

Coinbill Counter

Programming Procedure

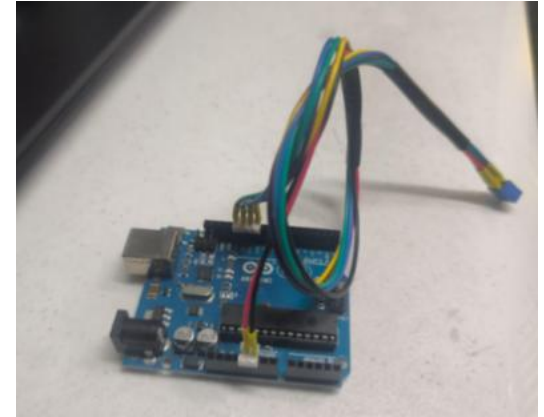
Materials Needed



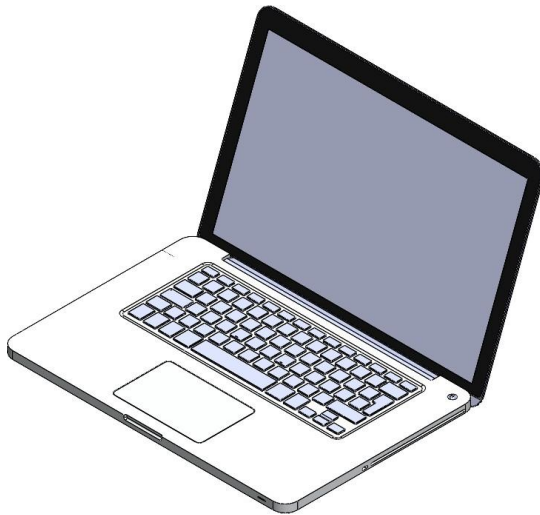
USB type A to USB type B



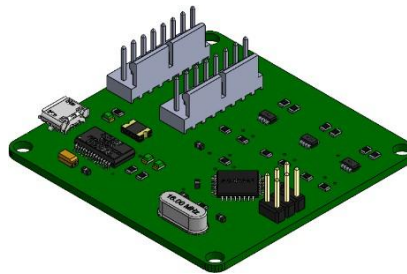
USB type A to USB Micro



Arduino Uno with ICSP



Working PC



CoinBill Counter Board

- Link: [CoinOp Coinbill.zip](#)

Software and Programs
(Do not restructure this folder)

Steps Summary and Description

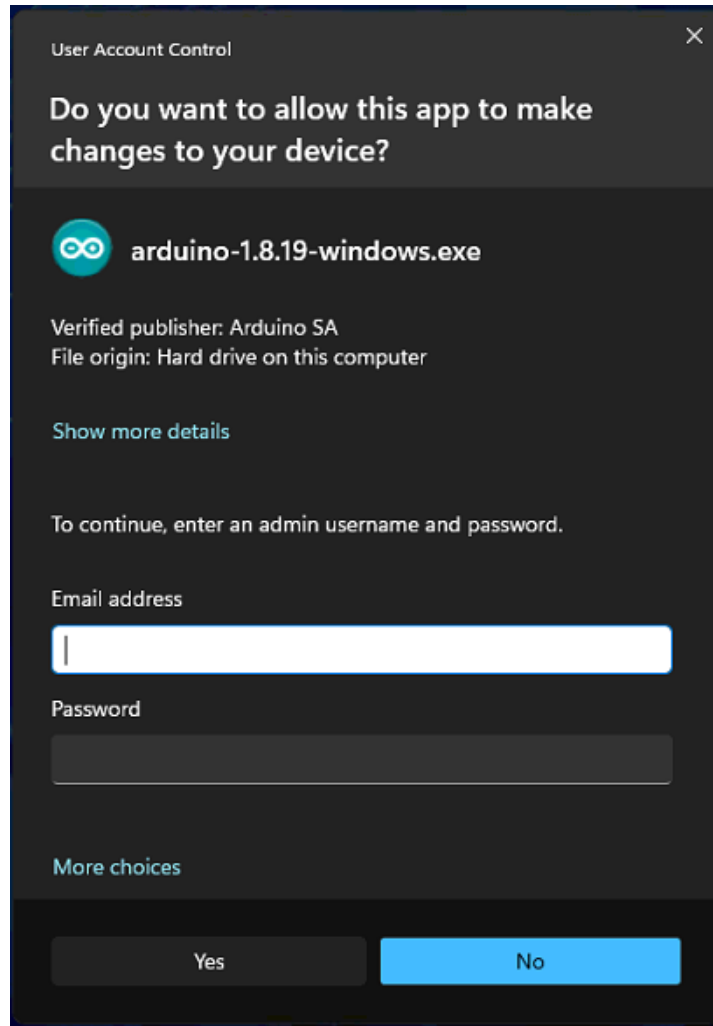
Step	Description
1. Software Preparation	Perform the initial setup of the Windows PC or laptop that will be used for programming. This includes installing and configuring the required Integrated Development Environment (IDE) and associated software necessary to prepare the Arduino Uno for use as a programmer. This is a one-time setup and does not need to be repeated for each CoinBill Counter Board.
2. Hardware Preparation	Configure the Arduino Uno to function as the programming interface for the CoinBill Counter Board. This includes uploading the required programmer firmware to the Arduino Uno, enabling it to work with the bootloader programming software. This is a one-time preparation unless the Arduino Uno is reprogrammed or replaced.
3. Bootloader Upload	Program the required bootloader onto the CoinBill Counter Board using Coinop Coinbill Programmer.exe . The bootloader enables the board to receive the main CoinBill firmware during the subsequent Program Upload procedure. This procedure is generally required only once per board. Some CoinBill Counter Boards may already have the bootloader installed; verify the machine attributes before proceeding to avoid unnecessary reprogramming.
4. Program Upload	Upload the approved CoinBill Counter firmware to the CoinBill Counter Board. This is the final programming stage and should be performed only after confirming that the required bootloader is installed. Upon completion, verify that the firmware upload is successful and that the CoinBill Counter Board is detected and operating correctly.

Software Preparation

Download all CoinOp Coinbill programs and extract to Desktop in this link: [CoinOp Coinbill. Zip](#)

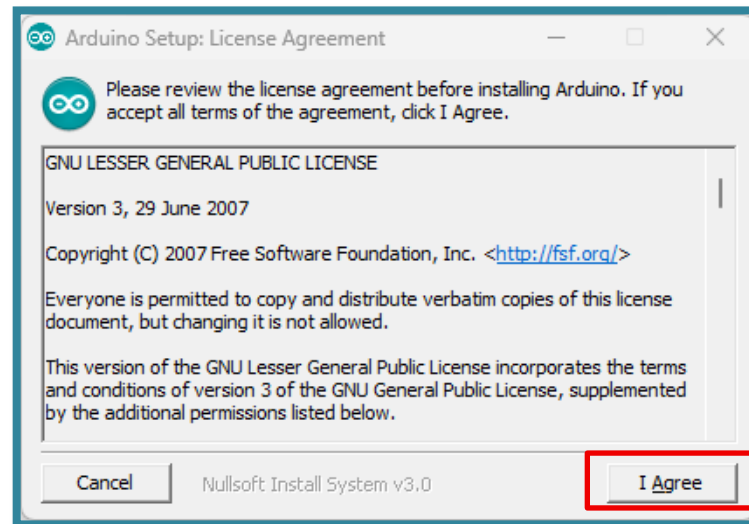
I. Arduino Software Installation (IDE)

1. Go to your extracted file location and double click on **arduino-1.8.19-windows.exe**
2. A security prompt may appear during the installation. Contact your Tech Support for guidance.

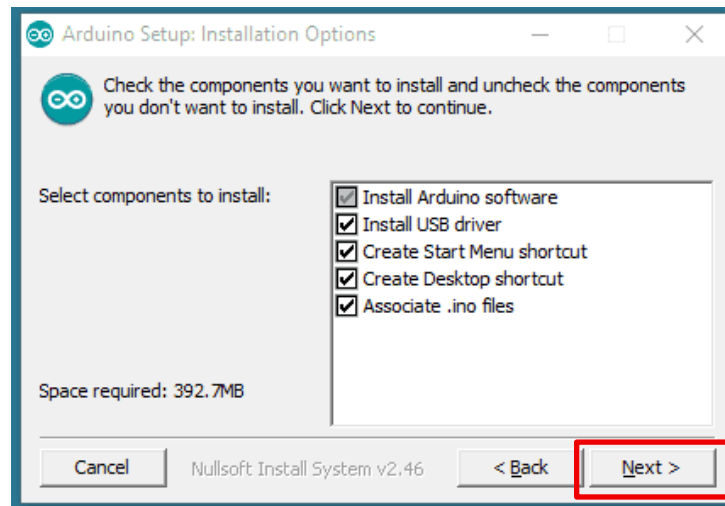


3. Follow these steps below:

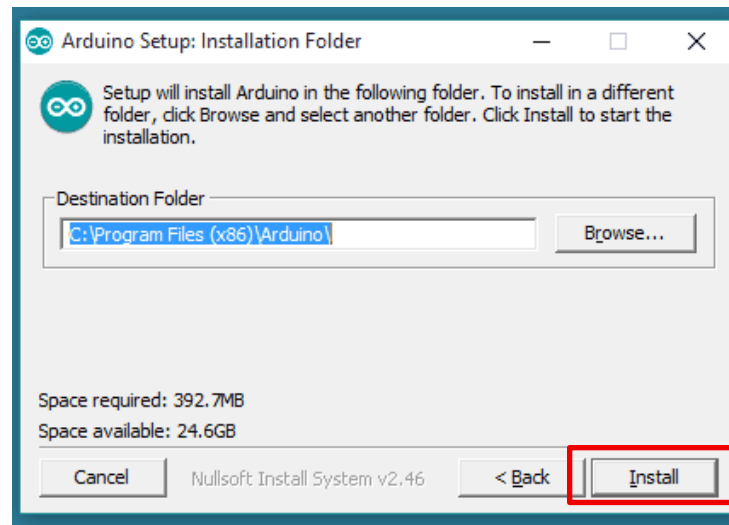
1. Click **I Agree** when prompt with License Agreement pop up.



