

Distributing a Fleet of Drones over an Area with No-Fly Zones

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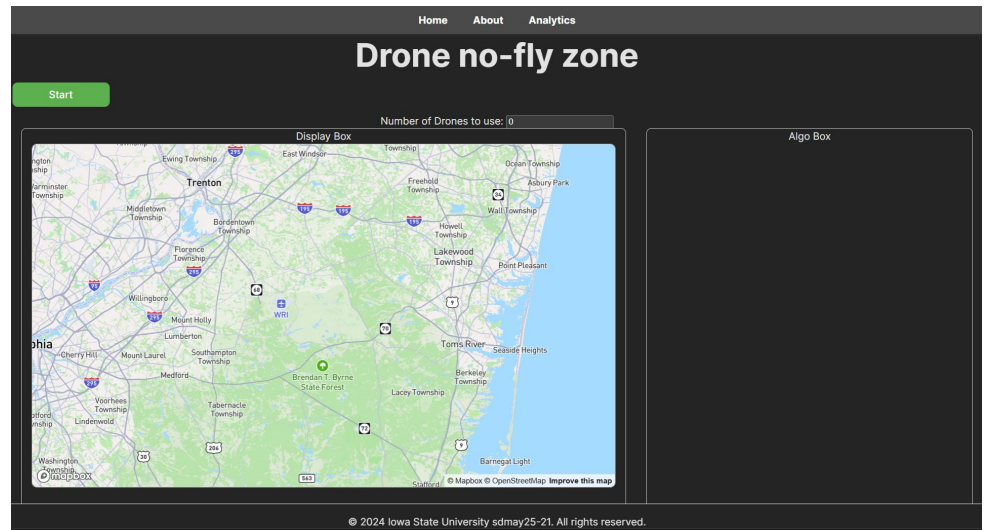
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Project Overview

- Goals:
 - To be able to give a UI to users that displays their drones interacting with their points of interest for whatever reason they have given.
 - Have drones fly in a shortest path to certain events while ensuring that they get around no-fly zones.
- Importance:
 - Many drone users currently have to manually use them to respond to events, we will automate this so that drones can instantly perform the jobs needed.
 - Rather than users controlling drones one by one they can now have all of them move at the same time assuming there are multiple events happening simultaneously.



Professional Responsibility (going well)

Communication Honesty:

- This is very relevant to our project as we need to be discussing issues that we are running into, things that are going well, and things that aren't going well. One small uncommunicated issue could propagate into our entire design and prevent us from being able to develop efficiently.
- Our approach is to have our advisor meeting every monday, then on Thursdays we meet just as a group to discuss the specifics of developing our prototype. Outside of this we text very frequently about what we are doing any what is going on with our weekly tasks.
- This approach to this responsibility stays ethical within our group as we are able to communicate issues freely, and be able to suggest new ideas without issues.

Professional Responsibility (not going well)

Health, safety, and well-being:

- This is very relevant as the mental state of our groups members is vital to our performance and deliverables for this project.
- Our approach in this area is basically non-existent. We really haven't discussed this or decided on a way to check up on one another throughout our process.
- In the future to change this we will start all of our weekly meetings by asking each other how we are doing outside of the project. As well as this we will text check up messages to one another to make sure everyone is feeling good about themselves to be able to better contribute to the project.

Broader Context Area-Four Principles

The most important of them all is likely economic, as the goal is to save money and time for people that are utilizing drone technology.

	Beneficence	Nonmaleficence	Respect for Autonomy	Justice
Public health, safety, and welfare	This design will help improve users abilities on automating drone flight	This design does not support the use of drones in harmful practices (bombing, war, etc.)	We listen to our users for different data formats that users want to use	Design gives benefits of visualization and data insertion for drones and their users
Global, cultural, and social	Many users want to see a way for their drones to respond to events as fast as possible	This design will not be able to harm any sort of group due to this being a visualization	The design will not impact other cultural practices by any regard	Our visualization will allow any group that utilizes drones to see quick and responsive benefits
Environmental	This design has drones using shortest path methods in order to best sustain the environment	The shortest path implementation will allow for drones to use little amounts of fuel, and help people.	This will be a very ecofriendly design because it is all on the internet.	This implementation would not disturb anyone or any animals, if drones were used they'd be flying high above
Economic	This design will allow for farmers, cities, and rescue ops be more cost effective, and save time.	This design could not disrupt the economy, as it does not directly relate to jobs or payments.	There are several different ways to select your input data, for people at different levels of understanding	This implementation does not take payment so it would not financially effect groups.

Ethical Issues

- Different path finding routes to be used could be consequential for timing, and potentially on saving lives. (What path should the drone take to rescue people the fastest? What path should the drone take to put out fires the fastest?)
- What would happen if a drone were to graze a no-fly zone or it changed? How would the person flying the drone be held responsible?