Griffith Buck Rose Website

Client: Reiman Gardens, Lindsey Smith
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sdmay24-41

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Introduction

Project: Informative website on the unique roses created by Dr. Griffith Buck which are stored at Reiman Gardens

Objective:

- Informative: Basic rose info, Griffith Buck and Reiman Gardens
- Maintainable: The website shall allow Reiman Garden employees to edit the website's information via simple forms
- Mobile: The website needs to be structured for mobile applications
- Overall: Create a website to make the general public more aware and informed of the Griffith Buck roses in a highly readable way

http://griffithbuck.ece.iastate.edu:3000/Home

Users

Who:

- Rose cultivators and Buck Rose enthusiasts
- Elderly
- Average user needs highly intuitive and user friendly website

Uses:

- Information gathering for specific roses
- Filter/search
- Plant Care
    - Rose bloom
    - Pest Appearance

Why:

- Dr. Griffith Bucks famous research into plant hardiness and disease-resistance
- Over 60 industry sources including nurseries in the US, Canada, England, New Zealand, Denmark, Norway, and India

Context:

- Global Impact: The public will be able to learn about the roses as well as get help with cultivation and maintenance
- Economic Impact: Marketing for Reiman Gardens and Buck Rose vendors

Project Overview

Project Management:

- Github
- Discord

Design Tools:

- Figma
- LucidChart
- Draw.io

Frontend Stack:

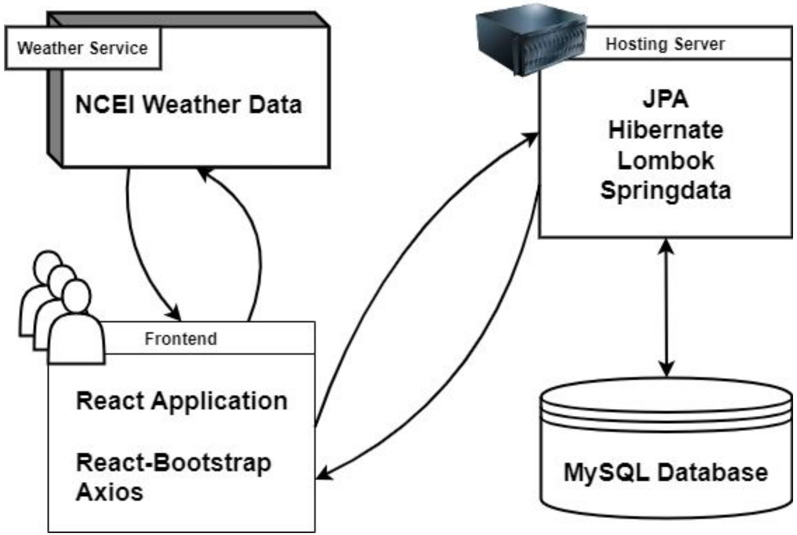
- React.js
- Axios
- Bootstrap

Database:

- MySQL
- Flower Information
- Page Information
- Vendor statuses

Backend Stack:

- Docker
- MySQL
- JPA
- Spring/Boot
- Hibernate
- Lombok
- Spring Data



Major Components

Homepage

Individual Rose Pages

Mobile Version

Admin Pages

Degree Day Calculator

Homepage

Fluid Key

- Dynamically filters flowers based on any combination of there dozens of characteristics.
- Integrates with pagination
- Inclusive or exclusive filtering

Fact/Rose of the Day

- Based on local time zone
- Pulls random flower/fact and display on carousel

Info Pages

- About Us, Griffith Buck, Glossary
- Dynamic Display
- Navigation of different section via banner buttons

Individual Rose Pages

General Information:

- Cultivation year, color, name, description, height, parentage, descendants, location, hardiness, notes, and disease resistance

Bloom Tracker:

- Shows week that individual flowers bloom

Vendors:

- Includes vendor pricing, last updated, name and website link
- Dynamically displays any amount of vendors

Dynamic Routing:

- Unique dynamically created link for each flower
- More shareable

Admin Page

Login:

- Admin pages hidden from general user
- Admin users can log in with username & password

Navigation:

- Landing page lists all tables
- Information about each table on the admin home page

Updating:

- Admin page loads specific database table
- Admin user can select row they want, then they can edit the information in dynamically made forms
- Admin User can send edited row as an update, addition or deletion into that table

Degree Day Calculator

Quick Overview:

- Tracking when pests become threats to Buck Roses
- Calculates based on weather data from stations across Iowa
- Calculation methods: Average, Modified Average/Custom, Sine

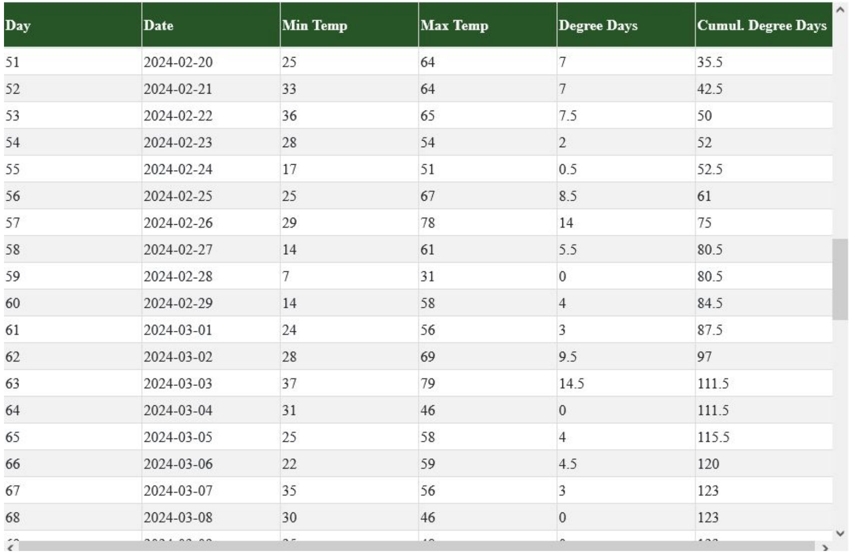
$$\frac{1}{\pi}\left\{\left(\frac{T_{max} + T_{min}}{2} - T_L\right)(\theta_2 - \theta_1) + \alpha[\cos(\theta_1) - \cos(\theta_2)] + (T_U - T_L)\left(\frac{\pi}{2} - \theta_2\right)\right\}$$

$$\theta_1 = \sin^{-1}\left[\left(T_L - \frac{T_{max} + T_{min}}{2}\right) \div \alpha\right]$$

$$\theta_2 = \sin^{-1}\left[\left(T_U - \frac{T_{max} + T_{min}}{2}\right) \div \alpha\right]$$

Input/Output Briefing:

- Inputs: Station, Date Range, Daily Temps, Temp Bounds
- Output table:

