# JoyMan

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Objective:

Controlling a bot wirelessly by reading motion and gestures of a person using

Microsoft Kinect.

Prerequisites:

* Basics of object oriented programming in C#
* Basics of UART communication.
* Arduino

Hardware Requirements:

* Microsoft Kinect 1.0
* Arduino Mega 2560
* HC-05 Bluetooth module
* An Omni or Mecanum drive
* A Windows computer

Approach:

In this project, Kinect is used as a 3D camera to detect a person’s head’s position in space so we get the x,y and z positions. When the programme initialises the first position of the head is taken as the reference for the rest of the programme. With this reference and current head position we calculate the inverse tan of the angle and send it to the bot. In the bot side the programme is written to move the bot at an angel received. Along with the head person’s hand’s y-coordinate is also monitored if it is raised enough the hit command is given to the bot, In this case it is a badminton playing bot and moves the racket on hit command.

Kinect

Windows Computer

With Bluetooth

HC-05 Bluetooth module

Arduino

Person

Camera

Wired USB

Wireless Bluetooth

UART at Serial1

Links:

<https://github.com/Deepak61900/JoyMan>

https://www.youtube.com/watch?v=8Ln2ocw7RKQ

The Verdict:

This project is currently reading the motion and gestures of the body parts, sound input can also be implemented easily. Kinect is a very useful piece of hardware and does the job quiet perfectly. The concept used in this project can be used to develop things like Surrogate soldiers, Shadow mode from the movie ‘Real Steel’ and much more.