Unified Captive Reared Caterpillar Tracker

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Problem:

Our client *currently tracks caterpillar data on paper* which is then *transferred by hand to digital spreadsheets*. It is a slow, difficult process. Our clients want a **more efficient way of collecting and analyzing data.**

Solution:

A **digital application** that handles all data **collection, storage, and reporting.**

Users:

- Members of the **On Sacred Ground Organization** engaging in captive propagation and rearing of the **Island Marble Butterfly species**, located on **San Juan island**.

Uses:

- Complete and file records relating to chrysalids and caterpillars
- Complete required check ups to chrysalids/caterpillars
- Importing/exporting csv files for data manipulation in excel sheets
- View historical data of previous records/checks for current user and their group

Requirements:

Functional:

- Application should be usable on both mobile and desktop.
- Gather data automatically whenever possible (APIs)
- Faster than hand-tracked data (Excel sheets, paper documents, etc.)
- Must be able to scale well with large amounts of data

Nonfunctional:

- Intuitive UI
- Gamified program that leaves users feeling rewarded for contributing data.
- Entirety of service must be relatively cheap (<$30 Monthly).
- Text should be minimal and accessible for all users.

Standards:

ISO/IEC/IEEE 23026:2015: focuses on system engineering and management requirements for the life cycle of websites

