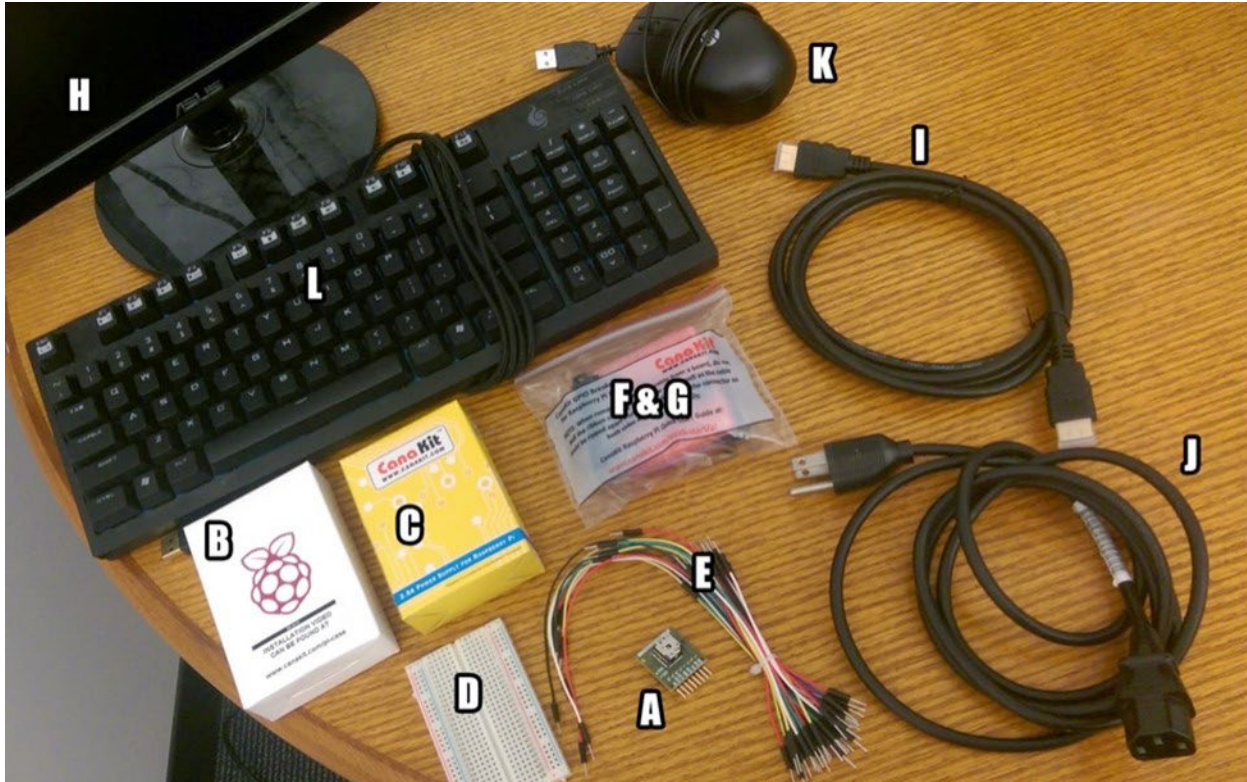


QUICK START GUIDE: LEPTON AND RASPBERRY PI

Required Materials



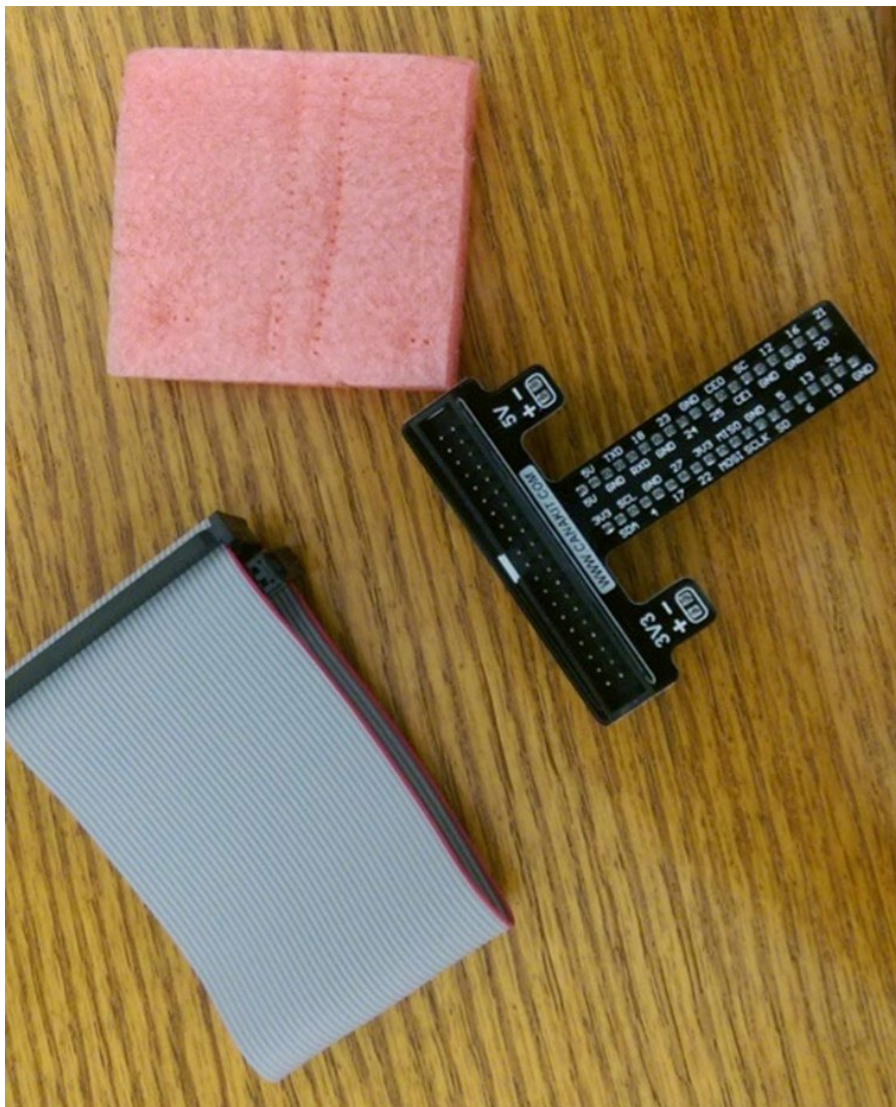
- A. Flir Lepton® & Lepton Breakout board
- B. Raspberry Pi
- C. CanaKit A Power Supply for Raspberry Pi (Or a powerful enough Micro USB charger)
- H. Computer Monitor with HDMI Port
- I. HDMI Cable
- J. Power Cable for Monitor
- K. USB Mouse
- L. USB Keyboard

The following items are required, but included in the CanaKit Raspberry Pi GPIO Breakout Board Bundle:

