Jeanine Carhart

CEIS 114 FINAL PROJECT AUGUST 27, 2022

INTRODUCTION

PROJECT SCOPE

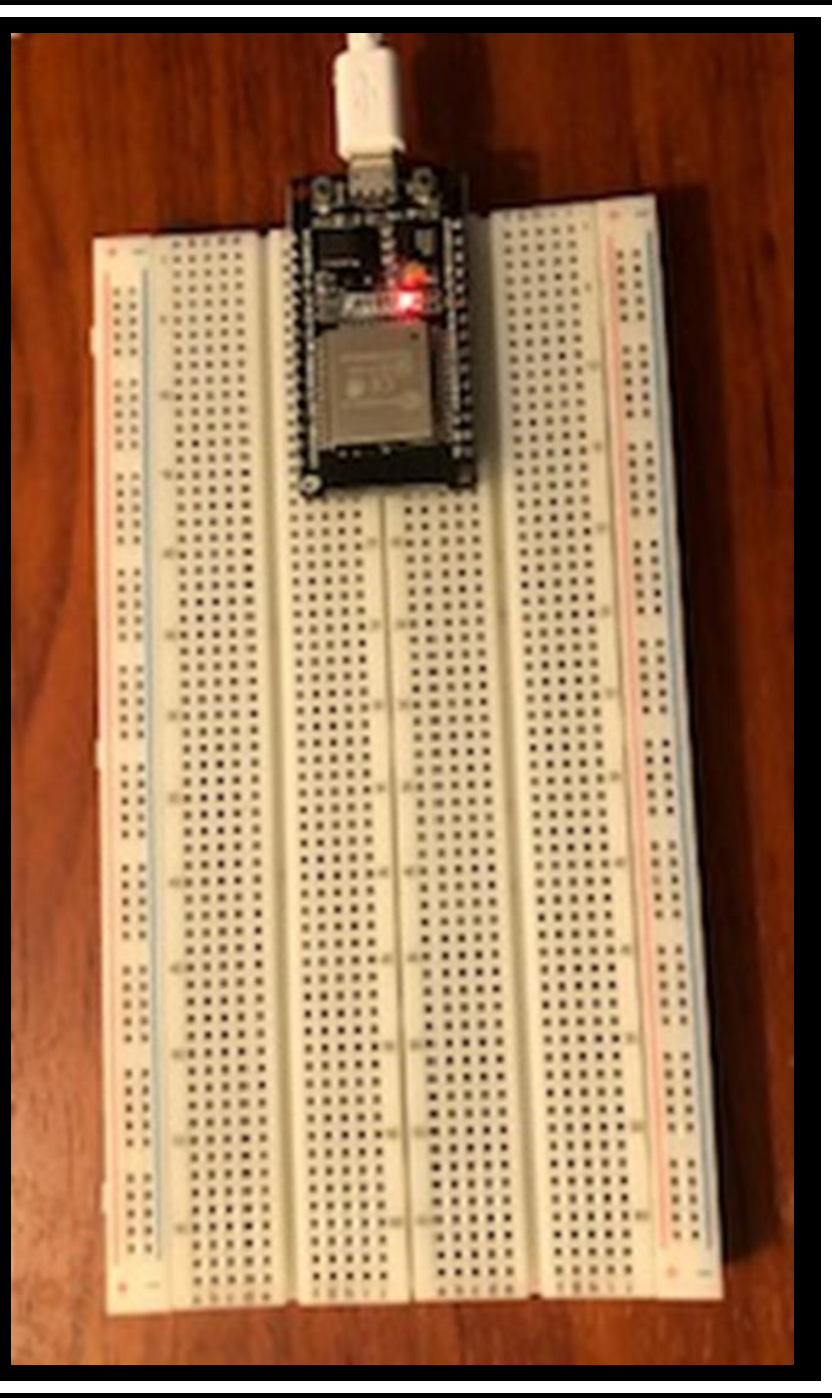
- Project Plan for IoT Traffic Controller
- Create the Traffic Controller
- Create a Multiple Traffic Light Controller
- Create a Multiple Traffic Light Controller with a Cross Walk
- Creating a Multiple Traffic Light Controller with a Cross Walk and an Emergency Buzzer
- Group Discussion Feedback & Final Project – Option 2

Module 2

Project Plan for IoT Traffic Controller

INVENTORY

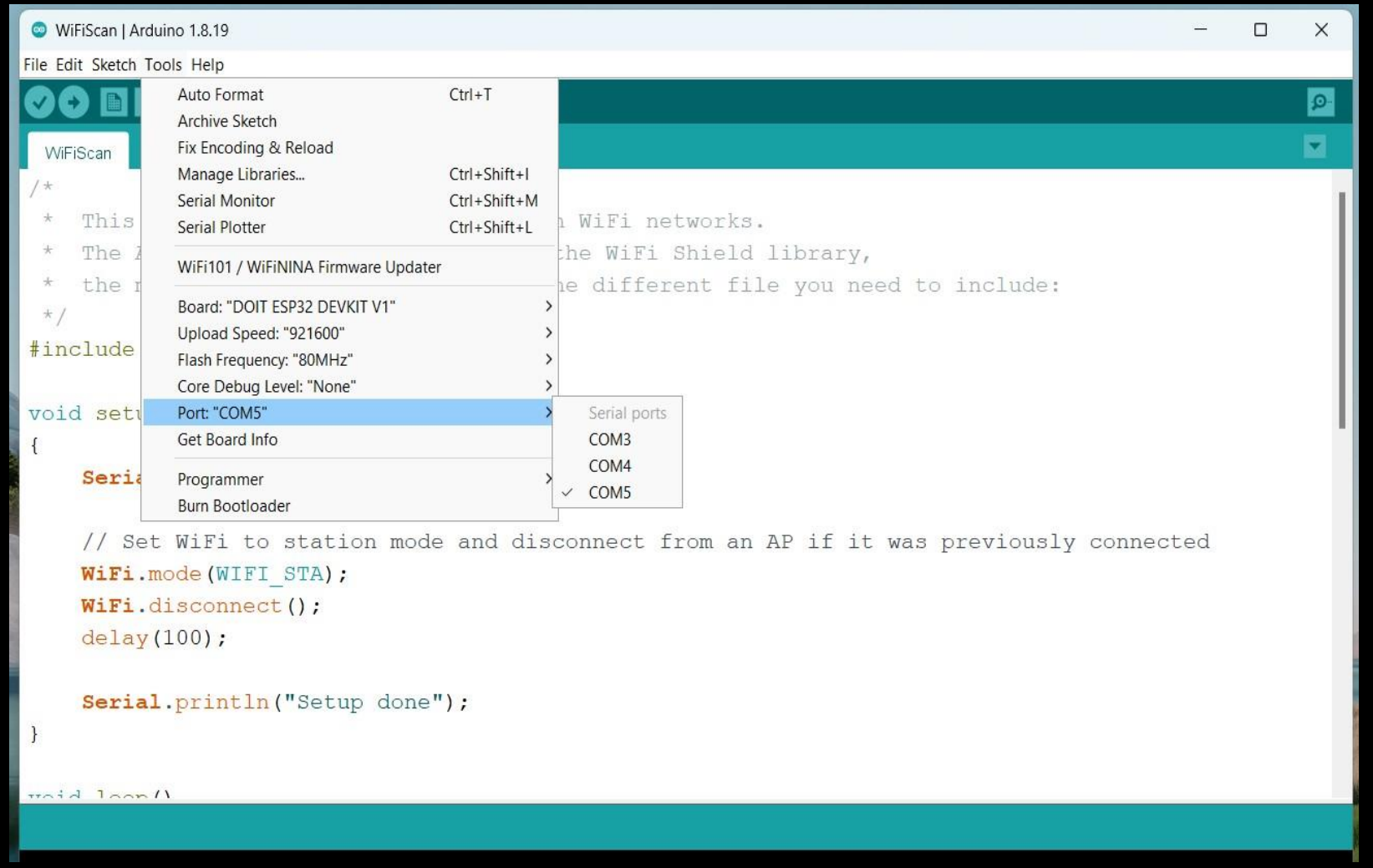
- ✓ ESP 32 Board
- ✓ Colored LEDs: Red, Yellow, Green, and Blue
- ✓ 220 Ohm Resistors (optional)
- ✓ Wires
- ✓ Breadboard(s)
- ✓ LCD Unit with I2C Adapter
- ✓ Active Buzzer
- ✓ Mini Router
- ✓ Push Button(s)
- ✓ PIR Motion Sensor