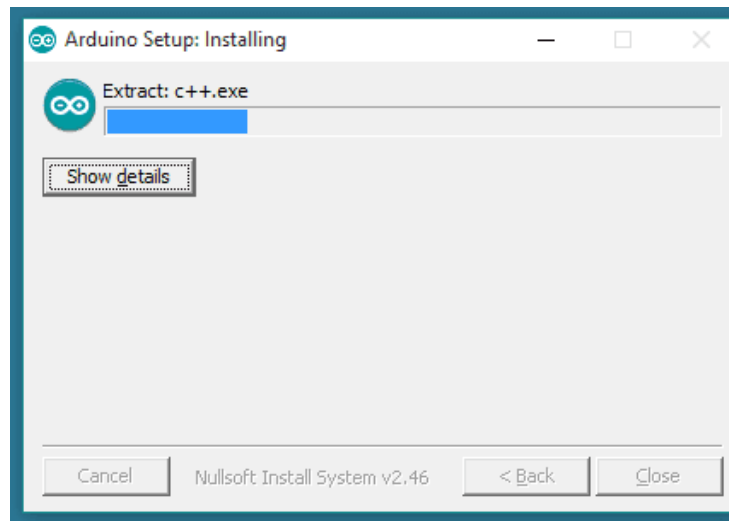
2. Check all component boxes to install. And click **Next** button.



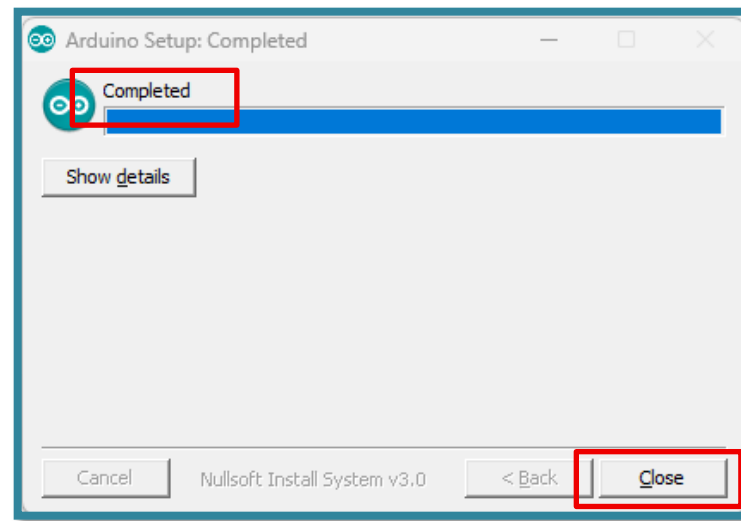
3. Choose the installation directory



4. Wait for it to finish the installation



5. Click close when completed



Hardware Preparation

II. Setting up your Arduino Uno as programmer

1. Connect Arduino Uno to the computer using **USB A to USB B**



Note:

1. The Arduino board will light up when connected properly
2. In case it does not light Up disconnect the USB immediately and contact tech support.

2. Go to your downloaded and extracted file and look for the folder **coinbillBootloader**  **coinbillBootloader**
3. Inside the folder double click on the **coinbillBootloader.ino**

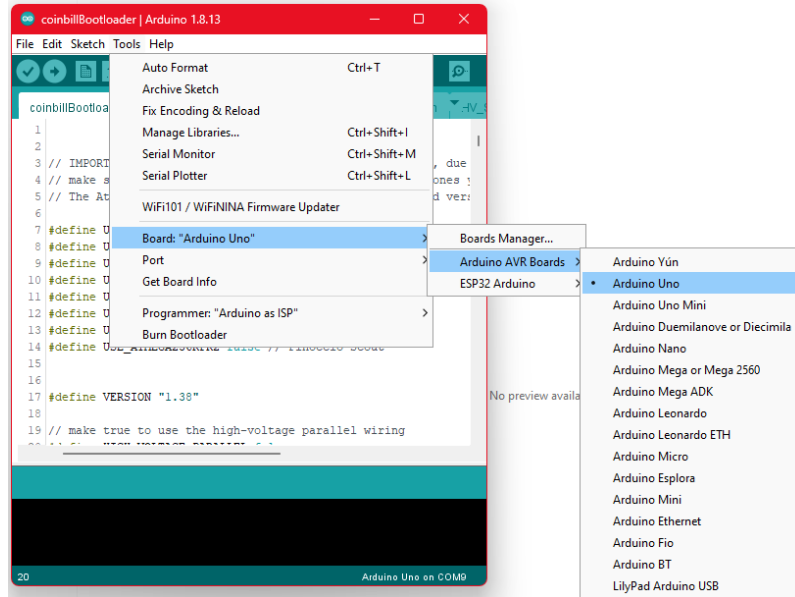
Name	Status	Date modified	Type	Size
 bootloader_atmega8.h	✓	8/21/2025 7:24 AM	CodeBlocks.h	7 KB
 bootloader_atmega16u2.h	✓	8/21/2025 7:24 AM	CodeBlocks.h	21 KB
 bootloader_atmega32u4.h	✓	8/21/2025 7:24 AM	CodeBlocks.h	25 KB
 bootloader_atmega168.h	✓	8/21/2025 7:24 AM	CodeBlocks.h	4 KB
 bootloader_atmega256rfr2_v1.0a.h	✓	8/21/2025 7:24 AM	CodeBlocks.h	28 KB
 bootloader_atmega328.h	✓	8/21/2025 7:24 AM	CodeBlocks.h	4 KB
 bootloader_atmega1280.h	✓	8/21/2025 7:24 AM	CodeBlocks.h	4 KB
 bootloader_atmega1284.h	✓	8/21/2025 7:24 AM	CodeBlocks.h	4 KB
 bootloader_atmega2560_v2.h	✓	8/21/2025 7:24 AM	CodeBlocks.h	46 KB
 bootloader_converter.lua	✓	3/29/2018 3:23 PM	Lua Source File	5 KB
 bootloader_lilypad328.h	✓	8/21/2025 7:24 AM	CodeBlocks.h	12 KB
 coinbillBootloader.ino	✓	8/21/2025 7:25 AM	INO File	17 KB
 fixup_links.sh	✓	3/29/2018 3:23 PM	Shell Script	1 KB
 General_Stuff.h	✓	8/21/2025 7:24 AM	CodeBlocks.h	2 KB
 HV_Parallel_Utils.ino	✓	8/21/2025 7:24 AM	INO File	8 KB
 HV_Pins.h	✓	8/21/2025 7:24 AM	CodeBlocks.h	6 KB
 HV_Serial_Utils.ino	✓	8/21/2025 7:24 AM	INO File	8 KB
 ICSP_Utils.ino	✓	8/21/2025 7:24 AM	INO File	9 KB
 Programming_Utils.ino	✓	8/21/2025 7:24 AM	INO File	3 KB
 Signatures.h	✓	8/21/2025 7:24 AM	CodeBlocks.h	6 KB

Note:

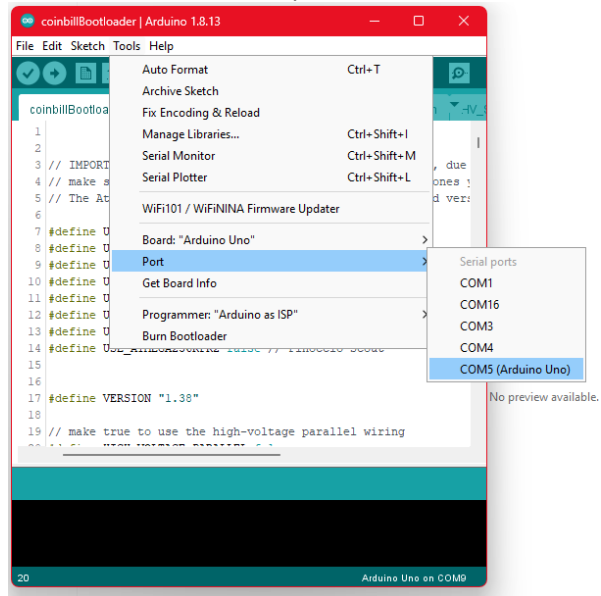
1. Do not restructure any files or folders in the inside of the downloaded and extracted [CoinOp Coinbill. Zip](#)
2. Every file should be exactly where it should be the first time you downloaded it.
3. One file relocated or missing will result in failure of installation or programming