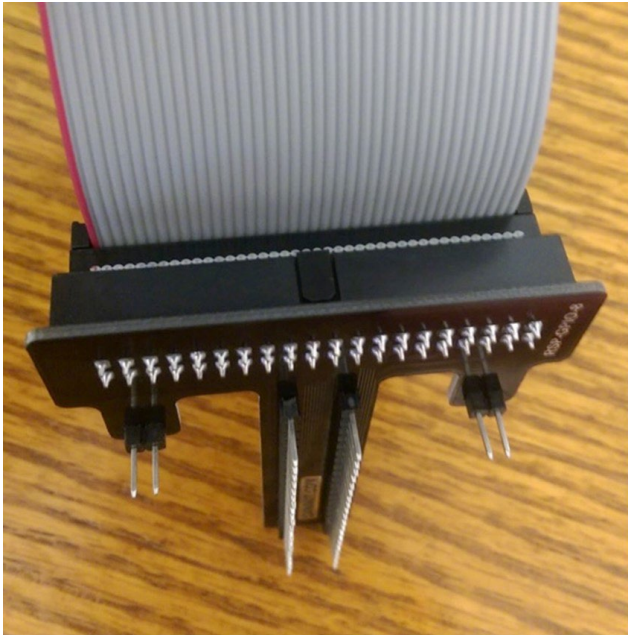
- D. Breadboard
- E. Wires
- F. CanaKit GPIO Breakout Board
- G. Ribbon Cable

Setting up the breadboard

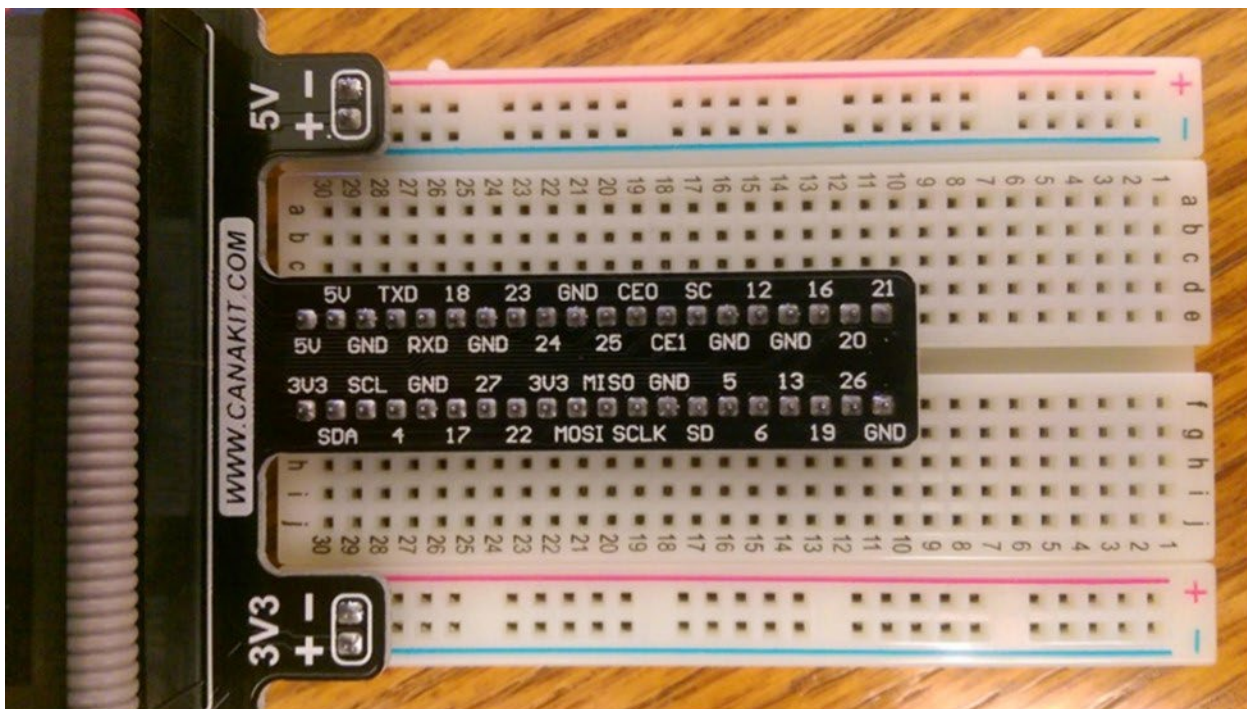
1 Take out the Canakit GPIO Breakout Board and it's ribbon cable from it's plastic bag and remove it from pink foam.



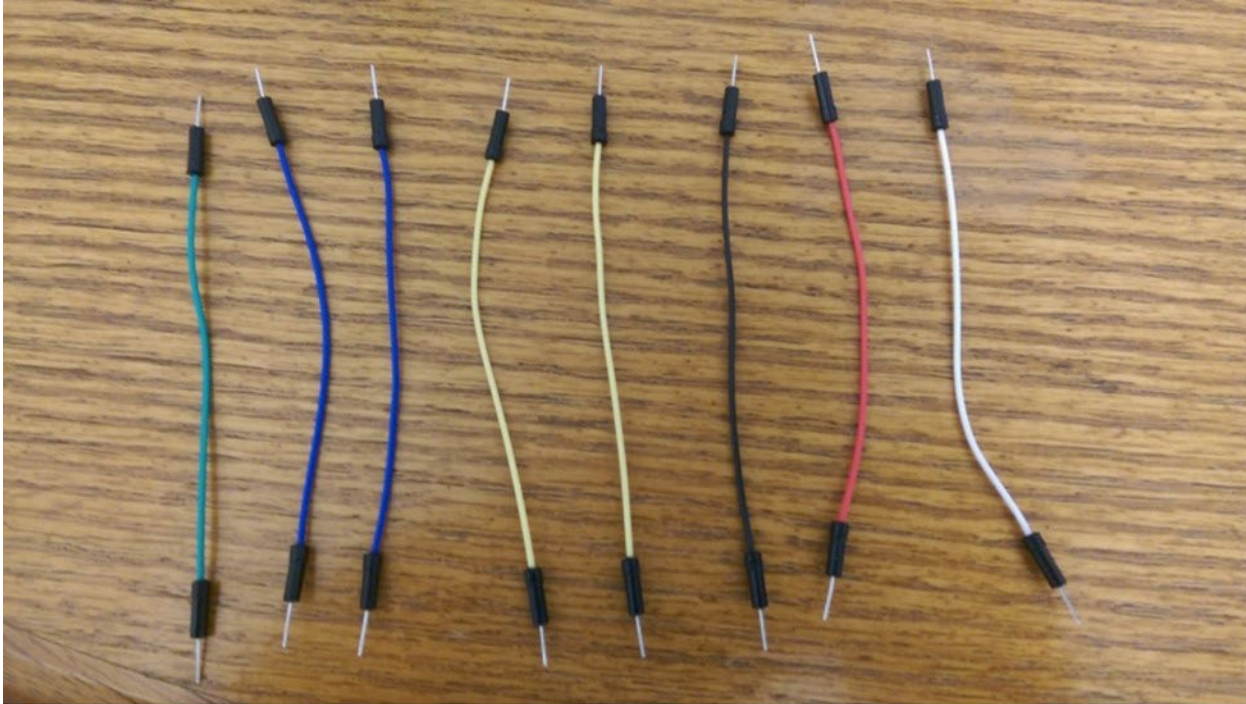
2 Attach Breakout Board to ribbon cable as shown.