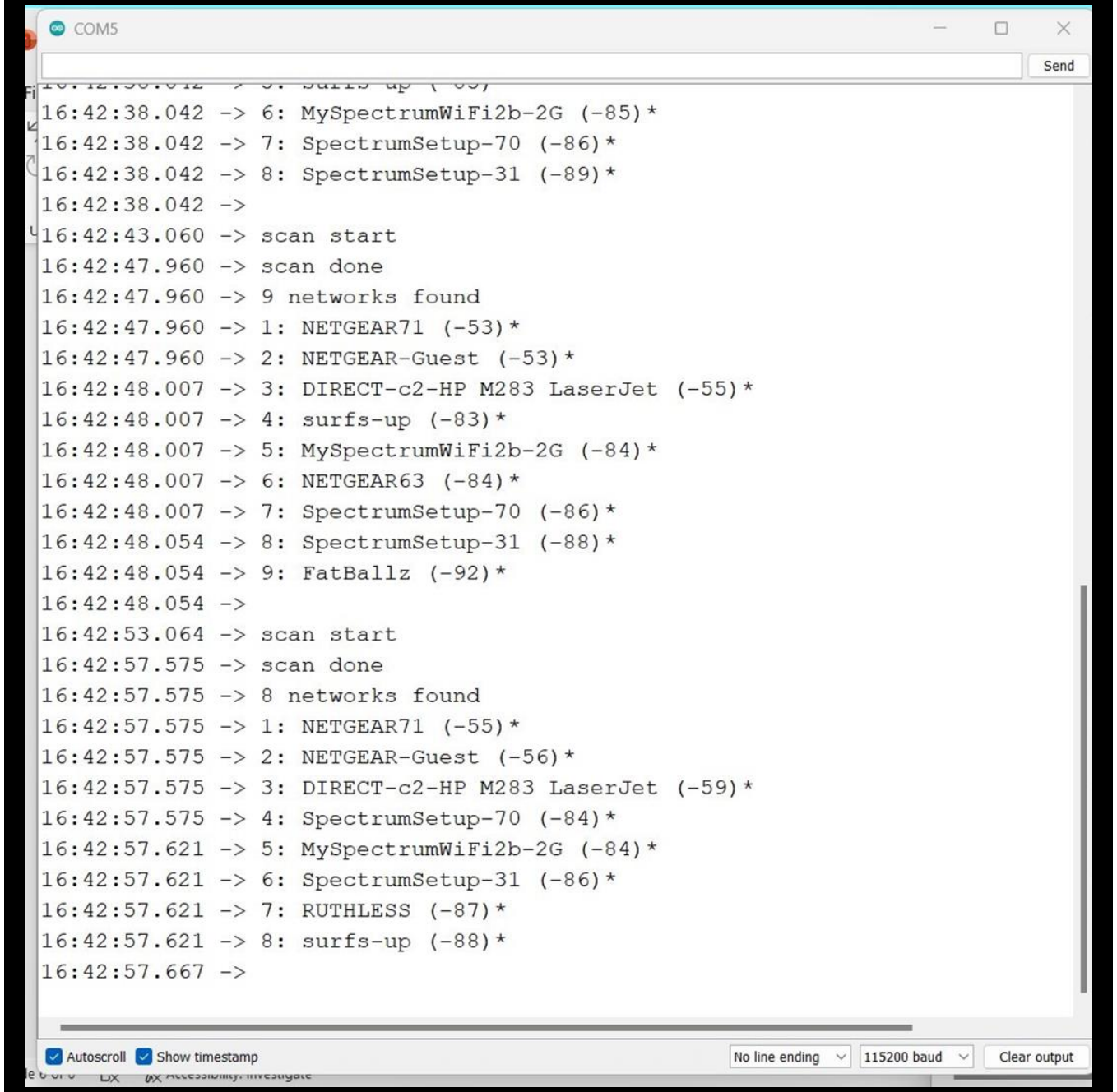
ESP 32

Microcontroller mounted and powered ON

Installation of Arduino IDE



Screenshot of Arduino IDE with **Port** selected from Tools menu



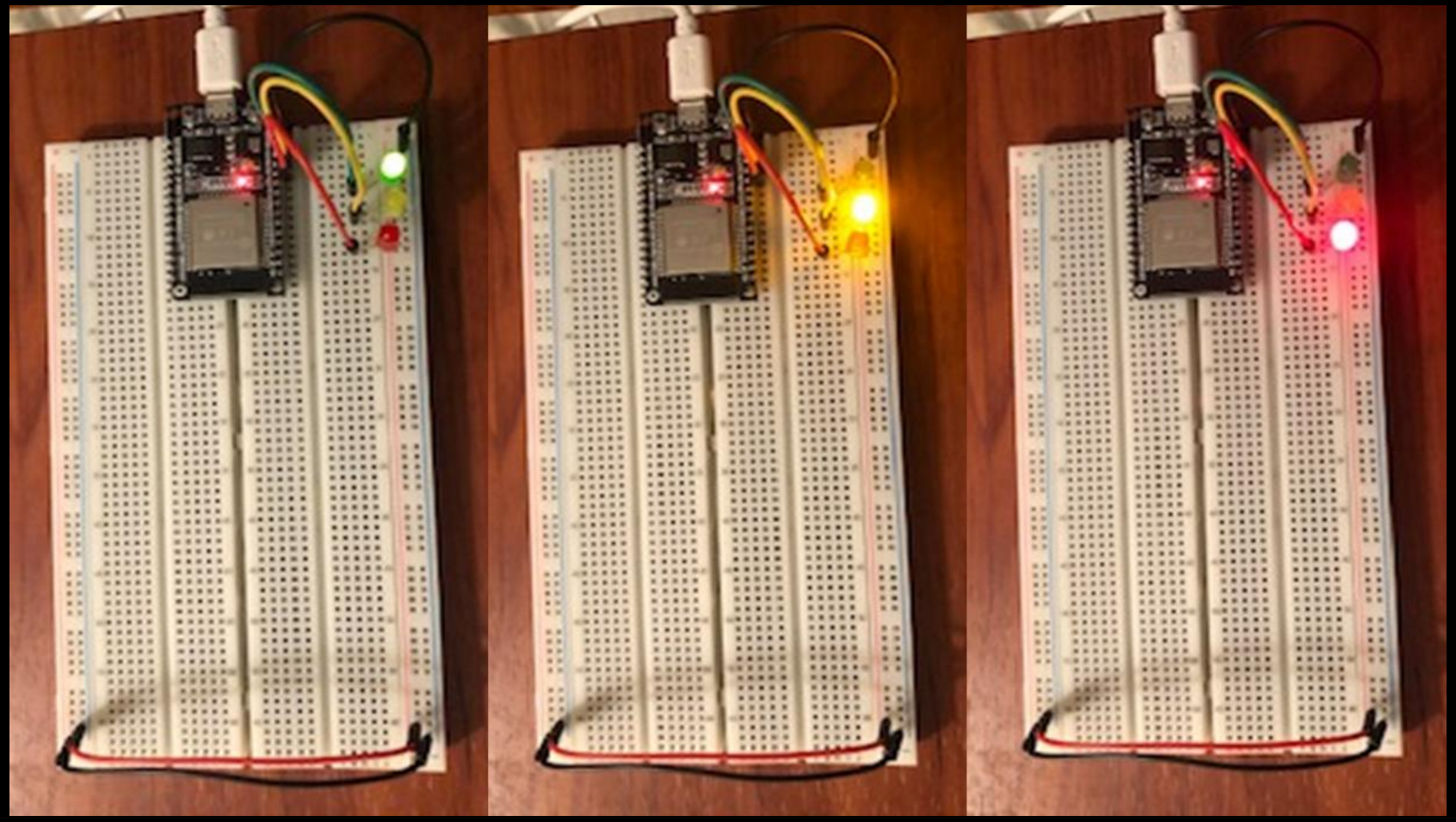
ESP 32 WiFi Scan

Screenshot of **Serial Monitor** in Arduino IDE showing the available networks

Module 3

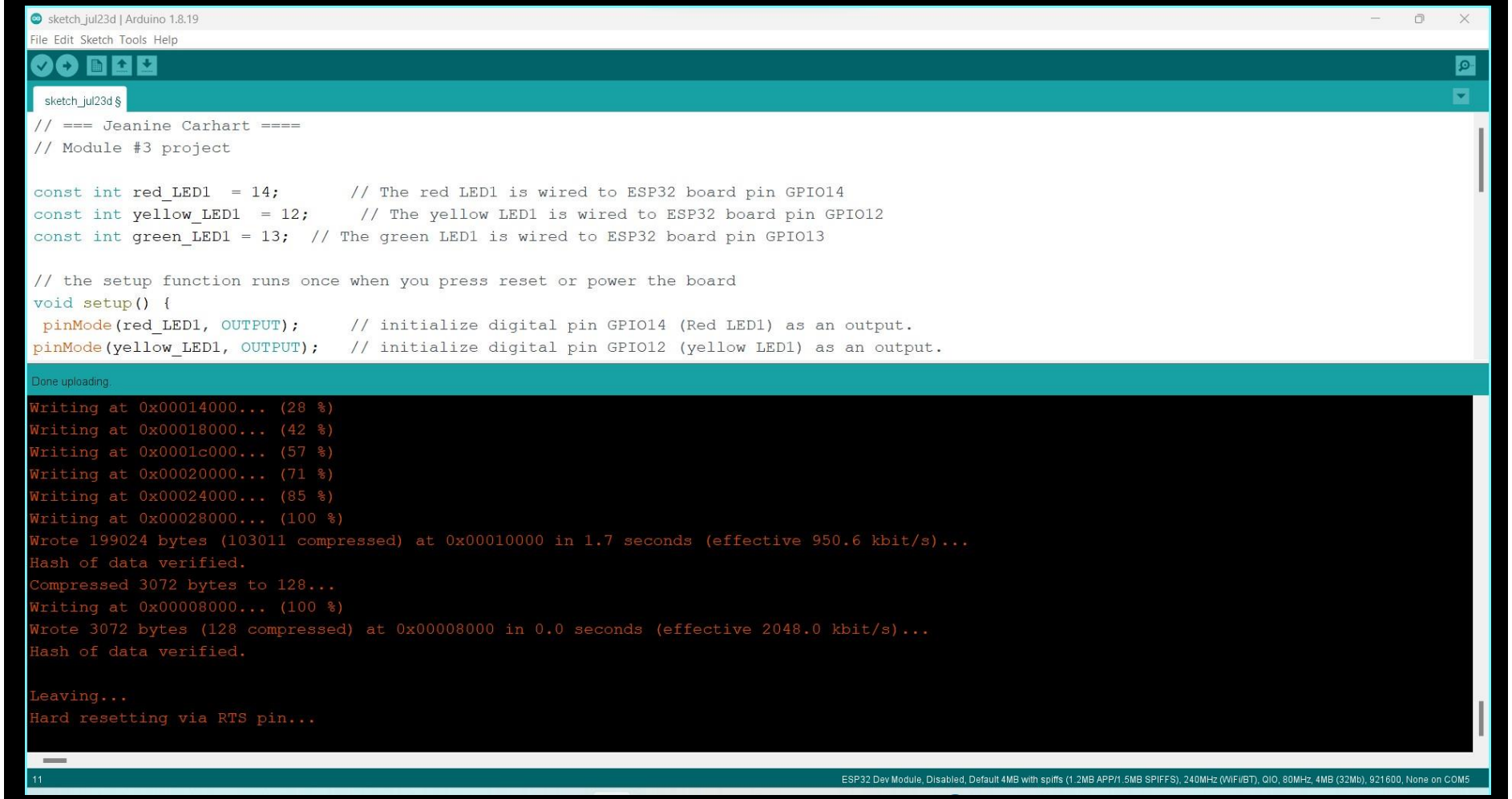
Creating the Traffic Controller

Circuit with working LEDs



- ESP 32 Board