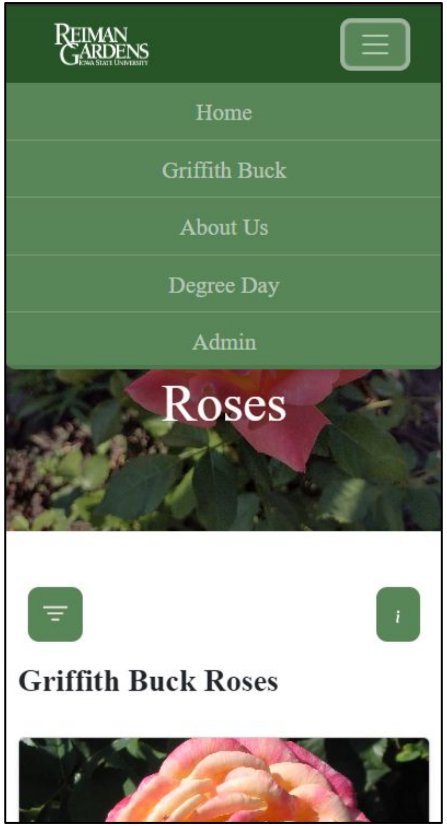


Day	Date	Min Temp	Max Temp	Degree Days	Cumul. Degree Days
51	2024-02-20	25	64	7	35.5
52	2024-02-21	33	64	7	42.5
53	2024-02-22	36	65	7.5	50
54	2024-02-23	28	54	2	52
55	2024-02-24	17	51	0.5	52.5
56	2024-02-25	25	67	8.5	61
57	2024-02-26	29	78	14	75
58	2024-02-27	14	61	5.5	80.5
59	2024-02-28	7	31	0	80.5
60	2024-02-29	14	58	4	84.5
61	2024-03-01	24	56	3	87.5
62	2024-03-02	28	69	9.5	97
63	2024-03-03	37	79	14.5	111.5
64	2024-03-04	31	46	0	111.5
65	2024-03-05	25	58	4	115.5
66	2024-03-06	22	59	4.5	120
67	2024-03-07	35	56	3	123
68	2024-03-08	30	46	0	123

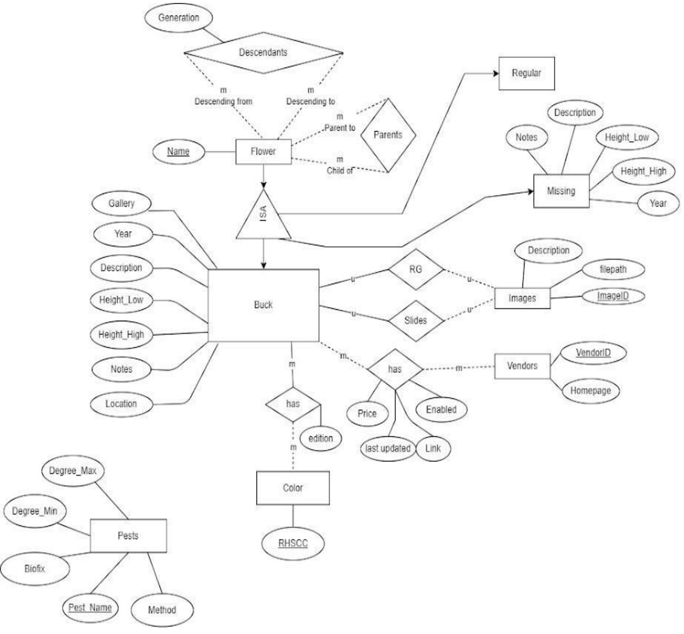
Mobile Version

Mobile Version Implementation:

- CSS media queries
- Bootstrap
  - Breakpoints, grid system, etc.
- Dynamic sizing
- Separate implementation for navbar and footer
- Horizontal scrolling for some features