3 Place Breakout Board onto breadboard as shown.



4 From the bundle of wires, select the following colors as shown. Colors can be interchanged as long as you have the same number of wires for that color. (Example: photo shows 2 yellow wires, can be changed with 2 of any other color)

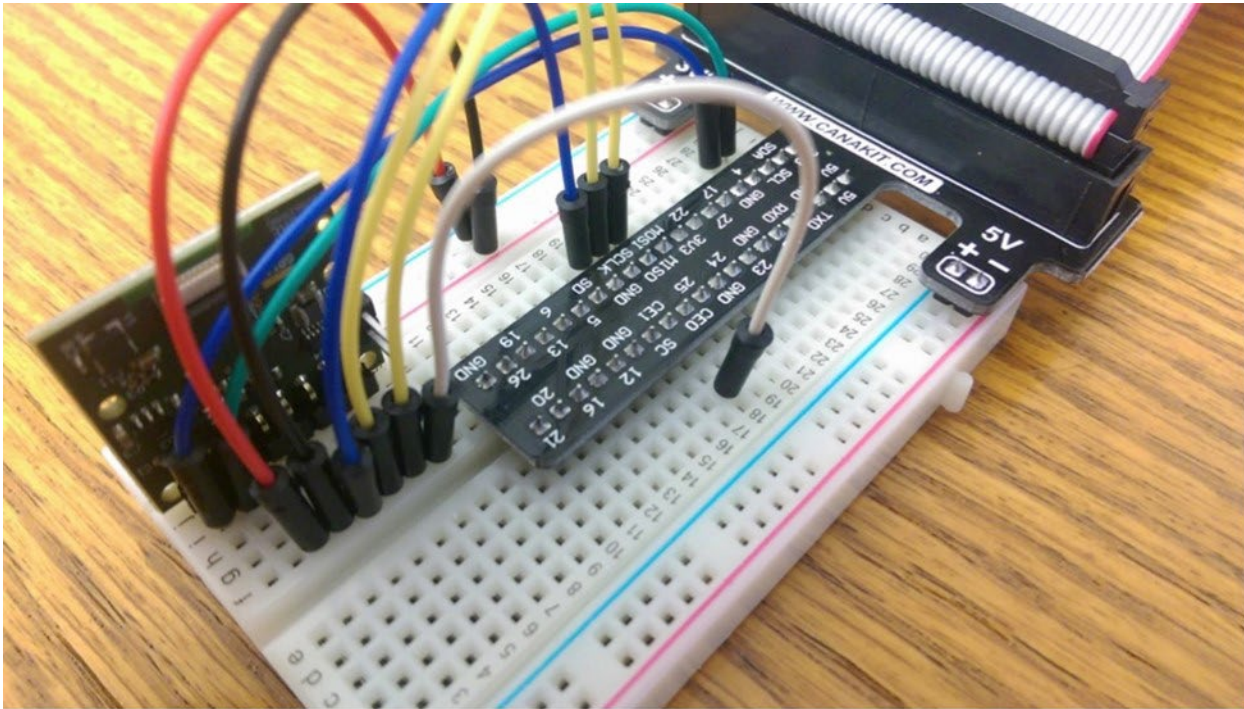


5 Attach the wires from the breakout board to the following rows (as labeled) Follow the pictures shown for guidance. The key below shows where the pins go: (From breakout board to row #)

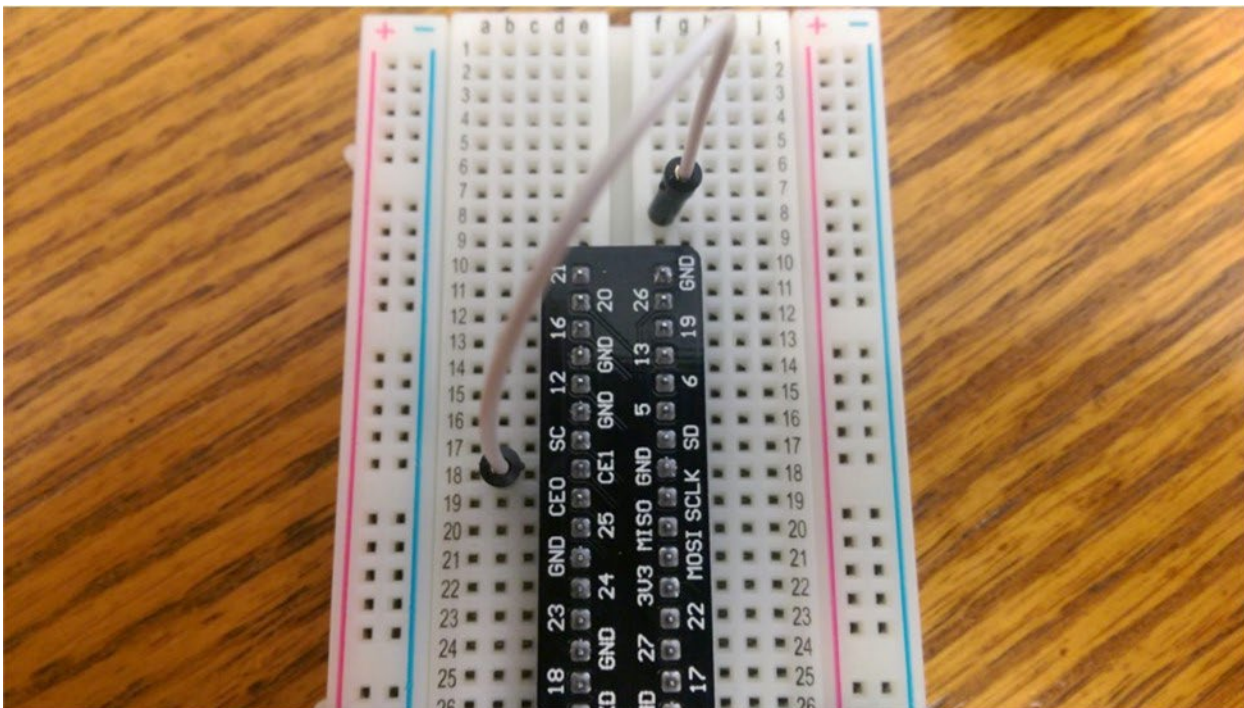
6 Key:

- a. White wire: Row (left) to Row (right)
- b. Yellow : Row (right) to Row (right)
- c. Yellow : Row (right) to Row (right)
- d. Blue Wire : Row (right) to Row (right)
- e. Black Wire: On row of holes next to red bar (right) to Row (right)
- f. Red Wire: On row of holes next to blue bar (right) to Row (right)
- g. Green Wire: Row (right) to Row (right)
- h. Blue Wire : Row (right) to Row (right)

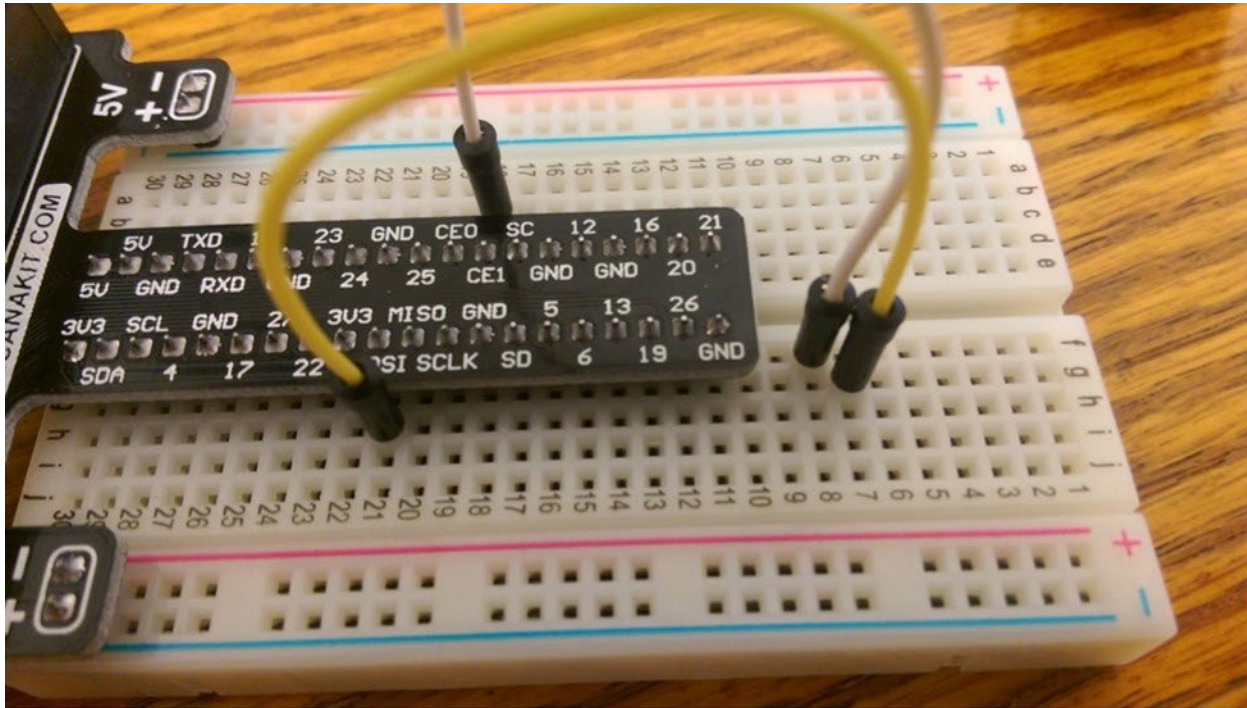
When you're all done, this is how it will look. Detailed steps to get this final appearance follow below.



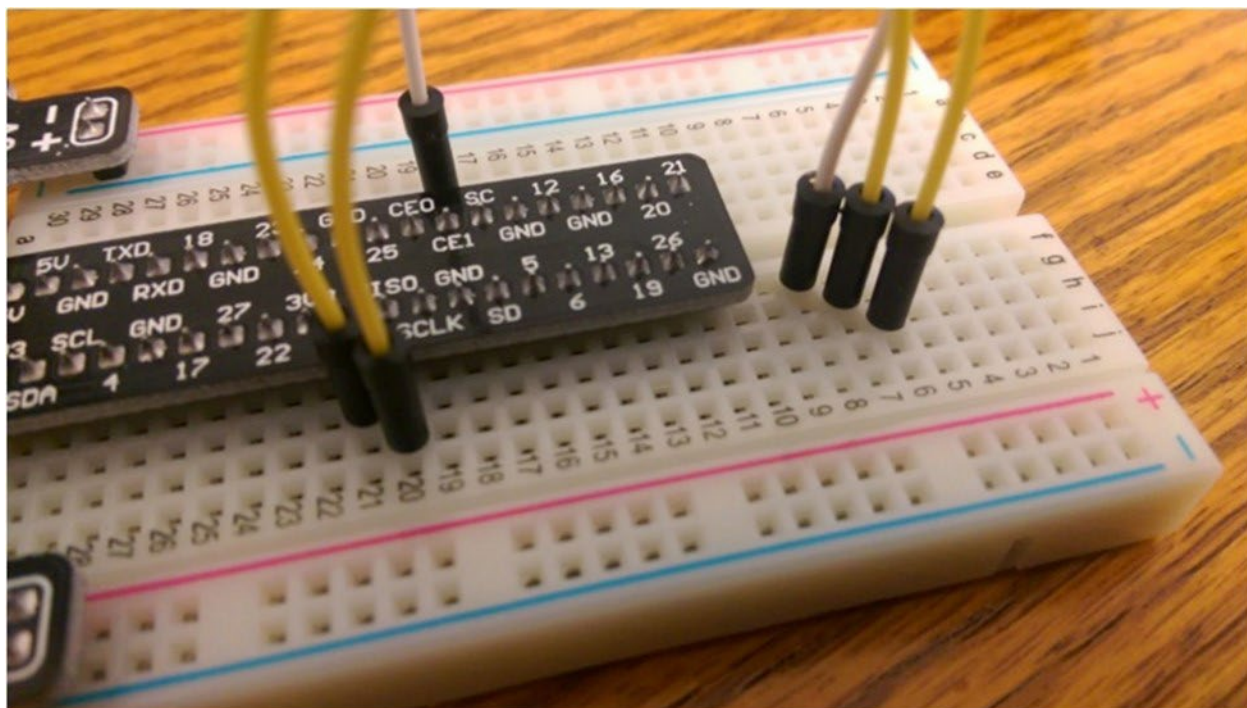
Follow the pictures in order to assemble breadboard:
Attach the white wire:



