CS M117 Project Proposal - Hawks

1. Team Name: Drone Team
   Project Name: Hawks
   Members:
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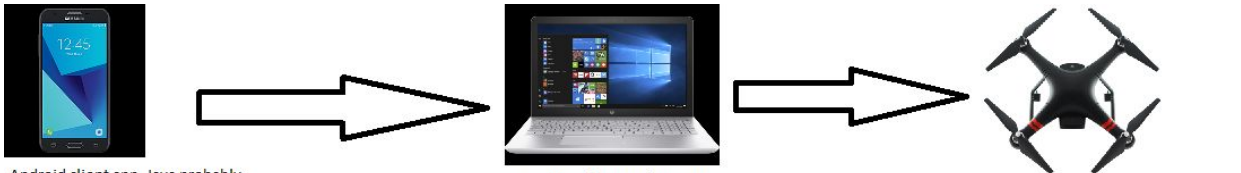
   2. Ben Hutchins (bhutchins3@g.ucla.edu)
   3. Cody Hubbard (codysphubbard@gmail.com
   4. Patrick Halle (phalle2727@gmail.com)
   5. Sidharth Bambah (sidharth.bambah@gmail.com)
   6. Stephen Lai (stephenlai1997@gmail.com)

2. Motivation
Typical drones require specific proprietary controllers to function, and have limited programmability. Our goal is to create a mobile app which can control drones, allowing for more customizability and less required hardware.

3. Expected functionality
With the mobile app, users will be able to control our specified drone using accelerometer and position data. The mobile app will pair with a server hosted on a separate computer, which then pairs with the drone.

4. Wireless Technologies
Our project will employ bluetooth and WiFi to pair the phone with the computer hosting the server, and bluetooth or some other method to communicate between the drone and the server.

5. Implementation Overview
For the mobile app, we will be using both iOS and Android devices. The drone we will be using is the Quadcopters Mini Drone RC. As for implementation, the drone is open source and programmable, so we will be programming it in C. The iOS app will be done in Swift, and the Android app in Java. The server will be written in Python, using basic socket programming and bluetooth libraries.



Android client app, Java probably
iOS client app, Swift

-Connect to server
-Choose drone to connect to
-read/transmit accelerometer data

Server, whatever language

-Receive client data
-Translate client data into packets (probably JSON)
-Communicate with drone (not entirely sure how)

Drone app, C

-Receive data from server, treat it like controller data
-Send sensor data to server

6. Responsibility Assignment
Android: Sidharth Bambah
iOS: Patrick Halle, Cody Hubbard
Server: Stephen Lai
Drone App: Ben Hutchins, Analisse Reyes

7. Work Schedule
We will meet Wednesdays from 2-4 pm.