- Colored LEDs: Red, Yellow and Green
- 220 Ohm Resistors (optional)
- Wires
- Breadboard

Screenshot of code in Arduino IDE

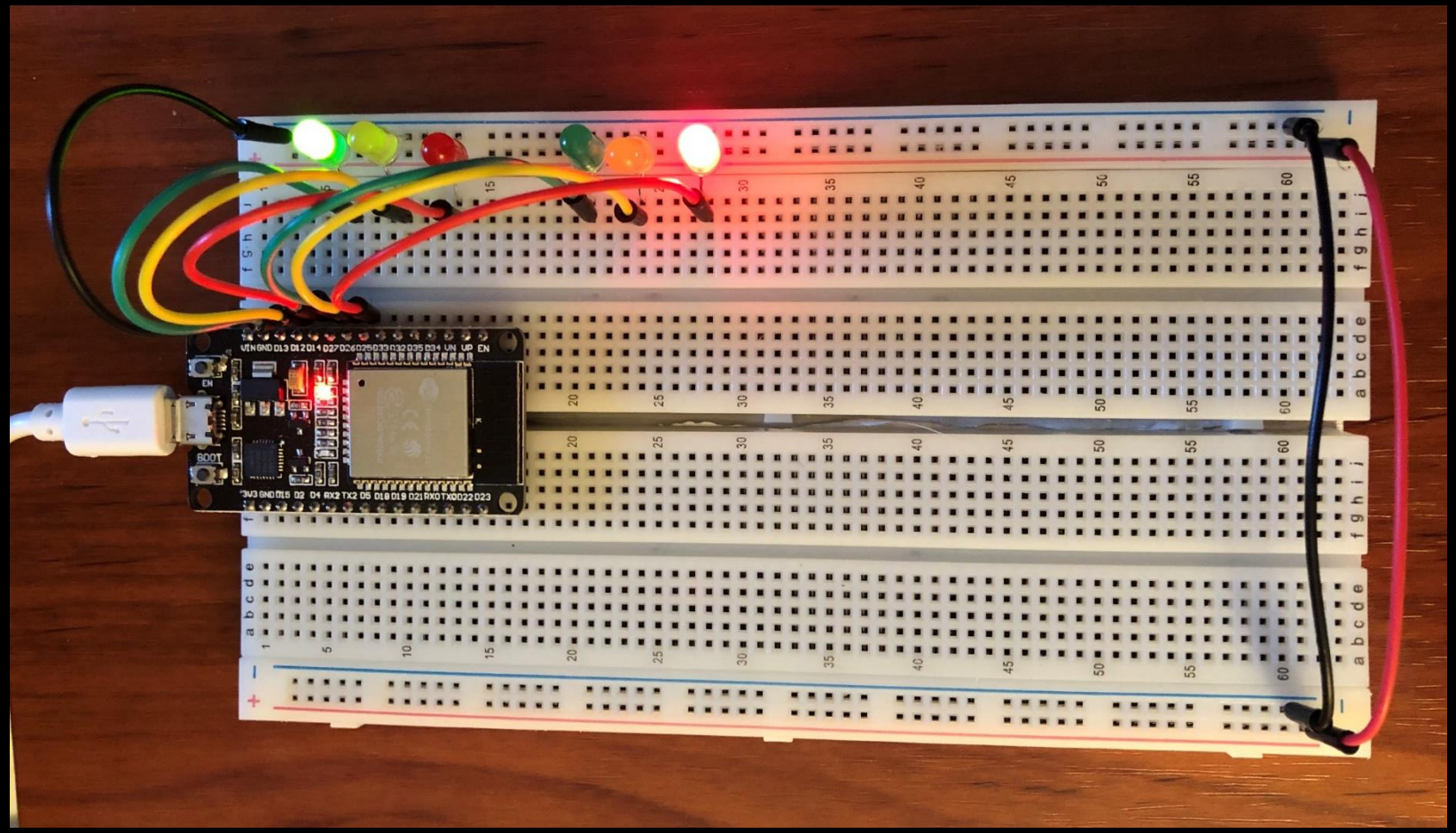


Screenshot of code in Arduino IDE showing my name in the comment

Module 4

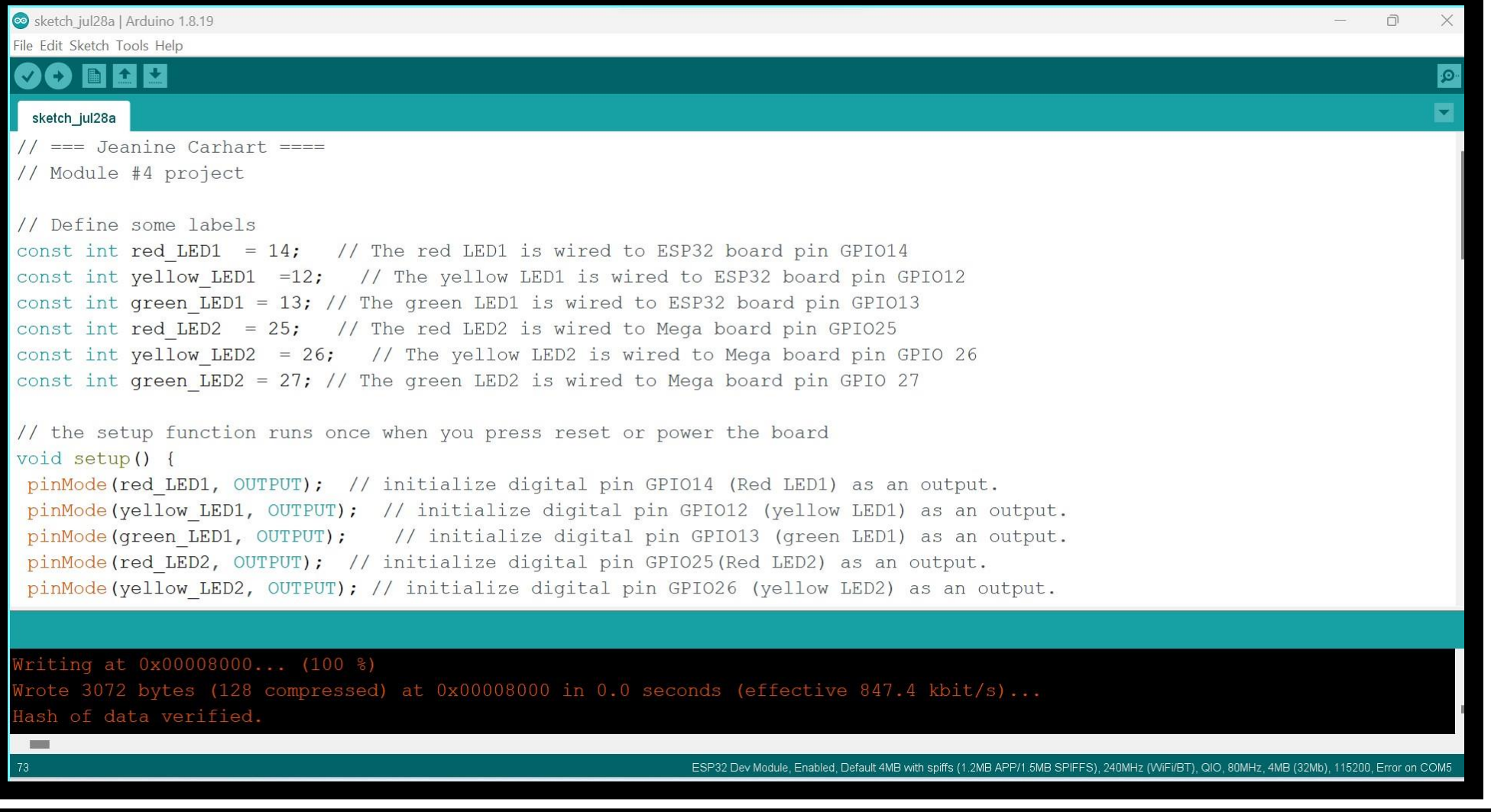
Creating a Multiple Traffic Light Controller

Circuit with working LEDs



- ESP 32 Board
- Colored LEDs: Red, Yellow and Green (two sets)
- 220 Ohm Resistors (optional)
- Wires
- Breadboard

