Developing a 3D Interactive Model of the PCL Map Room

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Wayfinding

1189 drawers of maps
19 different types of maps and call numbers
Printed stack guide
Map of the Map Room
Many patrons visit on weekends
# Guide to the PCL Map Collections

<table>
<thead>
<tr>
<th>DRAWER</th>
<th>COUNTRY/REGION</th>
<th>CALL NUMBER</th>
<th>GAZETTEERS AVAILABLE</th>
<th>SEE/SEE ALSO</th>
<th>ALSO IN THESE MAP SETS</th>
</tr>
</thead>
<tbody>
<tr>
<td>301</td>
<td>Greece</td>
<td>G 6810</td>
<td>DF 714 US 1955</td>
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<td>G 3200 G700 G71</td>
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<td>G 5700 G70 G7</td>
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<td>G 6800 G250 G71</td>
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<tr>
<td>410</td>
<td>Green Islands</td>
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<td>Papua New Guinea</td>
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<td>Solomon Islands</td>
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<td>Greenland</td>
<td>G 3380</td>
<td>G 743 US 1983</td>
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<td>G 3201 PSVARUS G25481</td>
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<td>210</td>
<td>Grenada</td>
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<td>see Lesser Antilles</td>
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<td>G 4477 G8</td>
<td>see Mexico</td>
<td>Baja California (Region)</td>
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<td>G 5070</td>
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<td>G 4810</td>
<td>F 1462 US 1965 MAP ROM</td>
<td>G 4840 G250 US</td>
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<td>F 1462 G39 1984</td>
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**Drawer labels**

**Drawer number**

**Region, area -- description of maps**

**RUSSIA - SUBJECT, CITIES**

**G 7001 - G 7004**

**Call number**
Inspiration

ASU Map and Geospatial Hub 3D Explorer - [https://mapgeoasu.github.io/3dexplorer/](https://mapgeoasu.github.io/3dexplorer/)

Opportunity for Capstone Student Assistance

- Invited to submit capstone project proposal for MS in Information Technology and Management program in September 2022

- Three GIS projects were initially proposed and a student capstone group selected the 3D PCL Map room

- Project work started in January 2023
To help ensure project success, we initially planned to emulate ASU’s approach we knew worked well which would involve using:

- ArcGIS Pro
- ArcGIS Online

Difficulties with 3D modeling in ArcGIS Pro and the benefits of open source software led us to evaluate QGIS as an alternative.
Updated Tech Stack Plans for Capstone Project

- QGIS was used to create map room floorplan, map cabinets, and pillars shapefiles and generating creating 3D interactive web app with qgis2threejs plugin

- A MySQL database hosted on Google Cloud Compute was used for storing map data

- Google Cloud Compute was used to host a web server with PHP installed

All software used was open source
Developing and Managing Map and Cabinet Data

Existing Resources

- Stack Guide
- Drawer Labels (numbered drawers)
- Maps in the catalog - (Alma/Primo)
- File geodatabase of Perry-Castañeda Library floor plans

New Resources

- Geolocated 3D rendering of the Map Room and all of the map cabinets
- Alma Report - Title list of all items in the PCL Map Collection - Thanks to Maria Chiochios!
Developing and Managing Map and Cabinet Data
Developing Map Room Geospatial Data in QGIS

Step 1: Create new polygon shapefile and create map drawers

Step 2: Fill in attribute data for newly created map drawers

Step 3: Create interactive 3D model with qgis2threejs plugin

QGIS Demonstration
Watch Recorded Demo
Next Steps

- Fix remaining bugs
- Streamline tech stack
- Improve accessibility
- Develop sustainment plan
- Migrate files to final infrastructure
- Get approval for production release
Lessons Learned

- Don’t pass up student capstone project opportunities
- Consider partnering to share supervision responsibilities
- Carefully evaluate software options early on
- Consult stakeholders at an early stage
- Frequent communications and meetings can help avoid issues
- Explore opportunities for continued collaboration
Acknowledgements & Contact

Student project team

- Manvi Mahajan
- Siva Maineni
- Stephen Hobson
- Dhruva Phulsandar
- Johan Thomas

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