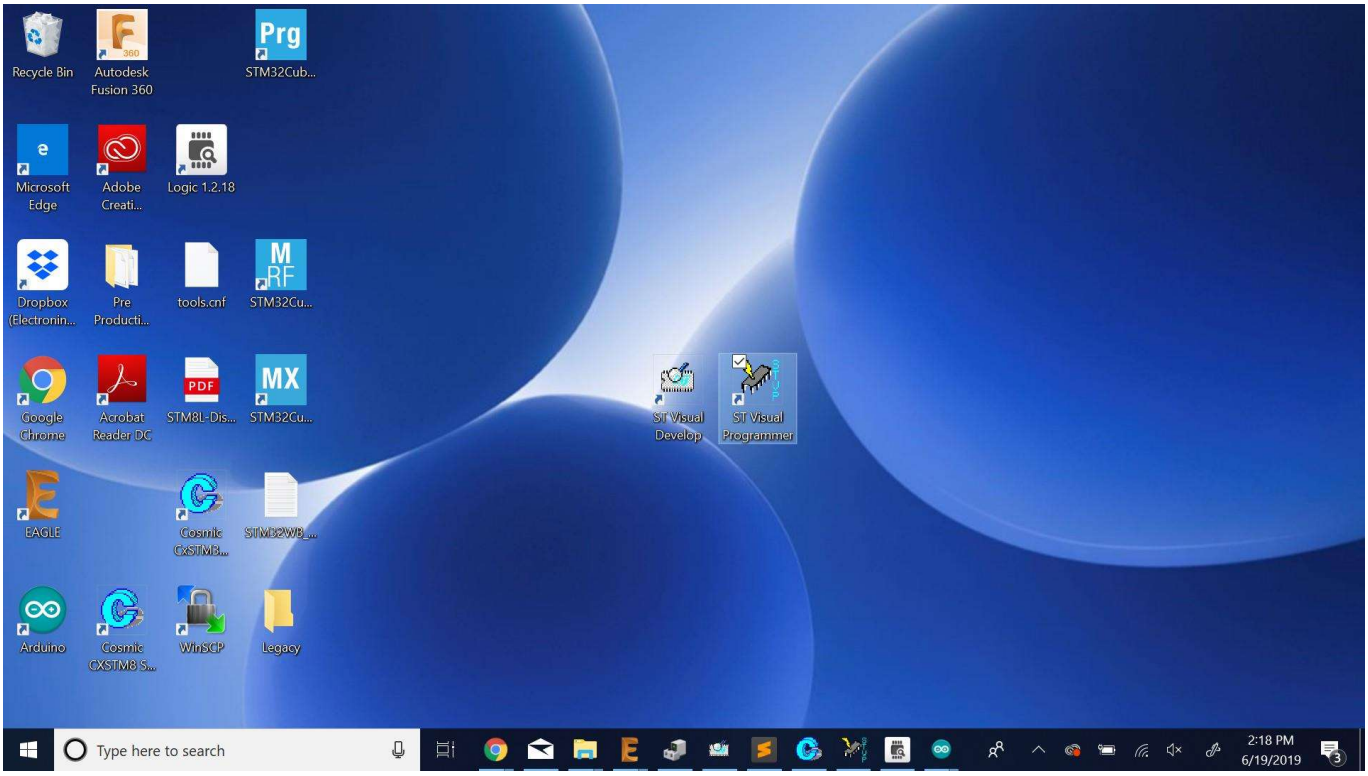
Setting up and Using a Dedicated ST-LINK/V2 and STVP for STM8 board without in-circuit ST-LINK/V2 (i.e. STM8L050J3)

***Note: For this guide, we are using the STM8L050J3**

***At this point, you should have set up STVD and your project files.**

1.) When you check, there should have been another program downloaded with ST Visual Developer (STVD) called ST Visual Programmer (STVP).



2.) Download the ST-Link/V2 USB driver if you haven't already from ST. Here is the latest download link from the day this guide was created

https://www.st.com/content/st_com/en/products/development-tools/software-development-tools/stm32-software-development-tools/stm32-utilities/stsw-link009.html