Screenshot of code in Arduino IDE

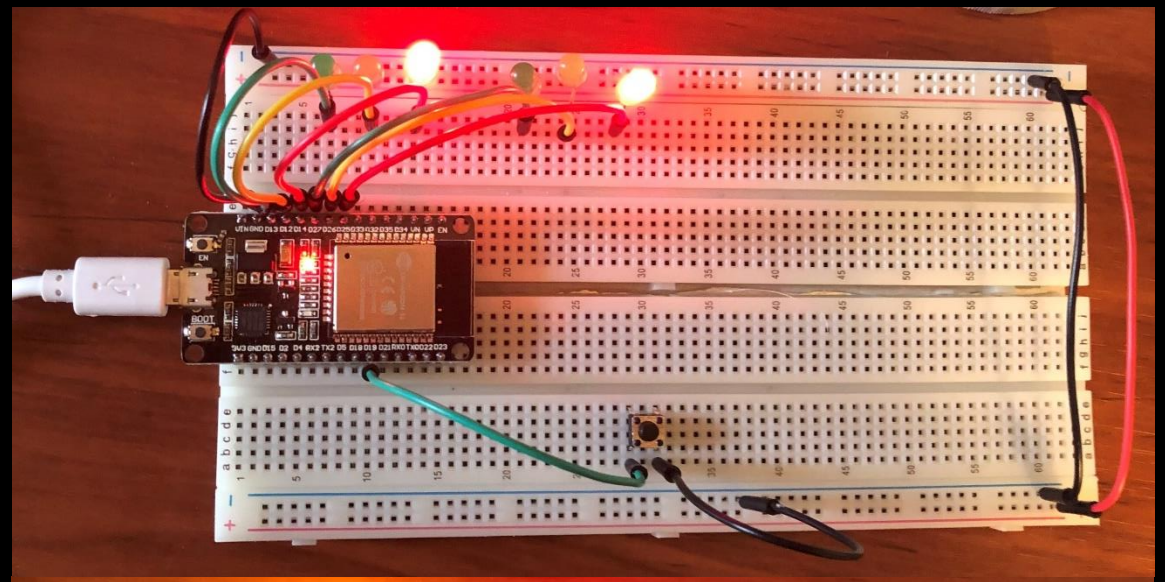


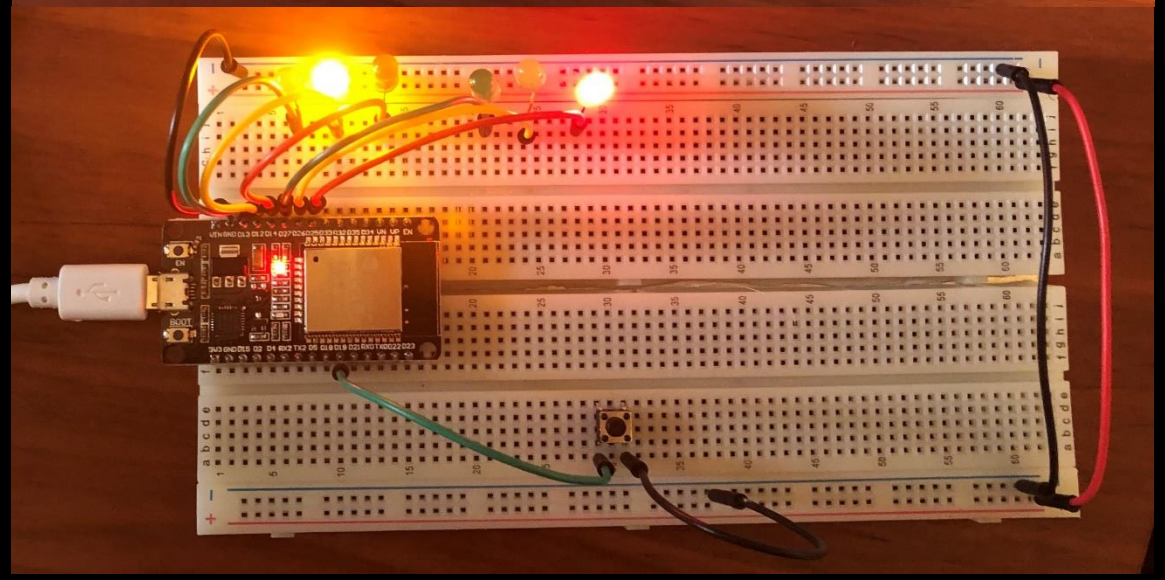
Screenshot of code in Arduino IDE showing my name in the comment

