Assignment #4

In-class working demo: 3 PM Friday May 24, 2019

Report Due: 11:59 PM Friday May 24, 2019

OBJECTIVE

The objective is to have you integrate sensors on the hardware computing platforms. For your last assignment i.e Assignment #4 you need to control both the paddles of a pong game (a classic arcade game) using sensors (ultrasonic, accelerometer, pedometer etc.) and Hexiwear/Raspberry Pi Z W.

INSTRUCTIONS

1. Please pair up in teams of 2-3 for this assignment.
2. You are allowed to take any code off the internet for a pong game.
3. ***Once you have decided on the sensors that you want to use please contact me (rohitbanerjee@g.ucla.edu) to get the go ahead.***

SUBMISSIONS / DEMO

1. You will have to present your demo in the discussion class on Friday May 24, 2019 at 3 PM.
2. Zip all the codes that you have used (with proper comments) and submit it in the shared google drive. Link to drive: https://drive.google.com/open?id=1AKlf-hQGBgFXOiTx1A500-N5NAyCXGf_
3. A write up report in pdf format needs to be uploaded on Gradescope by 11:59 PM Friday May 24, 2019. The report should explain the following points:
    a. Visualize the sensor data – Plot the sensor data which you have decided to use.
    b. Transfer Function/Mapping – How your sensor data is controlling the paddle i.e. how you are processing the sensor data to make it do something you want (in this case it's controlling the movement of the paddles.)
    c. Latency – The lag between when the sensor reads the data and when the paddle actually moves on the screen.
    d. Accuracy – Report any errors or glitches in your implementation and how you dealt with them.
    e. Resolution – How smooth is the paddle movement in the game using your implementation.