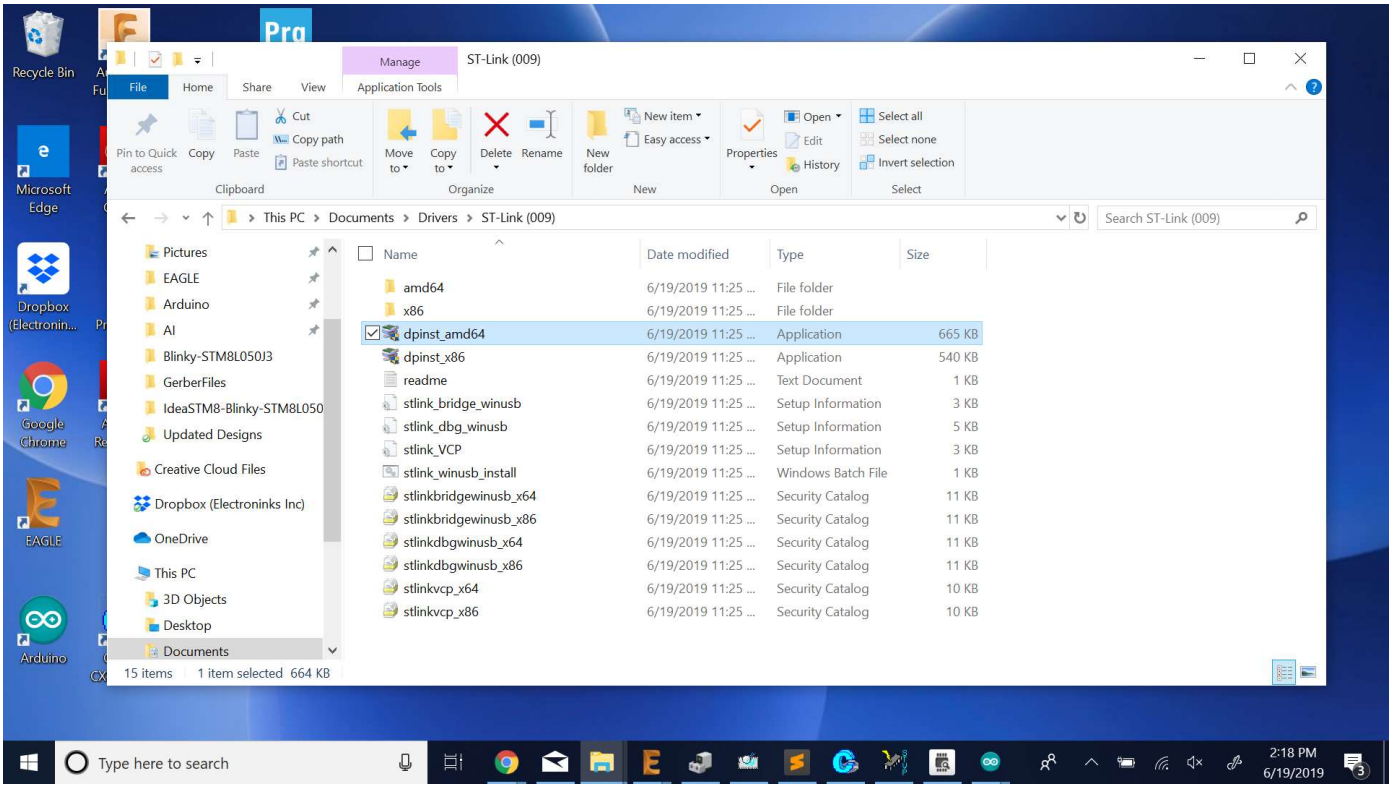
File Name: STSW-LINK009

Latest Version: 6/19/2019 - vSTSW-LINK009

3.) Once downloaded, extract all the files into a folder location. Depending on what bit computer you have, click on one of the two ‘dpinst’ applications

For 64 bit Windows machine: ‘dpinst_amd64’

For 32 bit Windows machine: ‘dpinst_x86’



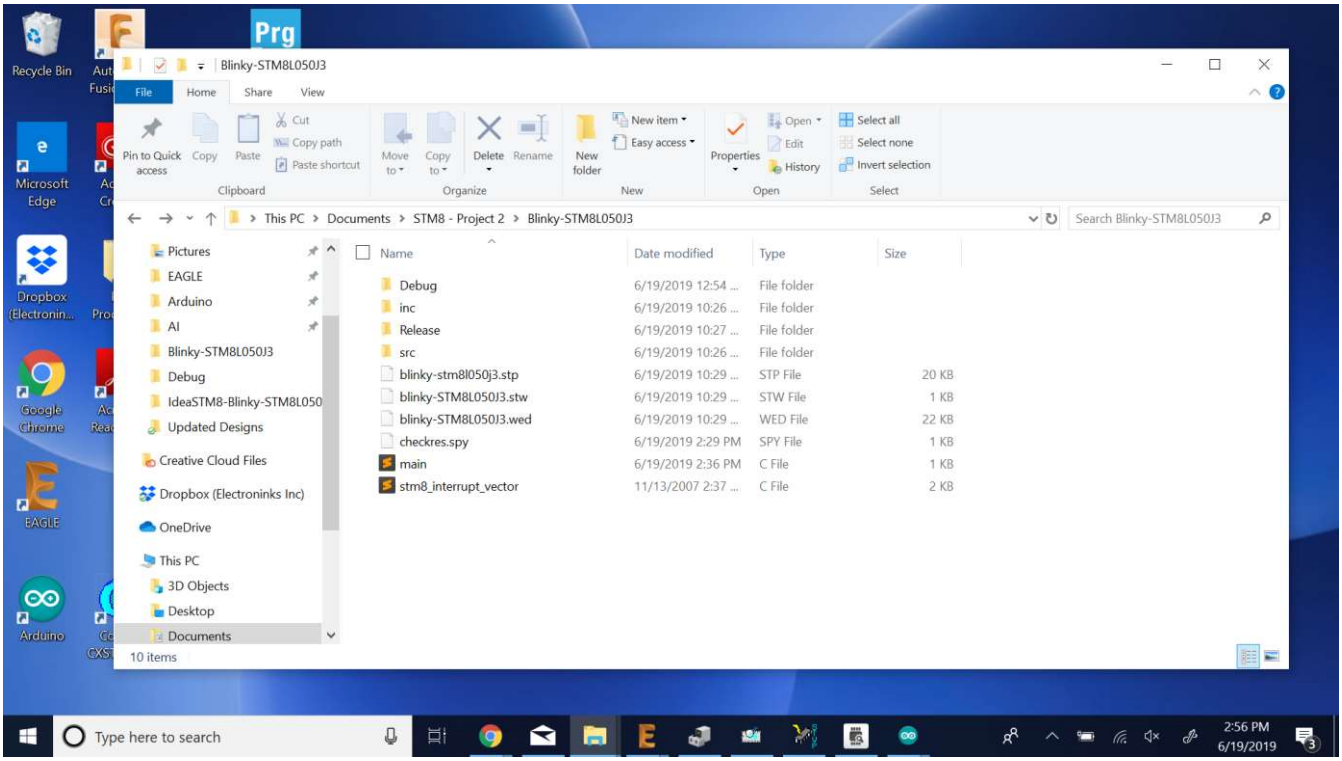
Install like you would any other program by pressing ‘next’ and accepting terms of agreement

3.) Next, have a finished project in STVD and build it. In this example, I just made a heart beating LED for the STM8L050J3. (The project name is called ‘blinky-STM8L050J3’)

