Formation Flying For Fun (FFFF)
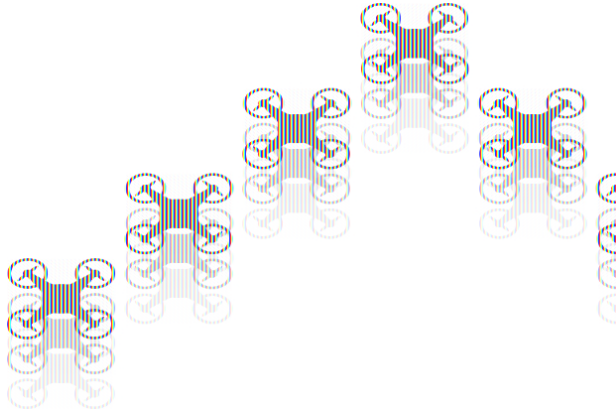
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Vision Statement

FFFF is a system that allows a group of drones (2-5) to fly in various formations. FFFF allows for the user to change between different formations in flight between locations. We plan on implementing at least three different formations including a straight line, the flying V, and the [delta formation](). Formation flying has many use cases in military situations, but also provides an excellent visual airshow for entertainment.

We are approaching the problem of formation flying through the lens of videography, and as such we plan to explore formations that lend themselves to that area. Additionally, we have some general ideas on incorporating video streaming in-flight, such as the ability to watch multiple drones' streams simultaneously or to switch between them, but we recognize that this might be beyond the scope of our project.
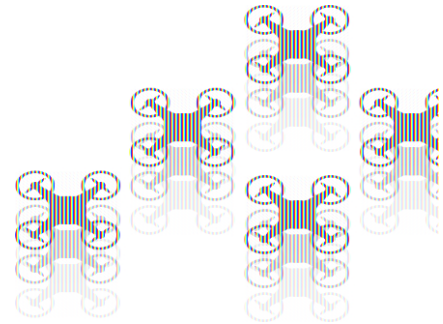
Formation Diagrams

Flying V

Straight line

Delta

Project Timeline

- By 04/02
  - Install appropriate hardware (Raspberry Pi, rudimentary videography hardware)
  - Begin groundstation/general drone communication setup
  - Begin working on simple formations (straight line)
- By 04/09
  - Initial groundstation/communication system in place
  - Complete simple formations
  - Begin working on more complex formations

- By 04/16
  - Complete first field tests of simple formations
  - Start wrapping up code for more complex formations
- By 04/23
  - Complete first field tests of complex formations
  - Finish implementing ability to switch between formations mid-flight
- By 04/30
  - Final field tests
  - Gather footage for final presentation