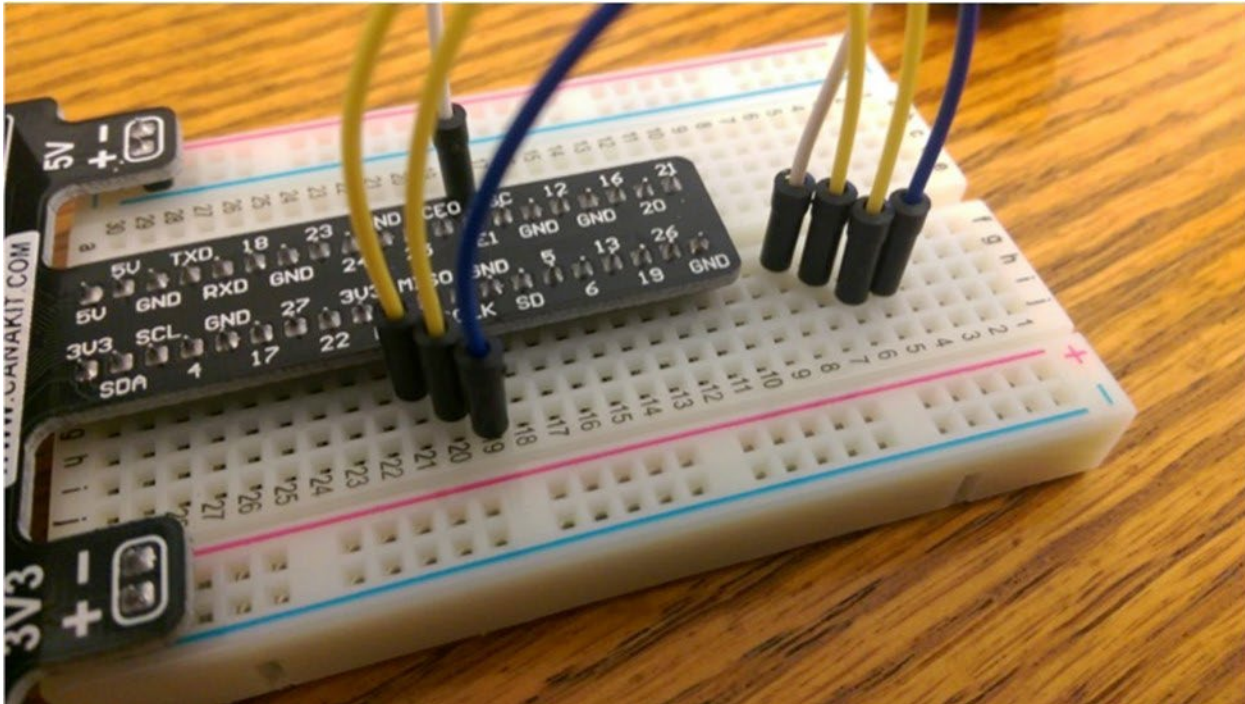
Attach the first yellow wire:



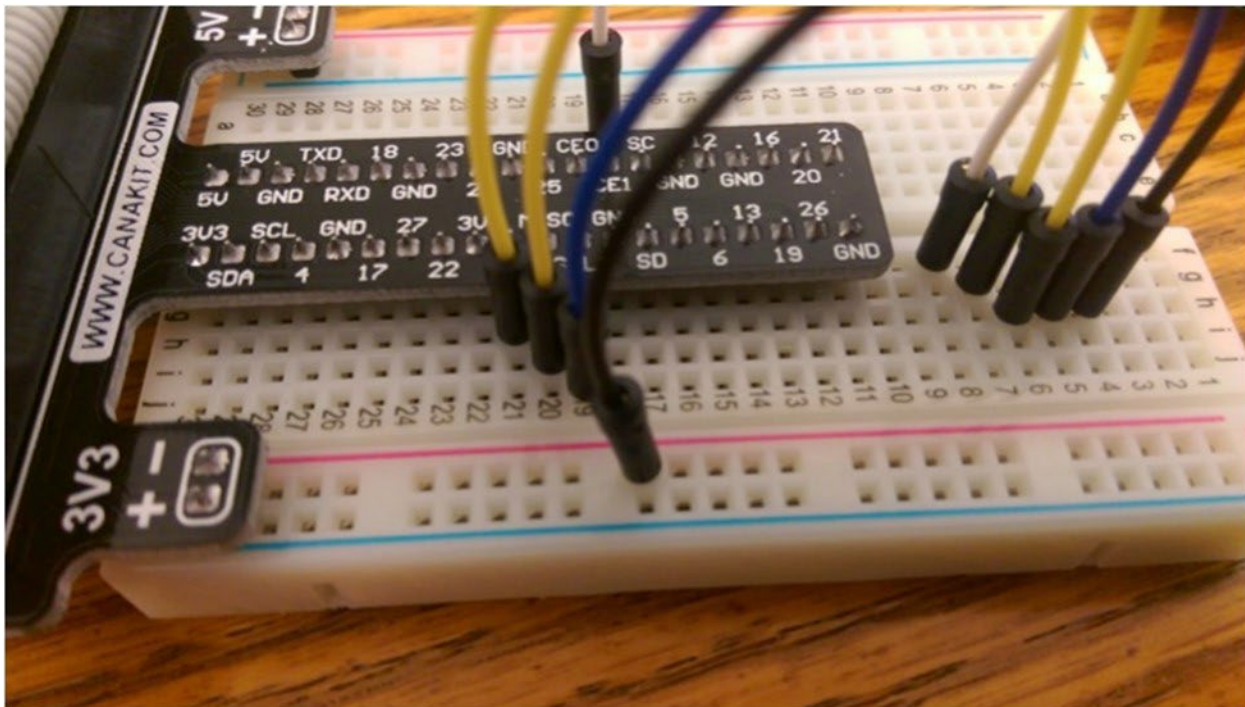
Attach the second yellow wire:



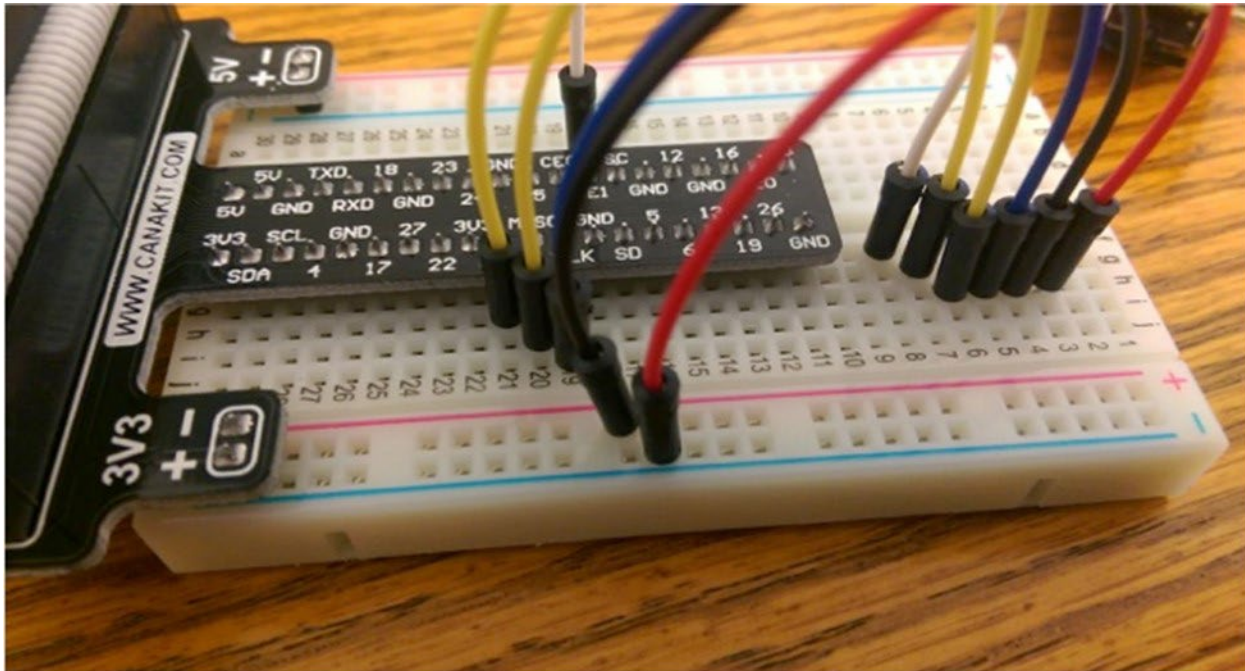
Attach the first blue wire:



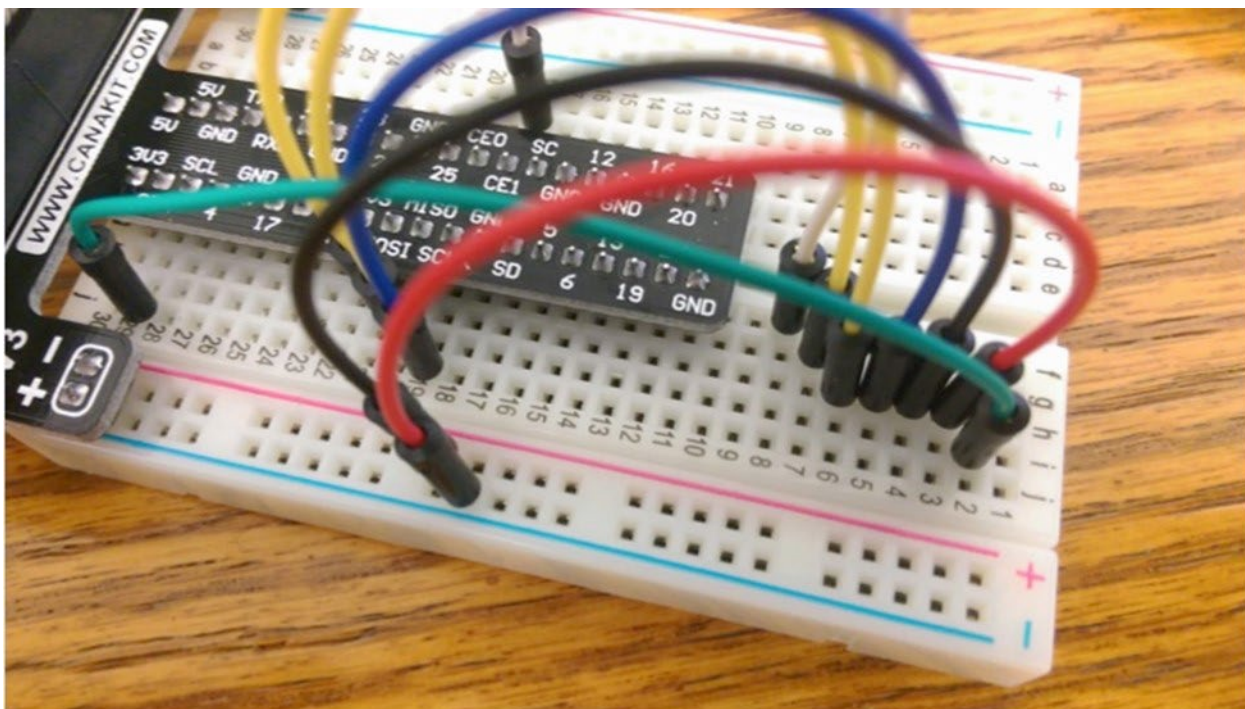
Attach the black wire:



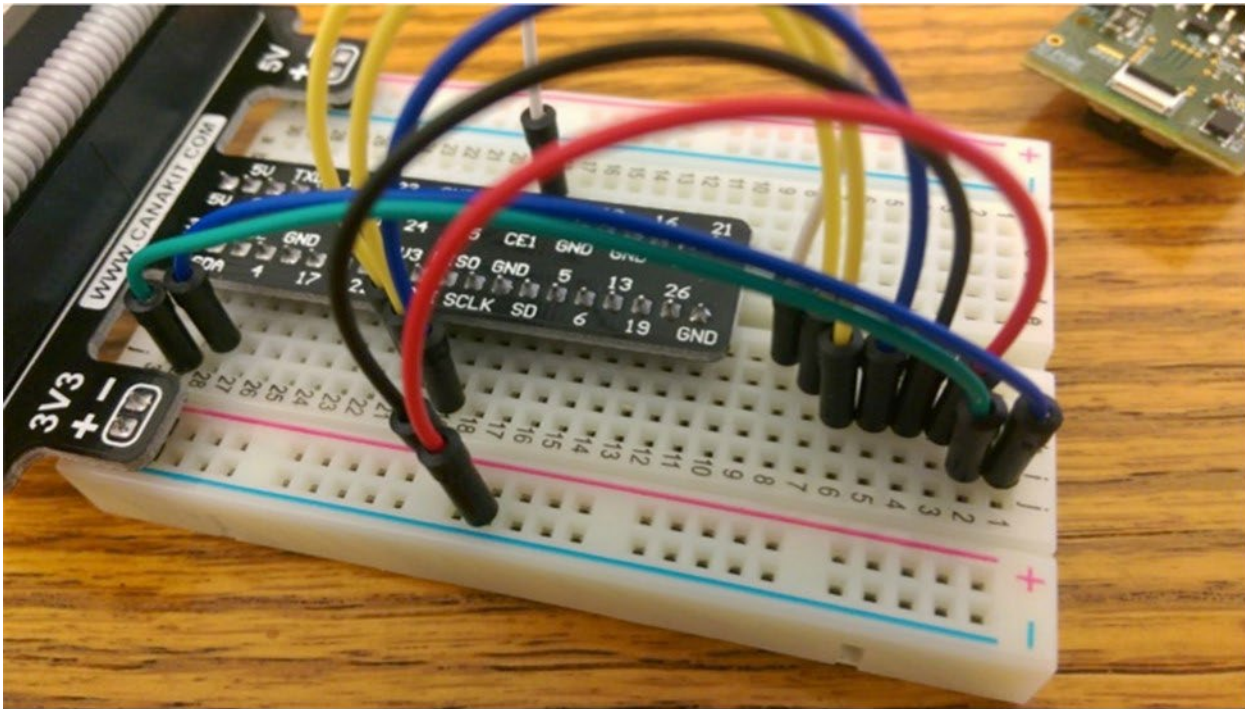
Attach the red wire:



