

Group 27 iMouse Proposal

1. General Idea

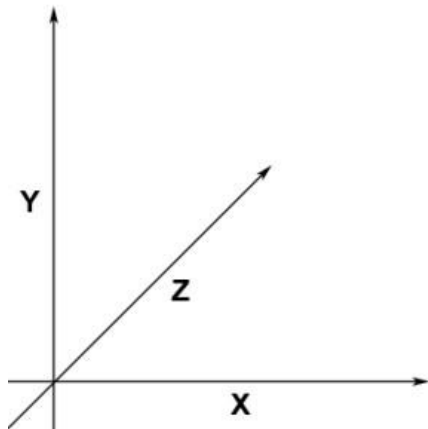
1.1) What does it sense?

- The iMouse senses movement from user in the form of acceleration in x-axis and y-axis.

The iMouse also have 2 buttons for left and right clicks.

1.2) How does it sense?

- For clicking, it receives input directly from the buttons.
- For cursor movements, primarily we plan to accelerometer to converts movements in x-axis and y-axis to make the cursor move left-right and up-down. (The axes used for detecting movement could be changed after testing.)



1.3) How does a user use it?

- We intend to make our iMouse small so that a user can hold it comfortably in one hand and move it up and down or left and right freely and the mouse will convert these movements into corresponding direction commands to the cursor. And the two buttons can be pressed for right click and left click using 2 fingers.

1.4) What are the challenges of this idea?

- Currently, the biggest challenges for us are the sensitivity and stability. We are not used to working with accelerometer so we are not sure about how we should adjust the sensitivity for the sensor such that the cursor can be efficiently controllable without unwanted movements causing by the instability of the user's hand. We are going to test if using gyroscope sensor will help improve the stability of our iMouse.

2. Components

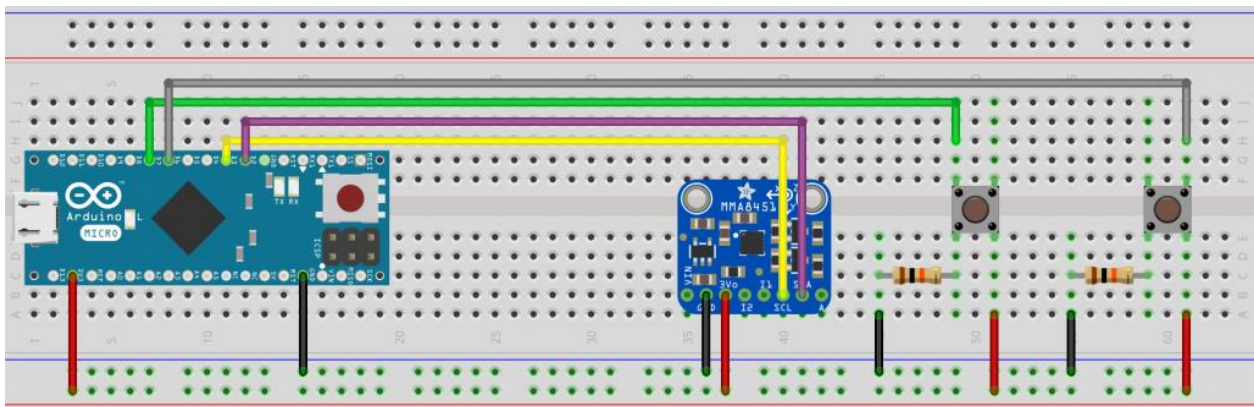
2.1) What sensor are required?

- Gyroscope and Accelerometer

2.2) How much do they cost?

- 190 Baht according to the reference slide given.

2.3) How does each sensor connect to a NodeMCU?



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Basically our NodeMCU will be similar to the diagram above but some changes could be made to improve the performance of our iMouse.