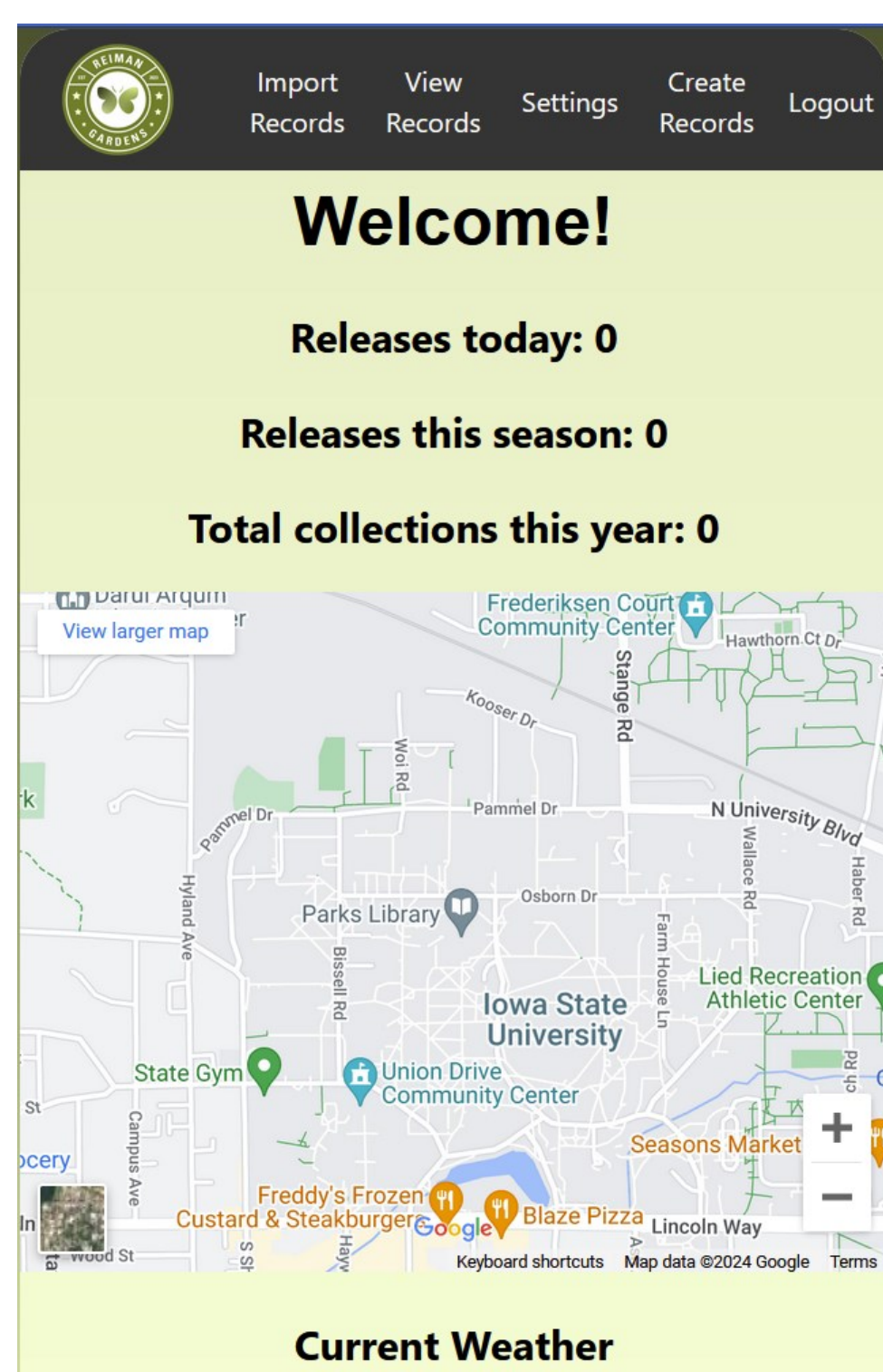ISO/TS 23029:2020: defines the framework, function, and protocols for an API ecosystem.
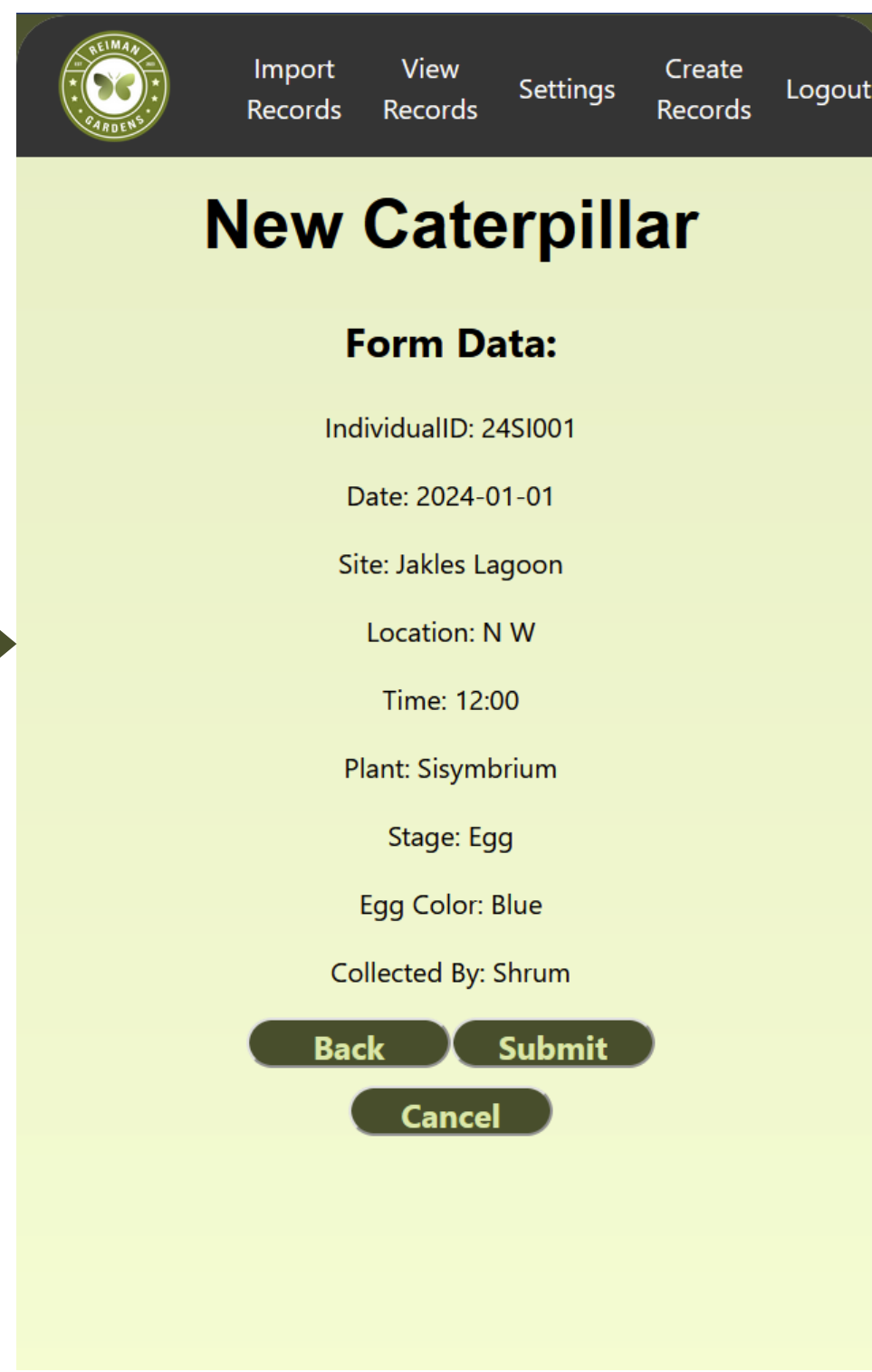