Module 5

Creating a Multiple Traffic Light Controller with a Cross Walk

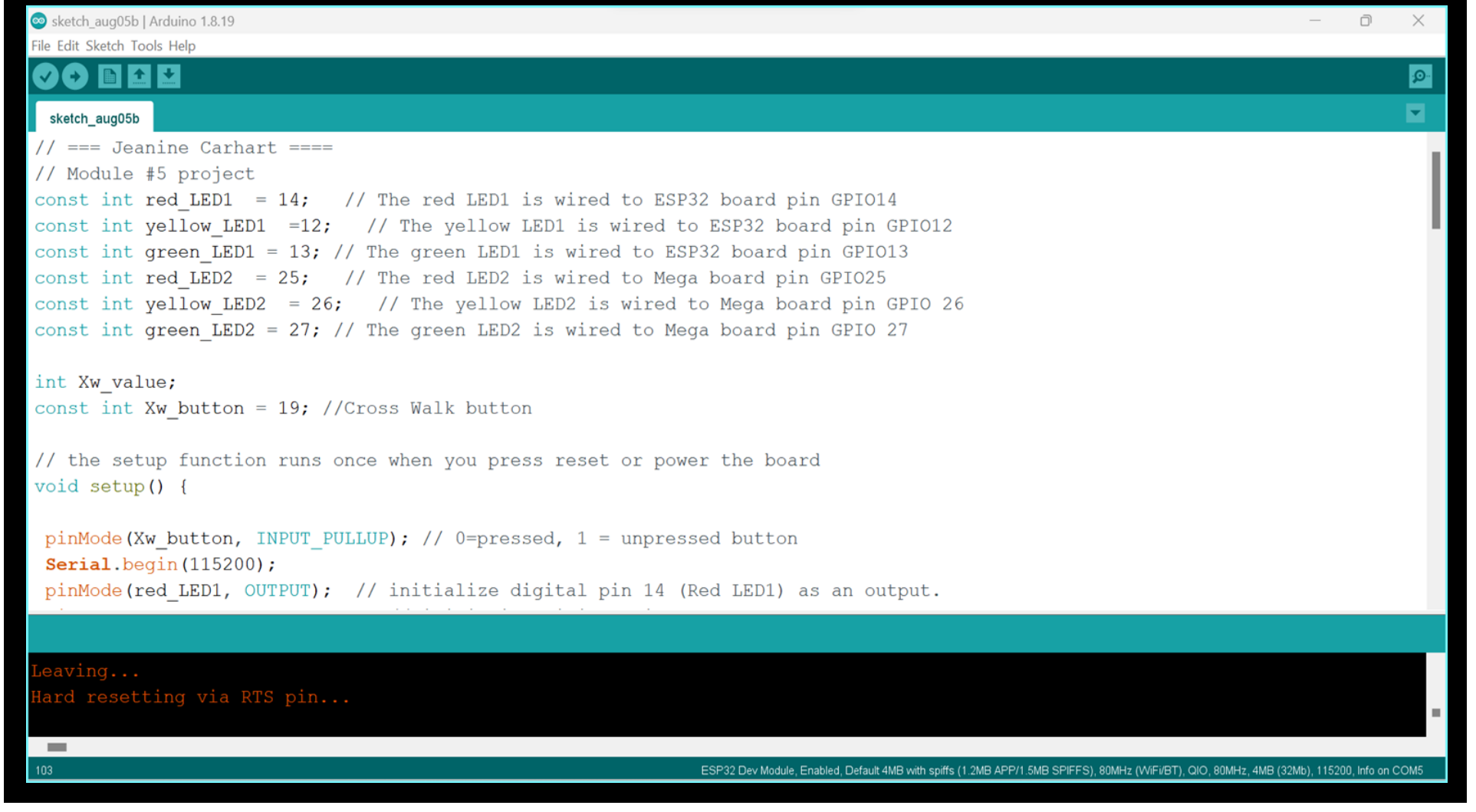
Circuit with working LEDs





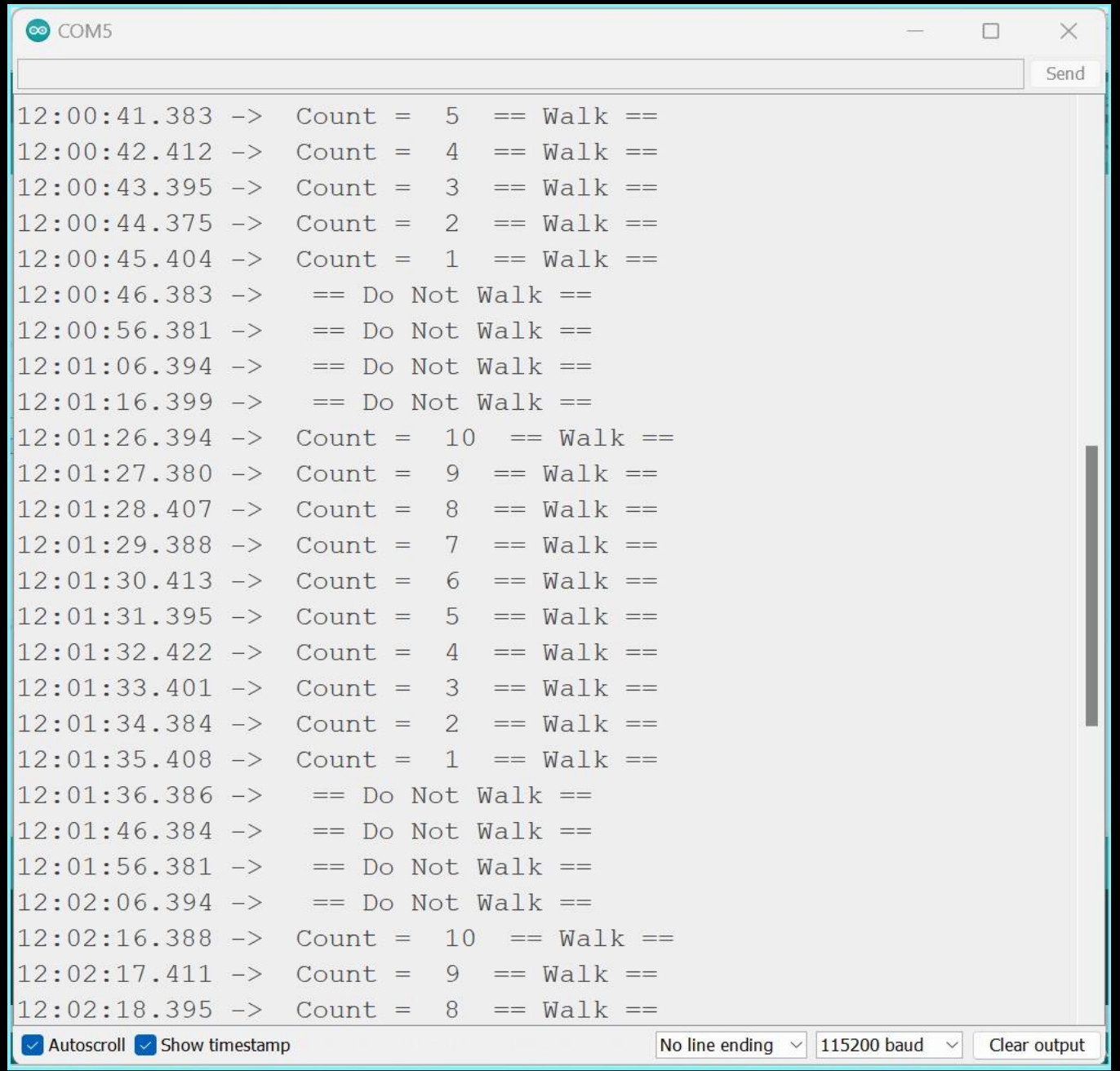
- ESP 32 Board
- Colored LEDs: Red, Yellow and Green (two sets)
- 220 Ohm Resistors (optional)
- Push Button
- Wires
- Breadboard

Screenshot of Code in Arduino IDE



Screenshot of code in Arduino IDE showing **my name in the comment**

Screenshot of Serial Monitor in Arduino IDE

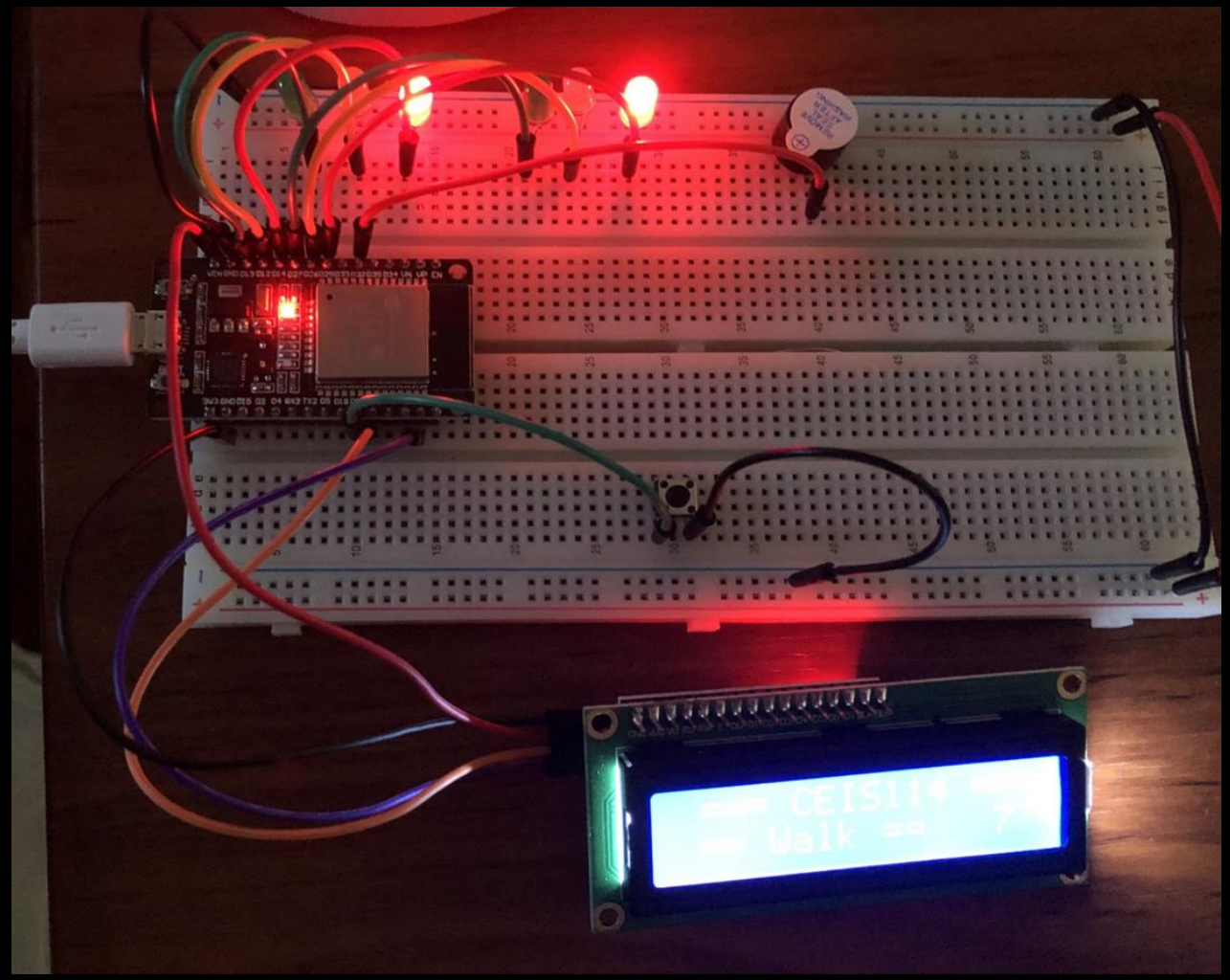


Screenshot of output in Serial Monitor

Module 6

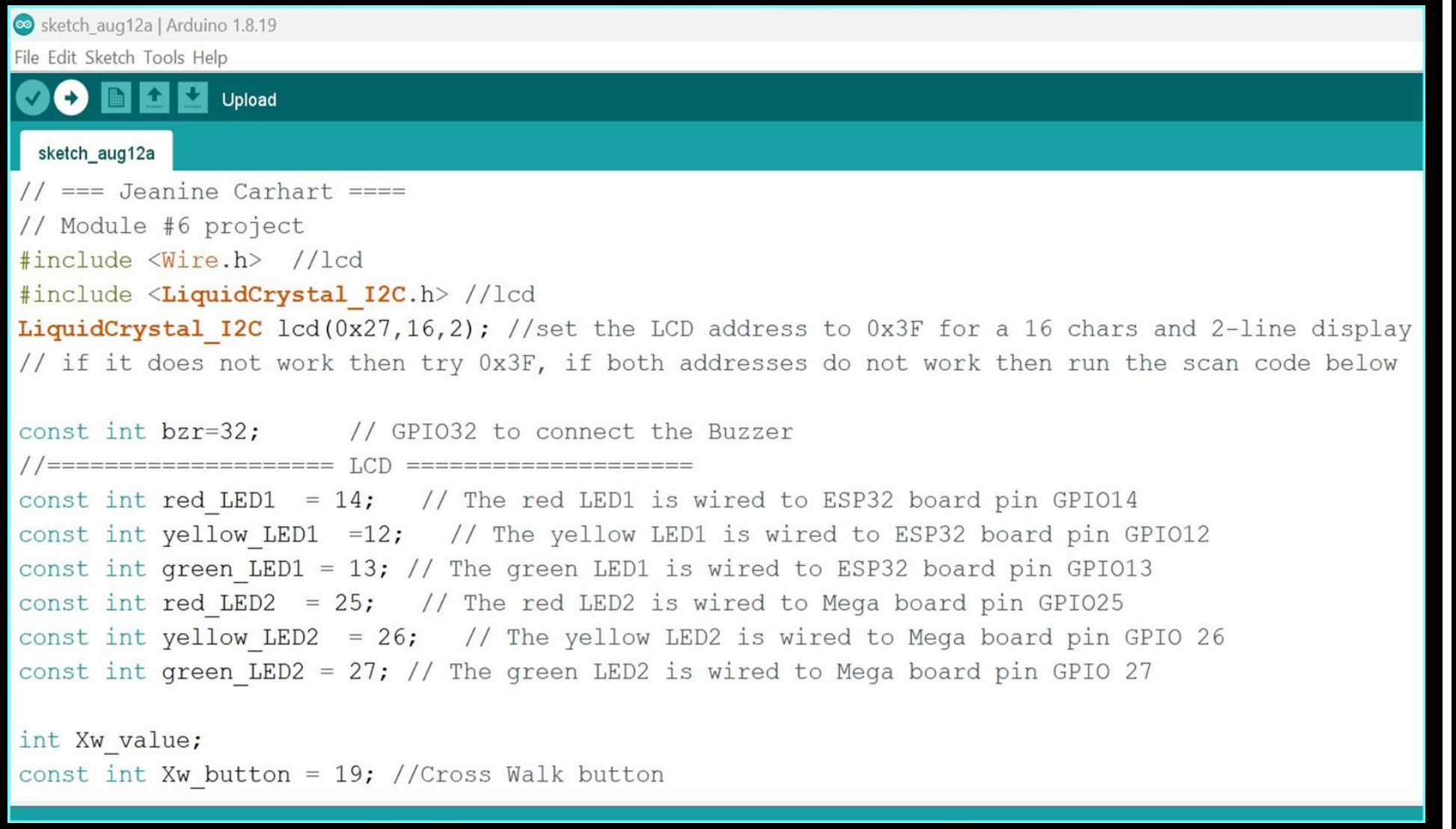
Creating a Multiple Traffic Light Controller with a Cross Walk and an Emergency Buzzer

