Narrative

* Problem Analysed

The first problem is I need to solder those components while I never used the solder iron,

although Vaughn told me I can use them in the classroom. However, I bought the soldering iron and the solder wire in the Mitre 10 because I think more comfortable and the more flexible time work in the home rather than the classroom.

The model is:

Fuller SOLDERING IRON 40 Watt Yellow

Fuller Solder Wire Rosin 1.6mm 15g

After I learn how to solder the components on YouTube, I think I need to buy a helping third hand that will very helpful to solder, I got it from Nicegear.

The model is:

TOL-09317

* Project design

The component List

1. PCB

2. Two of 16P IC seat

3. Two of 74HC595

4. six of 500R resistance

7. sixty-four of 5 mm flat LED

I made the LED cube after talking with Vaughn about this. I solder four LED’s positive one by one and do again with negative, the shape is 4\*4 so there have 16 LED on a surface.

Put the LED of the positive D0 ~ D15 round needle, each layer of LED positive with 2 cm row needle welded together and link connect adjacent negative electrodes.

* Hardware choice

We will build some LED thing in this project, I think the LED cube should be interesting and maybe can use in real life after project which someone links the cube with a sensor then make a night light.

I bought a LED kit on ICStation ([www.icstation.com/](http://www.icstation.com/)).

ICStation 4x4x4 Light Cube kit uses 64 cuboid LED and controlled by Arduino. Expansion board uses two 74HC595 shift register chips, using eight I/O can light the 4x4x4 Light Cube, its hardware resources needed is less than other 4x4x4 light cubic expansion board (needs 20 I/O to control).

* Insights

When I solder four surfaces LED I found I don’t have material to link each other, I am no idea where I can get this, because I do not have enough time wait for it shipped by internet shopping so I cut some LED ‘leg and use them to link those surface.

When first time connect the cube with PC, only couple LED can be turn on and I did a lot of research about the code. I found the problem is my cube have two IC chips not the code.

This LED cube has two chips to drive the LED, so I need code in the library file not in sketch file.

When I connect the caber with PC I found weld connection is not stable after I feel to soldered all part together and, some LED didn’t turn on and it need I push a bit then can work. However, I re-soldering them to fix the problem.

Didn’t solve but have plan to do

I still no idea how the cube work, the tutorial said sixteen groups of codes ‘B0000’ correspond to sixteen holes, and each group the four sets of number correspond from top to bottom, however, my cube is different.

The problem maybe is the IC chip, I bought the paper PCB online then I’m going to rebuild the cube without the IC chip.