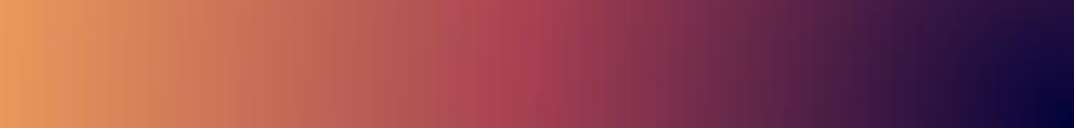


AR GLASS

MDES607-PROTOTYPING-LAB

Artemis Koolivand

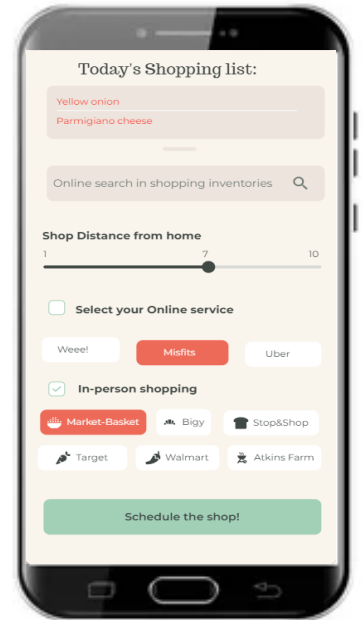
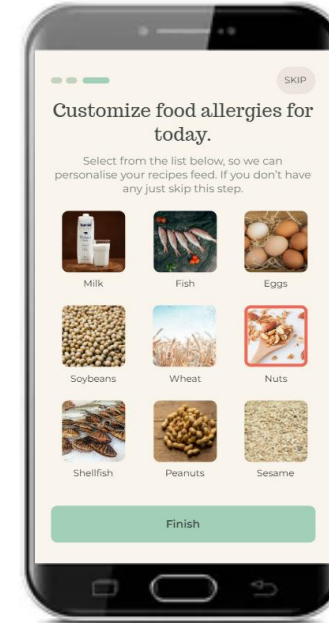
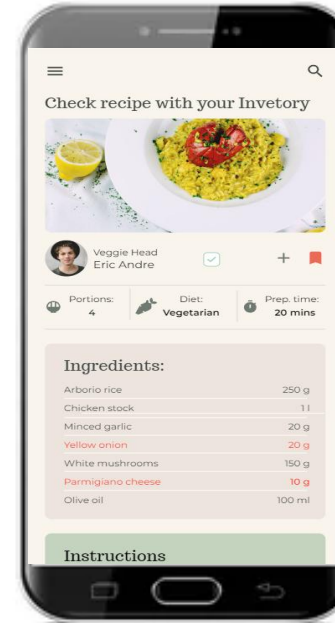
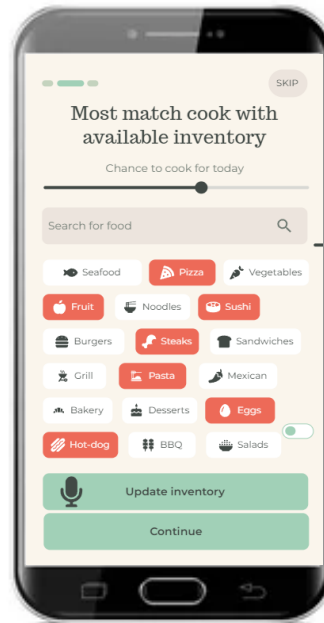