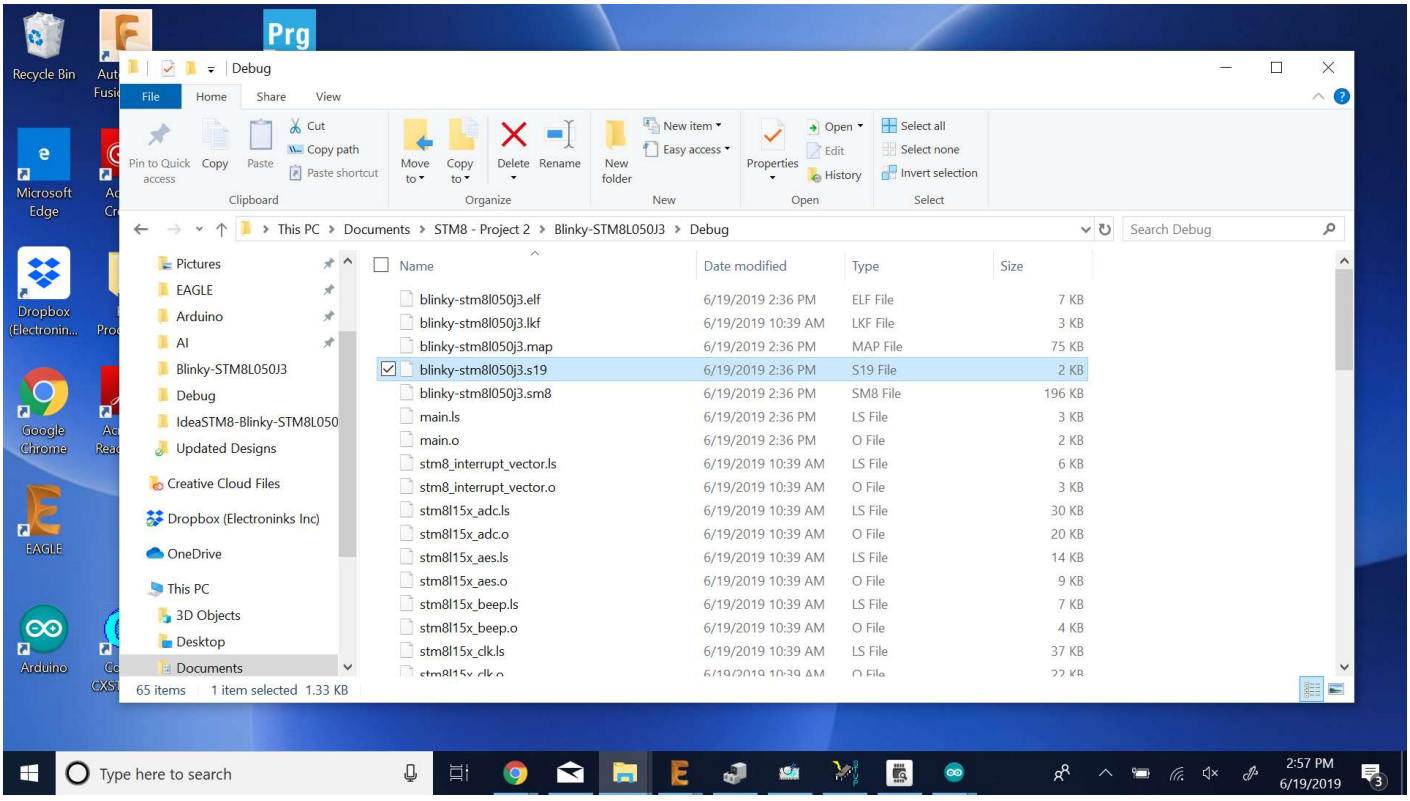
```
#include "stm8l15x.h"

#include "stm8l15x_gpio.h"
```

```
void Delay(__IO uint32_t nCount)
{ /* Decrement nCount value */
  while (nCount != 0) {
    nCount--;
  }
}

int main() {
   GPIO_DeInit(GPIOB);
   GPIO_Init(GPIOB, GPIO_Pin_6, GPIO_Mode_Out_PP_Low_Fast);

   while(1) {
      // Heartbeat
      GPIO_Write(GPIOB, 0x00);
      Delay(50000);
      GPIO_Write(GPIOB, GPIO_Pin_6);
      Delay(10000);
   }
}
```