Database Design

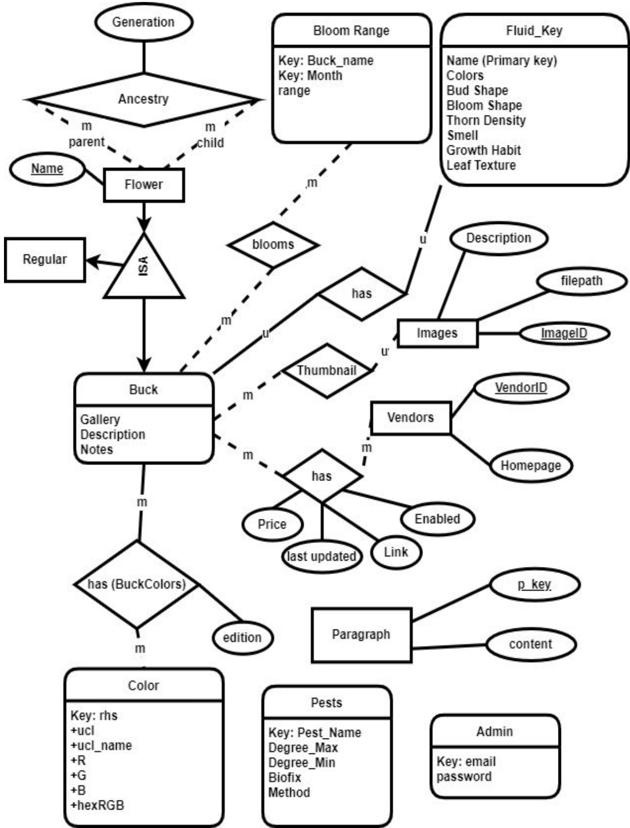


Design Choices

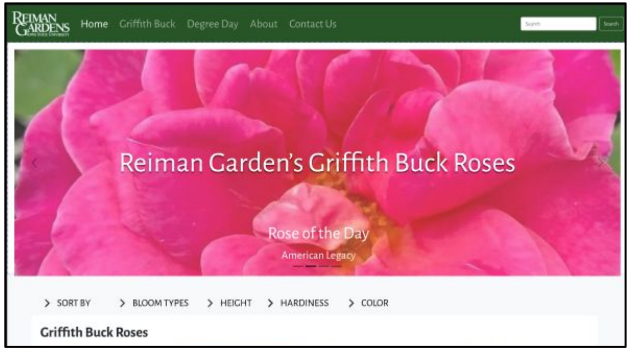
- MySQL
- Feedback: Graph Database

Design Changes

- Remove 'missing' flowers table
- Bloom days table addition
- Admin authentication table
- Fluid Key attributes expanded
- Paragraph information in database vs hardcoded
- Change thumbnails relationship
- Merge parents & descendants table into 'Ancestry'



Frontend Design

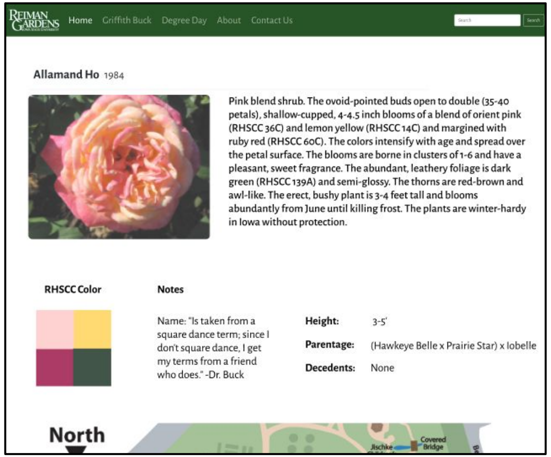


Reiman Garden's Griffith Buck Roses

Rose of the Day

American Legacy

Griffith Buck Roses



Allamand Ho 1984

Pink blend shrub. The ovoid-pointed buds open to double (35-40 petals), shallow-cupped, 4-4.5 inch blooms of a blend of orient pink (RHSCC 36C) and lemon yellow (RHSCC 14C) and margined with ruby red (RHSCC 60C). The colors intensify with age and spread over the petal surface. The blooms are borne in clusters of 1-6 and have a pleasant, sweet fragrance. The abundant, leathery foliage is dark green (RHSCC 139A) and semi-glossy. The thorns are red-brown and awl-like. The erect, bushy plant is 3-4 feet tall and blooms abundantly from June until killing frost. The plants are winter-hardy in Iowa without protection.

RHSCC Color

Notes

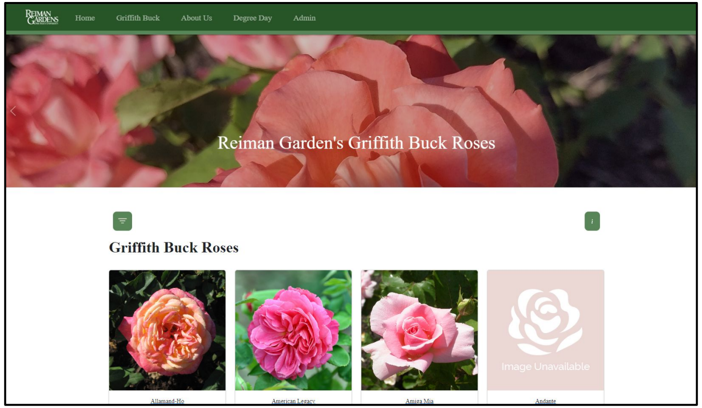
Name: "Is taken from a square dance term; since I don't square dance, I get my terms from a friend who does." -Dr. Buck