PROTOTYPES



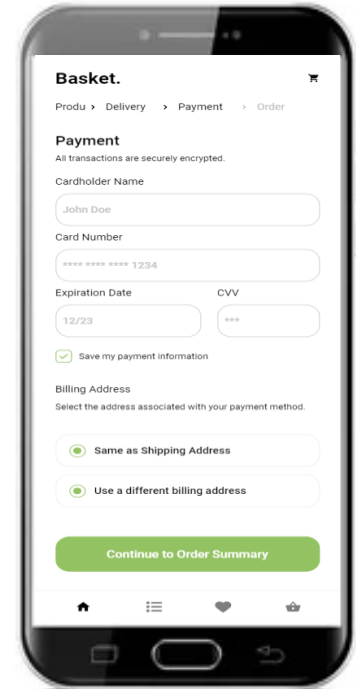
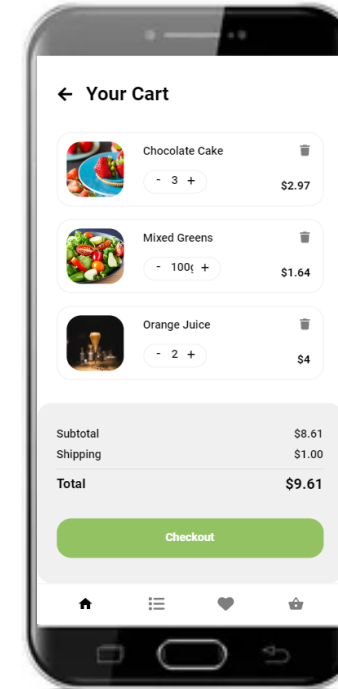
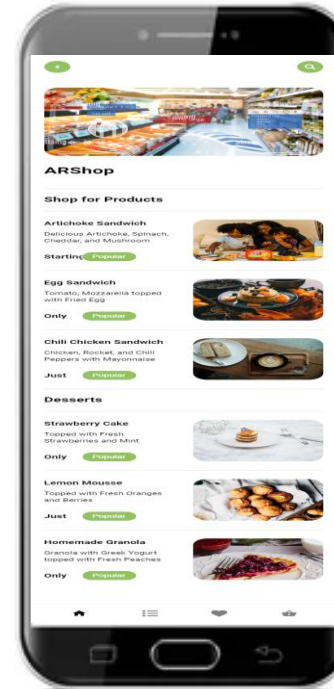
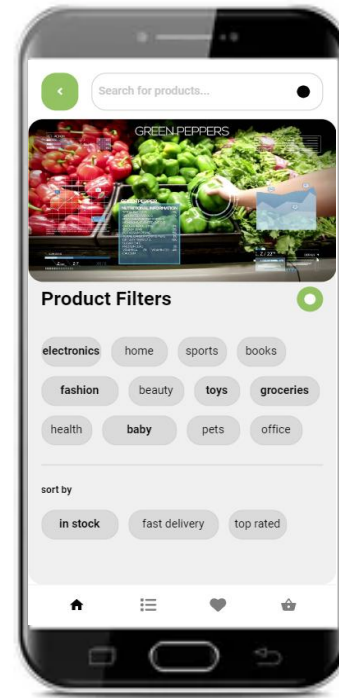
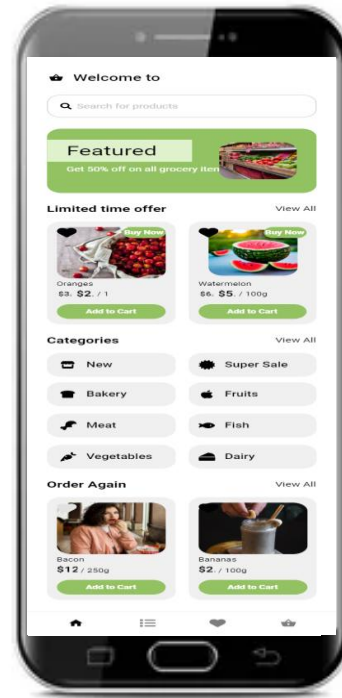
VERSION 1

HOOK THE COOK APP



VERSION 2

HOOK THE COOK APP + AR





AR GLASS



Augmented Reality (AR) is a technology that overlays digital information, such as images, videos, or 3D models, onto the real-world environment in real-time. AR enhances the user's perception of the physical world by blending digital content seamlessly with the surrounding environment.

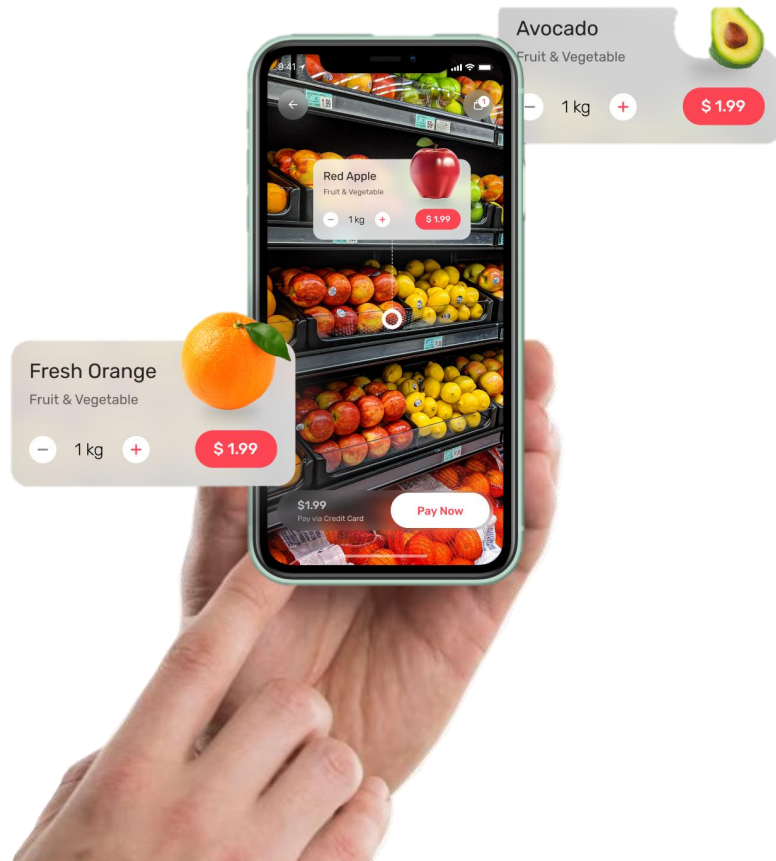
AR GLASS



Functionality

- Remote Assistance and Collaboration
- Navigation and Wayfinding
- AR enhances navigation by overlaying directions and relevant information onto the real world, aiding users in wayfinding
- AR is used in retail to allow customers to visualize products in their real-world environment before making a purchase decision. (**AR in Retail: Visualize Before You Buy**)