4. Setup board and ports on IDE

- Tools>Board>Arduino Uno

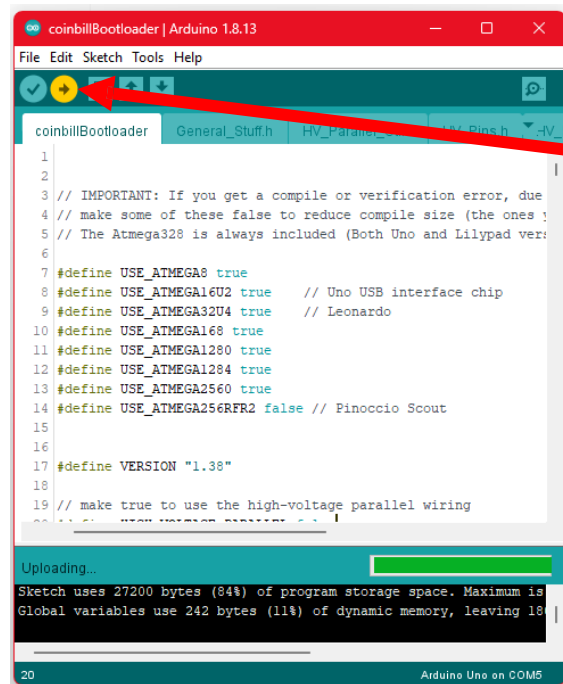


- Tools>Port>choose the port that has label Arduino Uno



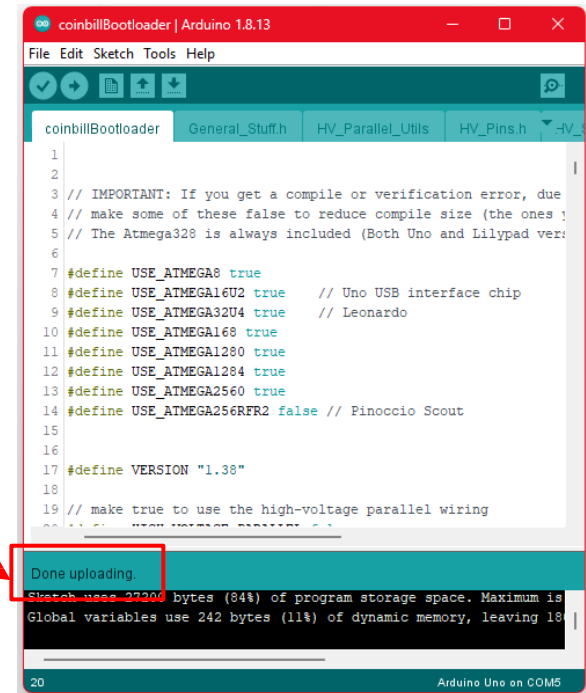
5. Upload the program to the Arduino board

- Click Upload button. Confirm done uploading. See below snips



Upload button

Done Uploading confirmation



Connection Diagram

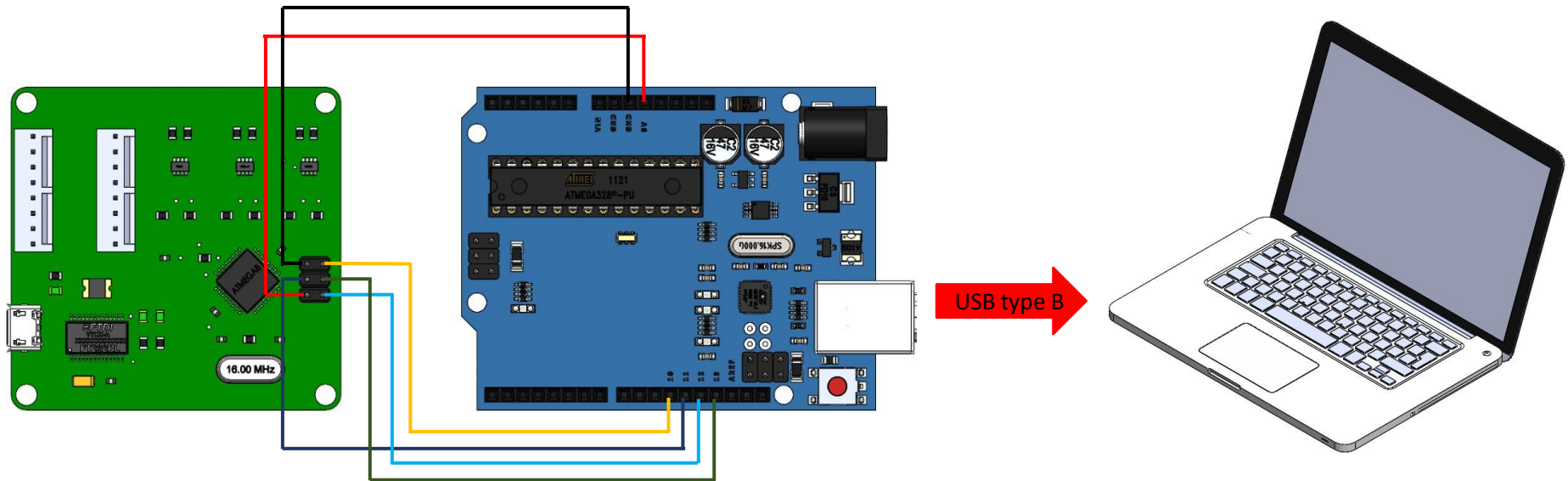


Figure1: Coinbill to Arduino Uno Connection

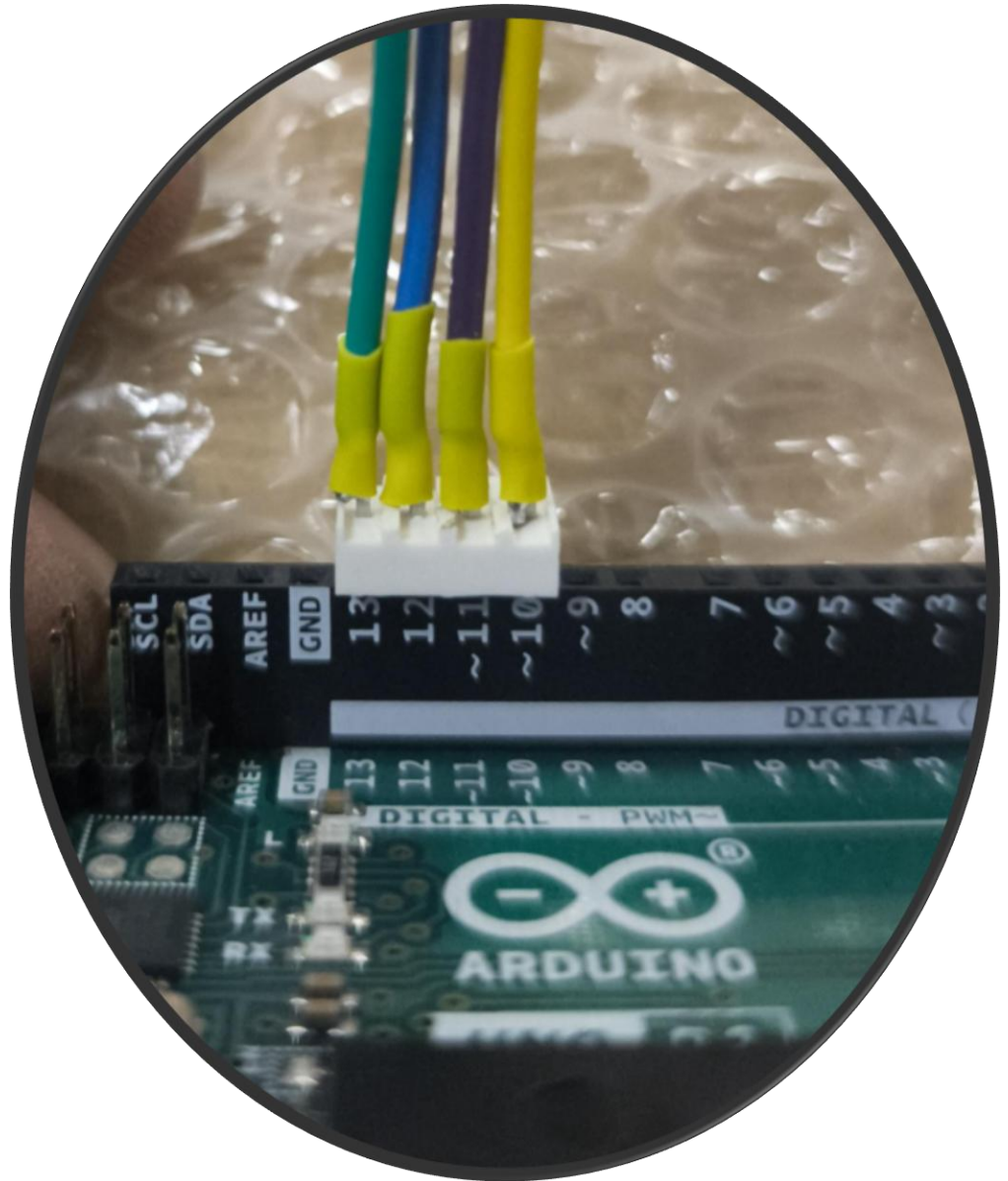
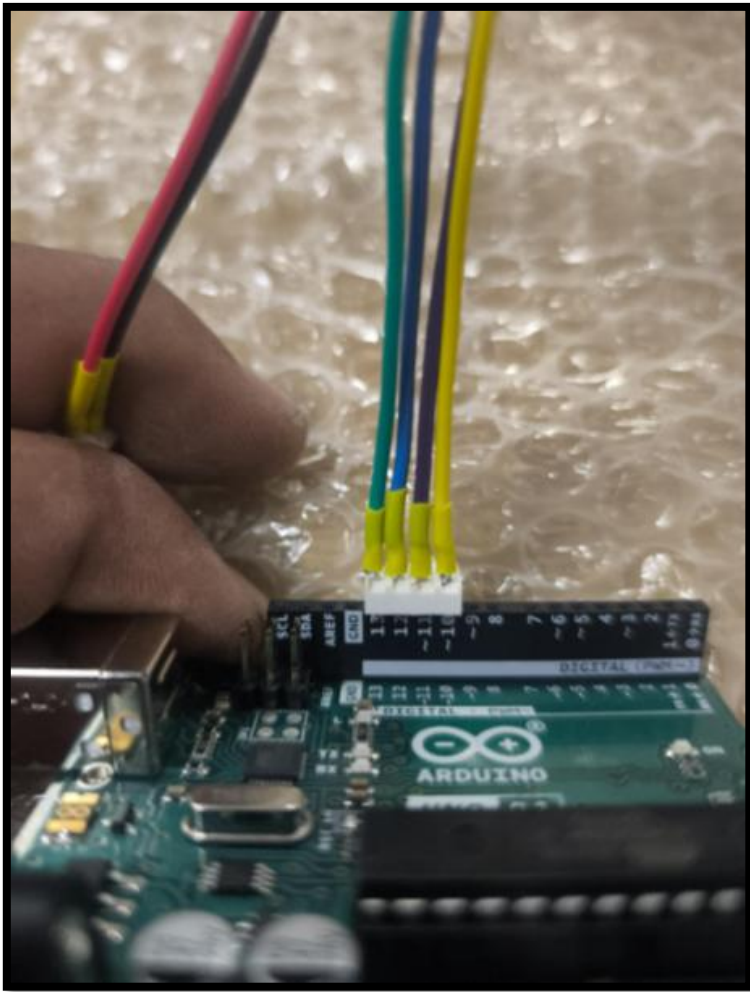
Wiring Color Code