Circuit with working LEDs and LCD display

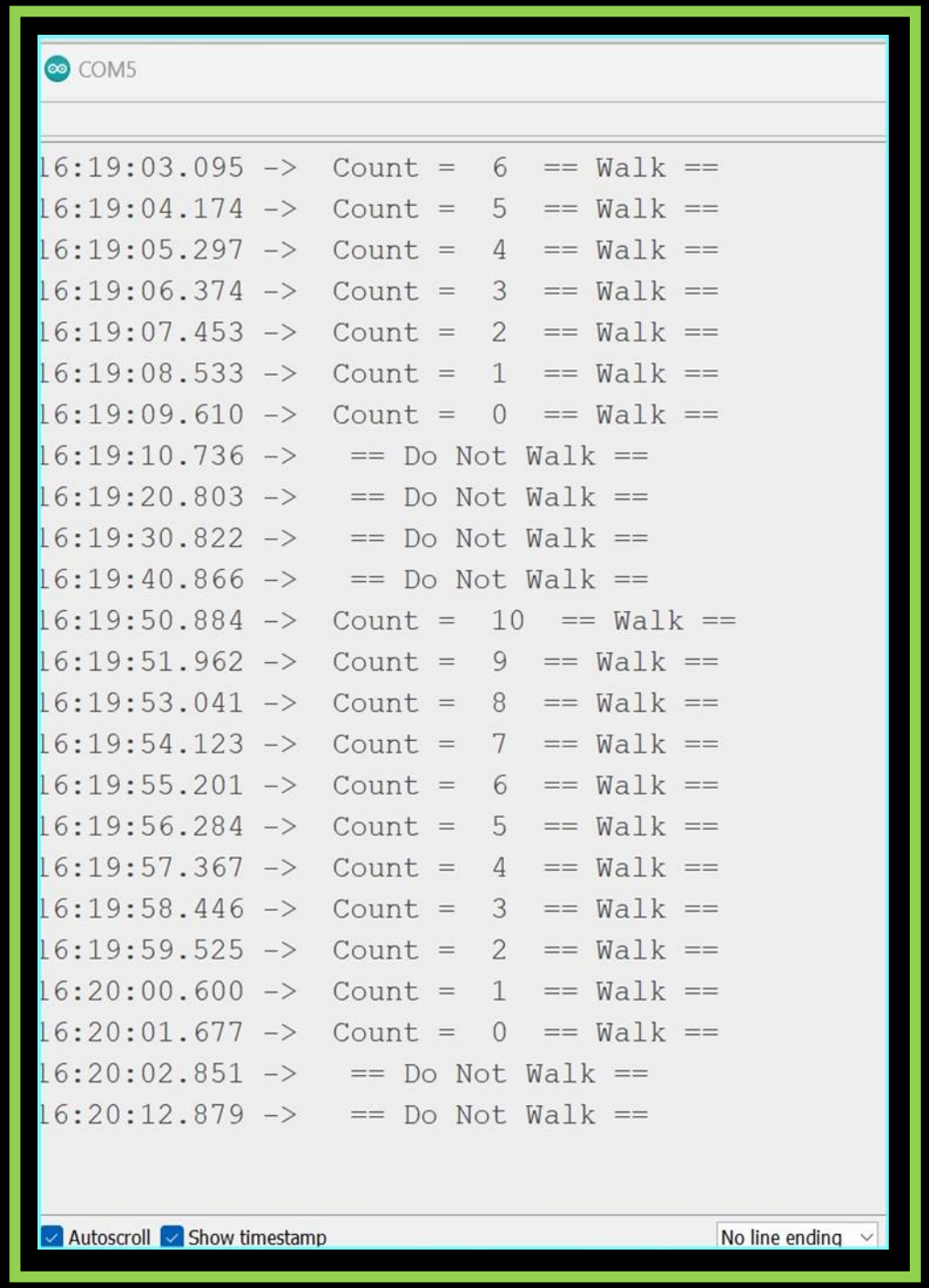


- ESP 32 Board
- Colored LEDs: Red, Yellow and Green (two sets)
- 220 Ohm Resistors (optional)
- Push Button
- LCD Unit with Message Display
- Wires
- Breadboard