The App has access to an AR camera

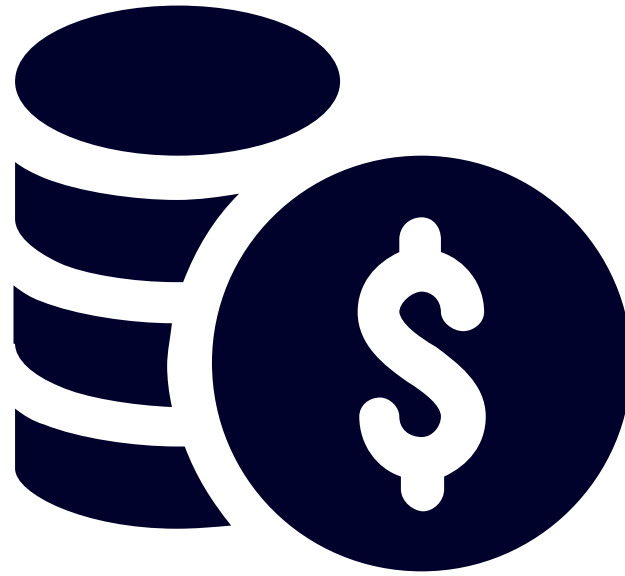


BACKGROUND STORY

As the COVID pandemic unfolded, I pondered on ways to recreate the genuine grocery shopping experience from the comfort of home, ensuring access to fresh, high-quality products. I longed for the convenience of personally choosing and purchasing fresh vegetable bags. In a busy world where multitasking is the norm, many people prefer to save time on cooking tasks, opting to buy pre-prepared meals and valuing efficiency in every aspect of their culinary journey.

AR glasses serve as a visual aid in such situations, enabling individuals to see through your perspective and immerse themselves in real-life experiences.