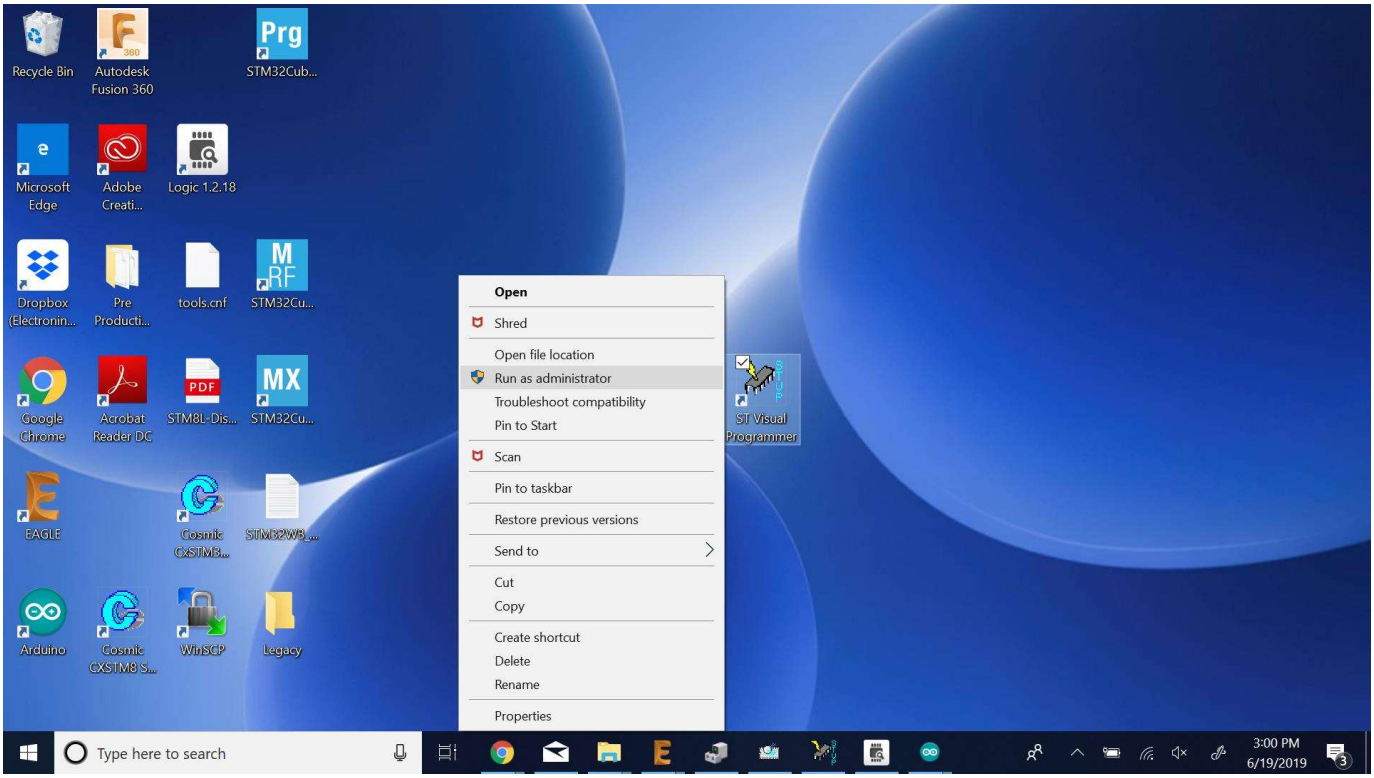
4.) Make sure the project is built. (Learned in setting up STVD for STM8 guide). Go to the folder of your project. Mine is called ‘Blinky-STM8L050J3’.



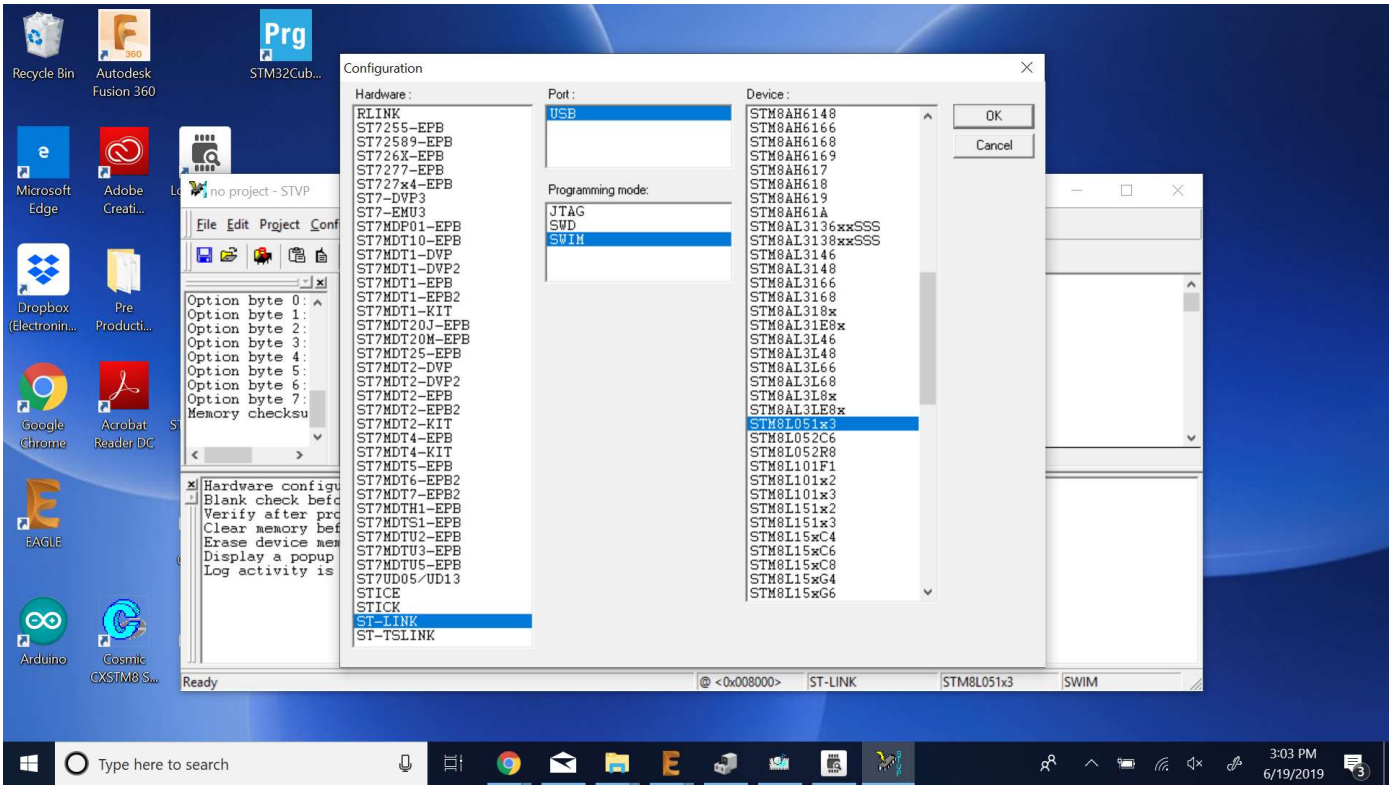
Then go into the ‘Debug’ Folder. Make sure you have the ‘Your_Project_Name.s19’ file i.e. ‘blinky-stm8l050j3.s19’



5.) Next, go find the ST Visual Programmer (STVP) program. Right-click and ‘Run as Administrator’. This might be unnecessary but it’s always good way to open in case STVP prevents you from accessing a file.