Wire Color	Arduino pin	Coinbill Pin
Yellow	GND	Pin 3
Red	5V	Pin 1
Yellow	Pin 1	Pin 4
Purple	Pin 11	Pin 2
Blue	Pin 12	Pin 6
Green	Pin 13	Pin 5

Note:

- The ICSP wire that you have may be different color from the illustration above. In that case just follow where the black and red wire goes and the rest is pre-configured.
- Arduino comes build in with ICSP cable.

ICSP Wire Connection – 4 wire side



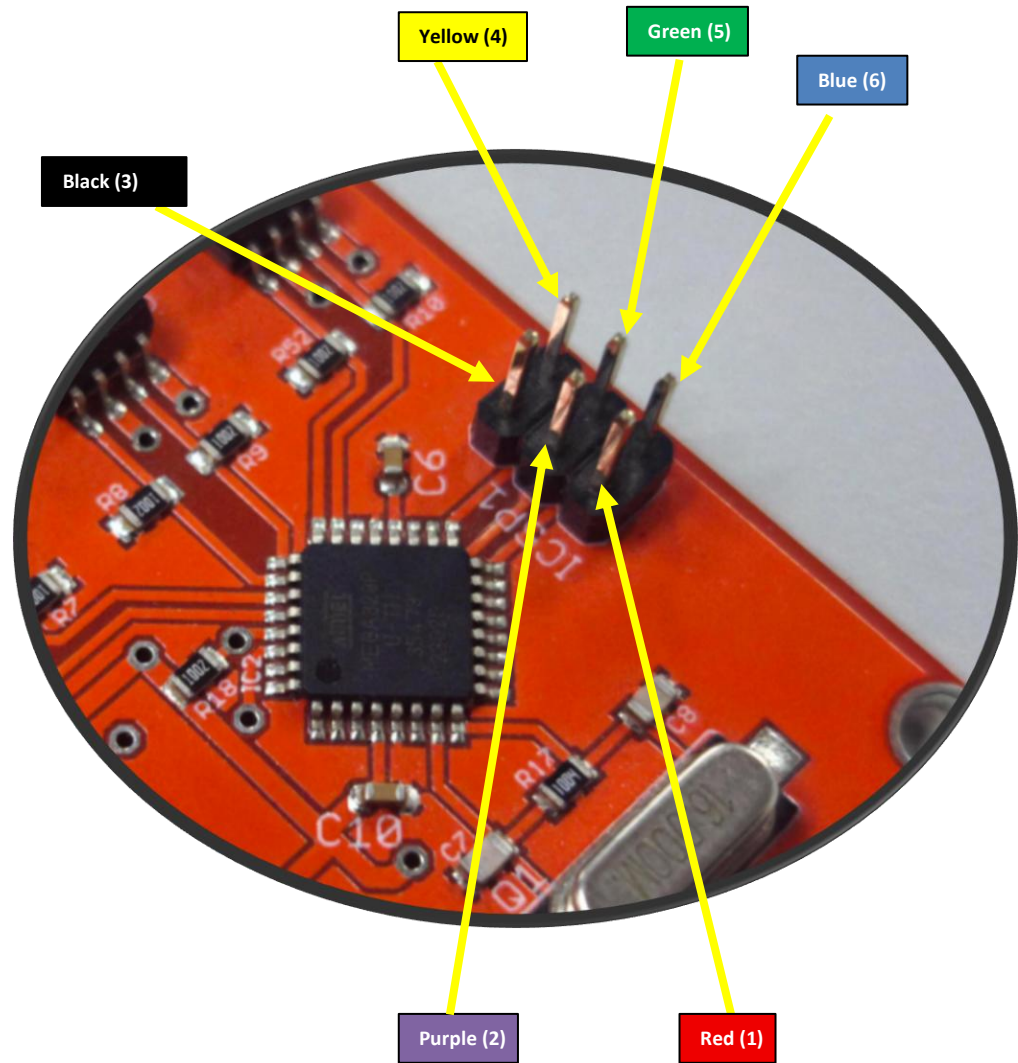
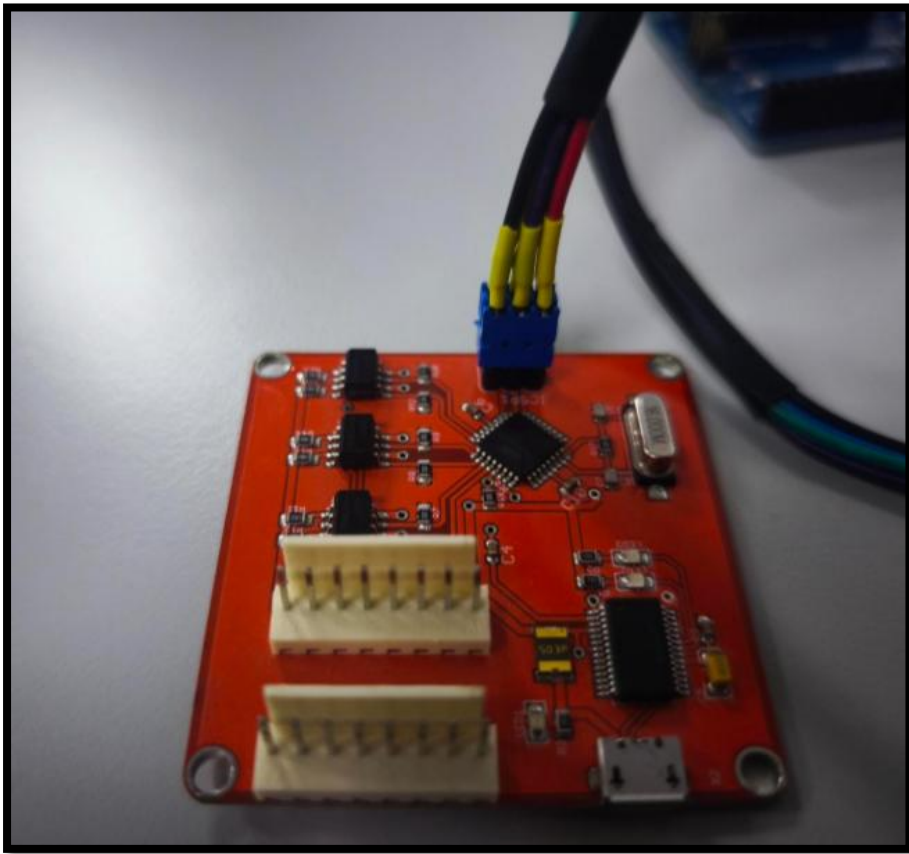
Wire Color	Arduino pin
Yellow	Pin 10
Purple	Pin 11
Blue	Pin 12
Green	Pin 13