MARKET SIZE



1.04T

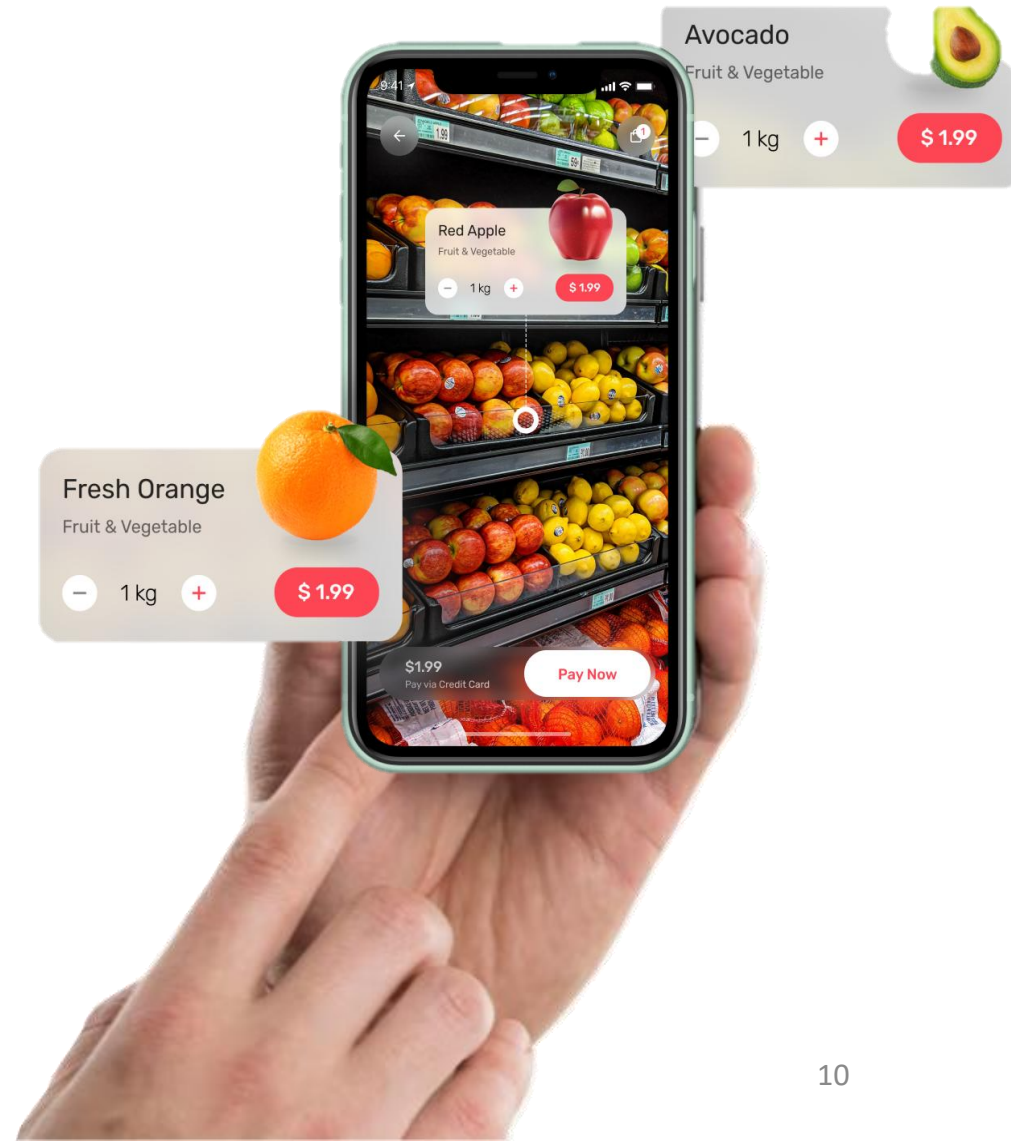
Online Grocery Market App

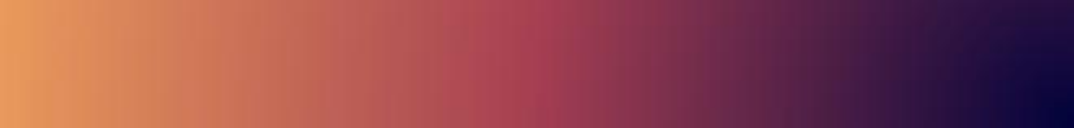


AR glass has a camera



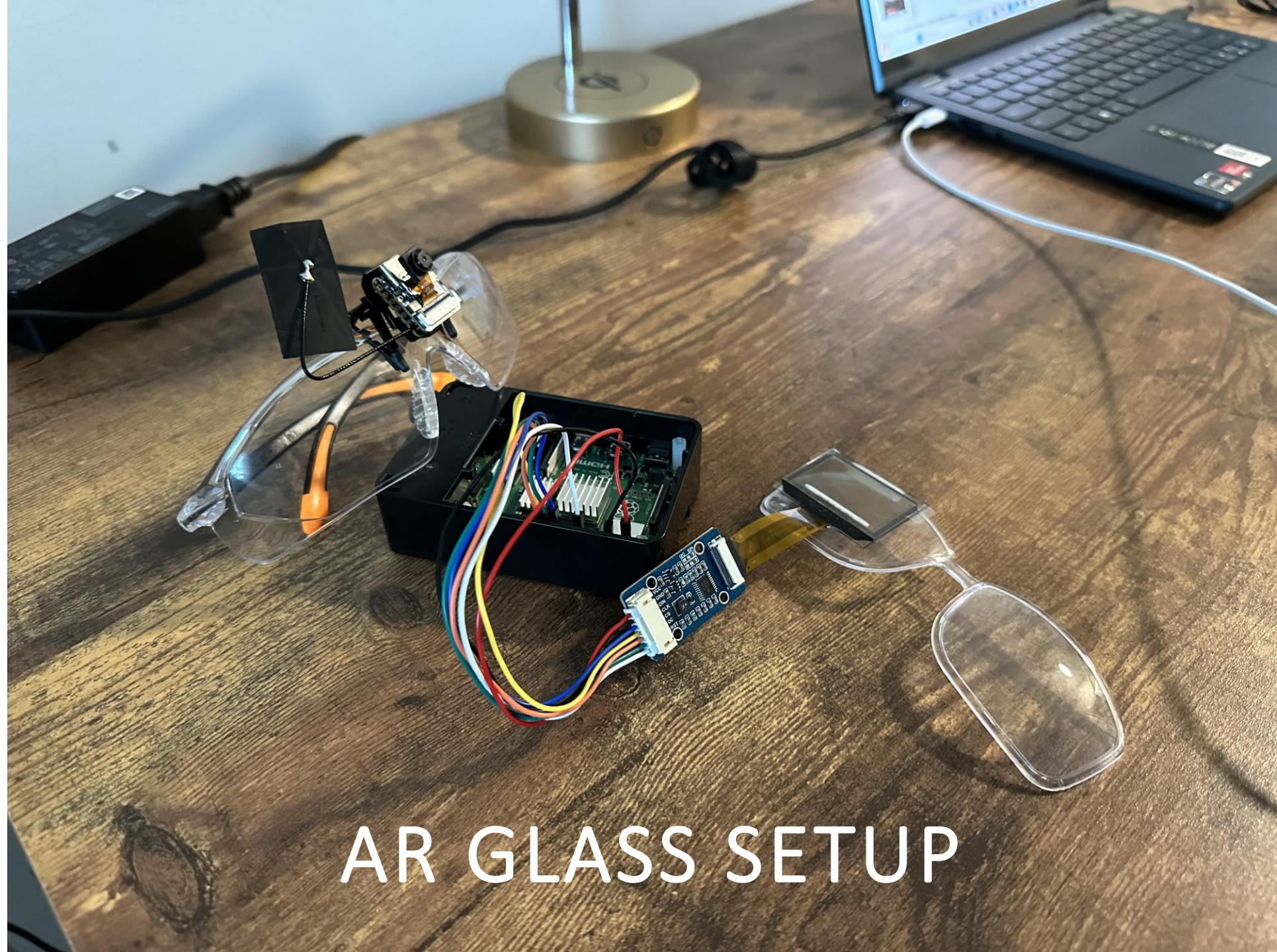
The App has access to an AR camera





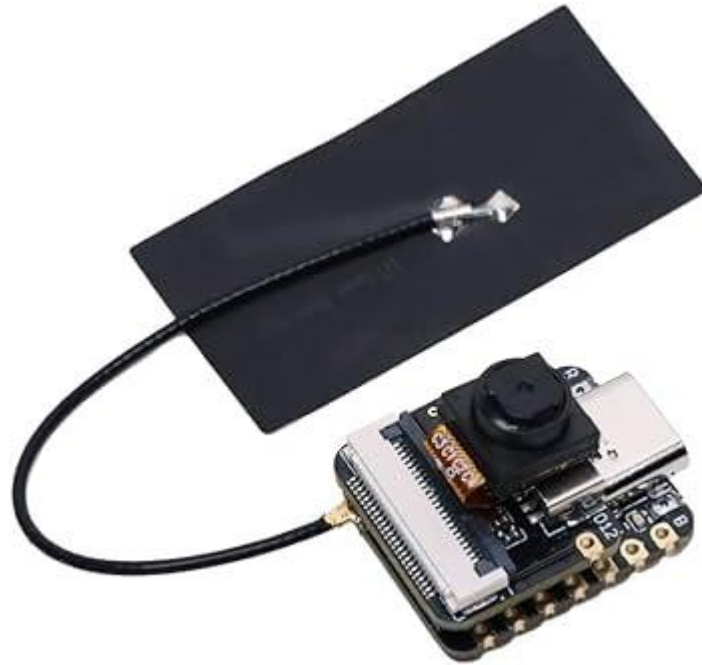
PROTOTYPE HARDWARE



