Reiman Gardens Butterfly Wing Application

IOWA STATE UNIVERSITY **College of Engineering** EE/CprE/SE 492 - Senior Design



Team Dec1608: Michael Bonpua, Scott Mueller, Carson Noble, Megan Reiman, Nicholas Riesen **Client:** Reiman Gardens - Nathan Brockman and Anita Westphal Advisor: Dr. Diane Rover **Team Site:** http://dec1608.sd.ece.iastate.edu

Introduction

This project focuses on creating a new web application for the Reiman Gardens Butterfly Wing. The application needs to be usable both on the Wing's touch-screen interfaces, and on the volunteers' and users' mobile devices. Its purpose is to add a level of interaction to the Wing through images and information portals, and to provide a system for volunteers and staff to manage butterfly data.

Functional Requirements

Visitor Side

- View butterfly and plant photo ••• galleries
- Search butterflies based on traits
- View statistics about the wing **
- Read educational pages **

Administrative Side

- Log butterfly shipments and releases
- Add/edit/remove butterflies
- Add photos and fun facts

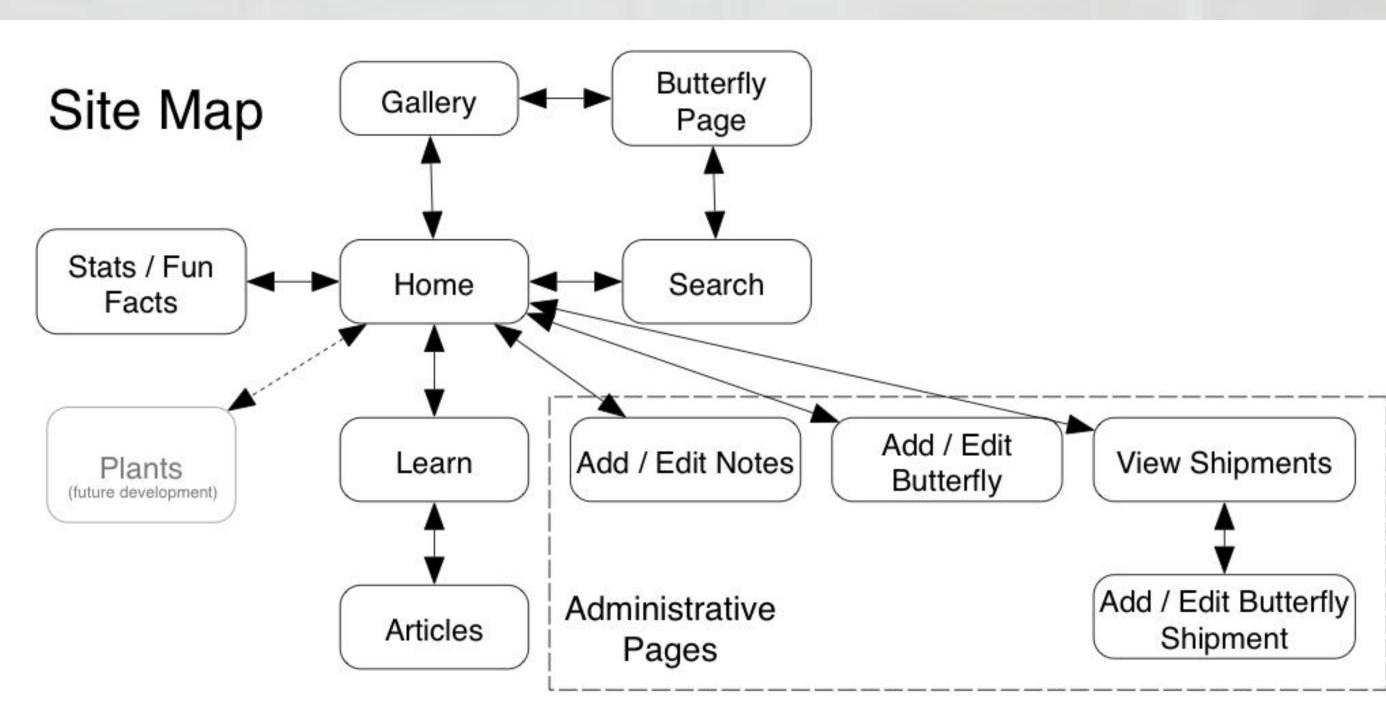


Front End

•

Goals Responsive to screen size

- Intuitive navigation **
- Visual appeal •



Nonfunctional Requirements

- Display well on all screen sizes
- Intuitive to use for visitors **

Operating Environment

- Butterfly Wing's kiosk (see right) **
- Volunteers' tablets **
- Visitors' mobile devices **