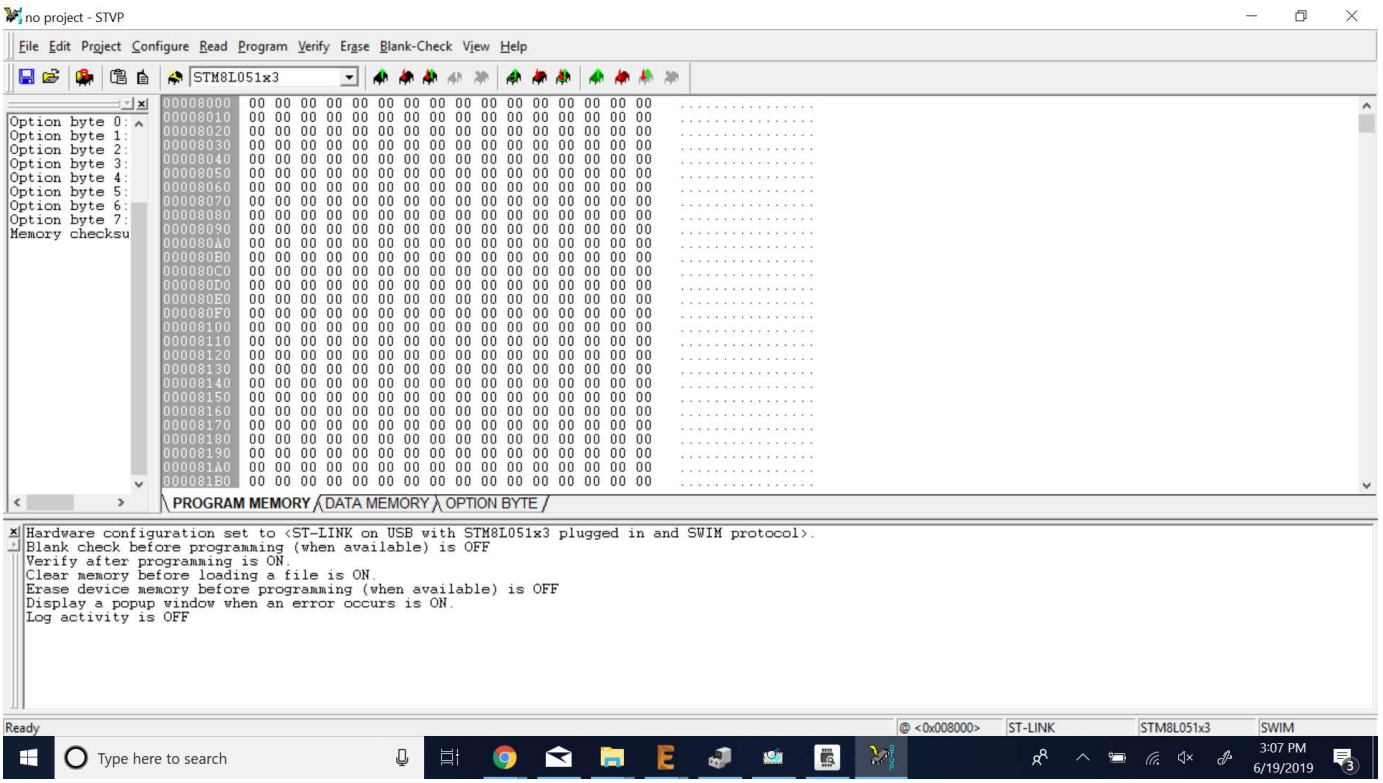
6.) A screen like this will popup when you first open the program.



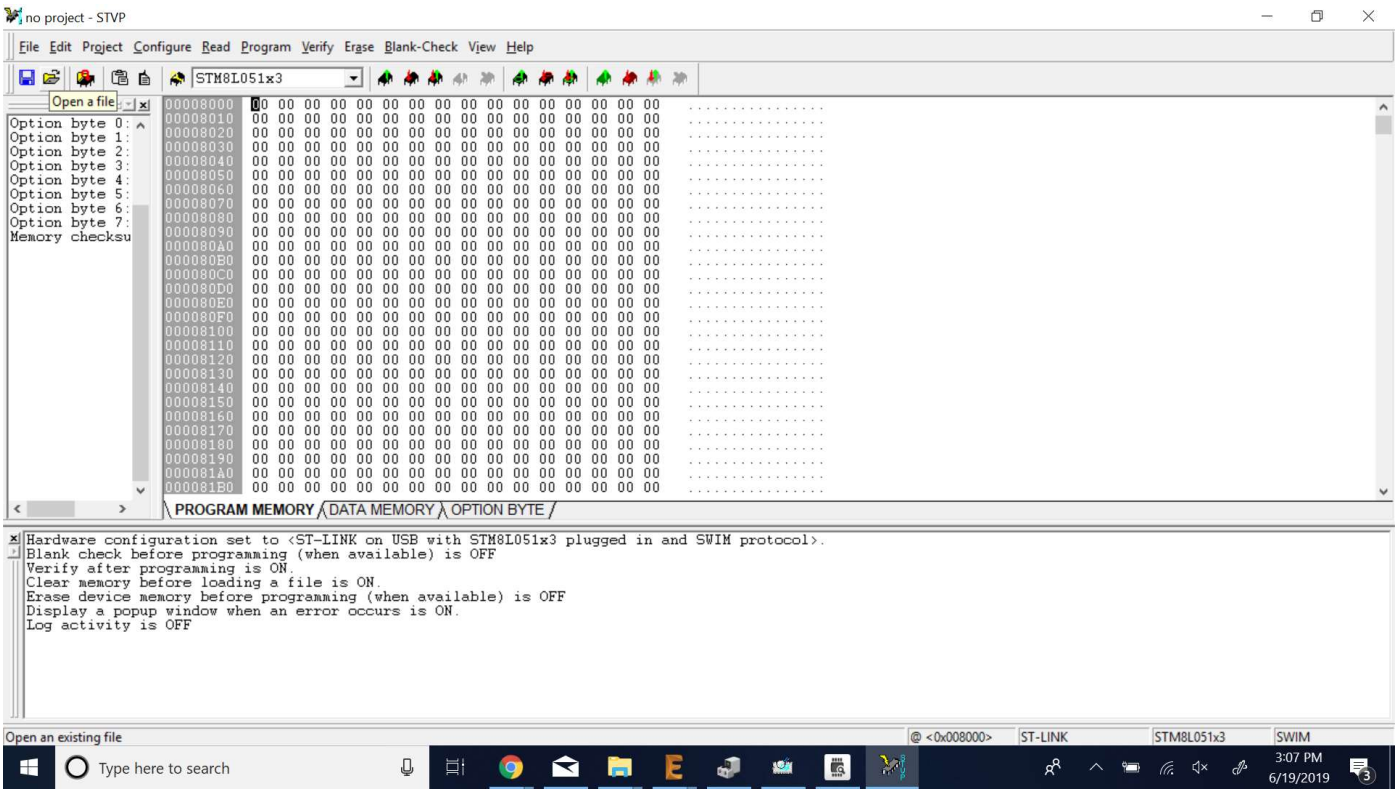
Choose ‘ST-LINK’ as your hardware. USB Port. SWIM as your programming mode for the STM8. Then choose your device. For the STM8L050J3, you choose the STM8L051x3 as your device.

