SE 101 – Lab Proposal

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Project Description:
A version of flappy bird where the user can have the option to clap in order to make flappy bird fly. In this version of flappy bird, the user controls a bird along a vertical axis while randomly generated obstacles move towards the bird. The bird is constantly falling, and only moves upwards in short bursts when the user claps. The game ends if the bird hits one of the obstacles. There is also a counter that keeps track of how many obstacles the bird surpasses.

Major Software Components to Project:
- Implementation of LCD User interface. (Update Screen)
- Implementation of Game to Recognize external Sounds. (Allowing sound to control Sprite)
- Implementation of 2D graphics and animations

Prototype:
- Evolutionary prototype
- Attempt to create a square on the screen which moves upwards in response to external sounds
- Have basic physics implemented (i.e. make the block accelerate downwards)

Hardware Required:
- Arduino Uno (RigidWare Store)
- Breadboard (RigidWare Store)
- Sound Sensor (Probably also Rigidware Store)
- Wires (Rigidware Store)
- Shield (Rigidware Store)
- Buttons 4x (RigidWare Store)
- LCD TFT 3.5 or 2.8 inch screen (Rigidware Store)

Challenges Anticipated:
- Drawing and moving a complex object
- Differentiation between noises
- Random generation of obstacles
- Time Management
- Implementation of simple physics into the game.
- Balancing participation.
- Using arduino software and hardware. (Limited knowledge)