

Creating a Web App for Tracking ESG Performance on Farms

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Merge directives

Create corresponding questions

The Data Mine

Design web application to track and record responses

Assemble scoring mechanism

Test and receive feedback from farm managers Implement feedback and develop application to be feature-complete

Introduction & Background

Halderman

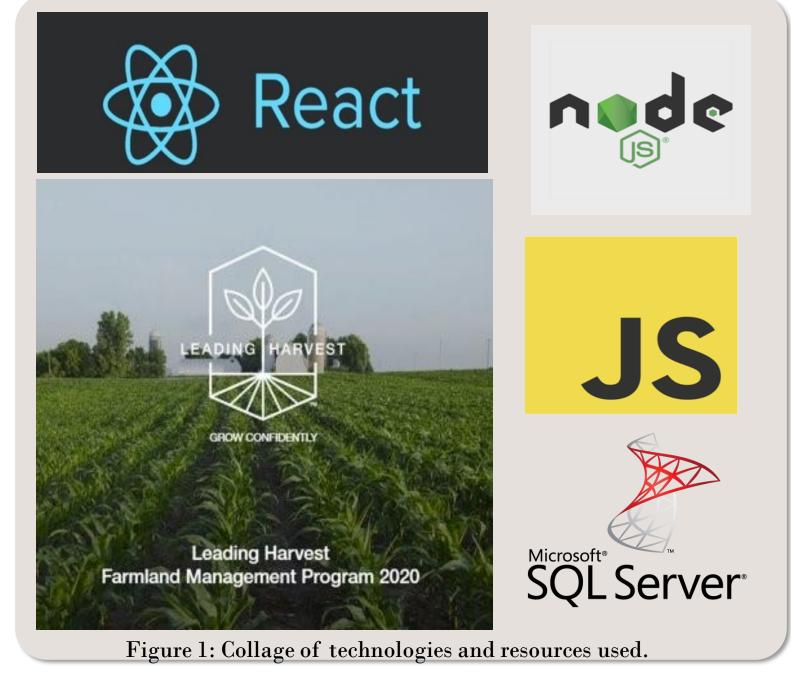
- Farm management company
- Created designation for eco-friendly farms called Eco Elite
- Goal is to encourage sustainable practices
- Long-term viability of the farm and operations enhanced as a result

Companies with strong ESG (environmental, sustainable, governance) performance typically achieve better stock performance, demonstrating how sustainable practices reflect positively on financials and customers.¹

Eco Elite takes an ESG approach to protecting

- Resources on the farm and surrounding areas
- People engaged in managing and operating the farm, and the governance of the farm management.

Web App: Tools & Resources Used



Directives and Scoring: Development Process

Examining and Merging ESG Standards

Gathering Feedback from Industry and Faculty

Iterating and Revising Constantly

Conclusion and Final Deliverables

- **Deliverable 1:** Sustainability standards and scoring system for Eco Elite Status.
- Created by merging Eco Elite and Leading Harvest standards and collaboration with mentors.
- Received industry feedback from Beck's Hybrids, local farms, and Halderman Area Managers.
- Deliverable 2: Web Application and Dynamic Form
- Capable of adapting as standards change in the future
- Dynamic question design that allows for questions to be updated by modifying the contents of a JSON file.
- Detailed guidance of each questions with relevant resources, rubrics, and additional details.
- User Authentication, log in and sign up, and a management page implemented.

Objectives

Design Process

Our team organized two teams during the design

• Went through each directive in Eco Elite and

• Created a list questions that needed to be

• Styled both the Halderman form and the

guidance page for the web application

form looks visually appealing

• Created features asked by Halderman so the

Merge Eco Elite and Leading Harvest into a single cohesive set of standards

Create an easier process for small farms to adapt sustainable practices and certify themselves as such

phase to implement our objectives:

Master List Team

Styling Team

Leading Harvest

included on the form

Develop a user-friendly webapp to helps farms determine if they meet Eco Elite status

