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Final Project Final Report

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Online Mapping of Commonwealth Campuses

Penn State University is comprised of not just one campus, but however built up of twenty-five different commonwealth campuses and locations. Penn State campus mapping needs improvement not just at the University Park campus, but also at the branch campuses as well. The current online mapping for mostly all of the commonwealth campuses, if not every single one is an online pdf document on their main campus page. These documents are very hard to interpret and not interactive at all. With the new wave of interactive college campus mapping technologies, Penn State as a whole is behind. With nearly 100,000 students university wide, it’s clear there are improvements to be made to all campus maps, especially the commonwealth campuses. The goal of my project is to provide information about commonwealth campuses in the online mapping world (i.e., OpenStreetMap and Mapbox).

To accomplish my goal, I followed a couple different workflows. First, I obtained the commonwealth campus data that OPP had collected containing building, roads, parking, and sidewalk shapefiles for all the campuses. This data was set up in individual geodatabases for all the different campuses (there were 25 total, including a couple of Penn State Agricultural research sites.) I took these files and imported them into Arc Map. In Arc Map, I exported each individual shape file for each campus into it’s own shapefile with an appropriate name. Then, the shapefiles were re-projected into the WGS-84 projection. These files were set-up to be easily uploaded into the Mapbox API, which can then be used in other projects (the University Park campus map). The second approach taken to input commonwealth campus information into the online mapping world was via OpenStreetMap (OSM). “OpenStreetMap powers map data on hundreds of web sites, mobile apps, and hardware devices” (OSM online site). Using OSM, my partner on the project (Adam Aharonian) and myself traced all of the commonwealth campus buildings into OSM. OSM allows third party contributors to create an account, and then edit online mapping information such as buildings, roads, sidewalks, etc. Using our skills learned earlier in the course on OSM, we added buildings and building names to approximately 200 commonwealth campus buildings.

Challenges with Mapbox were the main problem with our goal on this project. Errors with Mapbox included; errors with the C drive on campus computers, errors with projection, and errors calculating the min. and max. zoom levels. These errors were seen in Mapbox both on campus computers, and my own personal computer. Someone with more Mapbox knowledge may be able to move past these problems with the shapefiles Adam and I have created.

Future work on this project includes mainly work in OSM. Using data given from OPP and knowledge about the campuses on their credible University driven websites, more information can be put into OSM. Sidewalks, parking lots, and campus roads can be traced into OSM. Attributes for these features can also be added into OSM like, common names, number of floors, classrooms, and handicap accessibility. One can also reach out to the commonwealth campuses for information about their campus, like points of interest and specific regions. The extent of the campus could also be traced into OSM, as well as a general cleaning up of the areas in OSM. This will improve upon OSM skills. The shapefiles from OPP also contain surrounding buildings and roads as campus buildings when they are actually not university property. These shapefiles could be cleaned up, deleting any attribute that is not actually a part of the campus.

Overall, this project was very eye opening in the world of online mapping for college campuses. There is so much out there that can be done to improve the quality of Penn State University’s maps, along with commonwealth campus maps, which could in turn improve the all around productivity of students. I learned a lot about Mapbox and OpenStreetMap throughout my project, and I also learned a lot from other students in the class and their goals for the campus map.