GESTURE CONTROL INTERFACE

GROUP 2

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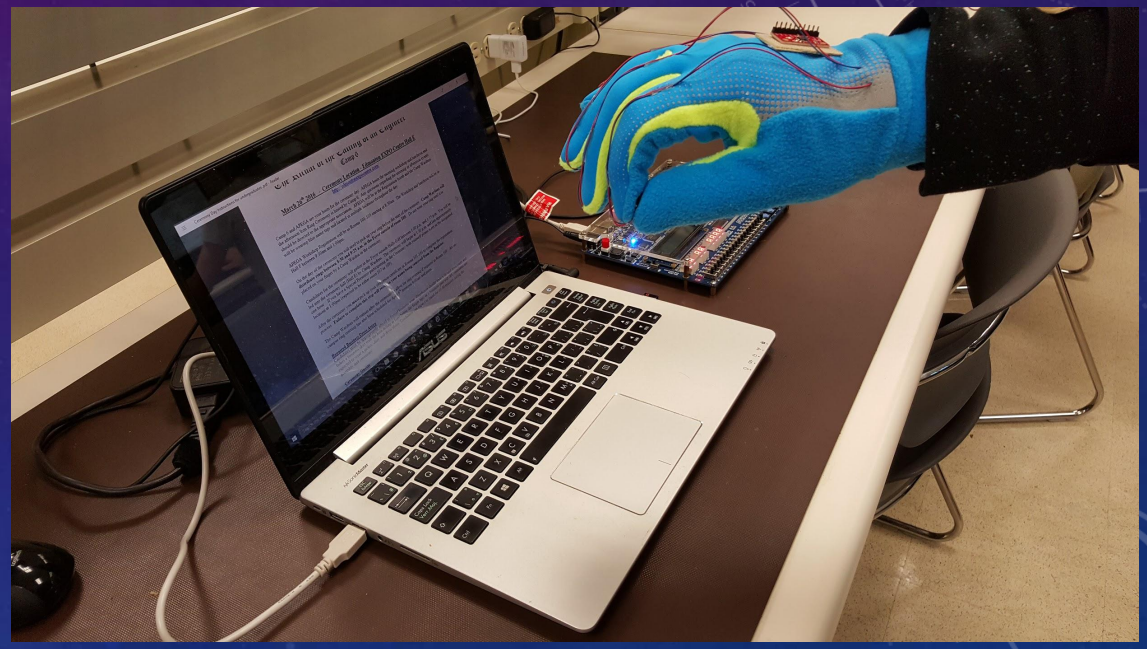
OVERVIEW

- Motion sensing glove
- Data wirelessly sent from glove to Altera DE2
- DE2 is recognized as an HID keyboard by a host computer
- Gesture recognition algorithm translates gesture information into a sequence of key presses



MOTIVATION

Innovation

To explore different ways to wirelessly interact with a computer. Gesture control has been in the mind of innovators for some time, however a useful product has yet to be realized.

