**Introduction**

The truth is we all want our houses smart, we want to run Jarvis in our homes, we want to get home and have our house automatically light up, or the door opening by itself as we approach it or we want to tell the kettle to boil a particular quantity of water before we get home from work. All these are actually possible using a microcontroller and some few sensors, while we won’t be designing all these in this tutorial we would try as much as possible to create a model for a smart door. Basically, the door senses anyone approaching and automatically opens on its own accord.

**List of Components**

PIR sensor

Servo motor

Breadboard

Jumper wires

InventOne dev board

Don’t forget to click the order link below to order for your inventone board also you can get most of the other parts online from hub360, aliexpress, ebay or amazon.

**Tutorial**

The image below shows the circuit connection for this project, here we have the servo modelling a real door. To get more info on how a PIR sensor works, click on this link or you can just google PIR sensor and you’d get a lot of info on how a PIR sensor works. We’d just try to give a brief explanation of how the sensor works.

A PIR sensor is a digital device that uses infrared rays to detect any form of movement in its environment, when motion is detected, it gives out a voltage level which can be read by a microcontroller. The PIR sensor sends out infrared rays which it uses to map out its environment so whenever we have the slightest of disturbance, it disturbs the gradient in which this sensor has created and hence we have motion being detected.

A servo is more like a stepper motor whose amount of rotation can be controlled using the amount and time duration of the voltage level sent to it.

**Code**

I’d just jump straight to the void loop in the code. In the loop, we have an if – else statement which checks if motion has been detected, writes the appropriate message on the serial monitor and writes a HIGH to the servo. If motion isn’t detected and we write a LOW to the servo. Finally, we’ve added a 3seconds delay so as to allow the PIR sensor settle before taking another reading from its data pin.