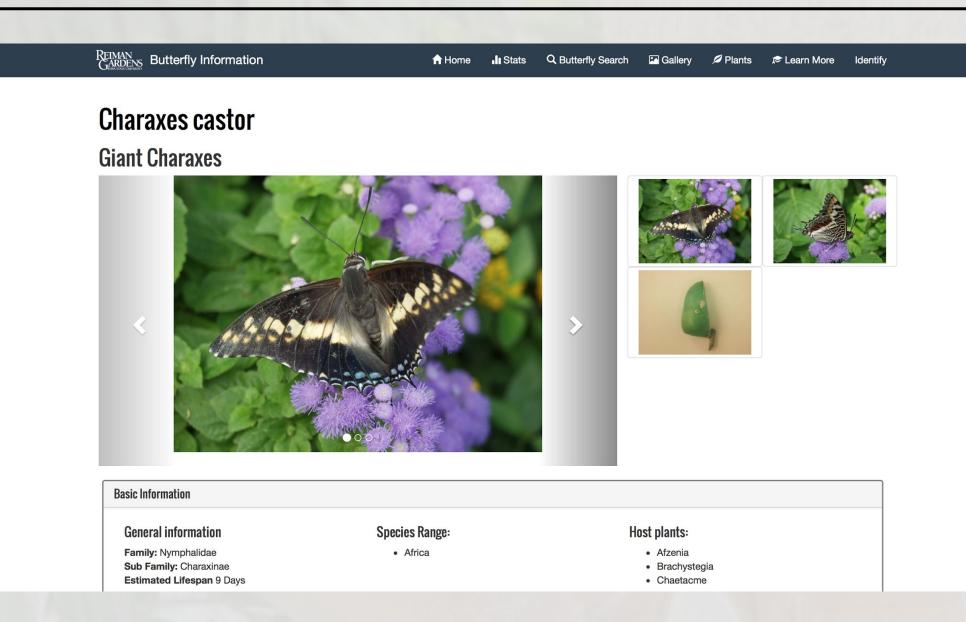
Back End

The application is built using the PHP framework Laravel. It follows a Model-View-Controller architectural pattern, allowing the codebase to be maintainable and structured for continued development.

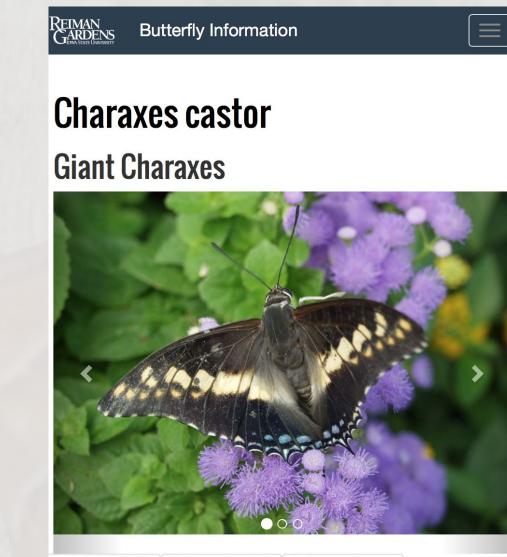
Search Page	View Butterfly Page	Add / Edit Butterfly Page	Stats Page	View Shipments Page	Add / Edit Shipments Page	Notes Editer
-------------	------------------------	------------------------------	------------	---------------------------	---------------------------------	--------------

- The site has intuitive navigation.
- The administration pages require little to no training to use.

Site Screenshots



- Content scales based on the device.
- Administrators go through a simple set of pages to track shipments and releases.



