

A Web Based Geographical Information System Application: Seyyah*

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Abstract

In the transformation process of industrial society to information society, remarkable changes especially in information technologies area are experienced. In this concept, technologies interacts with information and interdisciplinary studies gain different dimensions. One of the most noticeable typical examples of these interdisciplinary studies emerged in geography and Geographical Information Systems (GIS) spawned with the relations between the sciences, geography and informatics. GIS compiling geographical information, storing it in its database and analyzing it according to users' needs has been recently moved to internet environment. Therefore, people introduced with Web - Based Geographical Information Systems (WebGIS).

The aim of this study is to introduce Seyyah, a self- developed WebGIS application. Seyyah was designed to be used in especially elementary and high school instruction activities. High-resolution vectorial maps were used in the Seyyah, and extra features such as zooming and dragging with mouse by adding JavaScript codes to these maps were added. Then, the windows containing aimed topics over dynamic maps were opened and map keys were constructed. These information windows were directly connected to the database with the programming language, Active Server Pages.

Keywords: Seyyah, GIS, Web - Based GIS, Information Technologies, Mapping Technologies.

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Extended Summary

Having information and effective use of it have great importance in the transformation process of information society. Then, information technologies like Geographical Information Systems (GIS) come into prominence today. GIS is an information technology used for the analysis with visual and analytic tools by being processed location-based data, and enables its users to utilize knowledge with interaction. Developments in internet and web technologies have provided new dimensions to the use of location based knowledge. With the widespread use of internet and developing GIS technologies, web-based geographical information systems (WebGIS) were created. This technology has enabled researchers to collect, store and analyse data, and presents obtained output to its users through internet.

The aim of this study is to demonstrate Seyyah which is a WebGIS application developed by the researchers. WebGIS can be used as an educational tool and as an environment where students restructure knowledge with well-planned learning activities. In addition, students' learning new things by sharing their knowledge with others and interacting with each other is parallel to the philosophy of constructivist approach. Seyyah application has been designed especially for the use of secondary and high school instruction activities.

Adobe Fireworks CS4 (FW) and Adobe PhotoShop CS4 (PS) Extended programs have been used in the graphical user interface (GUI) design of Seyyah. Initially map navigation has been designed in the design process. Additionally a status bar has been added to Seyyah. Main functions of the status bar are to show a location on the map and to control the data windows. A lejtant which can be opened with an appearing window has been added to this menu. Functional zones in the map navigation and the status bar have been coded with JavaScript (JS) at Adobe Dreamweaver CS 4 (DW) and the functions have been run. DIV layers from HTML codes used for Seyyah have been used as raster. Therefore, the zone where map presentation of Seyyah is shown has been created with DIV layers.

Most of Seyyah's functions have been formed by coding with JS. The connection of Seyyah's dynamic content with the database has been conducted with ADOdb open database connection. To supply this database connection, the codes have been made with Active Server Pages (ASP). In addition, making changes on the observable data and adding media to the data have been conducted with ASP language. The database include student info, user name and passwords, contact information, ID numbers belonging to the data and the columns where information will reconstructed according to the data zones.

Seyyah has been featured on URL <http://www.cbsuygulama.com>. To enter the system, one needs to be signed as a defined user. The user accessing Seyyah can see his/her activity on the data panel. This info is stored in database. Besides, a search engine has been added to Seyyah which allows its users to search in the system. System does not require an add-on (plug-in). A computer connected to internet is enough for the use of Seyyah. Seyyah's database is open and easily accessible to everyone registered to the system.

Seyyah has been designed as a suitable tool for teaching a variety of subjects to students in different education levels and different lesson curricula. Besides, it can

be developed in the future. Then, its usage area can be expanded with desire. The system has been tested by the researchers and it is discovered that it effected students' academic achievement in educational setting positively. In addition, it improved students' learning with its easy use of extracurricular activities. Seyyah application can be used for educational purposes in schools which have appropriate technical infrastructure. According to the researchers' observation, even primary school students can use the application without any difficulty.

