PastureMap iOS Coding Challenge

The Basic Problem

Build an iOS app that allows ranchers to draw multiple pastures on a map so they can map out their ranch. The app should display all pastures and their areas on the map.

Details

A pasture is an irregularly shaped polygon. We recommend using a library such as Apple MapKit or Mapbox to draw the maps and polygons.

The requirements for the app are:

1. The user can draw polygons on a map.
2. The user can draw multiple polygons.
3. The boundaries of each polygon are drawn on the map.
4. The area of each polygon is displayed within the polygon.

Part of this challenge is designing the UI for this app. You are free to design the UI as you see fit as long as the app meets the requirements.

Extra Credit

You are encouraged to extend this project and add features as you see fit. Our only suggestion is that these extensions should add to, not subtract from, the user's experience (for example, adding a Pacman mini-game at the side of the page would be very cool, but highly not recommended)

If you want to add extensions but aren't sure what to do, here are some suggestions:

- Allow users to specify the pasture color
- Prevent users from drawing invalid or overlapping pastures
- Allow dragging and dropping polygon vertexes to edit pastures
- Allow undo
- Allow deleting vertexes
- Allow deleting pastures
- Show the total area of all pastures
- Store the pastures in local storage so they persist when the app is restarted.
- Connect the site to a live backend (even cooler if you build the backend yourself)

Guidelines

- You have three hours to complete the task. If you elect to add extensions and feel like you need more time, you are welcome to take up to eight hours. However, we ask that you send us what you have (even if incomplete) at the three hour mark.
- You have freedom over how you want users to draw pastures on the map and the visual design of the pastures and area labels.

- You are free to search online for any information you need. Cite any online references you use.
- You should structure your code using object oriented programming principles as if it were part of a larger project. You should use abstractions that make your app modular and easy to extend.
- Please submit your code in a zip file, or share it using Google Drive or Github. Include a readme.txt if running your code requires special instructions. If you extended the project, describe the extensions briefly in your readme.txt so we don't miss any of them out.

Evaluation

You will be evaluated on the following criteria (not in order of importance)

- User interface
- User experience
- Functionality
- Cleanliness of code
- Structure of codebase

Thanks for investing your time. We hope you learn things through this challenge, and have fun while at it. Good luck! :D