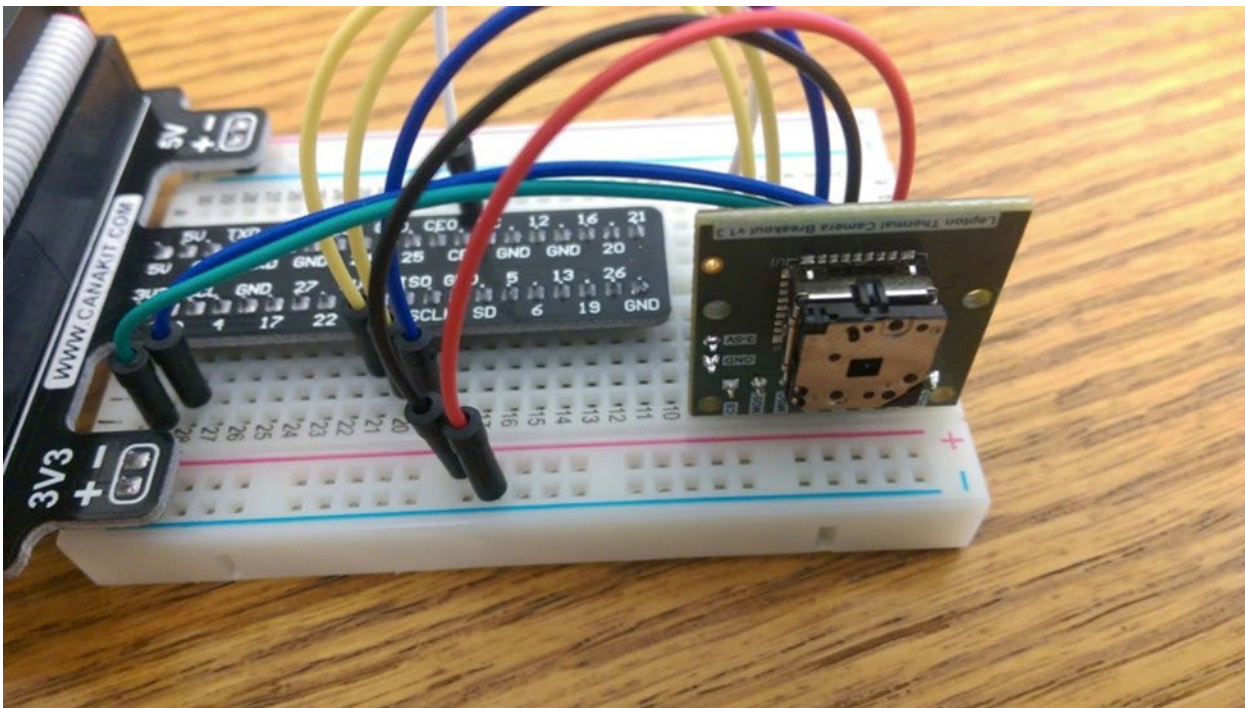
Attach the green wire:



Attach the second blue wire:



7 Attach Lepton camera to bread board such that it is facing outwards and that the pins occupy rows 1-8 as shown below.



Setting up the Raspberry Pi

- 1 Gather materials.
- 2 Plug in the Monitor to a wall outlet using the monitor's power cable and turn it on.
- 3 Take out your Raspberry Pi.



- 4 Check the slot underneath it to make sure the mini SD card is in place as shown in the picture.