ICSP Wire Connection – 2 wire side



Wire Color	Arduino pin
Yellow	GND
Red	5V

ICSP Wire Connection – Coinbill Board Side



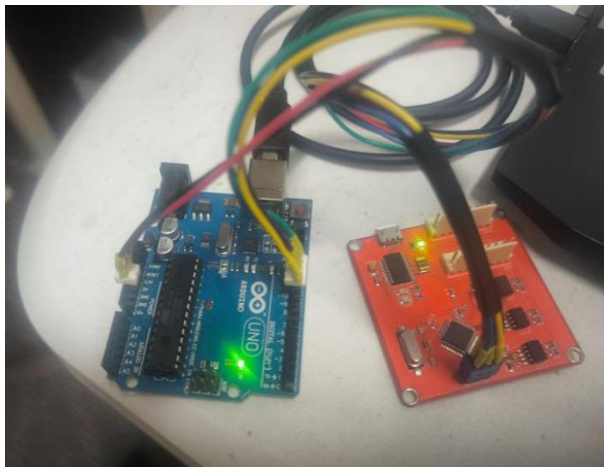
Bootloader Upload

III. Uploading Bootloader Coinbill Counter Board

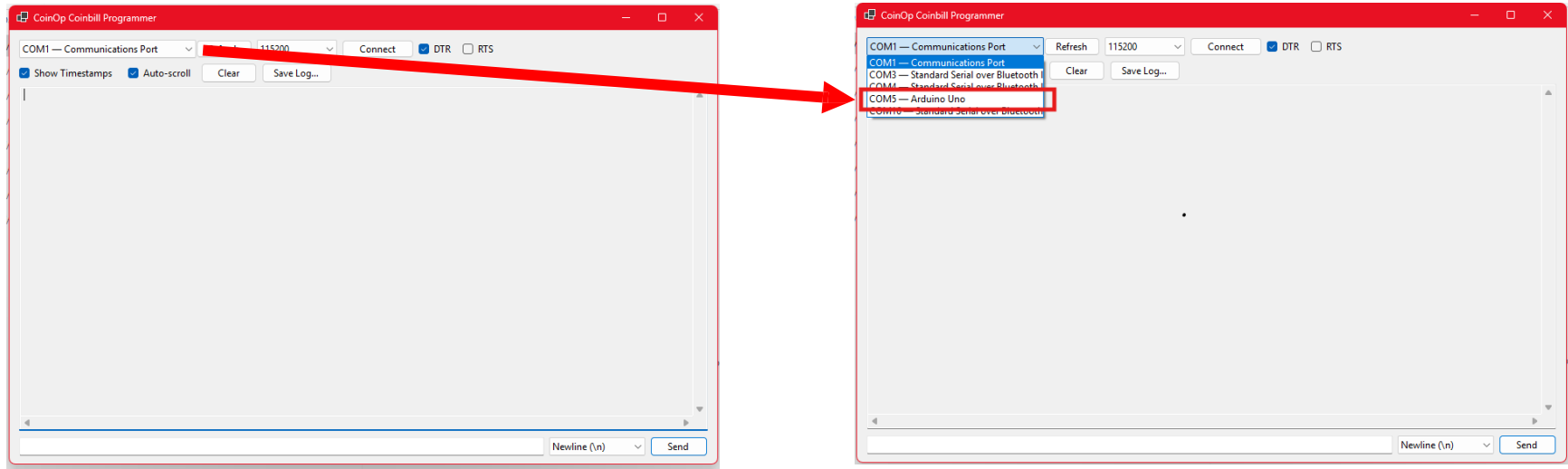
1. Go to your extracted folder named CoinOp Coinbill Programmer  CoinOp Coinbill Programmer
2. Double click on **CoinOp Coinbill Programmer.exe**
3. Connect your Arduino uno to the PC.



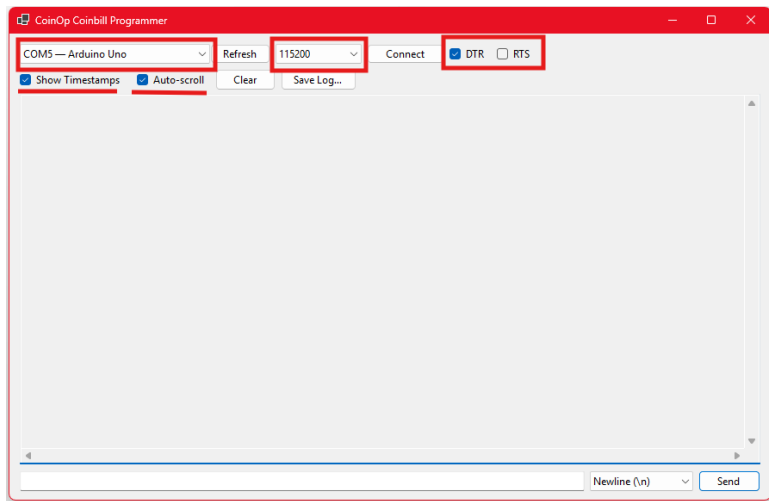
4. Connect your Coinbill counter board to the Arduino Uno (refer to connection diagram for wire color connection)



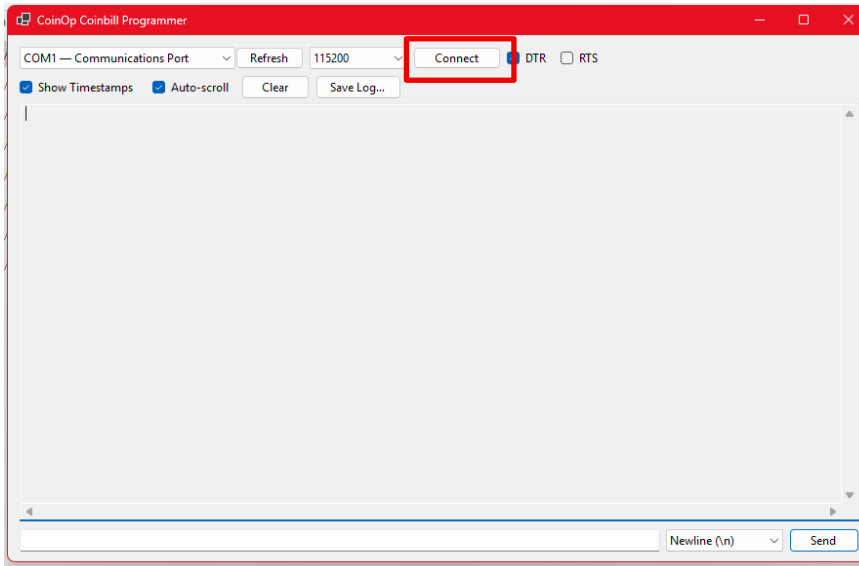
5. Confirm Port of the Arduino uno. Click port drop down and locate port of Arduino Uno.



6. Select 115200 as Baud rate, make sure DTR, Show Timestamps and Auto scroll checkbox are checked. See below snips

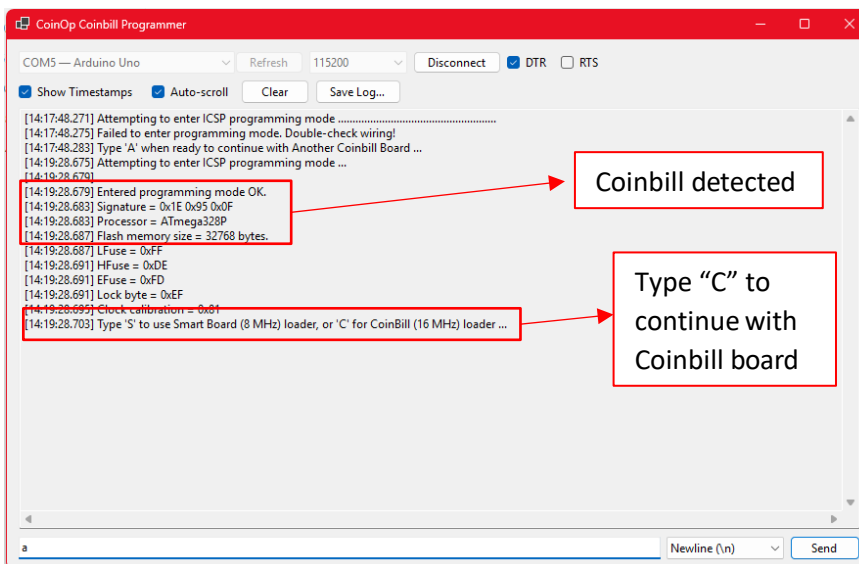


- Click connect and the Program will automatically search for the Coinbill board.

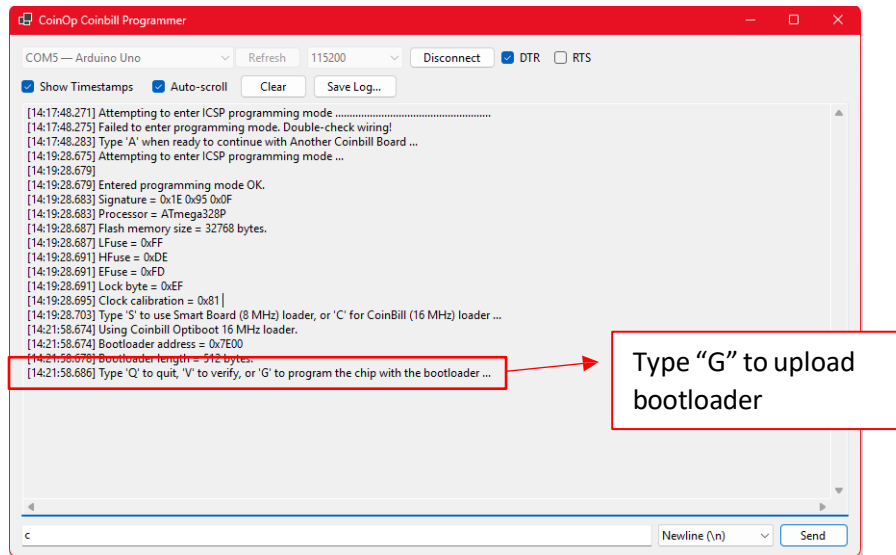


- Connect the Coinbill board as shown in the connection diagram figure 1. Once connected the program will ask you what do you want to do.