Tools

Twitter Bootstrap

JavaScript/jQuery

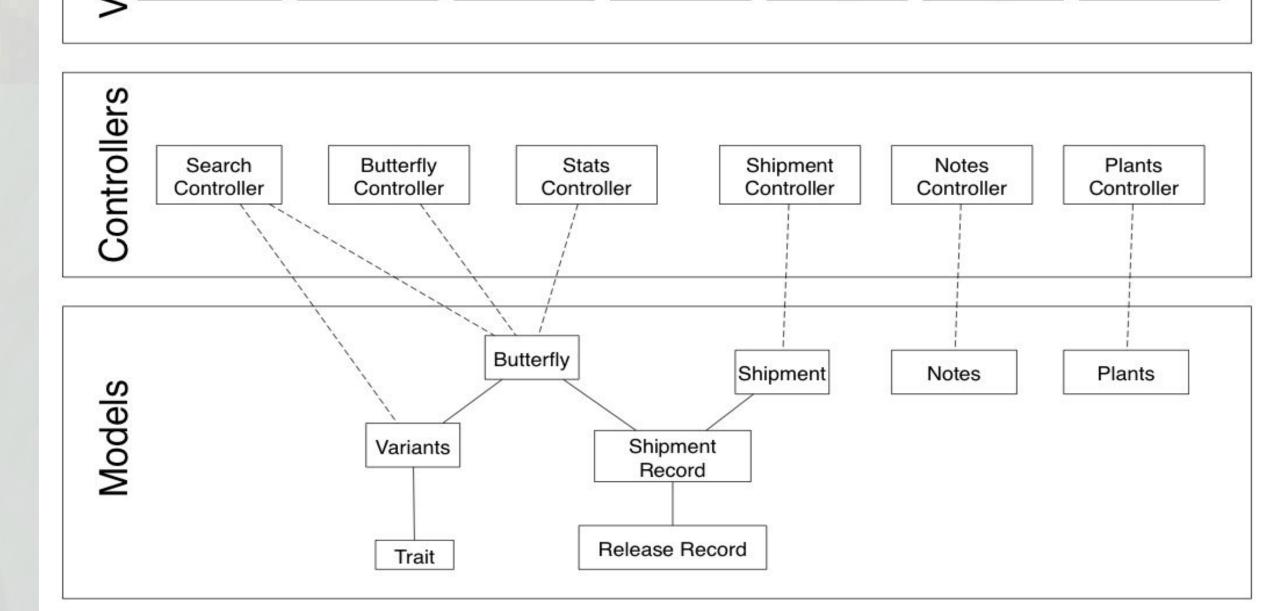
✤ HTML, CSS



Basic Information

General information	Species Range:	
Family: Nymphalidae	Africa	
Sub Family: Charaxinae		
Estimated Lifeonan O Dava	Hact plante	

Release Date 11/30/2016



System Design

Each component consists of a primary model, which supports the functionality to manipulate and display the data associated with it. The model classes are mapped to database tables by Eloquent, Laravel's **Object-Relationship Mapping framework.**

Laravel Framewrok

	New Shipment		
Shipment date	mm/dd/yyyy		
Arrival date	mm/dd/yyyy		Ascia limor Creamy Wh
Supplier			Catopsilia
Butterfly	Select species	•	Mottled Em
Number received			Cethosia cy Leopard La

	Emergences			
cia limona eamy White	0	•	+	
topsilia pyranthe ottled Emigrant	0	-	+	
thosia cyane opard Lacewing	0	-	+	

Testing Procedure

Code Reviews: Code is peer-reviewed for efficiency, functionality, and project standards before being merged into the main branch.

User Acceptance: A live demo is hosted on a DigitalOcean server for the client to routinely test and provide feedback.

Administration	Visitors
Butterfly Add / Edit / Delete Butterfly Entry Record	Butterfly Wing Statistics Butterfly Search View Butterfly Details Butterfly Image Gallery
	Butterfly Model
Plants Add / Edit / Delete Plant Entry	Browse Plant Entries View Plant Details
	Plant Model
Articles Add / Edit / Delete Article	Browse Articles View Article
	Article Model
Laravel User Management / DB Import / Export Permissions Utility	
L	aravel DB Interface
	MySqlDB