5 Attach Raspberry Pi to Monitor via HDMI cable.

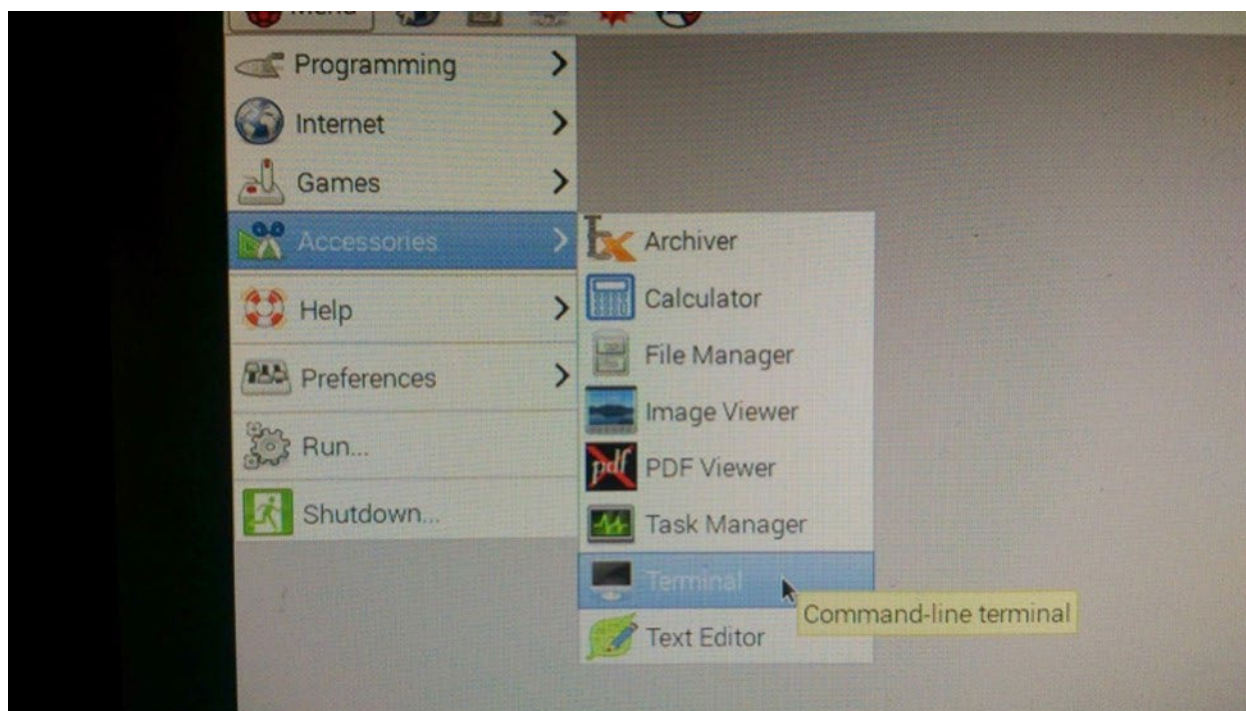
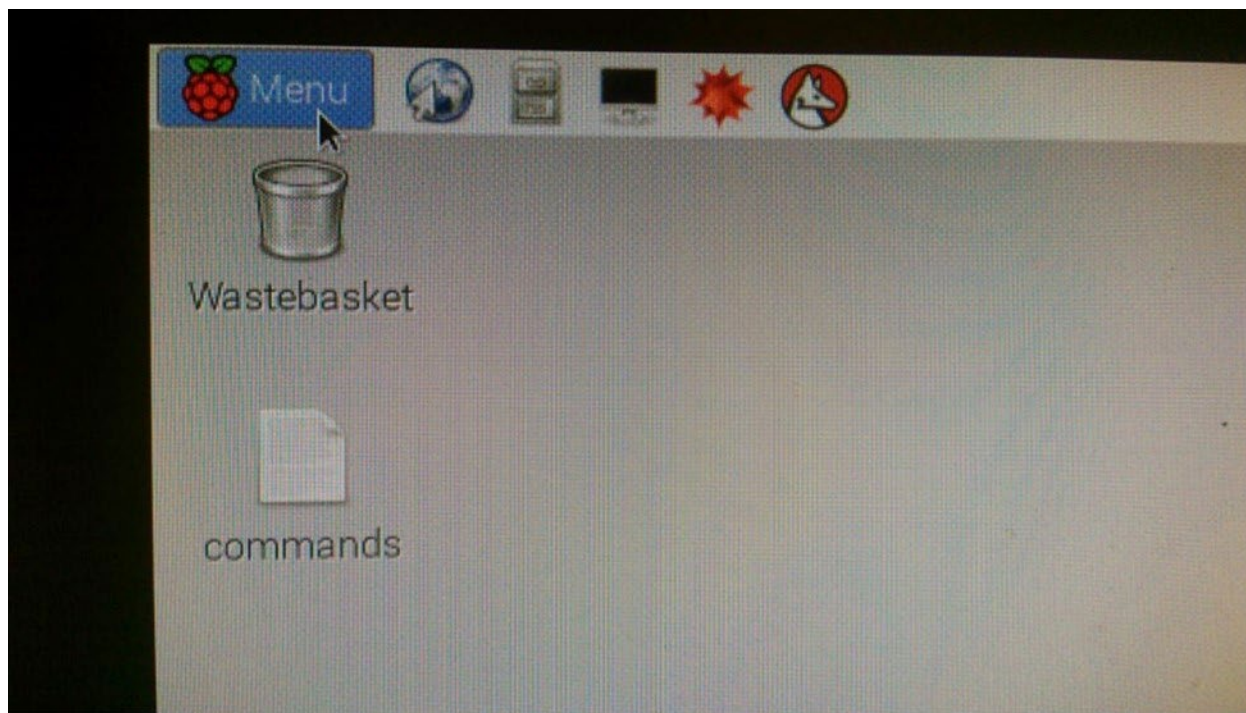


6 Attach mouse and keyboard to Raspberry Pi by plugging them into the Pi's USB ports.

7 Attach power cable to Raspberry Pi and plug it into a wall outlet. Your Pi should turn on and take you to the desktop.



8 Click "Menu" in the top-left hand corner of the screen. Then, hover the mouse over "Accessories" and another menu will appear. Select "Terminal" and a black terminal should appear in the middle of the screen.



9 Type in the following commands in order **EXACTLY** as shown below. After you type each one, press enter to 'run' that command.

1. `sudo apt-get -y install git`
2. `git clone https://github.com/groupgets/LeptonModule.git`
3. `cd LeptonModule`
4. `cd raspberrypi_video`
5. `qmake && make`

To explain what we did there, we grabbed the code from 'github', navigated to that folder and compiled it.

10 Remove top of Raspberry Pi and attach ribbon cable to the pins inside and make sure it is pressed all the way down.

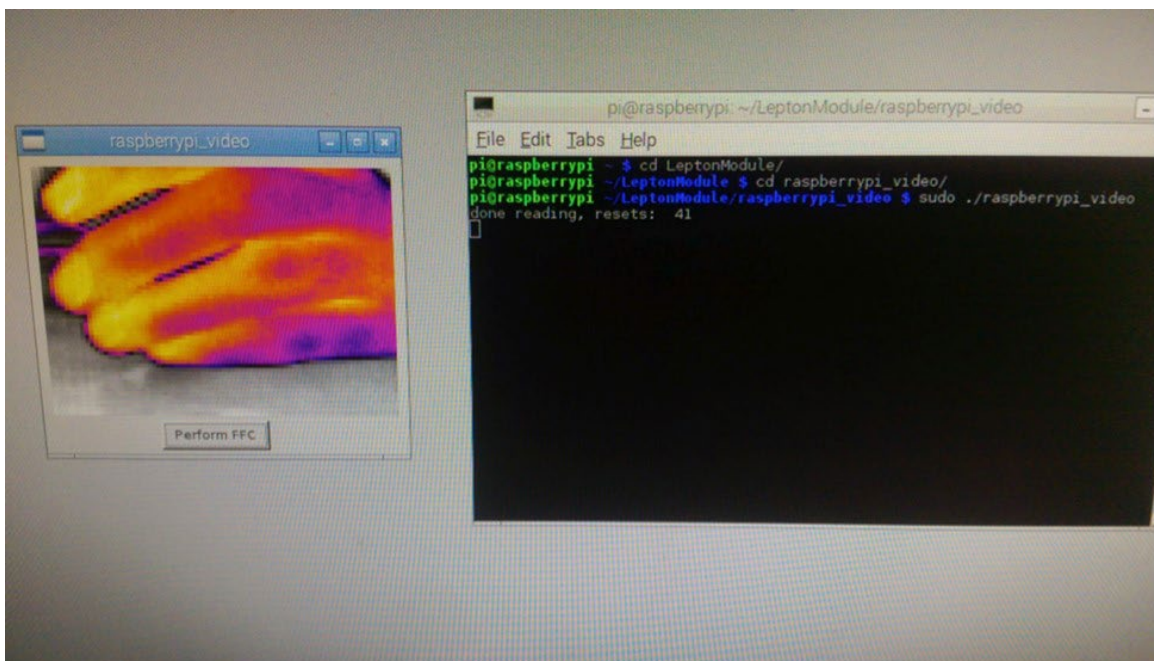




11 Type in the following command then press “Enter”.

a. `sudo ./raspberrypi_video`

12 Your Demo is setup and running! You can demo FCC functionality by pressing the “Perform FCC” function. The shutter on the Lepton should click and screen should recalibrate the color.



Troubleshooting

If your screen does not display the infrared feed from the camera, attempt the following things:

- Unplug the ribbon cable from the Raspberry Pi and plug it back in without turning anything off/on.
- If you have multiple cameras try swapping a different camera into the Pi.