SE 101 Lab Project - Group 40 - DHMO Destroyer

The Project

The DHMO (dihydrogen monoxide) Destroyer will be a small, fast, Arduino based remote controlled boat controlled through a self-developed Android application connected via Bluetooth.

Major Software Components

In terms of software, there will be two main components, the Arduino sketch and Android application.

Prototype Plan

For our prototype, we will be creating an evolutionary prototype. This prototype will not be the full boat, it will only consist of the working hardware as well as a barebones Android app. The purpose of this prototype will be to test and make sure we are capable of putting the hardware together and that the hardware is actually functional.

Hardware Acquired

- Elegoo Uno R3 Main Board
- Kuman Motor Drive Shield Expansion Board
- Kuman Bluetooth Module
- Urbest 12V 6000RPM DC Motor
- RioRand Servo Motor
- Gikfun 9V Battery Cable Plug
- 9V Battery
- Breadboard, LED Indicator Lights

Anticipated Challenges

In creating this project we expect to encounter many challenges. Although each of us have some programming experience, none of us have any experience in working with an Arduino or hardware in general. Additionally, while putting together the hardware, we will have to learn as we go about things we do not know about such as transistors, resistors, and capacitors. Another challenge we anticipate is waterproofing the various electronics. Because it is a boat, a large portion of the project will be submerged in water. Therefore, some of the electronics will be coming in contact with water. We have already came up with various solutions such as using rods to extend the distance between the motors and the water and/or using putty to seal possible gaps.