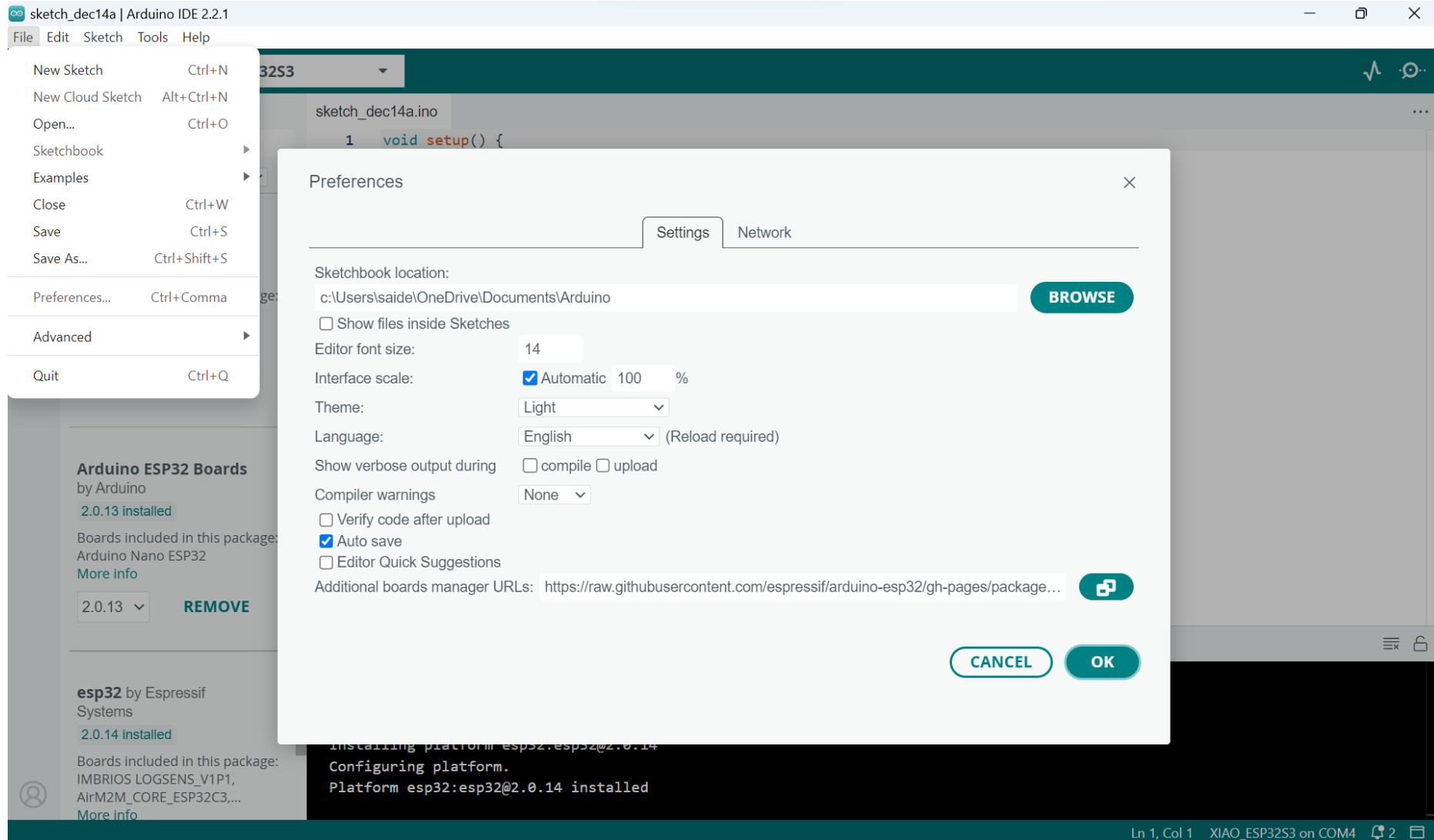


AR GLASS SETUP

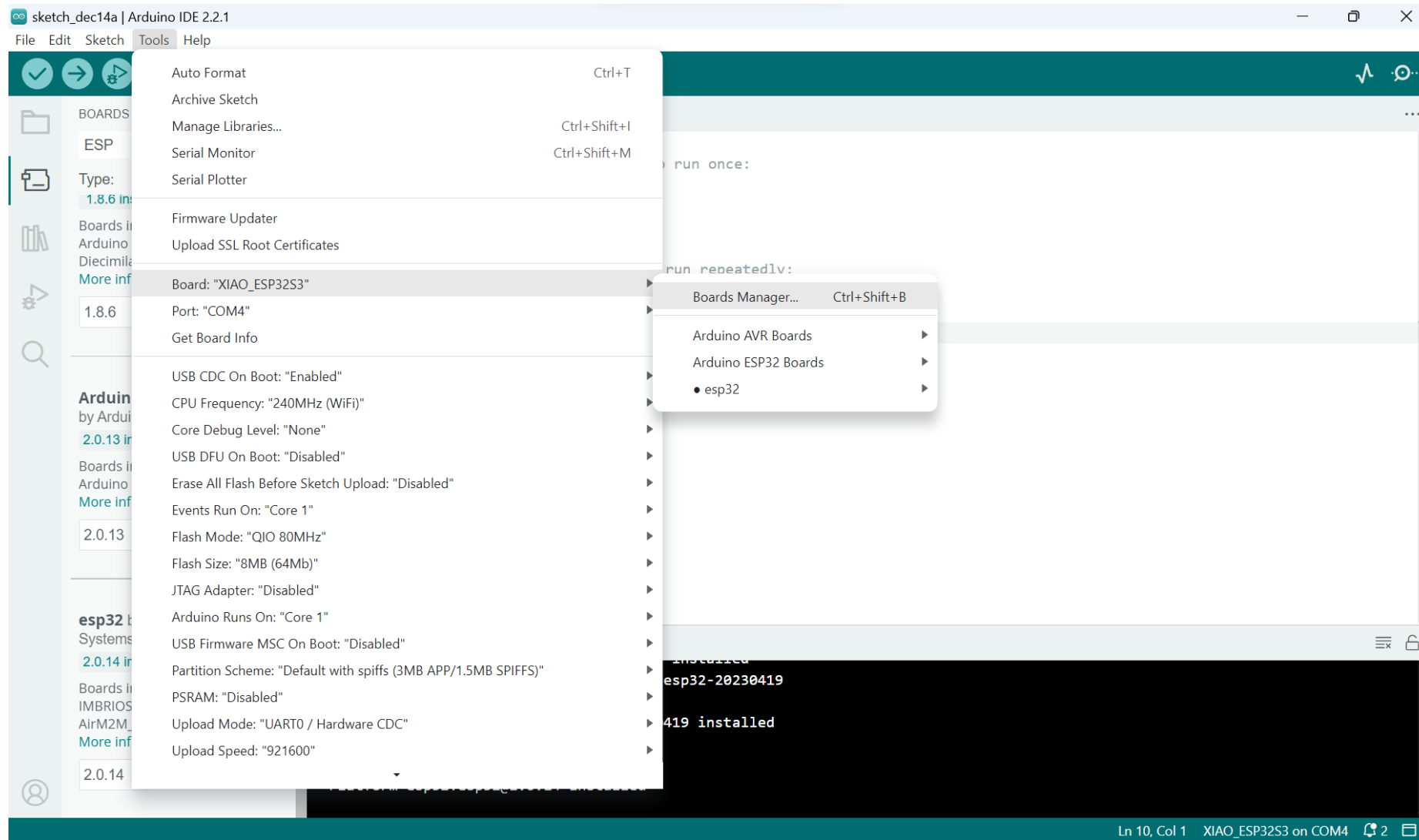
1. WIRELESS CAMERA



DEFINE THE LIBRARY PATH



INSTALL THE BOARD LIBRARY



INSTALL THE BOARD LIBRARY

The screenshot shows the Arduino IDE 2.2.1 interface. The top menu bar includes File, Edit, Sketch, Tools, and Help. The toolbar