Touch Bar

Team

Team Name- Beginners

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The Project

Our project would be an external device which when connected to a laptop or a computer; enables touch sensitivity on the screen when you need it. We'll make it in such a way so that it can be connected with the laptop or computer through a cord and it would start working.
-Most of the time, we're happy with using the touchpad or an external mouse to perform operations, but sometimes it may happen that the same job could have been easier if the laptop was touch enabled. Also, it would be pretty cool and useful if we could complete it. That is why we're making this.

Components and Other Requirements

Light sensors- Transmitter and Receiver (around a 100 of them)
Microcontroller and Other basic electrical components (Resistor, capacitors, etc.).
Acrylic or some material like that to create the framework.
Other components may be added as and when the need arises. This is not a complete list.

Estimated Cost

Around Rs. 6000-7000. Might Change.

Implementation

We intend to gauge the x and y co-ordinates (relative to a corner as reference) of the point where the user puts his finger which will then be fed to the CPU and co-related with the mouse pointer. Hence the cursor would move to and click at the location where you point.
The first part we'll do by placing two strips of light/ signal transmitters (laser light for example) on two adjacent edges of the screen thus creating a sort of a grid on the screen. Opposite to each transmitter would be a receiver which continuously senses the incoming signals. When the user touches the screen at a point, the signal to two receivers (one from the top row and one from the side) is cut off and hence we can obtain the x-y coordinates of the point where the user touches. Obtaining the coordinates we can use those coordinates to set the cursor at that point.
For the second part, we'll firstly need to study how exactly does an external mouse work and would have to correspondingly code for our project.

Timeline

Week 1: Detailed study about how an external mouse works and how to make the equipment compatible with the laptop/computer and about the sensors we are going to use. Also learn how to code the microcontroller.

Week 2: Assembling and creating model of transmitter receiver couple so that the ease to set up each time increases.

Week 3 and 4: Passing gained information to microcontroller and programing it to process the information and send it to the CPU. Again the CPU has to be calibrated accordingly. Completing the basic project.

Week 5: Testing. Taking care of glitches.

Week 6: If time remains, we plan to develop the equipment so that it could perform other functions like selecting, zoom in, zoom out, etc. other than just clicking.