

CS5760 - Human Computer Interaction & Usability Testing

Spring 2024

Application name: MI Herp Atlas Mobile App

Evaluation Assignment 4 – Design Support Document

UX Consultant

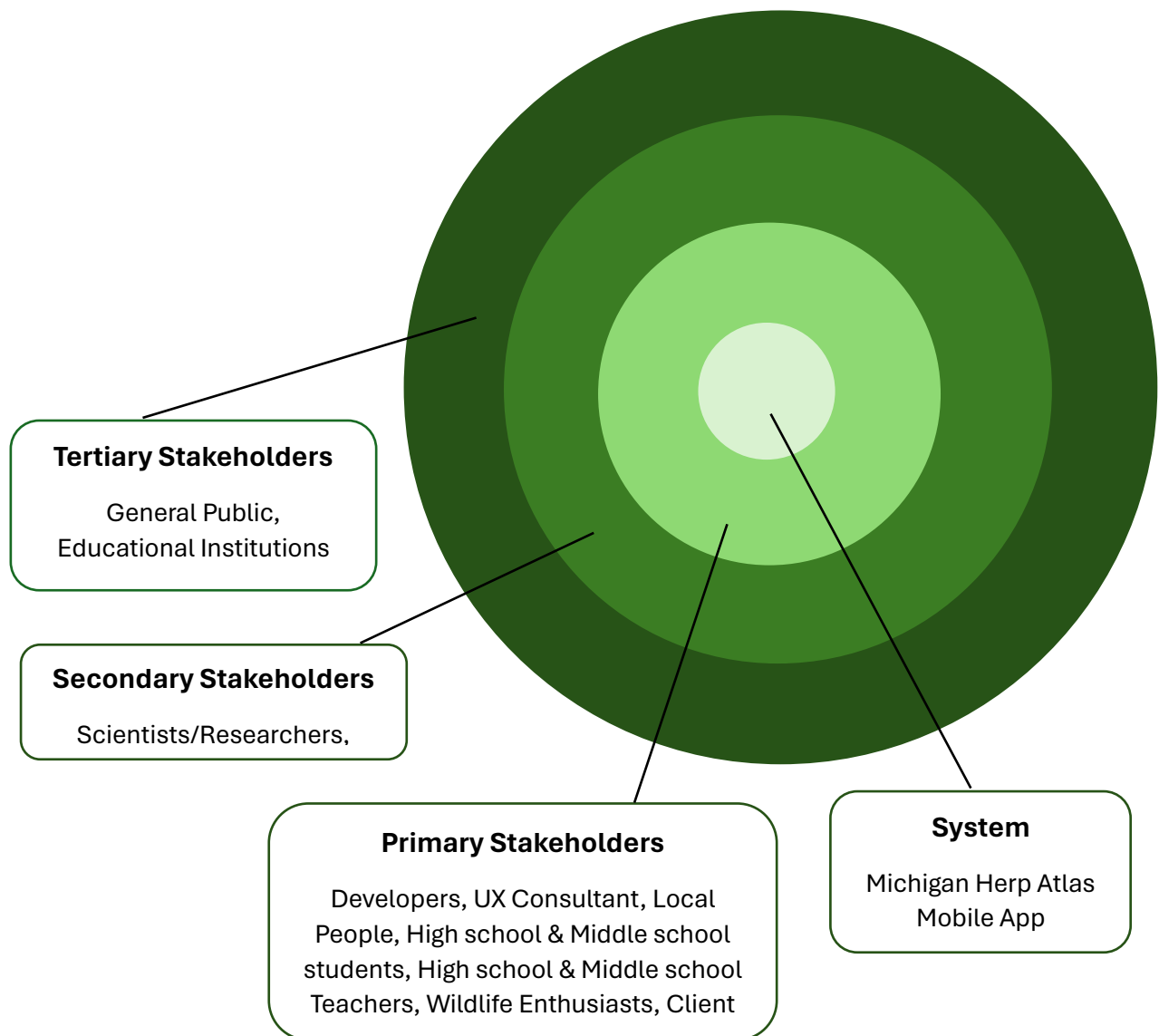
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Stakeholder Analysis

Onion model of stakeholder



Description of each stakeholder

1. Primary Stakeholders

Those stakeholders who are directly impacted and are responsible for its success.

