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1 Abstract

This project focuses on the development of a web-based tool for creating contours of spatial data such as cities, shores, lakes, rivers, basins, wetlands, forests, etc. These contours are crucial for storing and organizing data associated to a region, allowing greater search capabilities of the spatial data.

2 Problem Formulation

There is a lack of tools on the web that can help researchers deal with images of geographical areas of their particular interest. They usually need to rely on previous knowledge of the image such as coordinates or where the images are stored. This task could be greatly improved if the researcher is able to delineate a region of interest and used it as reference to search images that are associated to that region. Tools providing such functionality are almost none existent on the Internet. In order to have this functionality, one needs to rely on a commercial applications that don't run on the web.

3 Proposed Solution

Our tool will help create contours maps of specific areas, classify them in geographical categories, and save them on a database. These contour maps can then be used as reference for searching images corresponding that region.

On the proposed application the contour maps can be generated using an image of a region as background. The user can then use the application tools to create vectors and/or polygons that surround the region of interest creating the desired contour map. This map can then be given a unique name and saved on a database using geographical region classifications.



Advantages:

The tool currently being developed has the following advantages:

- It will facilitate the search of images corresponding to a sector or region of interest.
- There is no need to remember the coordinates to find images of a region of interest.
- The tool will be freely available to users throughout the Internet so that they can make the tool part of their own projects.

4 Current Work

Implement an application for capturing contours of a region using a prototype of the user interface. This application will use image spatial data of a region to capture contours of a region and let the users identify the different sectors of the region.

All the information gathered will be stored inside a database for later retrieval and will allow the investigators to choose different map backgrounds of an area while they have the option of identifying multiple regions inside the images.

5 Current Work Tools and Demo

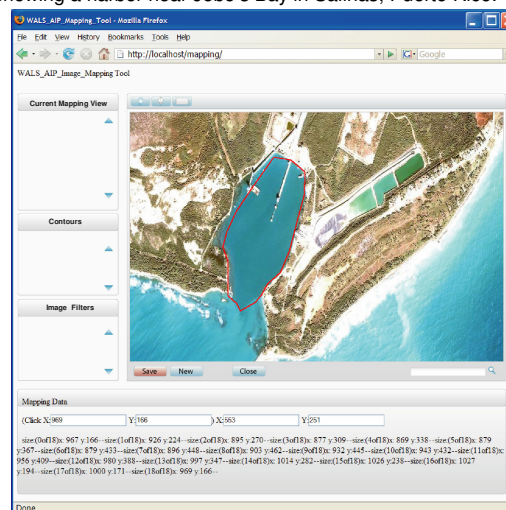
Ajax | Web 2.0 tools:

Ajax is part of the Web 2.0's enhanced World Wide Web. A method of delivering applications entirely through a Web browser by creating Web pages using different methods of design, more user friendly than before. The following are tools used to create our Web 2.0 application for creating contours of spatial data.

- Web Service**
 - Apache HTTP Server
 - HTML (Hyper Text Markup Language)
 - CSS (Cascade Style Sheets)
- Database**
 - MySQL®
- Programming**
 - JavaScript
 - PHP: HyperText Preprocessor with Zend Optimizer

Demo of the application:

The following image is a running demo of the current work with a spatial data showing a harbor near Jobo's Bay in Salinas, Puerto Rico.



6 Future Work

Provide functionality to the information boxes on the left of the user interface.

Accomplish automatic generation of contour maps.

Run usability heuristics to the user interface of the tool through the whole design process. User testing will be conducted after the design is completed to validate it.

7 References

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