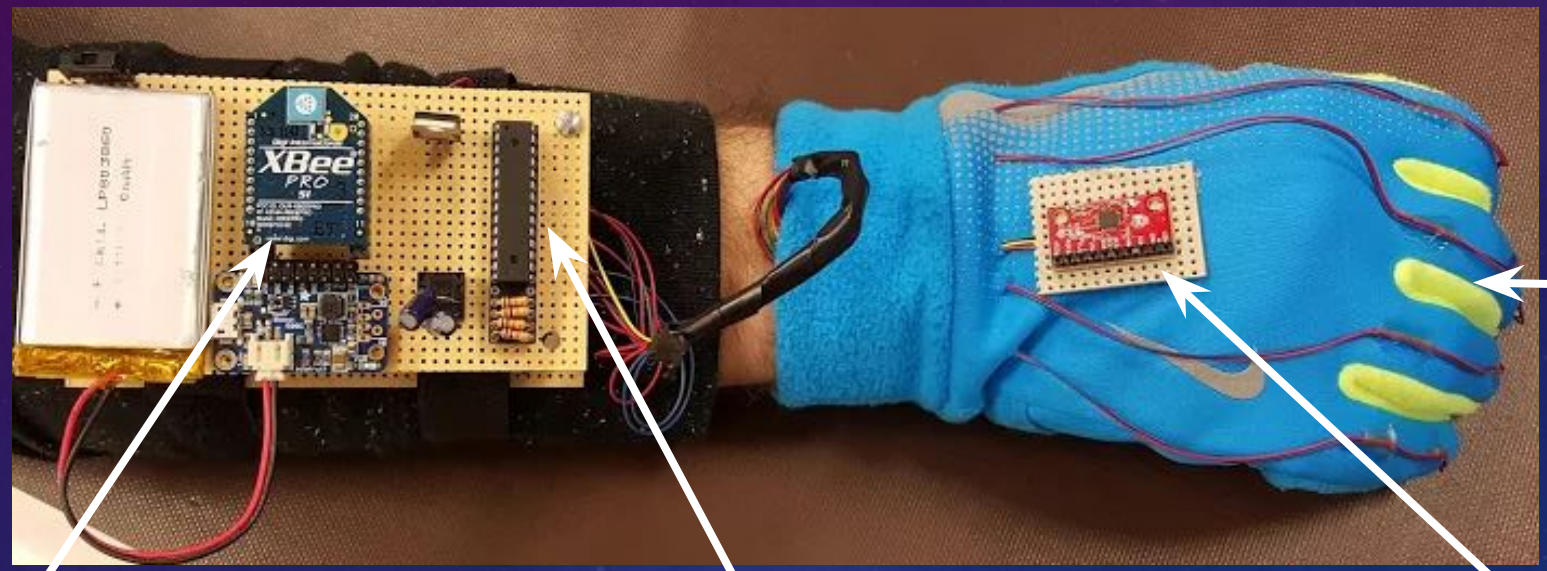
Convenience

A easy way to lean back a scroll through a PDF or document that is on your computer

DESIGN

- Project divided into 2 major parts
- Glove component: battery operated, wireless, wearable
- Board Component: receive information wirelessly, process data using a gesture recognition, have a USB connection

GLOVE COMPONENT



- Buttons for detecting interaction

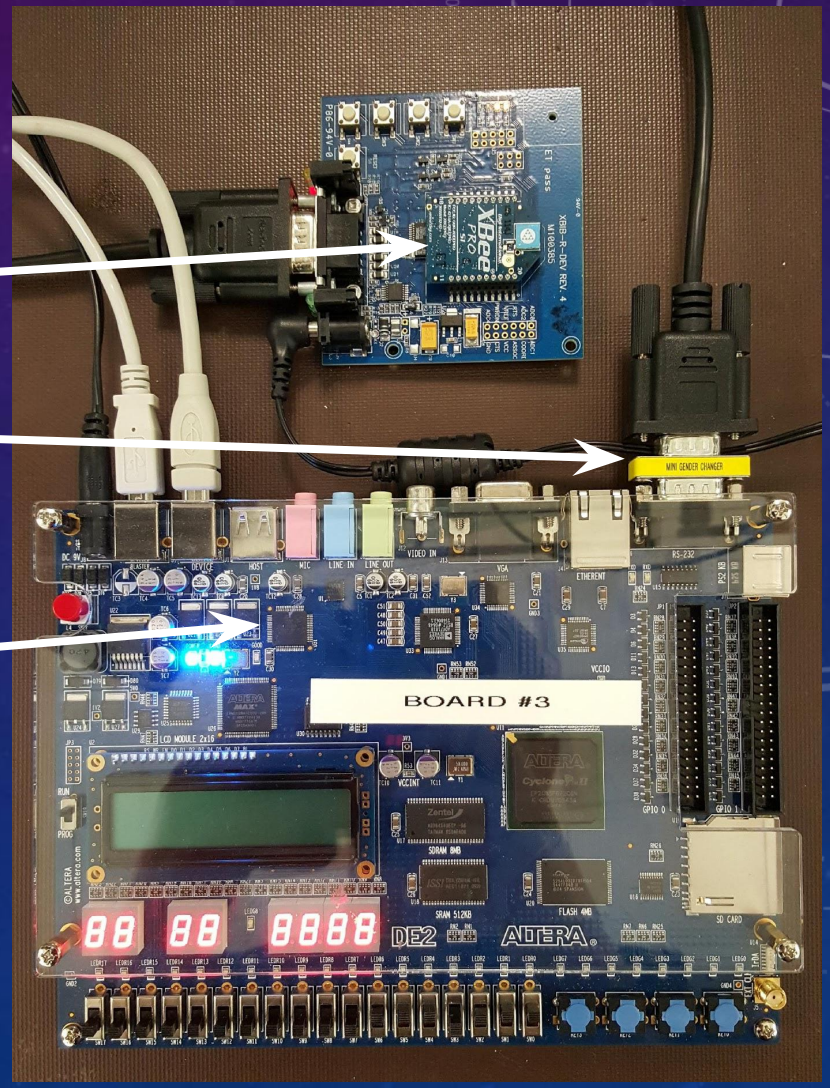
- XBee wireless transmitter for sending data to FPGA board

- Microprocessor for collecting acceleration data and sending it to XBee component for wireless transmission

- 6-degree of freedom inertial measurement unit (IMU) for tracking motions

DE2 AND FPGA COMPONENTS

- XBee wireless receiver for receiving data from glove
- XBee development board connected to the DE2 through a serial interface
- USB controller (ISP1362) for communication between board and computer



Let’s see how it works!

WHAT'S NEXT?

- Using HID drivers
- Leveraging unused data available from the IMU
- Additional buttons on the glove, other modes of operation

QUESTIONS?