

DEVELOPMENT OF A GIS BASED WEB SITE USING OPEN SOURCE SOFTWARE: CASE STUDY COLOMBO DISTRICT

Nadee Tharangani Ranchagodage

Postgraduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka

WebGIS (Web Geographic Information Systems), is a result of combining GIS with internet technology. A user receives spatially referenced geographical information in an interactive web viewer. It facilitates viewing, analyzing, digitizing of spatial data on a web browser. Though there are popular web mapping applications in other countries, in the Sri Lankan context it has been very limited.

This research project reported here has developed a simple, user friendly GIS based web site for town information using open source software such as ms4w (mapserver for windows), mapbender, PostgreSQL and geoserver. Map server for windows was used as both the web server and the mapserver, whereas mapbender was used to develop the user interface. Backend software are Geoserver and PostgreSQL. PostgreSQL was used as the database engine which was supported with the PostGIS spatial extension.

The web site is capable of retrieving, analyzing, searching, querying and adding of spatial data. Users can have separate accounts which they can log in to and each user can have their own maps. If users forget an email, it will be sent to user's email address given in the database. Map interface is having zooming, panning, measuring distance and many other tools.

A pilot project was implemented using 1:250,000 data from the survey department. Mainly used spatial data were divisional secretariats divisions (DSD), districts, roads, railways, towns and cities. Any user can be logged in to system and will be able to find locations based on city, district, and town or without querying.

In the designing process of this web site, several user levels were created. Possible user levels are administrative users, power users and normal users. Administrative users will be capable of granting privileges to other users. Normal users will be capable of create user, view information and digitizing.

This web site was tested with five users to check the functionality, usability, interface, compatibility, performance and security of the web site. The results showed that a high percentage of participants selected positive answers for each question in the questionnaire (equal to or more than 60%) confirming that the usability of the web site was quite satisfactory.

Many of the web based GIS applications have been developed using open source software in the world. But, in Sri Lanka there is no such system implemented as at now. Since the cost of buying GIS software is very high, the open source architecture is most suitable for a country like Sri Lanka.