

Home Security System Using Raspberry Pi

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Commercial Home Security System is Usually Expensive and Cloud Based

What people usually have for a home security system?

- Expensive: Costs \$ 300!
- Insecure: Using cloud servers, hacker likes them!
- Uncustomized: Have to order models from company!

Fortunately!

We can build our own!

Our Product is Low Cost, Customizable and Does Not Require Cloud Service

What we will build?

A Home security system using Raspberry Pi, which is connected to the WiFi, relatively robust against cyber attacks compared to cloud based system, packaged within a required size, and powered by mains.

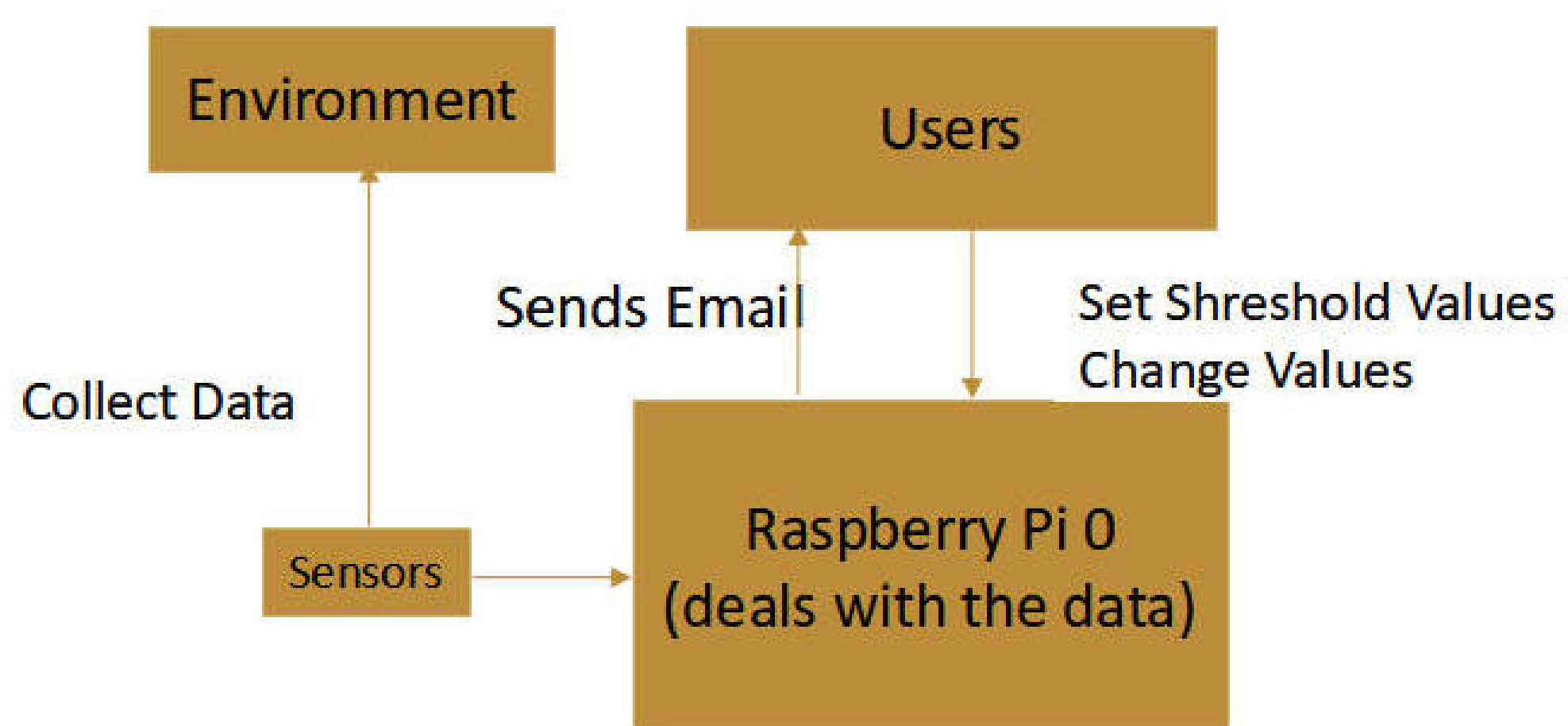
Why is it better?