Screenshot of code in Arduino IDE



Screenshot of code in Arduino IDE showing **my name in the comment**



Circuit with working LEDs and LCD display

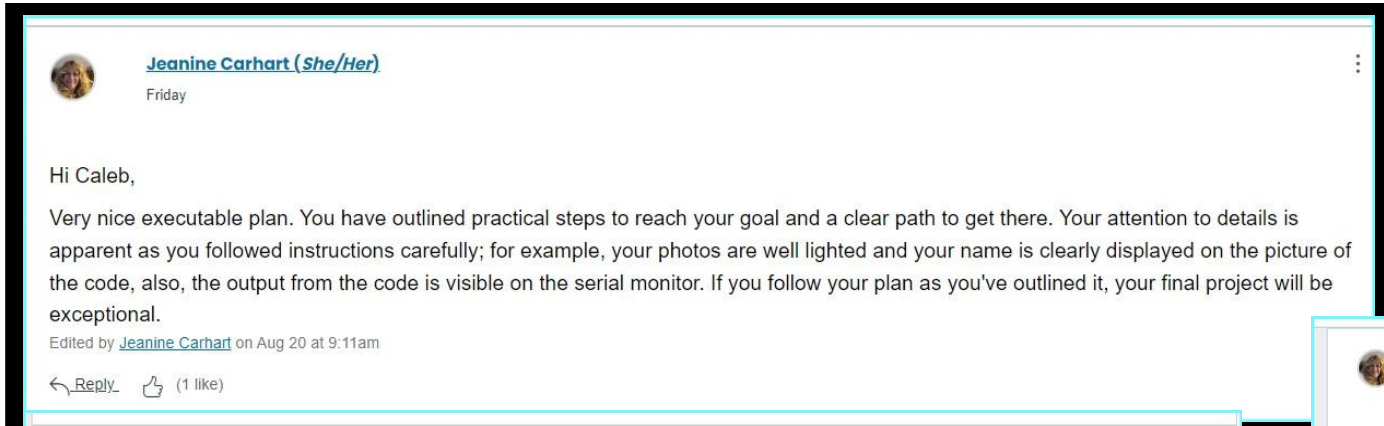
Screenshot of output in Serial Monitor

Module 7 & 8

Group Discussion Feedback
&
Final Project – Option 2

Group Discussion

Screenshots of Group Feedback on Project 6



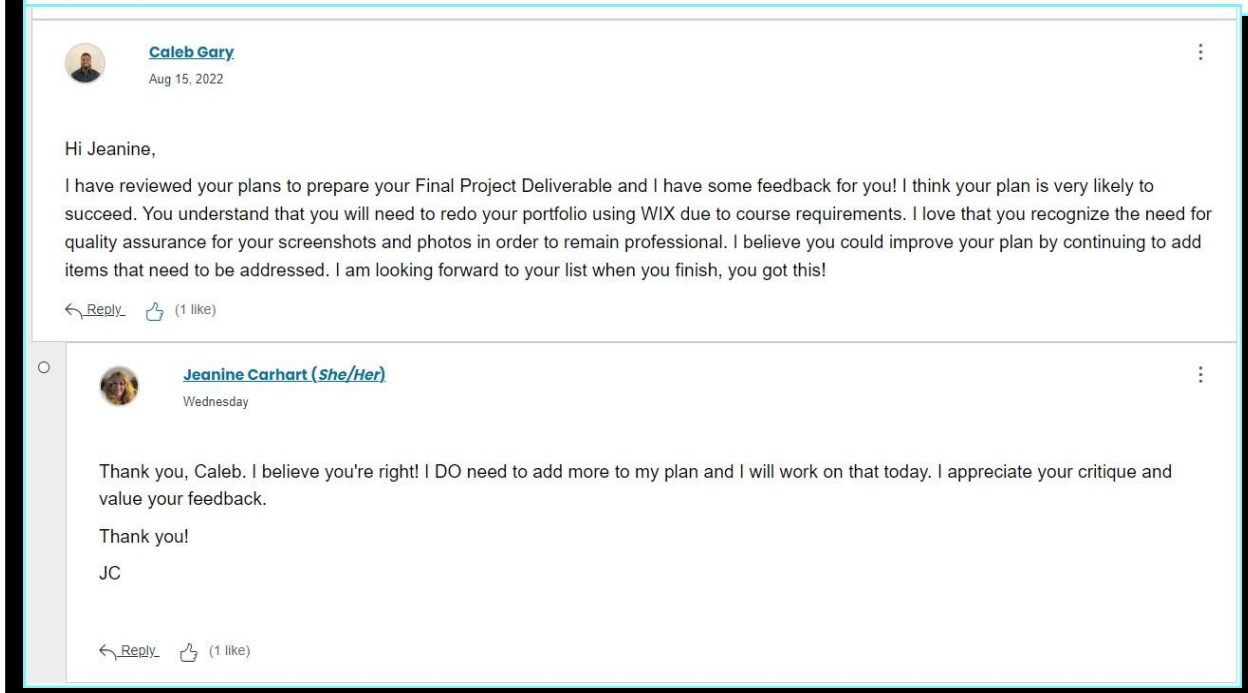
Jeanine Carhart (*She/Her*)
Friday

Hi Caleb,

Very nice executable plan. You have outlined practical steps to reach your goal and a clear path to get there. Your attention to details is apparent as you followed instructions carefully; for example, your photos are well lighted and your name is clearly displayed on the picture of the code, also, the output from the code is visible on the serial monitor. If you follow your plan as you've outlined it, your final project will be exceptional.

Edited by Jeanine Carhart on Aug 20 at 9:11am

Reply (1 like)



Caleb Gary
Aug 15, 2022

Hi Jeanine,

I have reviewed your plans to prepare your Final Project Deliverable and I have some feedback for you! I think your plan is very likely to succeed. You understand that you will need to redo your portfolio using WIX due to course requirements. I love that you recognize the need for quality assurance for your screenshots and photos in order to remain professional. I believe you could improve your plan by continuing to add items that need to be addressed. I am looking forward to your list when you finish, you got this!

Reply (1 like)

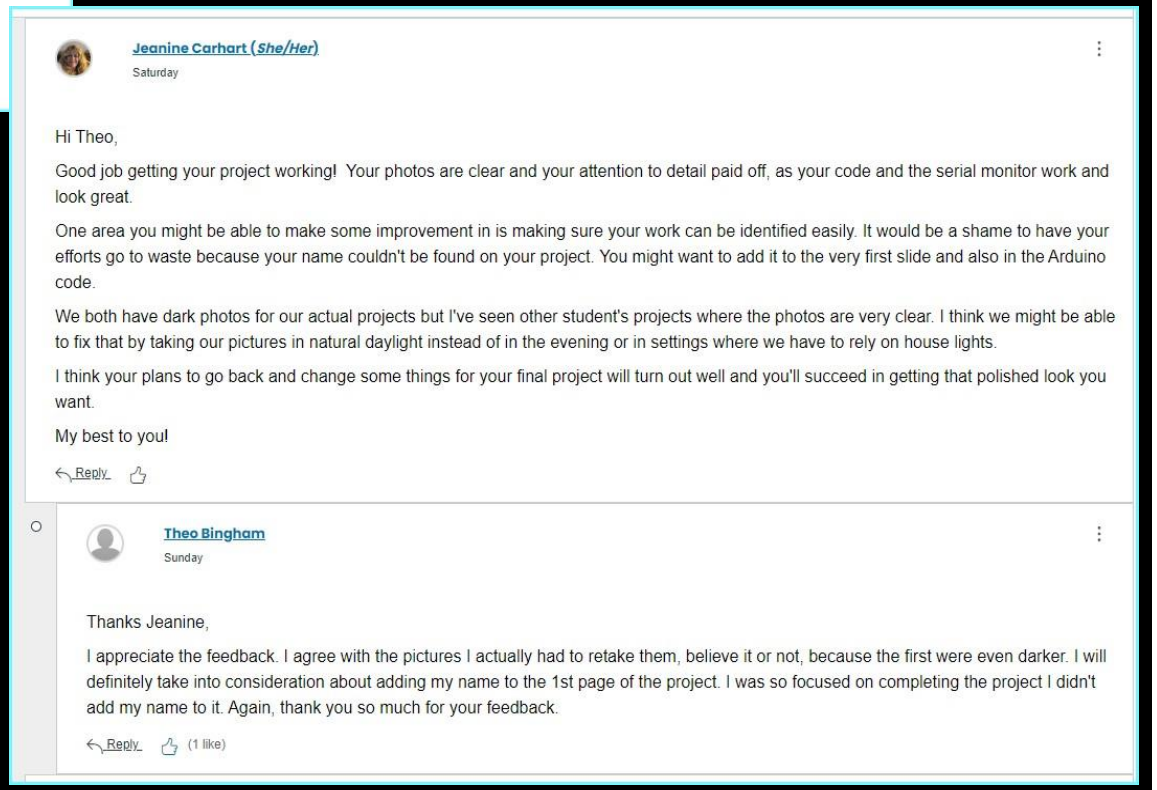
Jeanine Carhart (*She/Her*)
Wednesday

Thank you, Caleb. I believe you're right! I DO need to add more to my plan and I will work on that today. I appreciate your critique and value your feedback.

Thank you!

JC

Reply (1 like)



Jeanine Carhart (*She/Her*)
Saturday

Hi Theo,

Good job getting your project working! Your photos are clear and your attention to detail paid off, as your code and the serial monitor work and look great.

One area you might be able to make some improvement in is making sure your work can be identified easily. It would be a shame to have your efforts go to waste because your name couldn't be found on your project. You might want to add it to the very first slide and also in the Arduino code.

We both have dark photos for our actual projects but I've seen other student's projects where the photos are very clear. I think we might be able to fix that by taking our pictures in natural daylight instead of in the evening or in settings where we have to rely on house lights.

I think your plans to go back and change some things for your final project will turn out well and you'll succeed in getting that polished look you want.

My best to you!

Reply

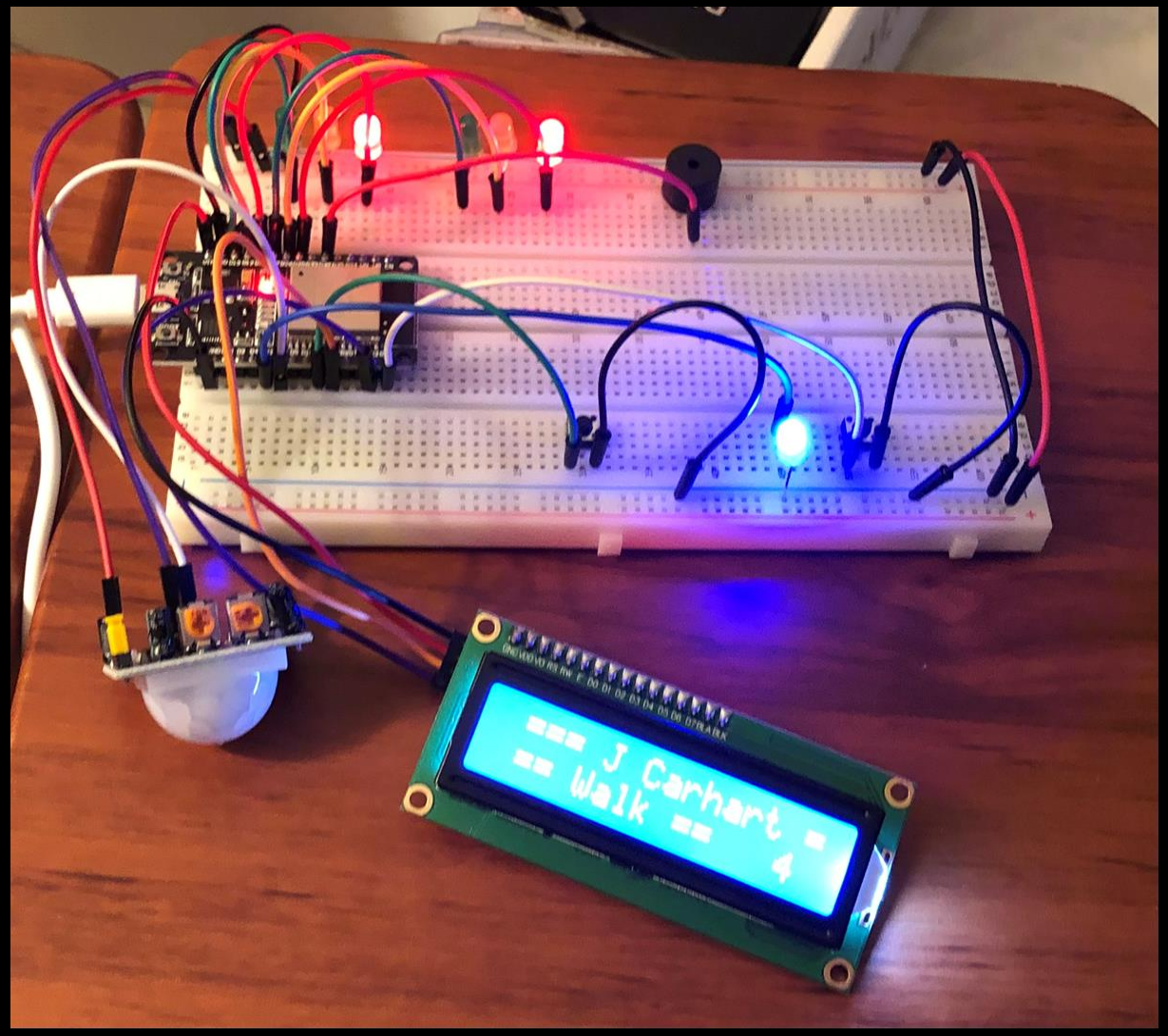
Theo Bingham
Sunday

Thanks Jeanine,

I appreciate the feedback. I agree with the pictures I actually had to retake them, believe it or not, because the first were even darker. I will definitely take into consideration about adding my name to the 1st page of the project. I was so focused on completing the project I didn't add my name to it. Again, thank you so much for your feedback.