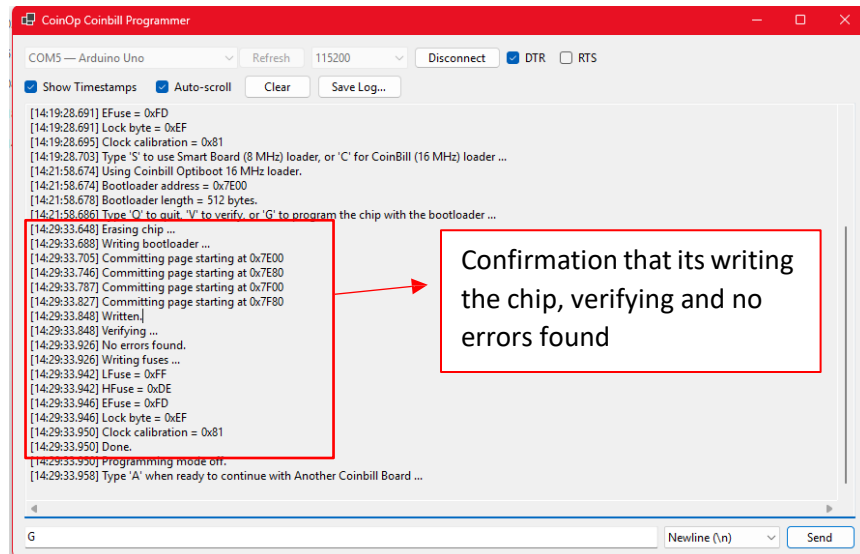
Step 1. Type “C” and click send for Coinbill programming.



Step 2. Type “G” to upload bootloader into the Coinbill board



Step 3. Wait for the confirmation that the bootloader was written successfully.



Note:

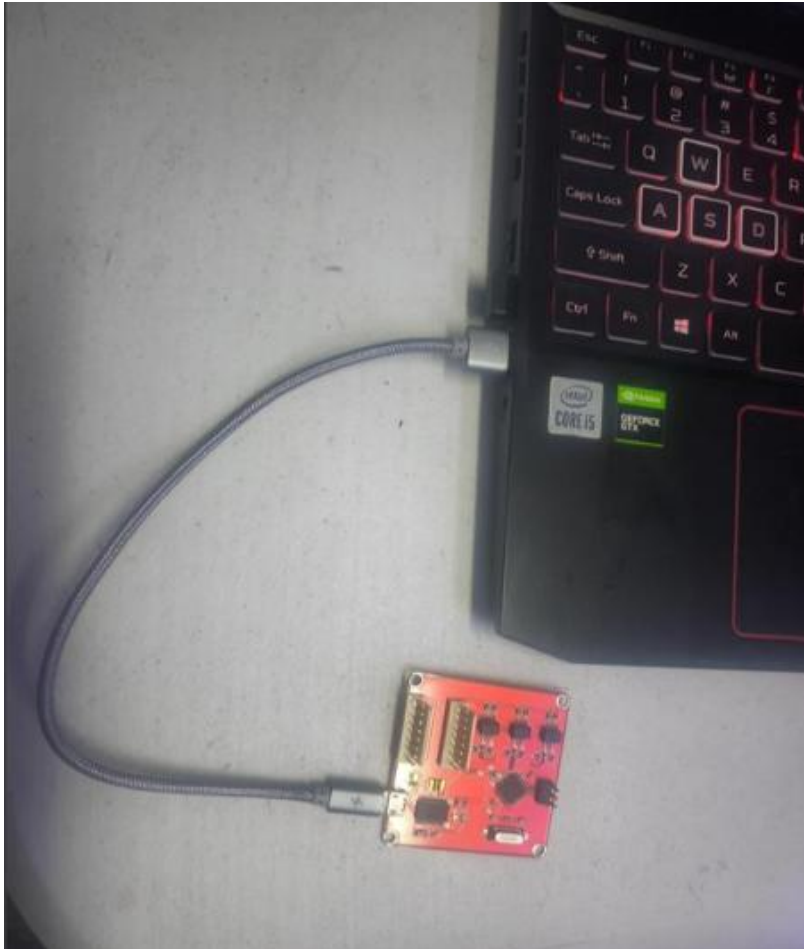
Once it successfully uploaded bootloader, you can disconnect the Coinbill board and connect another one. Then follow the instruction in the prompt. Type “A” when asked. Type “A” when ready to continue with Another Coinbill Board.

Step 4. Repeat step “Step 1 ” for another board programming.

Program upload

IV. Programming Coinbill Counter Board

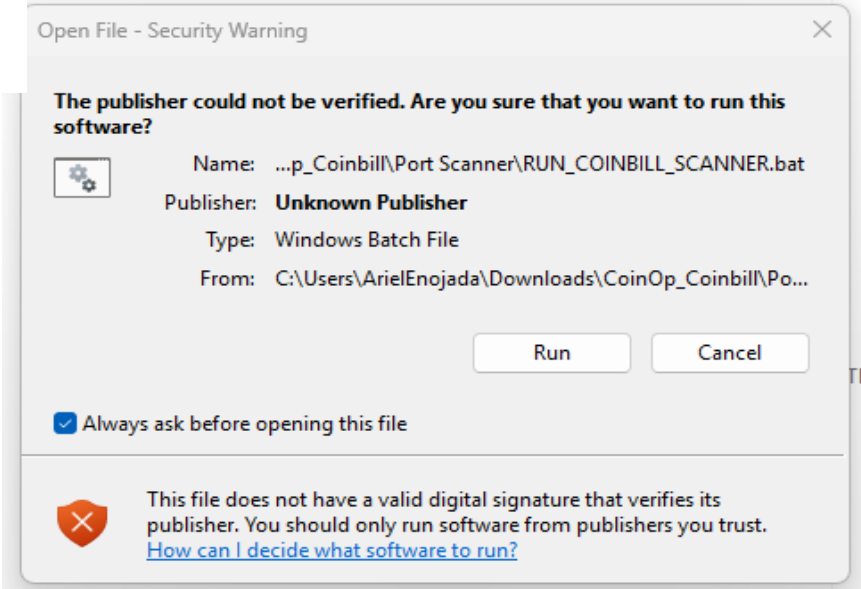
1. Connect the Coinbill board using the USB Type A to Micro USB cable



2. From your Arduino IDE open file [coinbill_V2.0.ino](#)

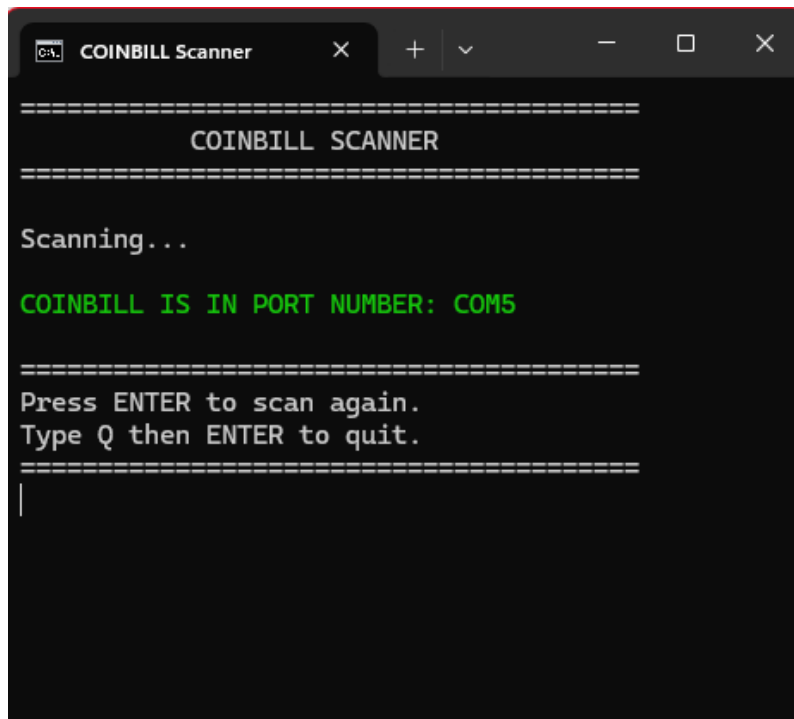
3. On the Coinop_Coinbill folder, go to the Port Scanner Folder
4. Double click on the "RUN_COINBILL_SCANNER" to see the port of the connected coinbill board.  RUN_COINBILL_SCANNER.bat

1



Click on Run button to proceed.