Final App and Directives Deliverables

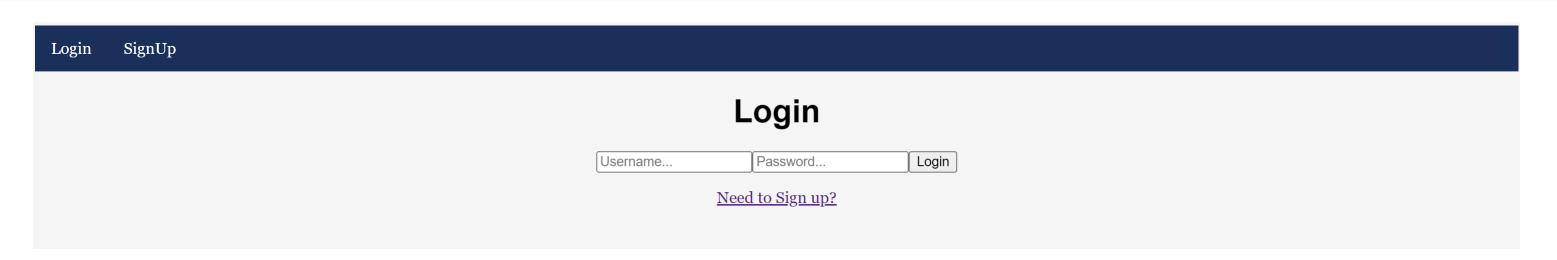


Figure 2: Login page of webapp

Question 1 Guidance This question supports Objective 11 from the Leading Harvest Sustainable Farming Standards. This objective focuses on Legal Compliance with federal Relevant definitions to aid in answering this question are below: Fair Labor Standards Act - Establishes minimum wage, overtime pay (over 40 hours), and child labor protection. • Federal Equal Employment Opportunity Law - Prohibits discriminating against an employee or applicant based on their race, sex, religion, disability, Migrant and Seasonal Agricultural Worker Protection Act - Protects agricultural workers by establishing standards regarding wages, transportation, housing, disclosure, and recordkeeping. (https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/whdfs49.pdf) • Abolition of Forced Labor Act - Prohibits any form of forced or compulsory labor. • Victims of Trafficking and Violence Protection Act - Benefits and protection for victims of trafficking. This includes immigrants. Occupational Health and Safety Act (OSHA) OSHA provides ability to: Request OSHA to inspect workplace. Employees may use rights under law without retaliation and discrimination. Employees receive training about hazards, methods to prevent harm, and the OSHA standards that apply to their workplace. The training should be in a language employees understand. Employees can be terminated for noncompliance with safety regulations and employers are at risk when employees don't follow OSHA regulations Scoring guidelines for this question are as follows: [snippet about what is expected in answer] **Full Points** Satisfactory Unsatisfactory User provides ample documentation and thoroughly explains, meets all User provides documentation but does not address all parts of No document uploaded, no acceptable the question in detail. Complies with current regulations and makes efforts to improve and Complies with current regulations, improvements on the Does not comply with current regulations and strives to participate in "above and beyond" programs.

Figure 3: Guidance page of webapp

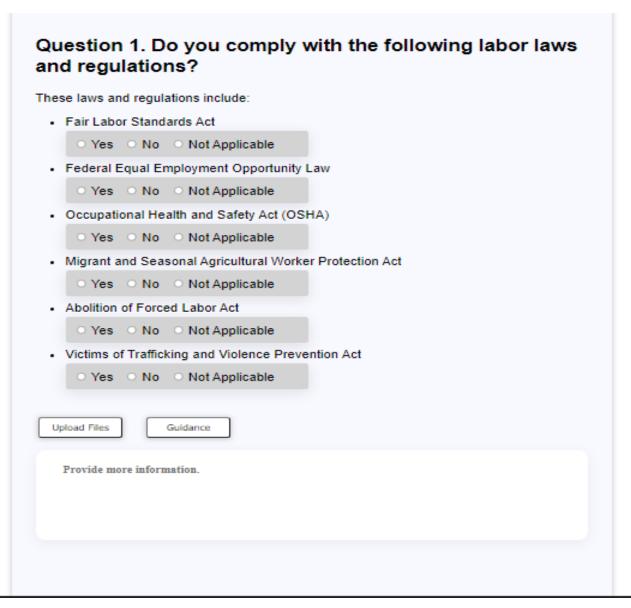


Figure 4: Form page of webapp

Next Steps

Some of our next steps include:

- Connecting to public/external databases for further verification.
- Exploring potential integration after the app infrastructure is built.
- Optimizing offline use by exploring integration with tools that would allow for offline saving of data or form progress to upload later.
- Auto filling form components and verification of the indicated practices.
- Further security for User Authentication.

References and Acknowledgments

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¹ White, A. "Why Sustainability Ratings Matter." MIT Sloan Management Review. 07 Aug. 2015, https://sloanreview.mit.edu/article/why-sustainability-ratings-matter/