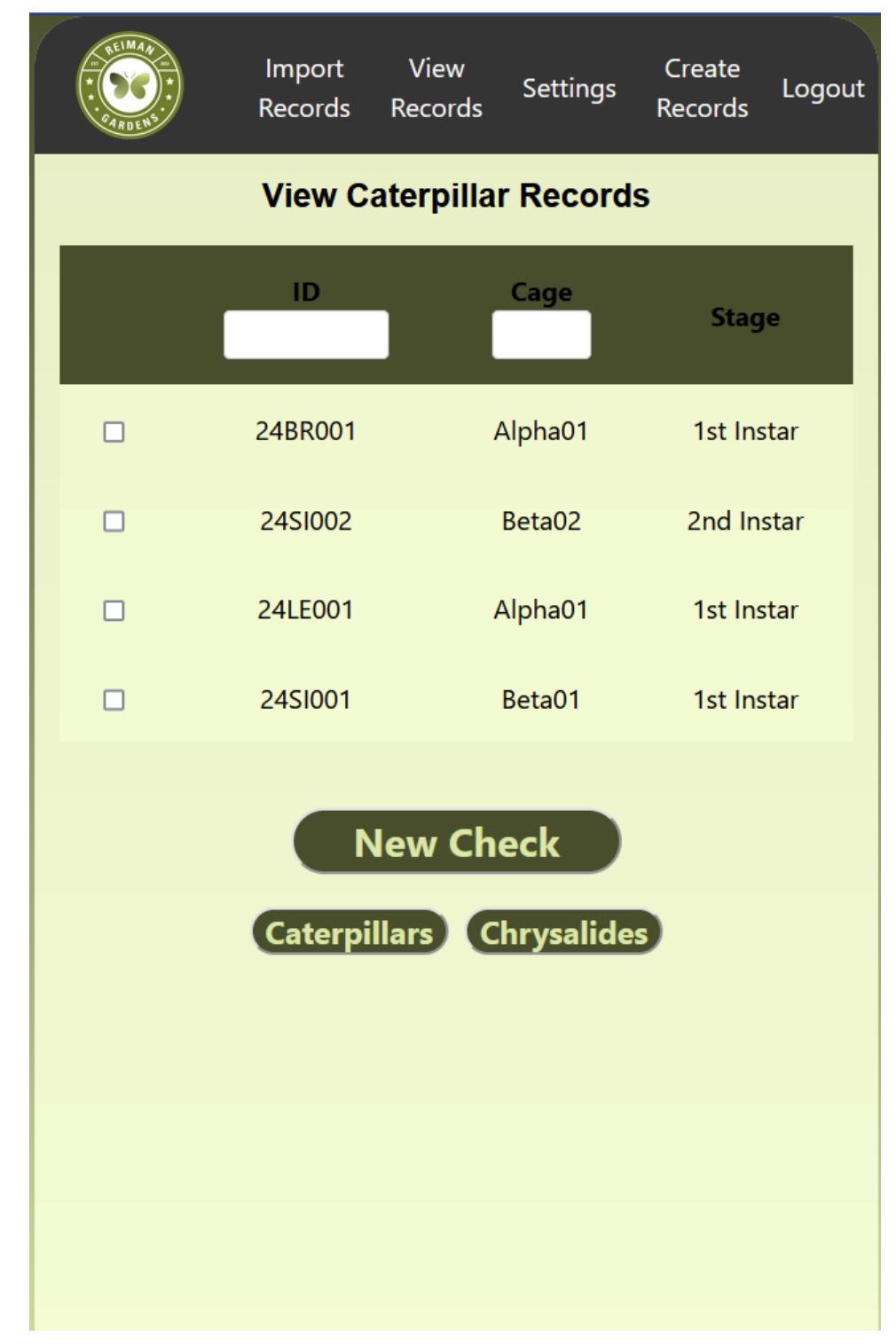**Figure 1: Home Page**

Figure 2: New Record Creation

Figure 3: View Records

Figure 5: Sample Data and Import Records

Figure 6: Export Data and Sample Output

Technical Details

- Login Security: AWS Cognito
- Programming Languages: NodeJS, ReactJS, HTML and CSS.
- Backend and Data Storage Solution: AWS Amplify, Cognito, S3, Route53

Testing

- User testing by the On Sacred Ground organization lab members
- Iterative process of receiving user feedback and pushing updates
- Popups to inform users of system errors