- Reasonable-priced project costs under 20 dollars
- Able to gather information and email out the emergency
- High security using secure shell only
- Fully hand-made with high customizable flexibility

Parts we will use:

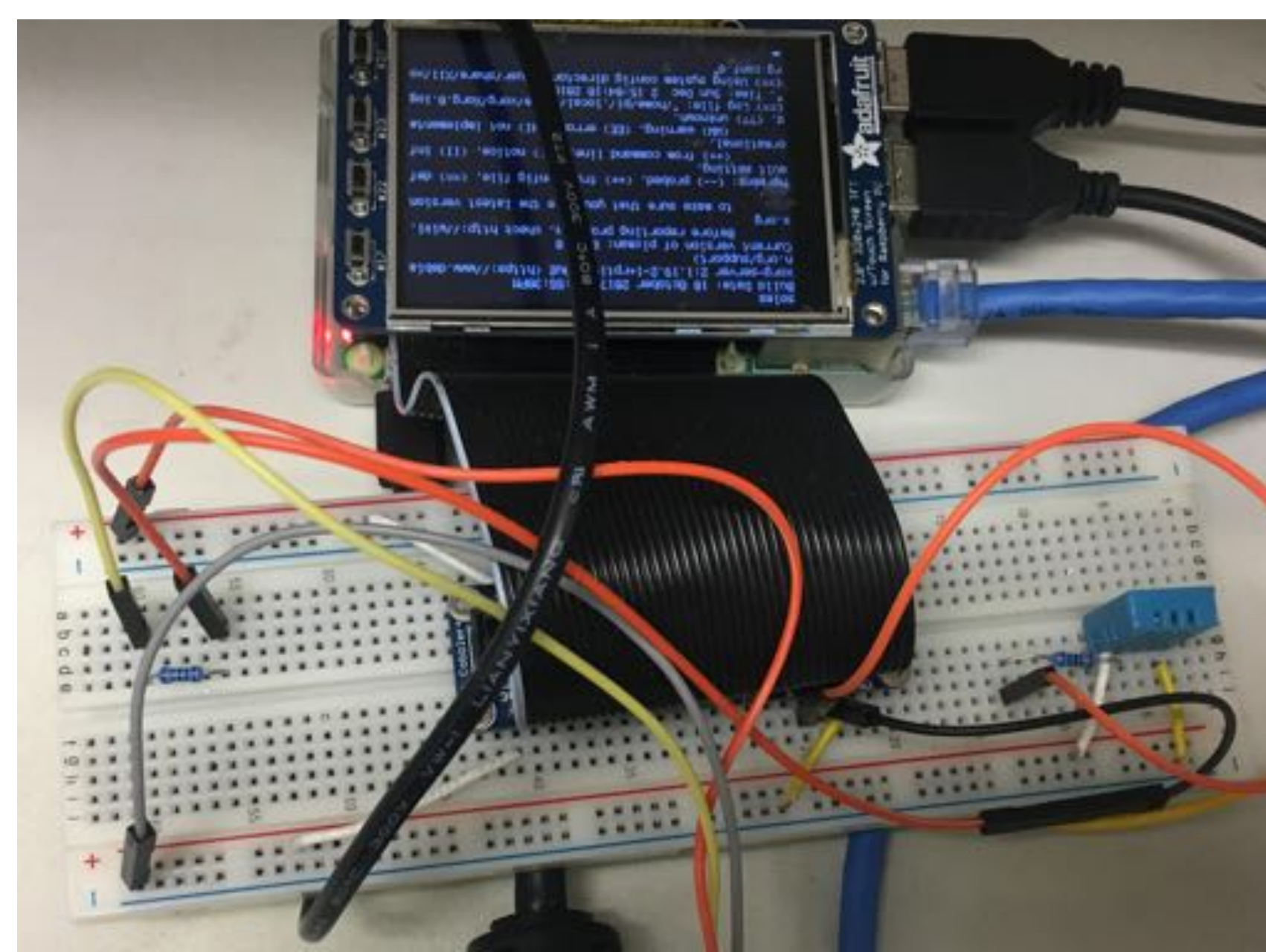
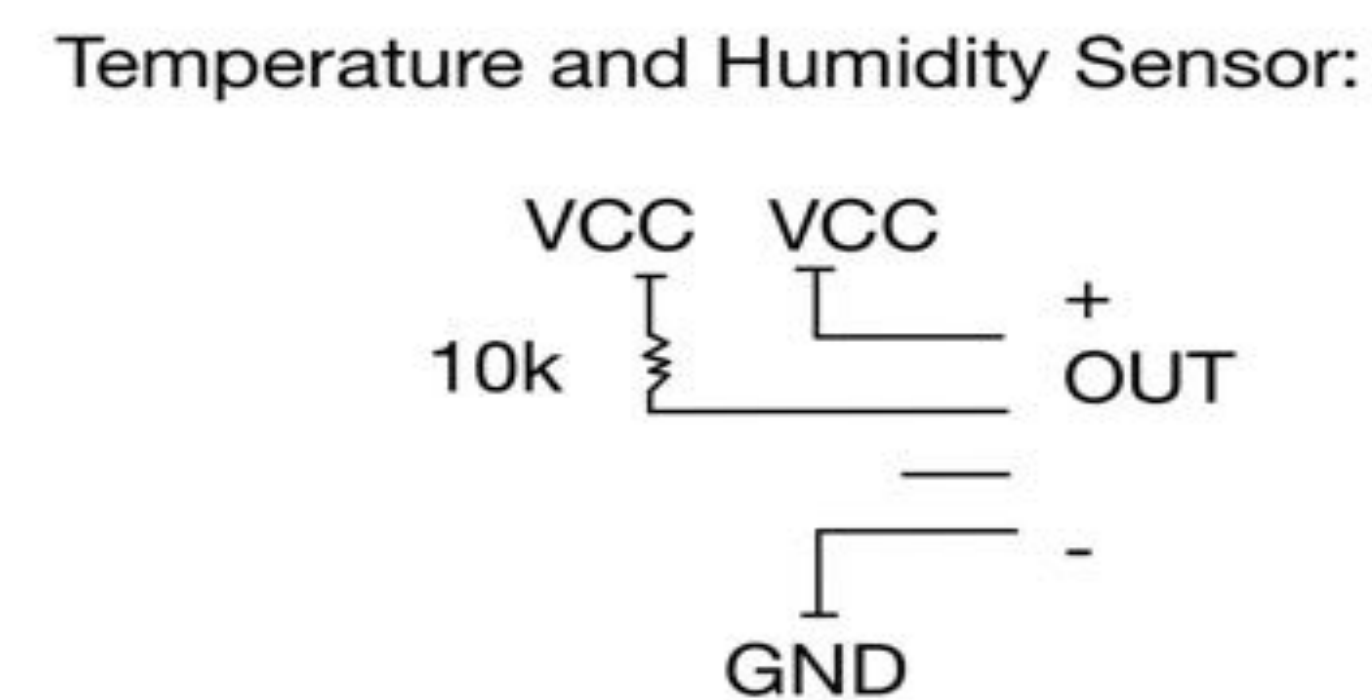
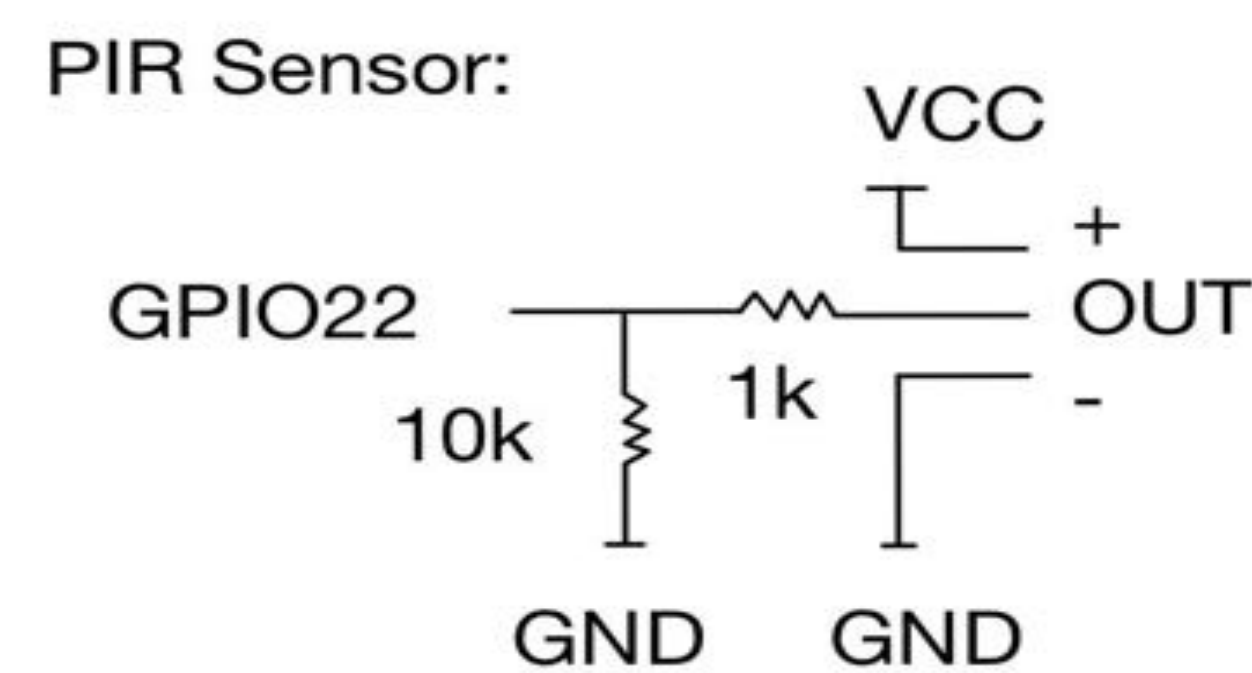
- Raspberry Pi Zero (W) **\$10**
- DHT11 (Temp & Humidity Sensor) **\$2**
- SR501 (Passive Infrared Motion Sensor) **\$2**
- 5V 2A Micro USB Charger **\$3**
- Box & Board & Wires