**The significant difference between the STM8L050J3 (8 pin) and the STM8L051x3 (20 pin) are the number of pins.

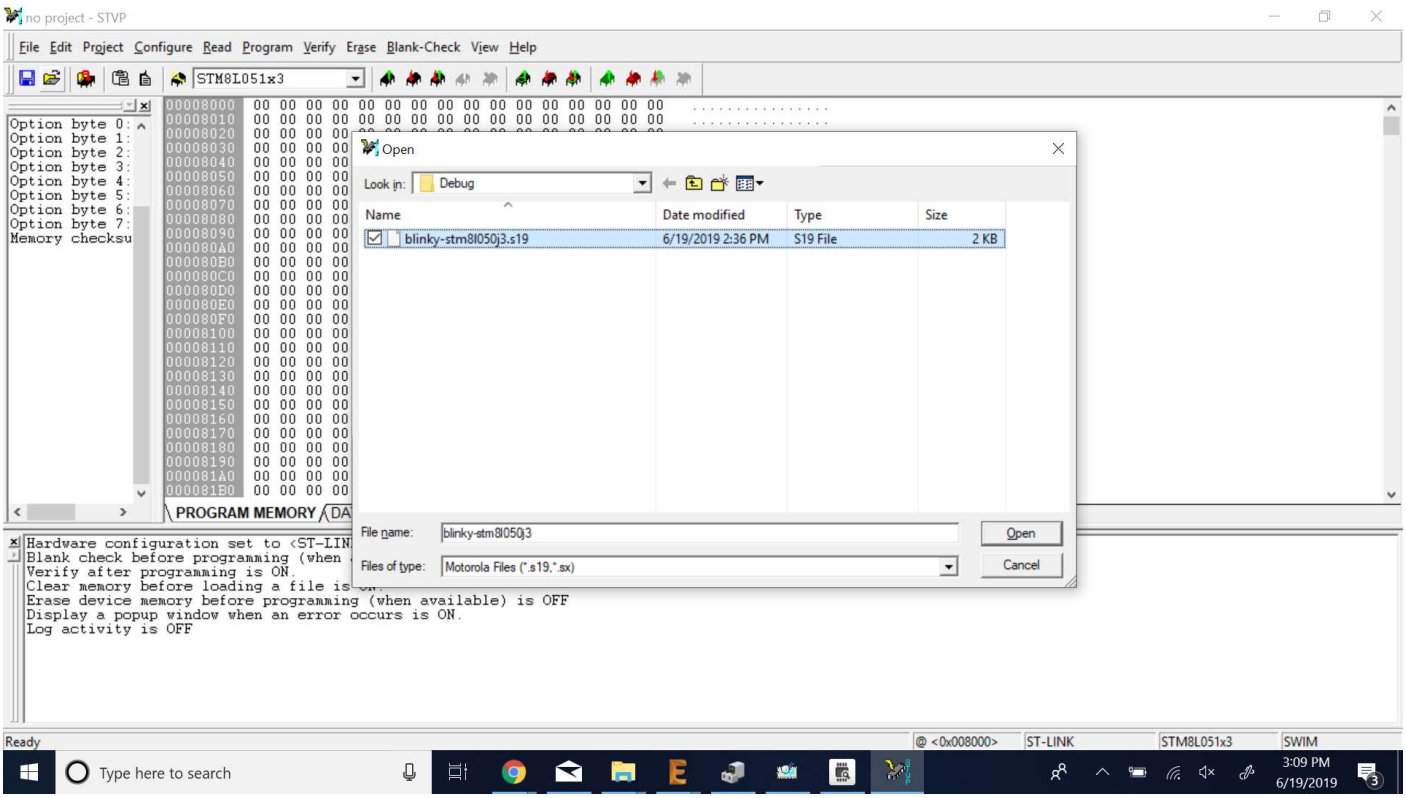
This is what you should see after pressing ‘OK’



