

Using GIS in promoting tourism industry in the City of Kerman

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Extended abstract

Introduction

Given that, the tourism industry can play a significant role in the economy of any country, therefore, it can multiply the income generated by this industry through planning and providing tourists and travellers with easy access to tourist sites and service locations in any region or country. The necessity of paying attention to tourism and using modern technologies to expand it, and utilizing its numerous economic benefits for countries, research on the relationship between the expansion of information and communication technologies has made the development of tourism necessary. Using the technology of Web GIS eliminates constraints such as the lack of sharing of data and different information between centers, the lack of easy access to the information needed at different times and locations, and the problems associated with updating them in the database. This research has investigated the role of GIS and the use of its Web environments (Web GIS) for wider, faster, cheaper access of tourists and guiding them to tourism and service information in the city of Kerman.

Materials and methods

To inform tourists and respond to their different needs such as informing about recreational places, ancient sites, cultural and service centers of the city of Kerman, roads (streets), as well as the implementation of the analytical functions required by any user on the city's tourism map, such as searching for a place, question and answer from the related map (query), determining the best path, turning layer on and off, identifying the features, selecting, storing and printing parts of the map, in cooperation with the Statistics and Information technology Organization of Kerman municipality, designing and execution of WEB GIS system of tourism in the city of Kerman was carried out. The stages of performing this research for implementing and operating such system are as follows:

1. Collection, compilation and providing data, hardware and software required
2. Creating a GIS database
3. Drawing and preparing the required maps in GIS
4. Correction of maps using aerial photos, satellite images of the study area and GPS
5. Preparing and completing the description table of the required maps
6. Hyperlinking of data with relevant features
7. Drawing the final tourism map of Kerman city
8. Uploading the tourism map of Kerman city on the web and determining the access level of each user

Results and discussion

In this research, the existing maps, corrected aerial photographs with the scale of 1:5000 related to the year 2013, and satellite images and GPS were used to collect the recreational, historical, cultural, religious, service and the roads of Kerman city. After collecting the tourism features and identifying the type of GIS software (Arc GIS10.2), the required tourism data with an appropriate format for storing and designing the land-referenced database using the ArcSDE software was entered from the GIS environment into the created spatial database of SQL Server. After designing the database, maps of the features related to tourism of the study area were prepared and drawn in the GIS environment. In the tourist map, for better guidance of travelers and tourists, for all related features, an image of them in the GIS environment was attached to the related feature which is referred to as the Hyperlink. By moving the mouse over the features, and by clicking on the feature's area, the appendix which is attached will open the map. To facilitate the arrival of tourists and travelers to their destinations by the network analyses map, the streets map was edited first and then, the topology was determined for them and finally, the geometric network of the streets of Kerman was designed. Every tourist or traveler can, by specifying his/her origin and destination on the map, determine the route of reaching his/her destination with respect to the parameters such as traffic, the type of the street, etc., and chooses the shortest access path in terms of time on the map. Finally, to load the tourism map of Kerman city on the Web, the required software and hardware were prepared. With regard to the hardware, an appropriate server device and high-speed Internet lines were taken into consideration. Regarding the software, ArcGIS Server 9.3.1 and ArcGIS Desktop 10.2 were selected.

Conclusion

The most practical capabilities of the WebGIS in tourism that will cause the tourism development and more revenue for Kerman are the users' access to the spatial and descriptive information of the cultural heritage sites, optimal routing for visiting places, planning and proposing the best tourism tour in a given time, searching based on the descriptions and finding the nearest tourism facilities, connection to documents and management capabilities. The most important issues that led to the implementation of Kerman's tourism map Web GIS are the goals, the use and response to different requests of several users simultaneously. Presenting information in this way can provide a solution for distributing and disseminating data required on the Web and for public use. The advantages of using the Web GIS include online and updated access to maps and data via Internet connection, the possibility of printing maps of a location, and more.

Keywords: Spatial Information Systems, Web GIS, Geo Database, Arc GIS Server, Tourism Map