Design the Software to Make the Device Act as a Security System



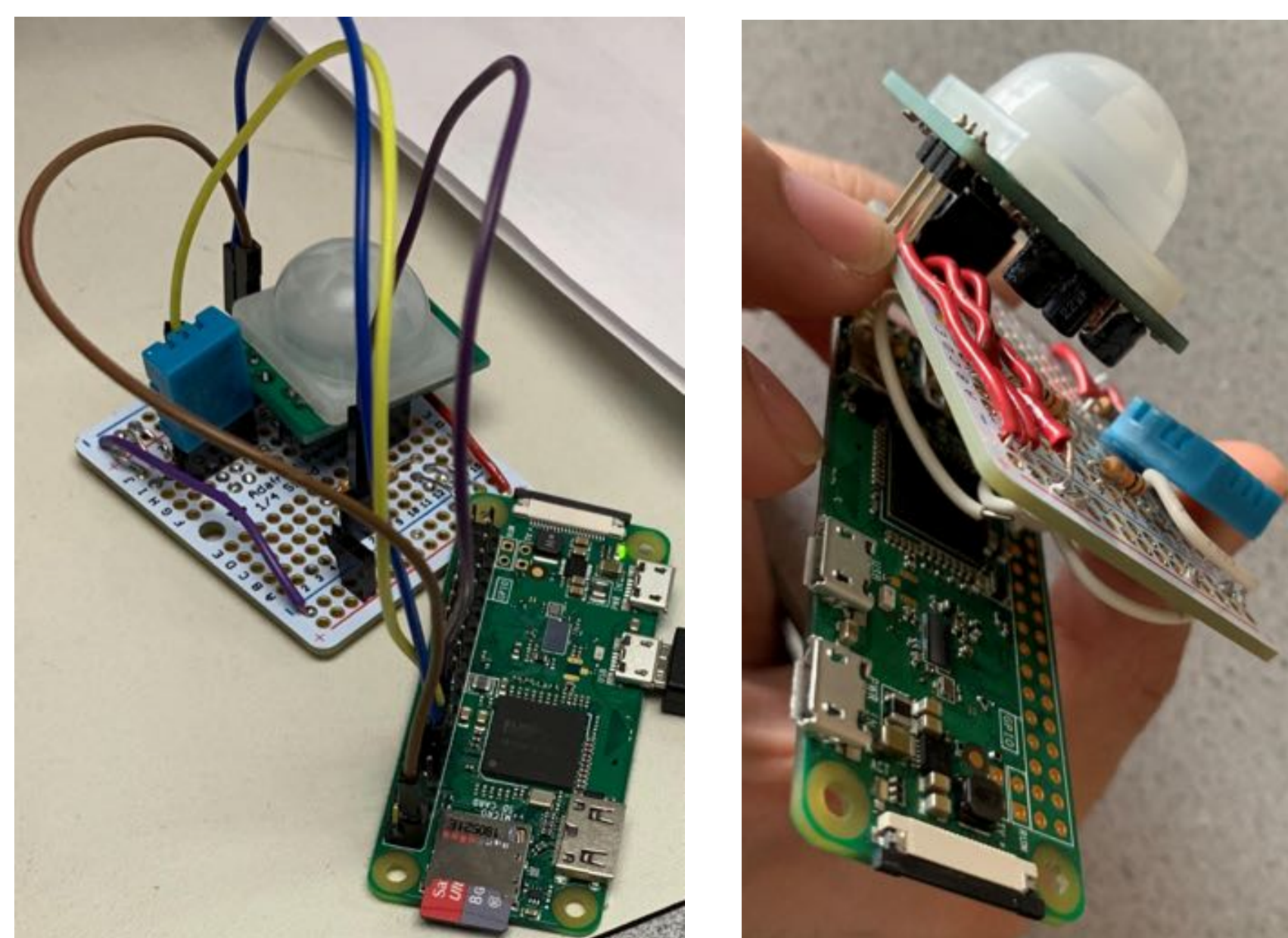
- Get data from sensors
- Check if anything unusual
- Send out notification via emails
- Automatically working with power on

Design the Hardware to Make Our System Work, then Get Ready to Package it in a Box Within the Required Size



Prototype 1

- Pi 3 with Bread Board (not cheap and compact enough)
- Touch screen (unnecessary for this device)
- Ethernet Cable (old fashioned and complicated)

