SE101 Proposal

Project Description (What It Does)

Using an arduino to control a character in a mobile game (iOS) through bluetooth.
Current game idea is a platformer akin to Mario and use button clicks to activate powers of character.

Major Hardware Components

- Arduino
- Computer
- Arduino joystick
- BLE Chip
- Breadboard
- Resistors and wires

Prototype Model

Evolutionary horizontal prototype. Prototype will eventually become the main system.
Key focus is on integration, making this model a good fit.
There are a variety of integration challenges for this project, therefore a horizontal prototype would be best. This will allow us to ensure that all the basic components can function together, and from there the project can evolve.

1. Begin by making an app that connects to bluetooth
2. Send and receive information between the app and the arduino (Input/Output)
    a. Be able to read joystick movements from the arduino
    b. Move a box with the joystick in a given direction
3. Create basic game where the character can move
4. Implement powers through button clicks

Major Software Components

- Connecting the arduino controller to a phone
- Developing the game
- Making the game responsive to arduino

Anticipated Challenges

- Connecting the arduino controller to a computer
- Making the game/app
- Effectively collaborating and working towards a goal as a team
- Integrating components and connecting arduino to phone
- Designing the game
- Learning new programming languages (Swift)