Height: 3-5'

Parentage: (Hawkeye Belle x Prairie Star) x Iobelle

Decedents: None

- Fluid Key is collapsible
- Footer has contact us information
- Glossary Page
- Removed global search feature
- Removed dynamic map
- Bloom days separate from degree days



Reiman Garden's Griffith Buck Roses

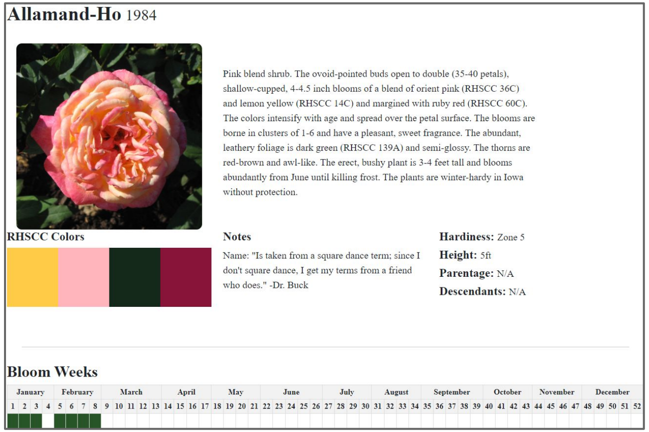
Griffith Buck Roses

Allamand-Ho

American Legacy

Amiga Mia

Andante



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RHSCC Colors

Notes

Name: "Is taken from a square dance term; since I don't square dance, I get my terms from a friend who does." -Dr. Buck

Hardiness: Zone 5

Height: 5ft

Parentage: N/A

Descendants: N/A

Bloom Weeks

<table>
<tr><th colspan="4">January</th><th colspan="4">February</th><th colspan="5">March</th><th colspan="4">April</th><th colspan="4">May</th><th colspan="5">June</th><th colspan="4">July</th><th colspan="4">August</th><th colspan="5">September</th><th colspan="4">October</th><th colspan="4">November</th><th colspan="5">December</th></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td><td>40</td><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td><td>49</td><td>50</td><td>51</td><td>52</td></tr>
<tr><td>🟩</td><td>🟩</td><td>🟩</td><td></td><td>🟩</td><td>🟩</td><td>🟩</td><td>🟩</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

Challenges

Data:

- Frequent database/schema changes
- Data retrieval
  - Flower photos in the fall
  - Reiman Gardens map
  - Disease resistance
  - Bloom ranges
  - Fluid Key attributes
  - Pests

Security:

- Originally using Okta
- ITS switching from Okta to Azure
- Implementing authentication and session management ourselves

Other:

- Degree Day/weather API
- Server storage of images
- Dynamic vendor information
- Larger group
  - Double-edged sword

Testing

Libraries:

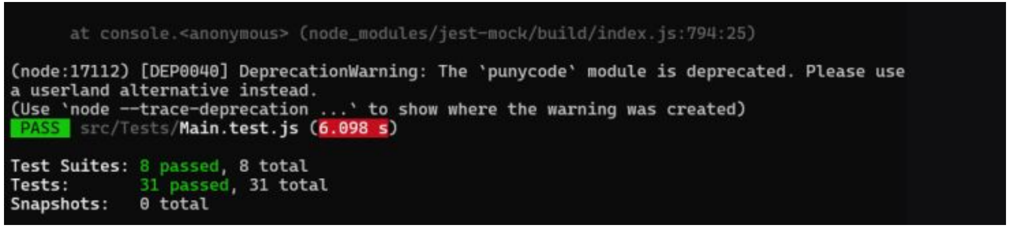
- JUnit
- Serenity
- Mockito
- React's Testing Library