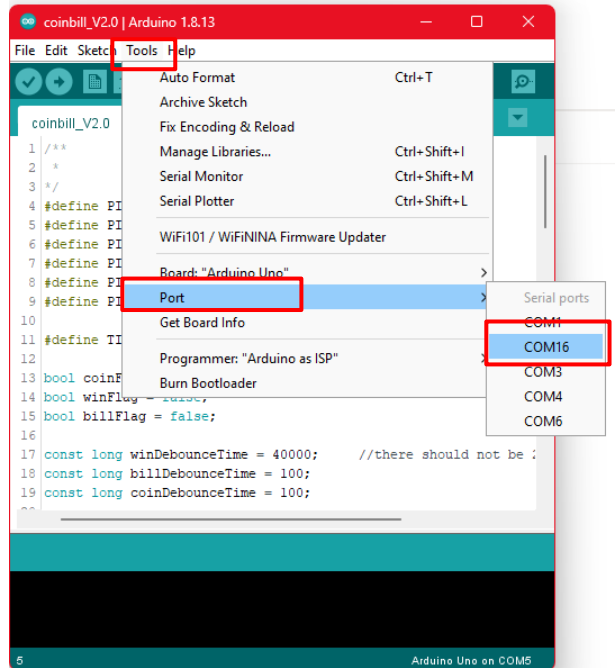
2



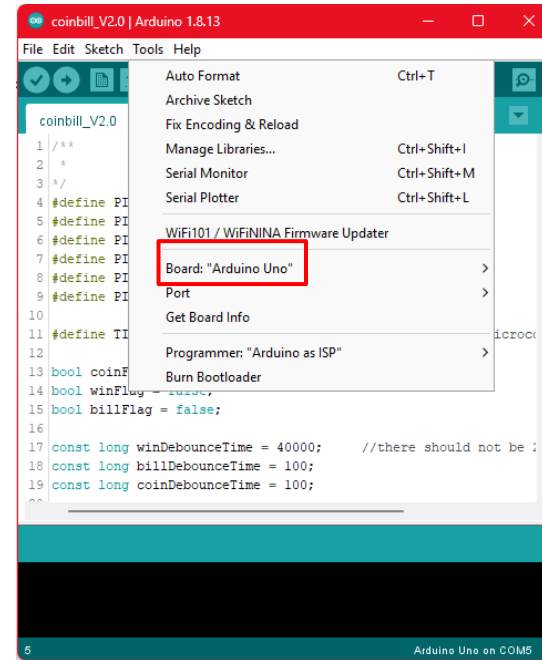
Take note of the PORT Number.

5. Find the port of the Coinbill board base on the coinbill port scanner result

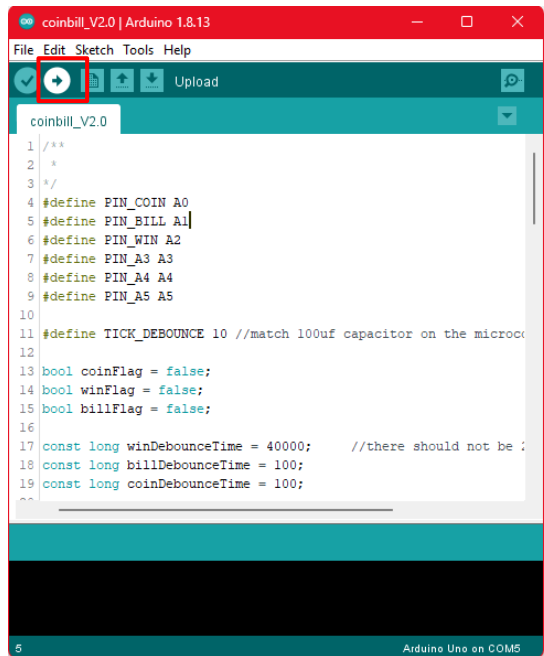
a. Go to Tools>Port>select port



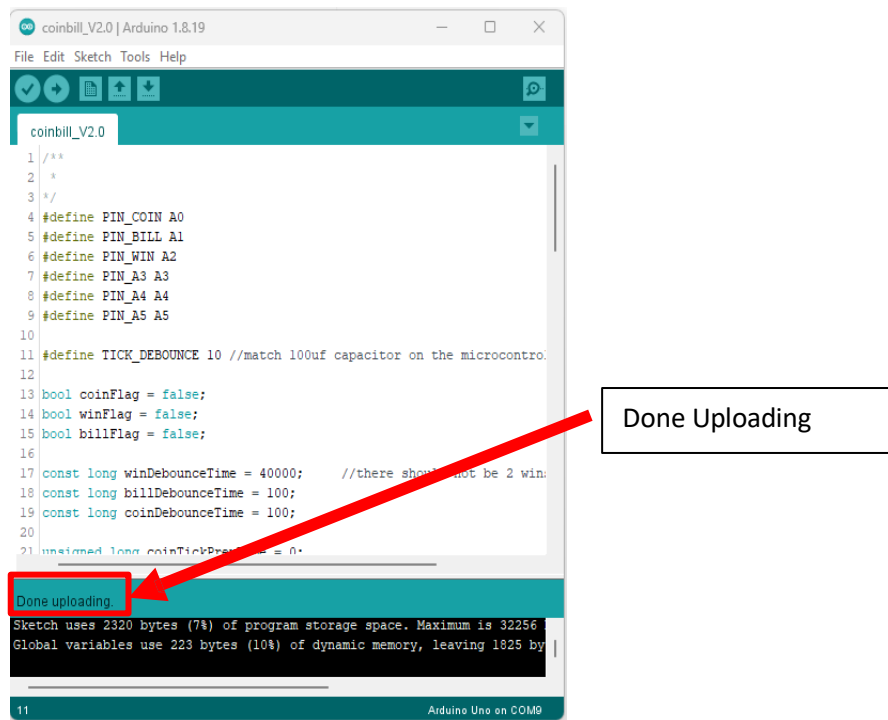
b. Go to Tools>boards>Arduino uno



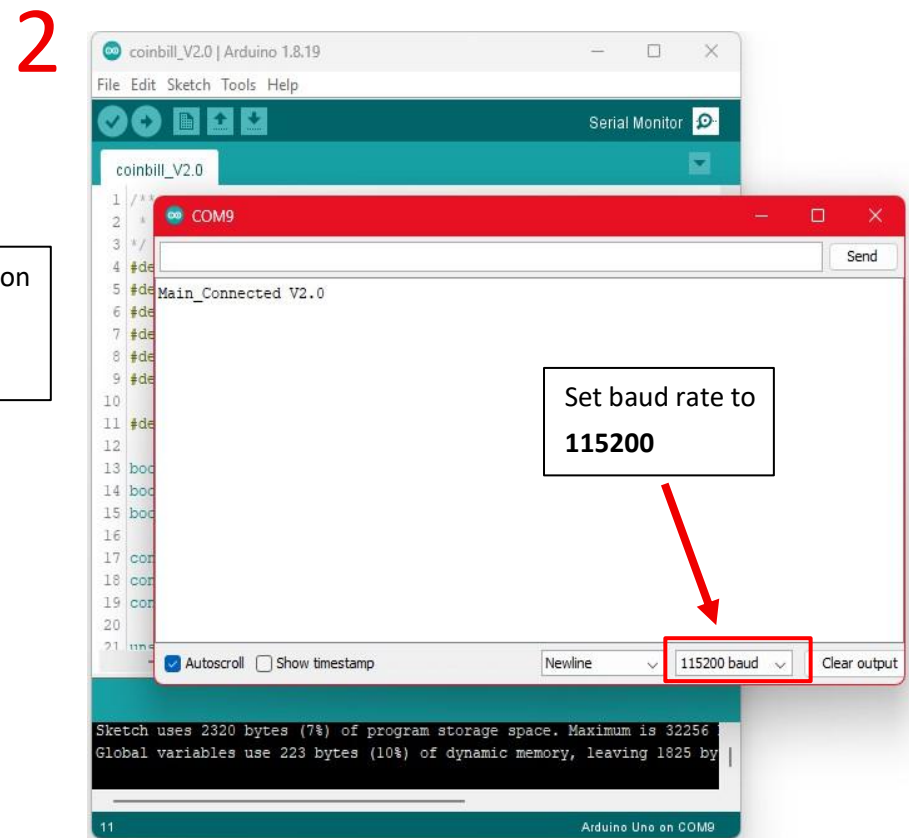
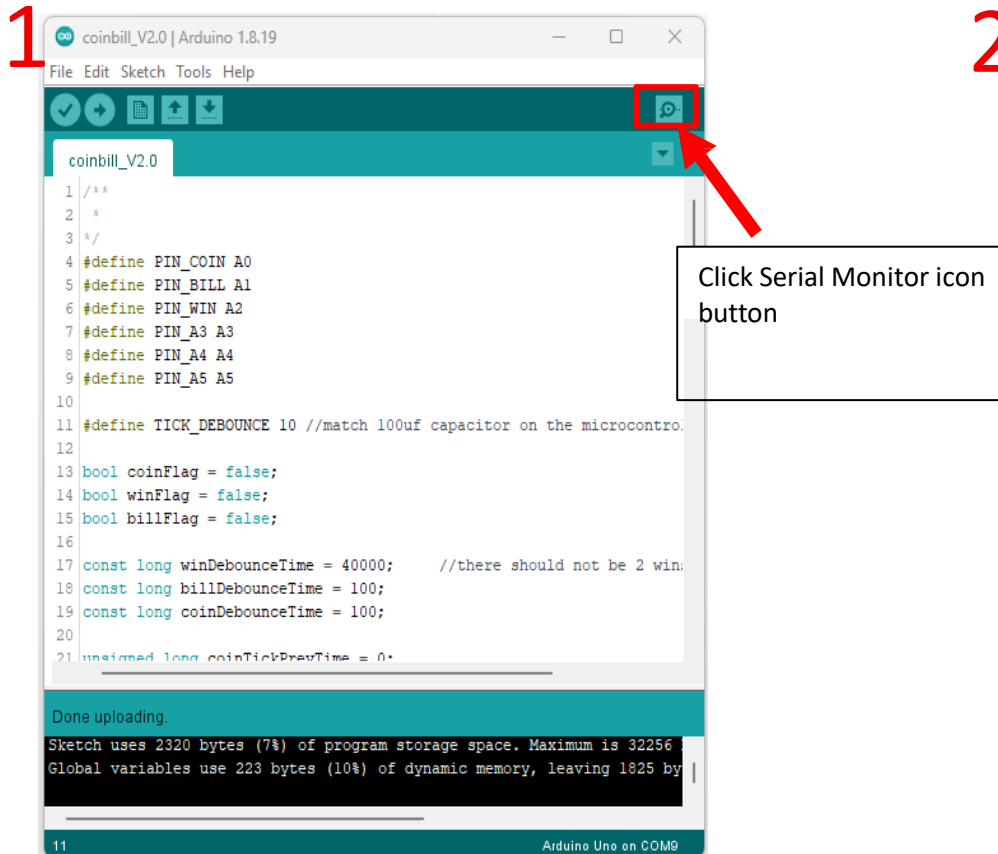
6. Click Upload



