A Framework for Communicating Citizen Science Pollinator Observations

Overview
The goal of this project was to design a framework for communicating citizen science pollinator observations. What was initially envisioned as a texting framework became a smartphone application. A website that delivers the observation results is the medium for connecting the efforts of citizen scientists around the world.

Objectives
There were three main deliverables required of this project:
1) Android application that serves as a collection point for pollinator observations.
2) Website that enables the data collected to be viewed.
3) 3D field guide that aids the user of the app in collecting accurate observation data.

Approach & Outcome
The Android application is the data collection utility developed for the research effort. It provides access to the survey, and utilizes the phones' hardware to collect the most accurate data. The app, called Honeycomb, was developed natively and is Open Source. We chose this direction because every observer, or even every region, could inexpensively own an Android device for both this research and other uses.

The website is hosted on the Penn State College of Arts and Architecture research server and is created using HTML, CSS, and PHP. It serves to promote the Pollinator Corridors project, Honeycomb, and the team who has worked on the project so far. The research server also hosts the project’s MySQL database; consisting of six tables, the database is the central repository for all of the collected surveys.

The field guide’s purpose is to make collecting observations a more interactive experience for the user. It also advertises the website and the app. The field guide features an analog thermometer, metric ruler, and customizable information panels. These information panels can be used to educate the user about any relative information needed for the specific study. The design was implemented in SolidWorks 2014 and 3D printed as a prototype.

The budget requirements for the project were minimal since it was mostly software based. Our biggest expenditure was the purchase of Google Nexus 7 tablet which we used to test the android app. The total amount spent was at $451.72 out of the initial $1000 budget.