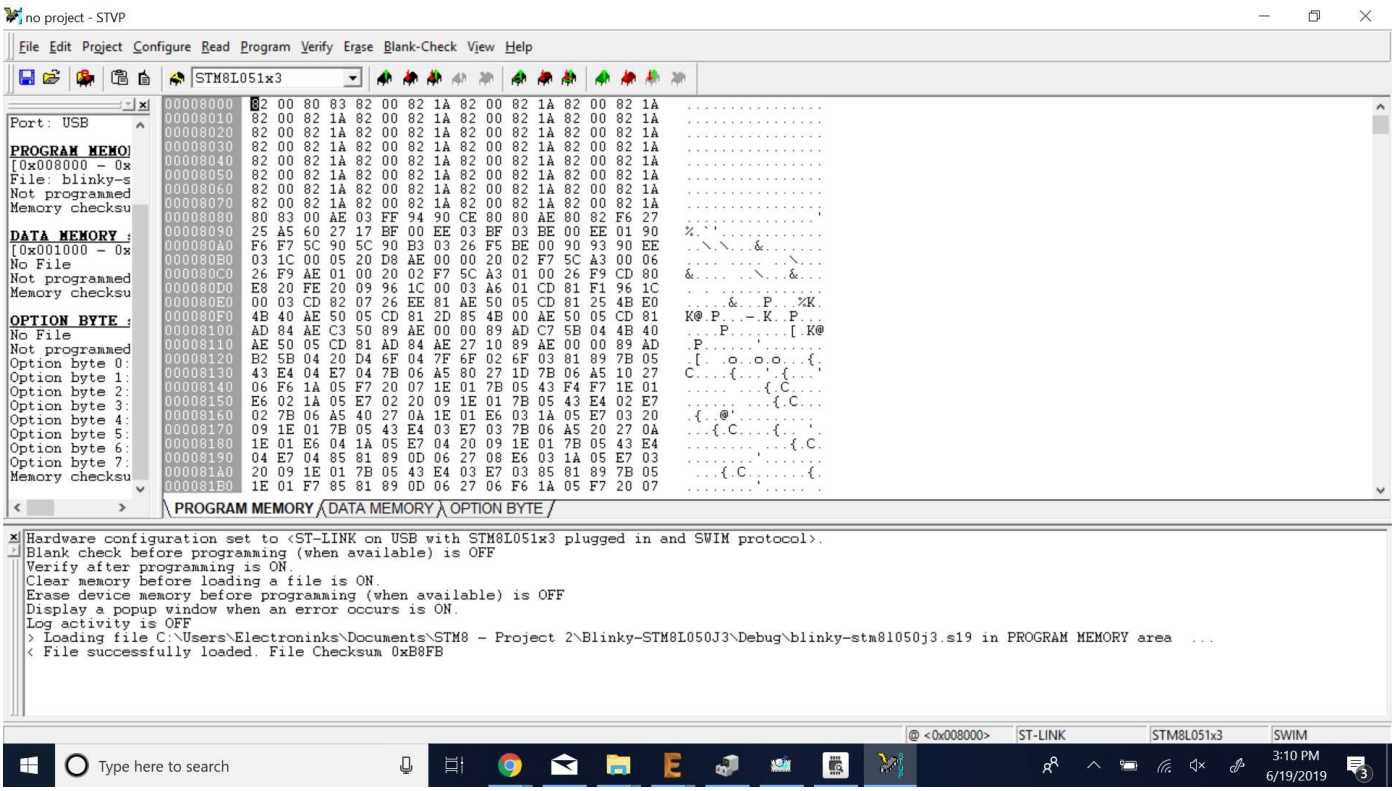
7.) Click on ‘Open a file’ in the top left corner, right beside the Blue ‘Save’ icon. It looks like an open folder with an arrow.



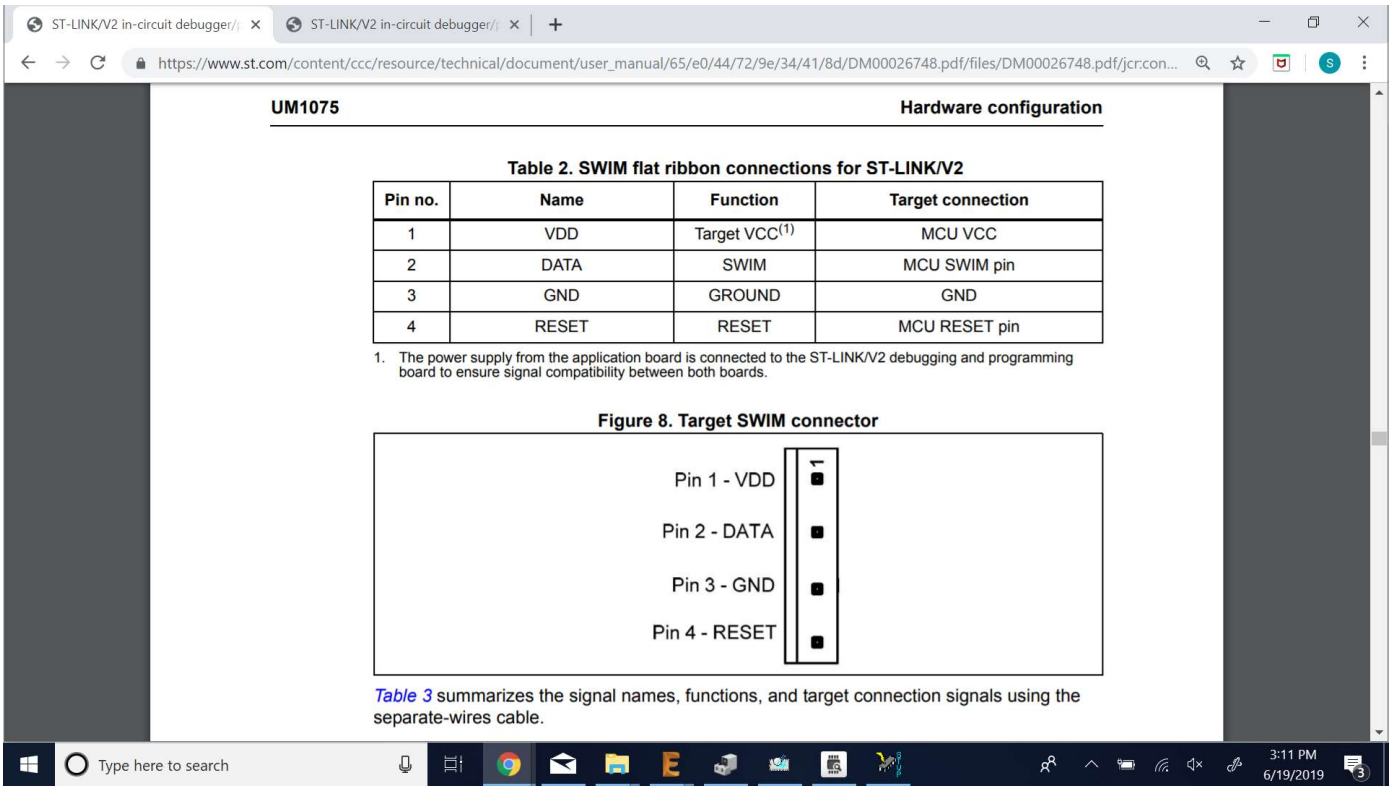
8.) Find your ‘Your_Project_Name.s19’ folder from earlier then press ‘Open’