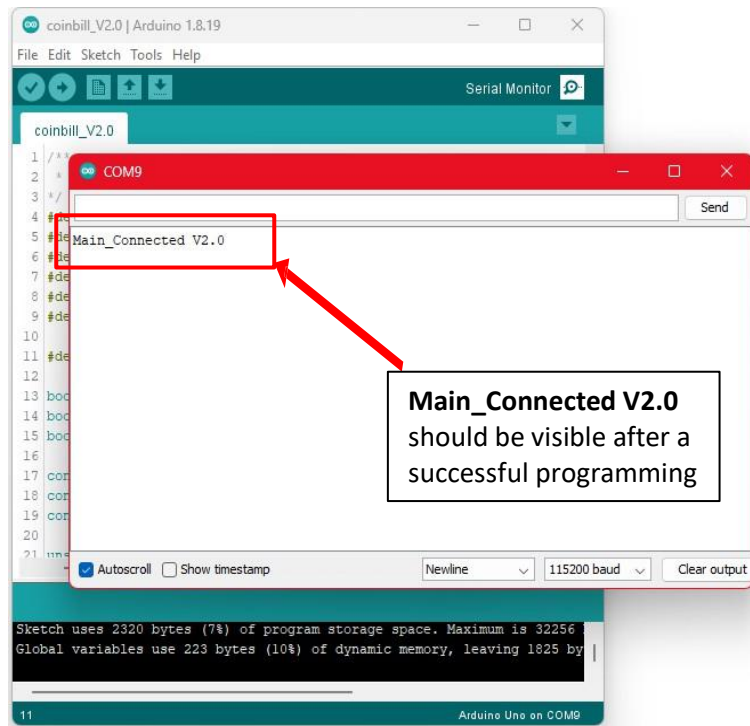
7. Confirm if the program uploading is done



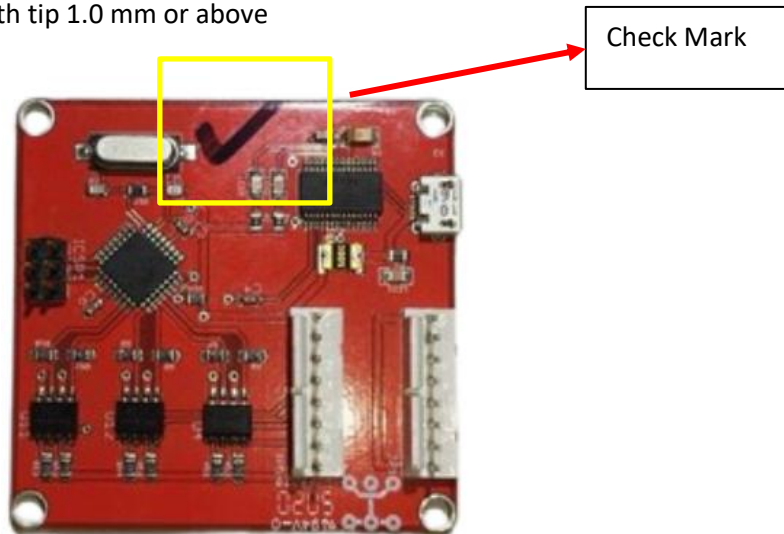
8. Click on Serial Monitor button.
 - a. You should see the program version if the programming is successful.



3



1. After confirming the program version. Make a check mark on the coinbill board.
 - a. Make sure its clear enough or big enough for anyone to see, as this is the only indicator that the board is freshly programmed.
 - b. Use black sharpie with tip 1.0 mm or above



Frequently Asked Questions.

#	Abnormal Condition / FAQ	Possible Cause	Recommended Action
1	Arduino Uno is not detected by the PC.	USB cable is disconnected, faulty, or the USB connection is not established.	Reconnect the USB Type-A to Type-B cable. Try another USB port or cable, then check the Arduino IDE again.
2	No COM port appears under Tools > Port.	Arduino Uno is not recognized by Windows.	Disconnect and reconnect the Arduino. Confirm that a COM port appears before continuing.
3	Several COM ports are displayed and I don't know which one is the Arduino.	Multiple serial devices are connected to the PC.	Disconnect the Arduino and note which COM port disappears. Reconnect it and select the port that reappears. The procedure requires the port associated with the Arduino Uno.
4	coinbillBootloader.ino will not open.	Incorrect file or folder was selected.	Go to the extracted coinbillBootloader folder and open coinbillBootloader.ino again.
5	Arduino IDE shows an error when uploading coinbillBootloader.ino.	Incorrect board or COM port may be selected.	Confirm Tools > Board > Arduino Uno and select the Arduino's correct COM port before retrying.
6	“Done Uploading” does not appear after programming the Arduino Uno.	The Arduino programmer setup did not complete successfully.	Do not continue to Coinbill programming. Check the IDE error, USB connection, board selection, and COM port, then retry until Done Uploading appears.
7	CoinOp Coinbill Programmer does not show the Arduino COM port.	Arduino connection is missing or Windows has not detected the device.	Reconnect the Arduino, confirm its COM port in the Arduino IDE, then reopen or refresh the Coinbill Programmer.
8	Coinbill Programmer cannot connect after selecting the COM port.	Incorrect COM port or communication configuration.	Verify the Arduino COM port and confirm the required communication settings before clicking Connect .
9	The wrong baud rate is selected.	Programmer communication setting was changed.	Set the baud rate to 11520 as specified in the procedure.

10	Coinbill board is not detected after clicking Connect.	Coinbill-to-Arduino connection may be incorrect or incomplete.	Check every connection against the connection diagram before trying again.
11	ICSP wire colors do not match the manual.	The ICSP cable uses different wire colors.	Do not rely solely on wire color. Follow the connector positions shown in the diagram. The manual specifically notes that ICSP wire colors may differ.
12	Coinbill board remains undetected even though the wires are connected.	One or more wires may be connected to the wrong pin.	Check the wiring pin-by-pin, particularly 5V, GND, Pins 10, 11 and 12 , against the wiring table on page 8.
13	Coinbill is detected, but programming does not continue.	The required command has not been sent.	Type C and click Send to continue with Coinbill board programming.
14	I entered “C,” but the bootloader upload has not started.	The bootloader command has not yet been sent.	Follow the next prompt and type G to start uploading the bootloader.
15	Bootloader programming stops before completion.	Communication or connection may have been interrupted.	Do not disconnect the board immediately. Check the programmer message. If successful verification is not displayed, check the wiring and repeat the bootloader procedure.
16	An error appears while writing or verifying the bootloader.	Bootloader programming was unsuccessful.	Do not proceed to the main program upload. Check the Arduino-to-Coinbill connection and repeat the bootloader process until verification completes with no errors .
17	I am unsure whether the bootloader was successfully programmed.	Success confirmation was missed or unclear.	Check the programmer output. Successful programming should show that the chip was written and verified with no errors .
18	The next Coinbill board will not start programming.	The programmer is waiting for the command to continue with another board.	After connecting the next board, type A when prompted to continue with another Coinbill board.
19	Coinbill board is not detected when connected directly by Micro-USB.	USB cable/port connection may be incorrect or the board's COM port has not appeared.	Reconnect the USB Type-A to Micro-USB cable and check Tools > Port in the Arduino IDE.

20	Multiple COM ports appear during the main program upload.	Both the Arduino or other serial devices may be connected.	Identify and select the Coinbill board's COM port. The manual notes that the Coinbill board is usually the port with the higher COM-port value .
21	coinbill_V2.0.ino fails to upload to the Coinbill board.	Incorrect COM port or board selection.	Confirm the Coinbill COM port and Tools > Board > Arduino Uno , then retry the upload.
22	The IDE shows an error instead of “Done Uploading.”	Main program upload was unsuccessful.	Do not treat the board as programmed. Check the COM port, USB connection and board selection, then retry until Done Uploading appears.
23	Serial Monitor does not open or shows no information.	Wrong COM port may be selected or communication with the Coinbill board has not been established.	Confirm the Coinbill board's COM port, then close and reopen Serial Monitor.
24	Serial Monitor opens, but the program version is not displayed.	Main program may not have uploaded successfully or the wrong port is being monitored.	Confirm Done Uploading , verify the selected COM port, and reopen Serial Monitor. The expected result is the program version appearing in the prompt.
25	The displayed program version is not the expected version.	A different program may have been uploaded to the Coinbill board.	Verify that the correct .ino program file was opened. Re-upload the required Coinbill program and check the version again using Serial Monitor.