shows icons for checking, running, and uploading code, along with a dropdown menu currently set to 'XIAO_ESP32S3'. The left sidebar contains the 'BOARDS MANAGER' tab, which lists three board categories: 'ESP', 'Arduino ESP32 Boards', and 'esp32 by Espressif Systems'. Each category shows the installed version and a 'REMOVE' button. The main editor area displays the 'sketch_dec14a.ino' file with the following code:

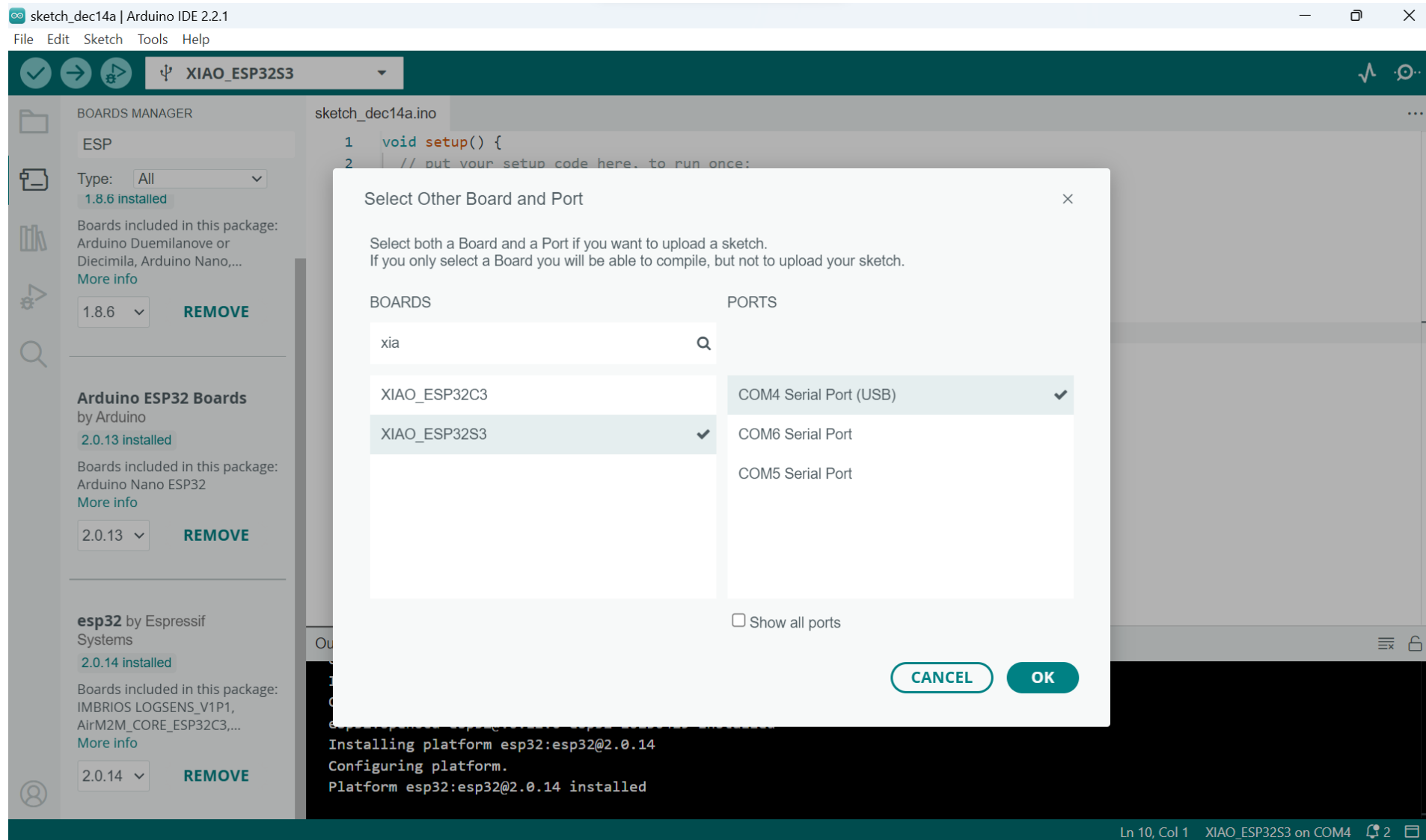
```
1 void setup() {  
2   // put your setup code here, to run once:  
3 }  
4  
5  
6 void loop() {  
7   // put your main code here, to run repeatedly:  
8 }  
9  
10
```

