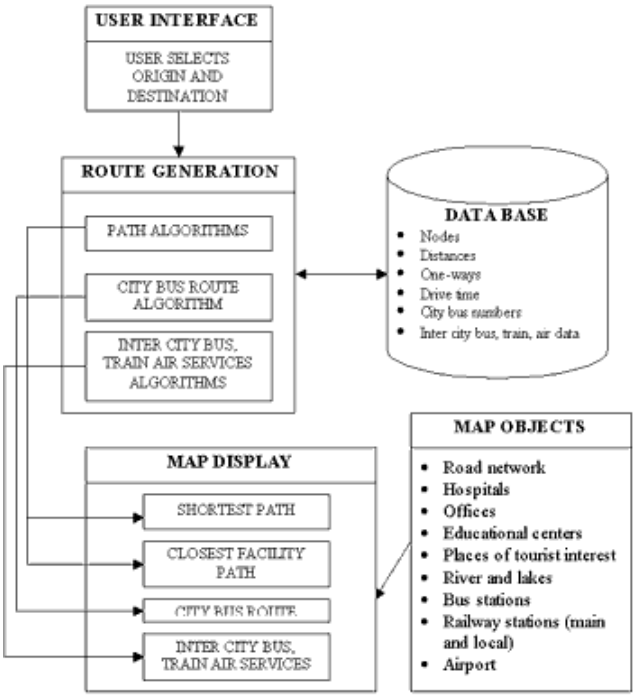

Figure 3 : System Development Environment with GIS-T

MODEL CONSTRUCTION

Authentication technology

Tourism transportation management information refers to the use of a variety of modern high technology will be all kinds of tourist transportation information from the collection, processing to provide service to the system, realize the sharing of resources has become the best operation and management of road transport, the development of intelligent road transport system (JTS) and lay for the new industry logistics industry base[11]. The tourist traffic management objective is through the implementation of the national road transport laws and policies to protect the industry management, as well as the legitimate rights and interests of legitimate business tourism enterprises and tourists to protect. To promote the development of tourism traffic industry, realize the smooth flow of goods suitable for the healthy development of the establishment of an open, competitive and orderly tourism market to promote the road transportation industry. The system utilizes a three-tier security model of user - role – module: the first layer is for the user, the second layer for role, and the third layer for module[12]. The relationships between users and roles, roles and the module permissions have been established, while the users and the module permissions have no direct relations. This model separates the system module permissions and users to make the role be as a middle layer. The relationship between users and roles is that a user can simultaneously belong to one or more of the roles and a role can also contain one or more users at the same time. Similarly, the relationship between roles and modules

are also the relationship of many to many and the role of the module can be set permissions to specific operations. Center city transportation management information system mainly includes the tally, Che Kwun, scheduling, finance, statistics, personnel, historical records and other functions. As the management information system, must make each substation network formation, by the implementation of unified regulation mode this station.

Themes and skin technology

The basic function of editing "drawing" respectively for the display and measurement of layer, is mainly to the attribute data and the spatial input "storage" Edit "drawing" spatial analysis for tourism traffic system. The editor can be added or deleted point "line" surface "change and establish their properties, but also can change their article with mapping function by which they can make the map, to display function can display the map, to display the comprehensive elements of geography, and they can zoom in and zoom out to show a different proportion of the level of detail for that area is measurement on the map[13]. The functions of statistical information themes and skin (including the master pages) are not only very easy to achieve a coherent style of the entire site, but also can be very easy to dynamically change the style of the entire site. Fortunately, the better news is that these features provide more consistent with the concept of software engineering, to make the project team collaboration be easier and more conventional in the website development process. The so-called “theme” refers to a collection of the appearance of the page and the appearance property of control settings. The expressed layer is the level of being direct to contact with customers, including the features, interface and so on which can seen directly. Logic layer focused on transaction processing, also known as the middle layer. The establishment of tourism traffic management information is the transportation system and decision management with computer and communication as the main means of multi-level, full-featured intelligent support system, with the help of the enterprise internal information network, collection, storage, retrieval, processing, analysis, the output of the transportation information management, scientific decision-making for each department of information management and service leadership. At present, it is the principles of design, tourism enterprise internal information network application system development principle[14]. According to the existing enterprise software environment hard, reasonable utilization of resources, using VB6.0 as the core platform, application development system, the backstage database uses the SQLServer2000 as the relational database system, to ensure the integrity of the tourist traffic information. The use of mature, advanced technology, convenient interface design flexible, component-based and object-oriented design.

CONCLUSIONS

Artificial information processing mode to realize network management model to replace the traditional, to modern means for tourist traffic related departments and their subordinate enterprises, subsidiary management departments of economic analysis, forecasting, decision-making and management of various information resources, effectively promote the development of the tourism industry and transportation industry. The tourist traffic information system will become part of the automobile transportation will be indispensable, to make full use of road resources, improve transport capacity, reduce transportation costs play a major role, and will become the core of highway transport daily command The system will improve the technical level of planning and management, provide a good platform for the planning and management departments, the relevant departments to promote the reasonable planning of the tourism transportation system and layout, to promote the sustainable development of travel industry, to lay a good foundation for planning. The use of this information, the managers can study transport statistics to reasonably accurately analysis tourist traffic and transportation, which become the key to success for monitoring tourist traffic and transportation of travel agencies and transportation. The statistical system reliability will be affected by other factors such as tourists’ demand and variation of travel time perceptions of suppliers.

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