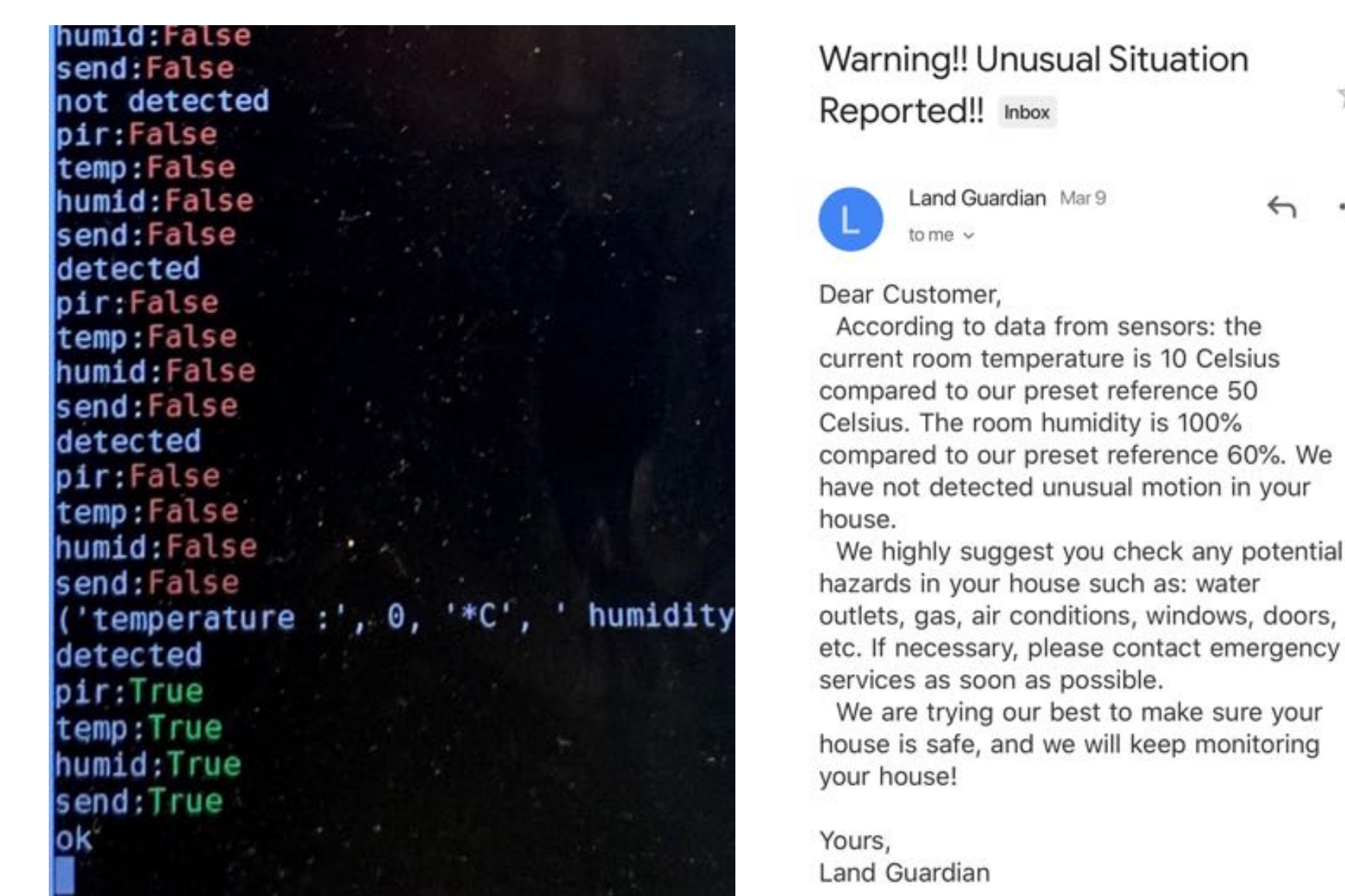


Prototype 2

- Pi 0 W (low cost and Wi-Fi available)
- 1/4 Size Proto Board (tiny but enough for this device)
- use electrical wiring cable (more stable)
- modify the wiring in intense way (more compact)
- also make it possible to: separate any components if needed