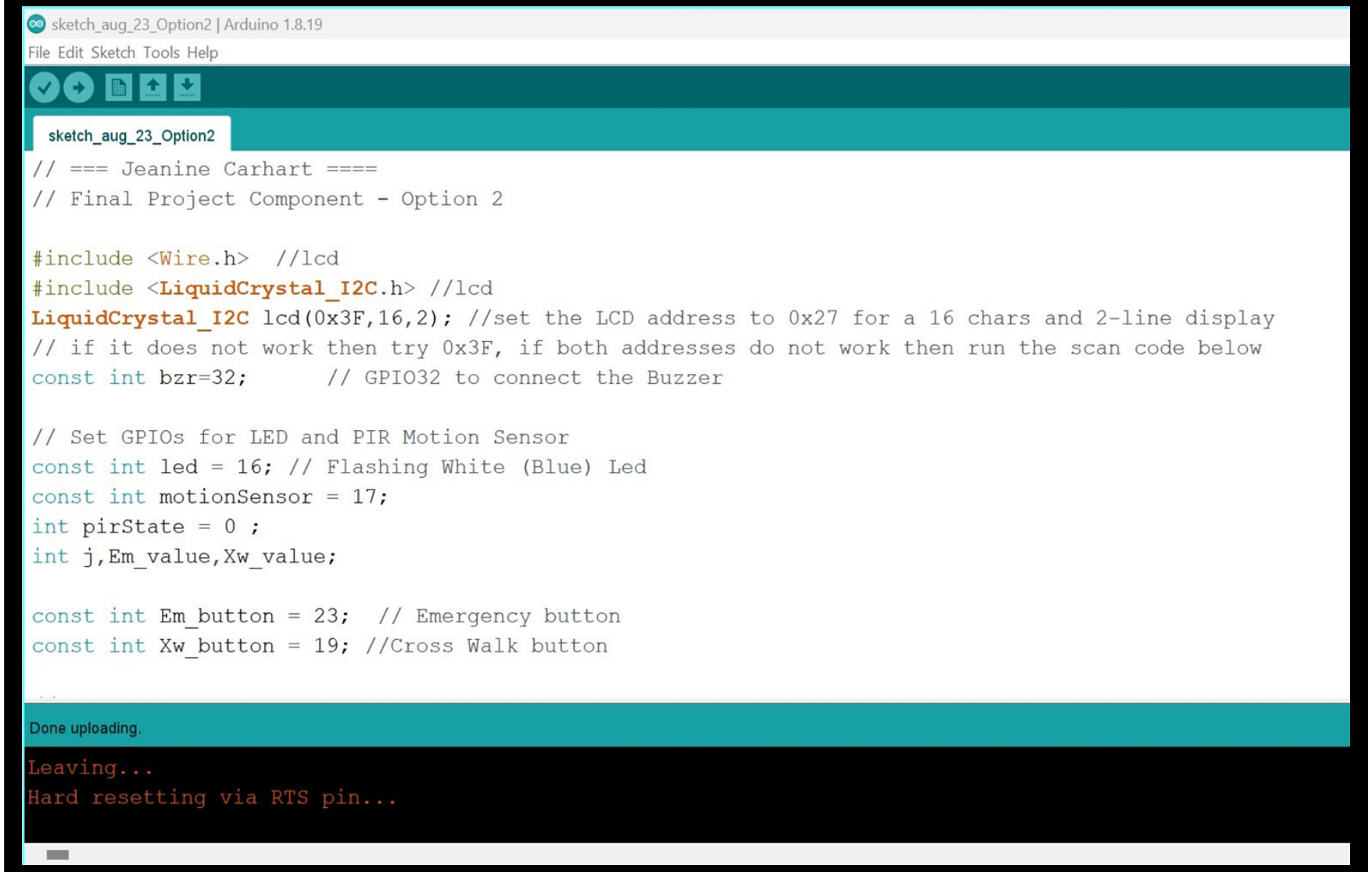
Reply (1 like)

Circuit with working LEDs And LCD display



- ESP 32 Board
- Colored LEDs: Red, Yellow and Green (two sets)
- One Blue LED – Emergency Light
- 220 Ohm Resistors (optional)
- Push Buttons - 2
- LCD Unit
- Buzzer
- PIR Motion Sensor
- Router
- Wires
- Breadboard

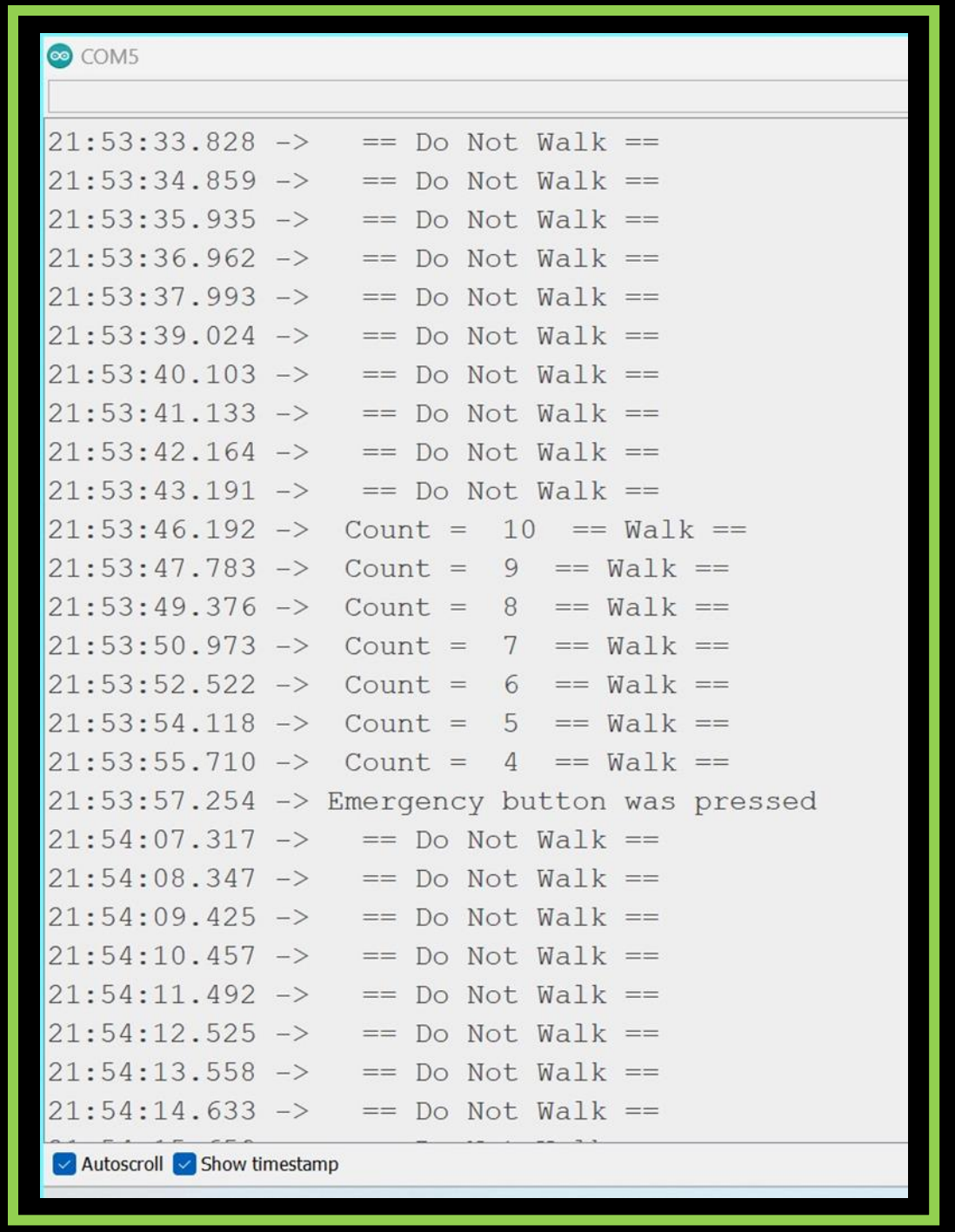
Screenshot of code in Arduino IDE



Screenshot of code in Arduino IDE showing **your name in the comment**

Screenshot of Serial Monitor in Arduino IDE

Screenshot of output in Serial Monitor



Challenges

Challenges

Couldn’t connect breadboard to internet	Had to download drivers again
Buzzer wasn’t working	Wire was plugged in wrong pin
Motion detector wasn’t working	Need to warm detector slightly

Career Skills

Career Skills

✓ Problem solving	✓ Patience
✓ Persistence	✓ Attention to Detail
✓ Research	✓ Analytical Thinking

Conclusion

Conclusion

Learned how to create a device with two sets of traffic lights and how to control them for a crosswalk and an emergency light.

This project gave me a little taste of how our traffic lights are controlled in real life and how useful automation and the IoT is in our day-to-day life.