# Library Lab
Atlas Viewer Project: Final Report

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Project Summary

The Atlas Viewer project set out to develop a way to explore the Harvard Library's geographic materials spatially, rather than page by page. Before development of the Atlas Viewer, the only way to peruse an atlas that had been digitized was using the Page Delivery Service one page at a time. Atlases are usually explored the same way maps are, geographically, moving from one page to the next based on direction not page order, and the Atlas Viewer provides patrons with that capability on-line.
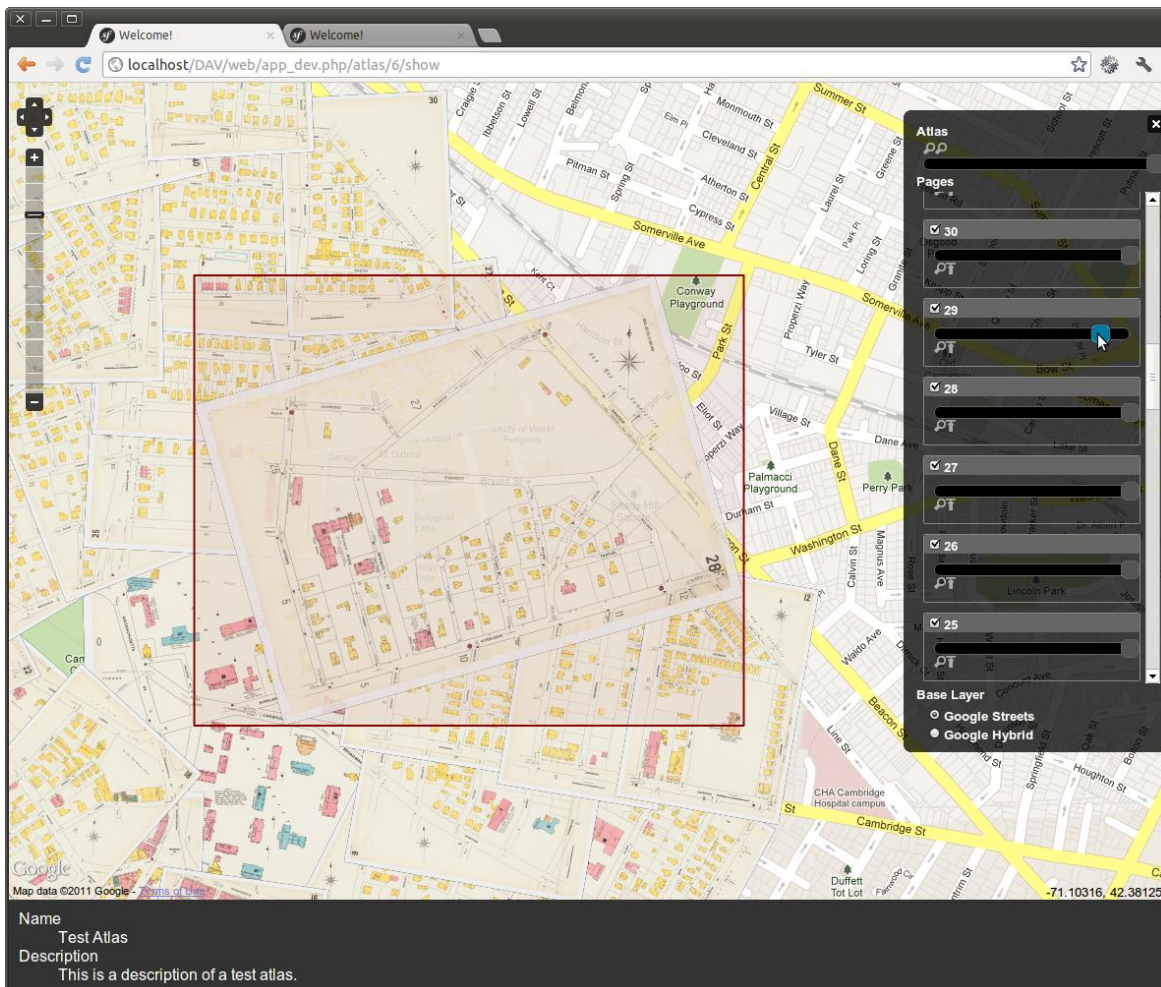
The application takes a set of images of pages from an atlas and displays those pages in their proper geographic location on top of a base map similar to Google Maps. To do this, each image must have an accompanying file called a world file that contains the geo-referencing information that puts it in the right place, at the right size and rotated so that north is up - location, scale and orientation. These images and world files are routinely created by the Map Collection as part of normal workflows, but we lacked a simple and intuitive way to display them.

An open source web mapping application, GeoServer, is the back end that allows the images to be displayed in this way, and uses another open source package, OpenLayers as the front end. OpenLayers provides the code that allows connections to various base maps (Google, Yahoo, Open Street Map) and manages the map navigation (pan, zoom, layers on and off). A developer from the Berkman Center configured the different packages and created a customized front end specific to this project.

An administrative interface is also included in the Atlas Viewer that allows a curator to submit the set of images that makes up an atlas. It also has functionality for making customizations to the application for each atlas, such as a link to the bibliographic record.

Accomplishments
During this project we created a working prototype viewer that meets all of the goals set out in the original proposal. The Atlas Viewer can display the pages of an atlas in a georeferenced way, and allows the user to navigate through those pages spatially. The interface has familiar looking tools and is intuitive to use. There is a method in place to allow the curator to add new atlases to the viewers and there is a workflow set up for doing this and adding links to HOLLIS records so the viewer will be findable.

Developing the application required a great deal of research into available geospatial tools that would hopefully be useful in future projects.

Challenges
Originally, we hoped to be able to build the Atlas Viewer on top of an existing platform called OpenGeoPortal, as it appeared to be the best choice given the requirements of the project. This approach ran into challenges with performance issues regarding the retrieval of multiple images at the same time. The response time was not within acceptable parameters and we had to eliminate the OGP programming layer from the application. This gave us large performance gains, and allowed for a bit more design freedom, but is not without its drawbacks.

Eliminating OGP limits our ability to utilize the images stored on the Harvard Geospatial Library server. Many of the atlases scanned by the Harvard Map Collection are included in HGL and exist on that server. As a prototype, the Atlas Viewer doesn't access those images, and instead is

looking for its own images and world files. The resulting duplication is not ideal and leads to additional administrative challenges, not least of which is the challenge of where to host the application.

Next Steps
The next step for this project is to create and publicize more "instances" of atlases and watch the response. Issues of hosting and space are still to be resolved before the prototype will be truly operable.

 The OGP team is aware of the performance issues and is working to resolve them. When the performance is improved, it would be ideal to reintegrate the two applications so that the Atlas Viewer could directly access the images as they already exist. The code for the Atlas Viewer could be rolled into the OpenGeoportal project and distributed to any interested organizations.

Budget
Total development hours: 117.60
Total development cost (salary, benefits, overhead, and administration): $14,527.38

Publicity
The Atlas Viewer prototype was demonstrated at the Library Lab showcase in October.