9.) Your ‘PROGRAM MEMORY’ should now be filled with hex digits.



10.) Now plug in your ST-LINK/V2. Here are the pinouts for the STM8 in ST-LINK/V2



And here are the pins for the ST-LINK/V2


STM32
STM8
4
1
COM

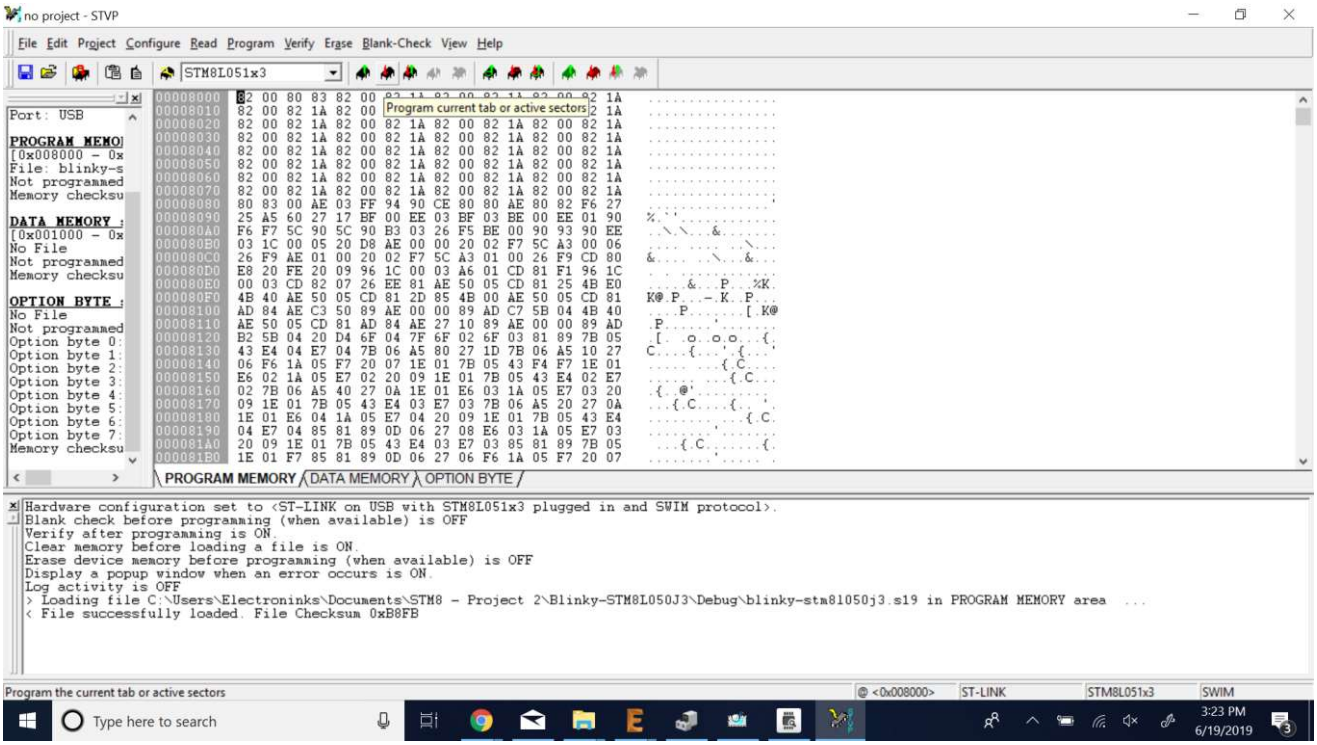
The direction of the pin numbers is not intuitive, so make sure it's connected correctly.

****Your device must be powered by another power source. As you can see in the pinouts, for pin 1 (VDD), YOU are supplying the 3.3V-5V (Depending on your devices absolute ratings – STM8L050J3: 1.8 - 3.6V) to the ST-LINK/V2

*IMPORTANT: You are supplying the VDD voltage TO the ST-LINK/V2. The ST-LINK/V2 is not powering the device in any way.

*****For pin 4, the RESET pin, if your device (like the STM8L050J3) does not have a RESET pin/functionality, just force the pin 4 on the ST-LINK/V2 to LOW by connecting it directly to ground.

11.) Finally, Program your device by clicking the second icon on the right of the drop-down arrow for devices (STM8L051x3). It should look like an IC with a red arrow pointing down.



Side Note of the LED colors on the ST-LINK/V2

RED LED means the computer and ST-LINK/V2 are connected and communicating.

ORANGE LED means the programmer tried programming the device but it failed.

GREEN LED means the device has been successfully programmed.