Technical Report

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Motivation

The goal of this project is naturally to try and further species protection through information, but also to encourage viewing these species in their natural habitats. While many people are aware of the threats faced by endangered species, we wanted to also encourage sightseeing in national parks to get lazy couch potatoes out and actually experiencing nature. We connect parks, plants, and animals by their states, hoping to recommend a park where you can find these rare species, while also helping us gauge which states are most involved in contributing to the greater good.

User Stories from Group 10 - Band Together

1. They would like us to dynamically load info on commits from Gitlab in the About page. The About page they saw was one that was just static. We had a rough draft website up that ended up being the one they reviewed since we couldn't get the full one out soon enough, so this one ended up being already completed by submission.
    a. Time taken - 3 hours
2. They want us to make the "Get Started" button on the Home page clickable. Their version had just a button that did nothing, it was there for the look of the Home page. The current one is linked to the Park page.
    a. Time taken - 15 min
3. They want us to display all the information relevant to search criteria on each detail card on the list pages. We had forgotten about that requirement and were just going to have Cards on the model pages with an image and name. We have since added the 5 attributes that we allow sorting and filtering by as a vertical column of text for all models.
    a. Time taken - 1 hour
4. They want us to add descriptions for information given on 'Animals' pages. Our data source is the US Fish & Wildlife Preserve, and they have many fields like "BCC" and "Distinct Population Segment" as part of their data. We didn't think too much about it, but it makes sense that the average user needs to learn what these terms are. We think that the best way to implement a solution is to make the terms hyperlinks in the tables, and link to a definition of them.
    a. Time estimated - 15 min
5. They want us to make the map on the Parks page readable. Apparently, they had to zoom in too much to see it. We had our own issues with getting the map to be the right size, but we think we've got the hang of it, so it should be a simple matter of trial and error to see what size looks good.
    a. Time estimated - 15 min

User Stories for Group 2 90min in One

1. We want to see players that are on the same team in one place. Their instances page didn't have any filters in mind, just a list of players. Grouping them by teams is useful when interested in the team overall. We're thinking they should point to each other's instances.
    a. Time estimated - 1 hour
2. We want to be able to browse players. There was no indication that searching was possible for players. We'd prefer not to have to scroll through a randomly listed table to find individuals. A search bar or sorting alphabetically is useful enough.
    a. Time estimated - 15 min (they only need to put the search/filter bar in, not process any requests yet)
3. We want to be able to see a team's history. That's useful to answer the questions of if a team is getting better or not. A table of win/loss is enough for this.
    a. Time estimated - 30 min
4. We want to know which teams are from which country. That's useful if we want to find information on a player from our country. This should be a displayed attribute, possibly filterable, on the models' page for teams.
    a. Time estimated - 15 min
5. We want a way to compare teams. This goes along with seeing a team's history. With that, they can also rank teams. Some way to filter by win/loss on team model would be nice for this.
    a. Time estimated - 15 min (again, just the filter bar)
6. We want more media on the Home page. There are 3 coloured buttons, which is nice, but a logo or something more would be more flashy and attractive. They already have a soccer ball as their icon, so another one would be good enough to let people know that this website is about soccer.
    a. Time estimated: 15 min
7. We want to see a mission statement, headshots, and links to tools on About page. They went ahead and did the dynamic pulling from Gitlab first, so they did the hard part first. They need to have all the other, static info and design it as well.
    a. Time estimated: 1.5 hours
8. We want to see all 5 filterable/sortable attributes on models pages. They currently have only 3 attributes for each instance on the models' pages. Since 5 of them minimum need to be filterable/sortable, letting us see them would be appreciated.
    a. Time estimated: 15 min
9. We want to see at least 10 attributes on the instance pages. Again, they only have 3 attributes per page. The minimum requirement was 10.
    a. Time estimated: 4 hours
10. We want to see the Contacts model filled. It was empty when we got it, so we're assuming they have to get the data and design the page still.
    a. Time estimated: 1 hour

RESTful API

We have a skeleton API on Postman. We haven't thought much about filtering and searching, so we basically have 2 endpoints for each model of parks, plants, and animals for a total of six. The first endpoint for each is to get a list, designed to populate the models' pages. We also want to have optional queries to restrict the list's start and size to make loading quicker. The list elements will be instances in JSON format. The second endpoint for each model is designed for getting individual models and loading instance pages. The unique IDs used for identification are from the original APIs, listed as the park code, ECOS ID, and USDA symbol.

Models

Parks

The parks are where the plants and animals might be located. The data for them is from the National Park Services' API.

- Sortable Attributes
    - Names
    - Emails
    - Phone Numbers
- Filterable Attributes
    - Designations
    - States
- Descriptive Attributes
    - Images
    - GPS Coordinates (Displayed on a map)
    - Park Code
    - Description
    - Directions Info
    - Weather Info
    - Addresses
    - Website

Plants

One of the categories we divided endangered species into. The data for them is from a USDA sponsored API.

- Sortable Attributes
    - Common Names
    - Scientific Names
    - Family Common Names

- Filterable Attributes
    - ESA Listing Statuses
    - States (Displayed with highlighting on a map)
- Descriptive Attributes
    - Images
    - USDA Symbol
    - Family
    - Category
    - Duration
    - Growth Habit
    - Toxicity

Animals

The other category we divided endangered species into. Their data is from the US Fish & Wildlife Services Environmental Conservation Online System.

- Sortable Attributes
    - Common Names
    - Scientific Names
- Filterable Attributes
    - Groups
    - ESA Listing Statuses
    - States (Displayed with highlighting on a map)
- Descriptive Attributes
    - Images
    - Are they domestic or foreign?
    - Are they a distinct population segment?
    - Are they aquatic?
    - Are they Birds of Conservation Concern (BCC)?
    - Conservation Plan Title, if one exists

Tools

Along with the above APIs and the necessary tools React, Bootstrap, and React-DOM, we used 3 optional tools.

- React Select - We wanted to allow selection of multiple filters (e.x. Filter both reptiles and birds), but React Bootstrap's dropdowns don't support multi-select by default, so we decided to use this instead. It's a dropdown with high levels of customizability, but we plan on only using the basic provided ones with no customization.

- Google Maps React - As the name suggests, it allows embedding a Google map with React. We already planned on having it for the GPS coordinates of parks, but we might also use it for state highlighting for plants and animals instances.

- Styled Components - This tool is to allow easier styling for components. We saw this tool in a React Bootstrap tutorial, so we just followed along and stuck with it. We're using it for simple styling, like centring text in a column.

Hosting

For now, we are hosting the static site on S3 and Cloudfront, with an SSL certificate from ACM and the domain from NameCheap.