- **Local People:** Local People who record observations through the app and contributing to the valuable content to support the conservation.
- **High School & Middle School Teachers and Students:** Teachers and students who are interested in environmental science and its conversation are the

primary stakeholders. Students who are looking forward to study nature and contribute to the conservation projects also come in this category.

- **Wildlife Enthusiasts:** People who have interest in knowing wildlife around their surrounding/world.
- **App Developers:** Development team of the project/application.
- **Client:** The one who proposed the project/application.

2. Secondary Stakeholders

These stakeholders don't have primary interest but are still using and contributing to the application.

- **Scientists & Researchers:** They use application for analysing the data and doing research in detailed level.

3. Tertiary Stakeholders

- **General Public:** They increase their own knowledge and contribute to the conservational effort.
- **Educational Institutions:** The institutes who want to make environmental science as the curriculum for teaching and spread awareness.

Stakeholder goal influence table

Stakeholders	Goal	Influence
Client	Increase the collection of data and improve the user experience and make	High - Provides project requirements and gives s direction to work
Local People & Wildlife Enthusiasts	Easy to record observation, learn about the existing species and contribute to conservation of endangered species	High - Large database collection which is responsible for app's success
Scientists & Researchers	To make observation and do research and improve the monitoring tools for tracking the species	Medium - They are a small group, but research contributions are high
High School & Middle School Teachers	Using app for education and teaching environmental science and contributing to conserving wildlife	Medium - There is a potential for this user base to grow
High School & Middle School Students	Using app for education and learning environmental science and contributing to conserving wildlife	Medium - There is a potential for this user base to grow and engage

App Developers	Creating an app which is easy to use and efficient for updating the records.	Medium - Technical execution of the app. Mostly impacted by Client's needs
General Public	Spreading awareness about species in their area.	Low - Understanding ecological concerns and contributing to conservation initiatives
Educational Institutions	Using for updating curriculum as an education source	Low - For promoting scientific literacy

Personas

Primary Stakeholder

1. Emma, the Nature Enthusiast
Age: 32
Tech Expertise: Moderate (comfortable with smartphones, basic apps)
Education: Bachelor's degree in biology
Daily Life: Works as a park ranger, enjoys hiking and exploring nature.
Needs: An application which records herpetofauna observation quickly. There is no internet connection in the woods. She wants to update the recorded observations when the connection is available.
2. Sarah, the High School Teacher:
Age: 38
Tech Expertise: Basic (comfortable with online platforms and basic apps)
Education: Master's degree in education
Daily Life: Teaches biology classes, leads field trips with students.
Needs: An educational app that engages students in citizen science projects, helps in data collection during the trips especially in fields, and provides learning resources about Michigan's herpetofauna.

Secondary Stakeholder

1. Dr. Liam, the Researcher
Age: 45
Tech Expertise: Advanced (comfortable with various software and data analysis tools)
Education: PhD in Ecology
Daily Life: Leads research projects on amphibian and reptile populations, supervises graduate students.
Needs: An app that collects detailed and accurate observation data with GPS coordinates, allows for batch uploading, and integrates with existing research databases. Wants features like advanced search filters and data export options.

2. Mark Wilson, Graduate Research Assistant)

Age: 29

Tech Expertise: Comfortable using specialized research software, early adopter of new technology, proficient with smartphones and mobile apps.

Education: Master's student in Ecology and Conservation Biology, assists professors with research projects.

Daily Life: Does independent research, collects data for his thesis project, and collaborates with other researchers.

Needs: Uses the app for field research, conducting surveys, and documenting observations for own research projects. Needs advanced features like species checklists and data export options for further analysis.