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References

- Akkoyunlu, B., Altun, A. & Soylu, M. Y. (2008) *Öğretim tasarımı* (1. bs.). Ankara: Maya Akademi.
- Aktaş, Ö. (2005). Grafik tasarım ürünlerinde anlamın kurgulanışı olarak nesnenin dönüştürülmesi, Yüksek Lisans Tezi, Adana.
- Alkan, R. M, Kalkan, Y., İpbüker C. & Yanalan M. (2003). İnternet ortamında coğrafi bilgi sistemi uygulaması: web-tabanlı haliç bilgi sistemi (WHBS), *TUJK 2003 Yılı Bilimsel Toplantısı, Coğrafi Bilgi Sistemleri ve Jeodezik Ağlar Çalıştayı, 24-25-26 Eylül 2003 Konya*, s.146 – 154.
- Aras, İ. & Yıldız, F. (2011). İnternet tabanlı CBS'nin sivil ve askerî amaçlı acil durum uygulamalarında kullanılmasında yeni bir yaklaşım, *Harita Dergisi*, 145, s.38-51.
- Arkün, S., Baş, T., Avcı, Ü., Çevik, V. & Gürcan, T. (2009). Addie tasarım modeline göre web tabanlı bir öğrenme ortamı geliştirilmesi, *Eğitimin Değişen Yüzü: Yeni Paradigmalar 25.Yıl Konferansı, 14 Mart, Ankara*.
- Aydınoğlu, A., Ç. (2003). İnternet tabanlı CBS uygulaması: Trabzon ili örneği, *IX. Türkiye Harita Bilimsel ve Teknik Kurultayı*, s.305-314, Ankara.
- Aydınoğlu, A., Ç. ve Yomralıoğlu T. (2003). E-belediyeler için internet tabanlı harita hizmetleri, *E-Belediyecilik ve E-Mühendislik 2. Ulusal Kongresi*, Ankara.
- Ceyhan, B. Y. & Yerci, M. (2005). İnternet tabanlı coğrafi bilgi sistemleri ile kartografik üretimin kontrol ve yönetimi, *Harita Dergisi*, 134, s.38-51.
- Düz, N. (2001). *Kitap kapağı'nda grafik tasarım öğelerine ve ilkelerine kuramsal bir yaklaşım*, Yüksek Lisans Tezi, Isparta.
- Erbaş, M. & Alkış, Z. (2005). Web tabanlı veri düzenleme ve etkileşimli harita sunumu uygulaması, *Harita Dergisi*, 133, s.43-52.
- <http://wikipedia.org>. (2012). Erişim tarihi: 03.12.2012, 09:57
- <http://www.adobe.com>. (2012). Erişim tarihi: 01.12.2012, 13.32
- İneç, Z. F. (2012). *Sosyal bilgiler eğitiminde internet tabanlı CBS uygulaması*, Yüksek Lisans Tezi, Erzincan.
- İz Bölükoğlu, H. (2004). Eğitim fakültelerinde grafik tasarım eğitiminde bilgisayar kullanımının değerlendirilmesi, *TOJET (The Turkish Online Journal Of Education Technology) Dergisi*, 3(2), 142-148.
- Kantar, F. (2003). *İnternet tabanlı coğrafi bilgi sistemleri*, YTU Yüksek Lisans Bitirme Tezi, İstanbul.
- Köktürk, E. (2003). Coğrafi bilgi sistemi (CBS) ne değildir? *TUJK Bilimsel Toplantısı, Coğrafi Bilgi Sistemleri ve Jeodezik Ağlar Çalıştayı*. 55-68, Konya.
- Lai, J., Luo, J. & Zhang, M. (2012). Design and realization of the intangible cultural heritage information management system bades on web map service.

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605 – 612.

Nair, S. S. (2011). Web enabled open source gis based tourist information system for bhopal city. *International Journal of Engineering Science and Technology.* 3(2), 1457 – 1466.

Şaşan, H.H. (2002). Yapılandırmacı öğrenme, *Yaşadıkça Eğitim.* 74-75, 49-52.