Types:

- Unit
- System
- Acceptance
- Beta Testing since April 7th

Process:

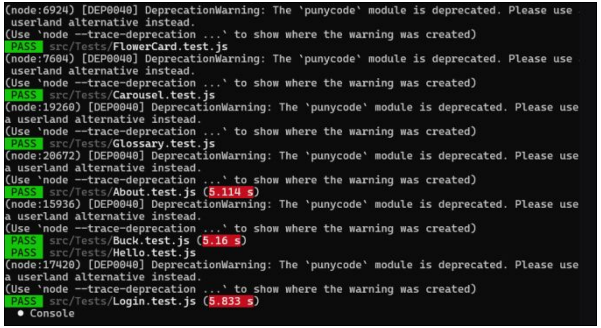
- Tests run in Build and Pipeline
- Manual testing to ensure functionality
- Reviews and Approvals before merges



```
      at console.<anonymous> (node_modules/jest-mock/build/index.js:794:25)

(node:17112) [DEP0040] DeprecationWarning: The `punycode` module is deprecated. Please use
a userland alternative instead.
(Use `node --trace-deprecation ...` to show where the warning was created)
 PASS  src/Tests/Main.test.js (6.098 s)

Test Suites: 8 passed, 8 total
Tests:       31 passed, 31 total
Snapshots:   0 total
```



```
(node:6924) [DEP0040] DeprecationWarning: The `punycode` module is deprecated. Please use
 userland alternative instead.
(Use `node --trace-deprecation ...` to show where the warning was created)
 PASS  src/Tests/FlowerCard.test.js
(node:7604) [DEP0040] DeprecationWarning: The `punycode` module is deprecated. Please use
 userland alternative instead.
(Use `node --trace-deprecation ...` to show where the warning was created)
 PASS  src/Tests/Carousel.test.js
(node:19260) [DEP0040] DeprecationWarning: The `punycode` module is deprecated. Please use
a userland alternative instead.
(Use `node --trace-deprecation ...` to show where the warning was created)
 PASS  src/Tests/Glossary.test.js
(node:20672) [DEP0040] DeprecationWarning: The `punycode` module is deprecated. Please use
a userland alternative instead.
(Use `node --trace-deprecation ...` to show where the warning was created)
 PASS  src/Tests/About.test.js (5.114 s)
(node:15936) [DEP0040] DeprecationWarning: The `punycode` module is deprecated. Please use
a userland alternative instead.
(Use `node --trace-deprecation ...` to show where the warning was created)
 PASS  src/Tests/Buck.test.js (5.16 s)
 PASS  src/Tests/Hello.test.js
(node:17420) [DEP0040] DeprecationWarning: The `punycode` module is deprecated. Please use
a userland alternative instead.
(Use `node --trace-deprecation ...` to show where the warning was created)
 PASS  src/Tests/Login.test.js (5.833 s)
  ● Console
```

Conclusions

Progress:

- We were able to complete the original goal of building an easily maintainable website for Reiman Gardens
- Management of website requires little to no code knowledge
- Mobile design is fully implemented
- Advanced degree day calculator to replace Michigan State University's
- Information displayed can help cultivators by given them pesticide times and bloom ranges

Value:

- Provides open, easy access to information about Griffith Buck Roses and Reiman Gardens

Future Client Goal:

- CSV Upload
- Better Image Storage Solution
- Dynamic Linking
- Cloud Architecture

Questions?

Thank You!

https://sdmay24-41.sd.ece.iastate.edu

Who are We?

Amy Hartjen - Client Interaction, Organization, Frontend Design

Erik Sandberg - Full-Stack, Database Administrator

Devin Amdahl - DevOps, Scrum Master, Full-Stack

Patrick Origer - Research, Third Party Manager, Degree Days

Alex Reynolds - Frontend Lead

Greg Carter - Full-Stack, Connections, Backend

Logan Schmit - Backend Helper, Lead Testing