What We Have Built in the End and What We Can Do in Future



Testing after Packaging

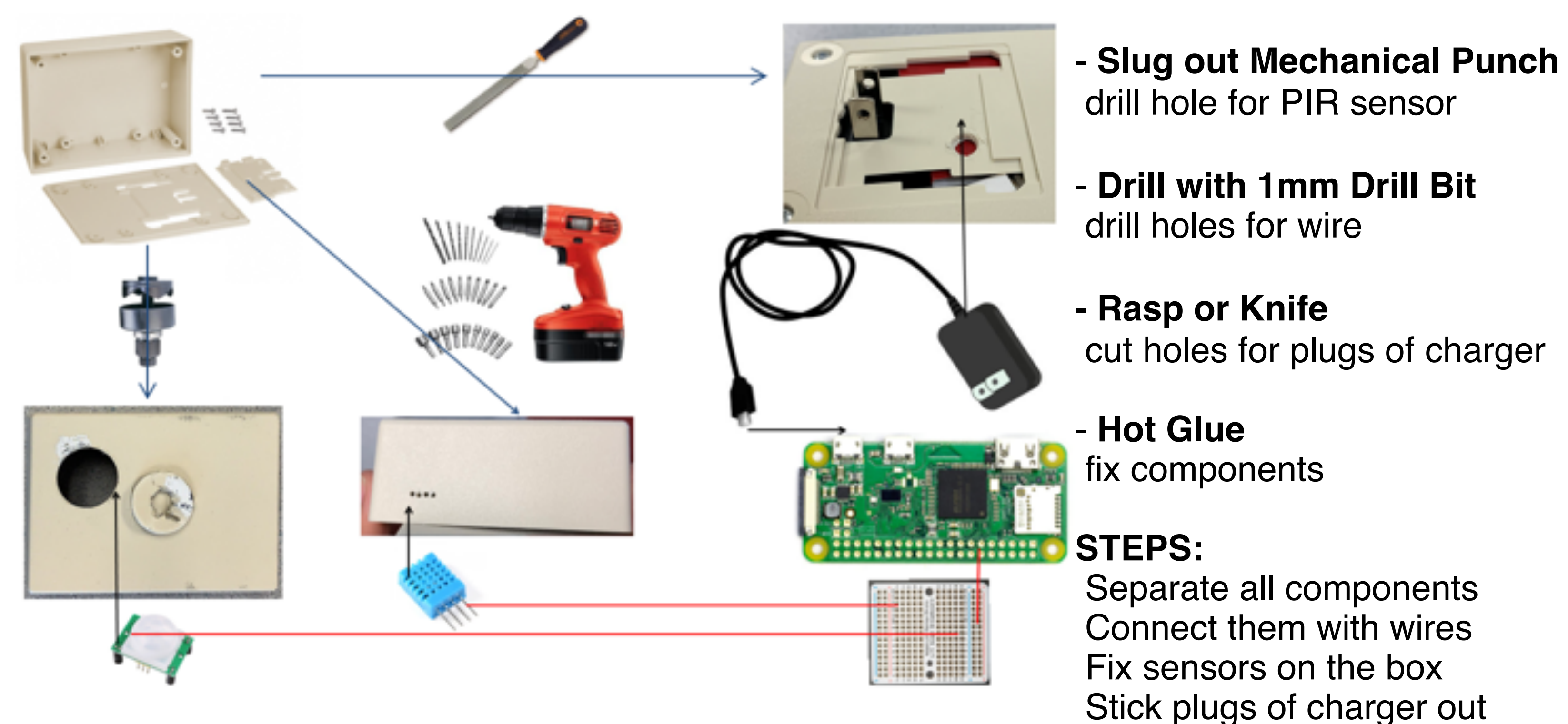
- Plugging in and working for one week
- Working at the sensing mode
- Connecting from PC via SSH
- Printing out the results on the screen



What we can do in future?

- Mass production for less cost
- Package it with any DIY boxes
- Replace the charger with battery bank
- Add/remove/modify sensors
- More possibilities...

How to Strategically Package the Device in Detailed Review



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