Hierarchical Task Analysis

1. Authentication and Account Management:

- **Login (existing user)**
 - Enter username and password.
 - Submit login credentials.
 - Handle success/failure
- **Create account (new user):**
 - Enter name, email, and password.
 - Submit account creation information.
 - Handle success/failure
- **Manage account settings:**
 - View and edit profile information.
 - Set preferences (dark/light theme, etc.)
 - Manage saved observations (offline/online)

2. Observation Recording:

- **Access observation form:**
 - Open form from main screen
 - Navigate between sections.
- **Enter observation details:**
 - Select species (search or browse list)
 - Enter date and time (autofill optional)
 - Specify location (GPS, map, manual entry)
 - Add optional details (age, sex, quantity, etc.)
 - Upload photos and/or audio recordings
 - Add observation notes.
- **Review and submit observation:**
 - Preview details
 - Edit or correct errors.
 - Submit for online upload (if internet available)
 - Save for offline upload (if internet unavailable)

3. Observation Management:

- **View saved offline observations:**
 - Access list of saved observations
 - View details of individual observations
 - Edit or delete saved observations.
- **Upload saved observations:**
 - Select observations for upload.
 - Initiate upload process
 - Monitor progress and handle success/failure.
- **View uploaded observation history:**
 - Access list of uploaded observations
 - View details of individual observations
 - Filter and search observations

4. **Additional Features:**

- **Access help and documentation:**
 - View FAQs and tutorials
 - Contact project support
- **Access app settings and information:**
 - View app version and update information
 - Provide feedback and suggestions.
- Offline functionality for data entry and saving.
- GPS accuracy requirement and feedback
- User interface design for efficient data entry on mobile devices
- Accessibility for users with varying technological skills
- Data security and privacy
- Integration with Michigan Herp Atlas database

Notes

App Concept

A mobile web application for recording real-time field observations of herpetofauna (amphibians and reptiles) Michigan Herp Atlas.

Users

Variety of users

- citizen scientists
- scientists/researchers
- high school and middle school teachers
- high school and middle school students

Users have a variety of technological savvy.

Usage Context

The primary use of the app is in the field on a mobile device. The speed, ease, and efficiency of using the app is the primary usability goal.

History

For many years, users used a “Mobile Mapper” app for recording field observations, but the app is obsolete. Now, they are using a WordPress site to record observations. The WordPress form based for recording observations is complete, but not as efficient as the “Mobile Mapper” app.

Current observation view

<https://miherpatlas.org/account/add-record/>

Data

The Michigan Herp has a database, and David will provide a database schema.

I suspect that except for authentication the database can be a single table for observations.

Views or Pages

- Single form view for saving observations.
- Navbar or Title Bar with login and help links.
- Help modal.
- Perhaps a “queue” for a list of observations stored on the device.
- Login modal

Restrictions and Details

- The app is to be used in the field.
- Observations are only made in Michigan.
- Required fields: species, date/time, location (15 m accuracy)

Important Features (Improvements)

- Ability and instructions for saving icon and shortcut for the observation view on a mobile device.
- Authentication should occur during uploading observations. There should also be a remember me in the login modal.
- Users should be able to save the observations on the device and later when internet connection is good upload all the saved observations in a batch. There could be a view listing all the saved observations.
- GPS accuracy should be 15m. Greater than 15 m the app should prevent saving the observation. The app should display the
 - current accuracy.
 - Map for viewing and setting location, if there is a good internet correction.
 - Auto fill time and date.
 - Auto fill county and township using a KMZ layer in the map. I think this can be done without a map view.
- Camera opens when uploading an image and can also upload from the photo album.
- Audio recordings. This could be an upload from the file system.
- User’s choice of dark and light themes.
- Multiple observations at a single location but uploaded as multiple observations.

Other Improvements

- Try to have related fields together. Also try to have required fields at the top.
- Try to have popular fields near the top.
- A save button that is always accessible
- Database schema
- API call to the database
- KMZ file for MI counties and townships

- Authentication procedure

What is the Authentication procedure?

You must register an account via WordPress and then sign up before submitting a record. It uses the default WordPress authentication built into the platform.

Formats in: Google Play