

# Butterfly Longevity Tracker

*Bi-Weekly Report 2 (2/28/25 - 3/13/25)*

## Project Information

- Project Title: Global Butterfly Longevity Tracker
- Group Number: sdmay25-03
- Client: Nathan Brockman
- Advisor: Maruf Ahamed
- Team Members:
  - Alex Herting - Full-stack Engineer
  - Andrew Ahrenkiel - Full-stack Engineer
  - Charles Dougherty - Frontend Developer
  - Jaret Van Zee - Backend Engineer
  - Carter Awbrey - Visionary

## Summary

On the frontend we continued working on implementing all communication with the backend and a fully functioning web application. We had to alter some of our response handling and request bodies as we talked with the backend on making our requests more efficient and “correct” to what the application will need to display. We made new screens that account for oversights in our original design like a way to change the facility info as well as generate and provide the user with a qr code and hyperlink to their facilities guest entrance page.

On the back end, the back-end is nearly ready for deployment to the Reiman Gardens domain as a completed prototype. The tagging system’s complexity has been reduced to allow for an easier experience for a guest/user to enter sighting data for a butterfly. Database reporting features have been nearly completed for data extraction and extrapolation. Information relating to a butterfly has also been updated to provide additional data for a butterfly reporting to a supervisor.

# Accomplishments

## ● Alex

- Updated the create domain screen to match new system design
- Created the update/access facility info screen and implemented functionality
- Provided a way for each facility to have a unique link to their domain to give to the guest
- Altered the guest login experience so it lands on the domain page and logs into the domain
- Worked on register butterflies page, updating to account for all possible tag types
- Collaborated in finding a tagging system that works for both front and backend
- Encoded the images within the domain creation screen to send to backend
- Participated in code reviews for frontend

## ● Andrew

- Updated functionality of edit butterflies and guest enter pages to work with new schema of request bodies.
- Updated guest enter page to work with tags of different background colors and shapes, also updated for entering foreground dots.
- Collaborated in finding a tagging system that works for both front and backend for the scope of our project
- Completed code reviews for frontend
- Updated multiple pages that needed minor bug fixes, mostly to do with sizing of page on small mobile devices.

## ● Charles

- Continued work on report generation screen
- Began implementing import database
- Began development of database updating from the backend

## ● Jaret

- Developed additional database reporting features:
  - Special root user functionality to access data from multiple domains
  - Added additional criteria and methods to generate database reports by
- Met with client to ensure that information stored in the database and other reporting features were in line with set requirements
- Collaborated in re-working tagging system of butterflies
- Began development of importing butterfly features
- Worked with front-end to ensure that butterfly importing features will be compatible with front-end

## ● Carter

- Worked with team to make changes to the tagging system
- Fixed various issues related to the CI/CD pipelines
- Created new color interpreter system
- Did research and experimented with generating tags programmatically for tag suggestions
- Worked on improving mongoDB integration with Spring to get much better performance
- Further worked on AWS integrations with Cloudfront, although still waiting to get access to fully finish this setup

# Pending Issues

## Front End

- Implement backend requests on screens that require GET or POST requests
- Fully implemented user hierarchy
- Complete UI functionality
- Mult-Institute functionality
- Generate report statistics and data results
- Create new facility admin account
- Forgot password

## Back End

- Unit Tests
- API Tests
- Optimize Database Queries For Better Performance
- Improve Input Validation
- Create API documentation with "Spring REST Docs"
- Finish Configuration for long-term hosting site (AWS)

# Individual Contributions

<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>HOURS cumulative</u>
Alex Herting	Create domain screen, update facility screen, guest login configured to set domain, register butterfly screen, new tagging system, code reviews	20	121
Andrew Ahrenkiel	Guest Enter page updates, Edit butterflies page corrections, all around sizing bug fixes, updated tagging system design, code reviews	15	110
Charles Dougherty	Report generation screen, importing databases, data table pull from backend	10	83
Jaret Van Zee	Butterfly Database Reporting features: Special Root privilege functionality, Finding average lifespan by species, finding butterflies, find by status, find sightings by permission level or user. Butterfly importing features.	22	93
Carter Awbrey	Butterfly tagging system updates, query optimization updates, AWS integrations	22	122

# Future Plans

For the frontend, we want to finish up all of our tagging information requests and start to get more into working on generating reports and importing legacy databases. This will allow us to fully test out our sightings feature and make adjustments as needed. We are hoping that we can also figure out an efficient way to allow an admin or docent user to change their password. We will also need to create a way for the first account to be created under a new facility.

For the backend, we need to continue the work that we stated for the mongoDB query optimizations, and finish working on the database importing functionality to get a beta version ready for our client.