The bottom panel shows the 'Output' window with the following text:

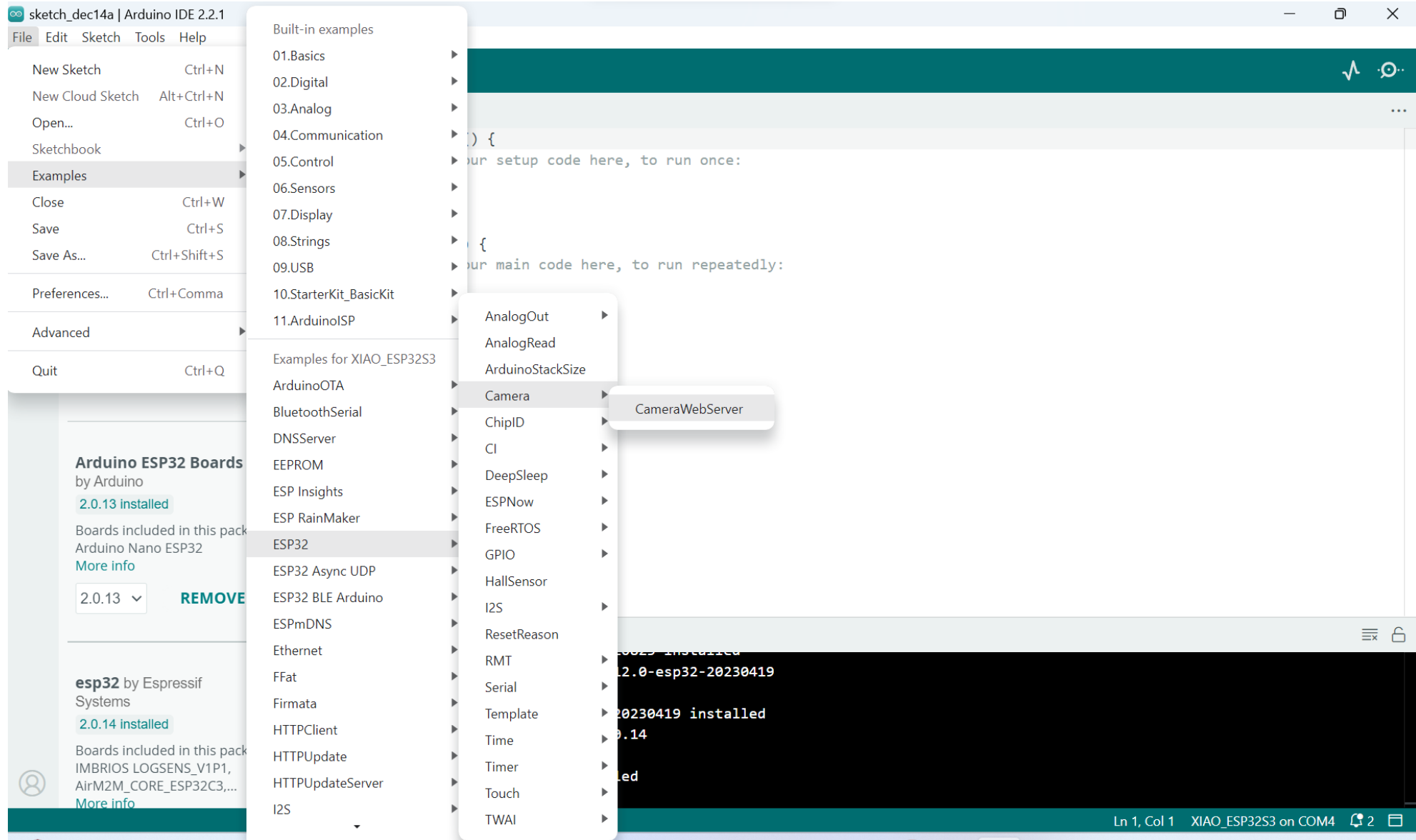
```
esp32:openocd-esp32@v0.12.0-esp32-20230419 installed  
Installing esp32:openocd-esp32@v0.12.0-esp32-20230419  
Configuring tool.  
esp32:openocd-esp32@v0.12.0-esp32-20230419 installed  
Installing platform esp32:esp32@2.0.14  
Configuring platform.  
Platform esp32:esp32@2.0.14 installed
```

The status bar at the bottom indicates 'Ln 10, Col 1 XIAO_ESP32S3 on COM4' and shows 2 notifications.

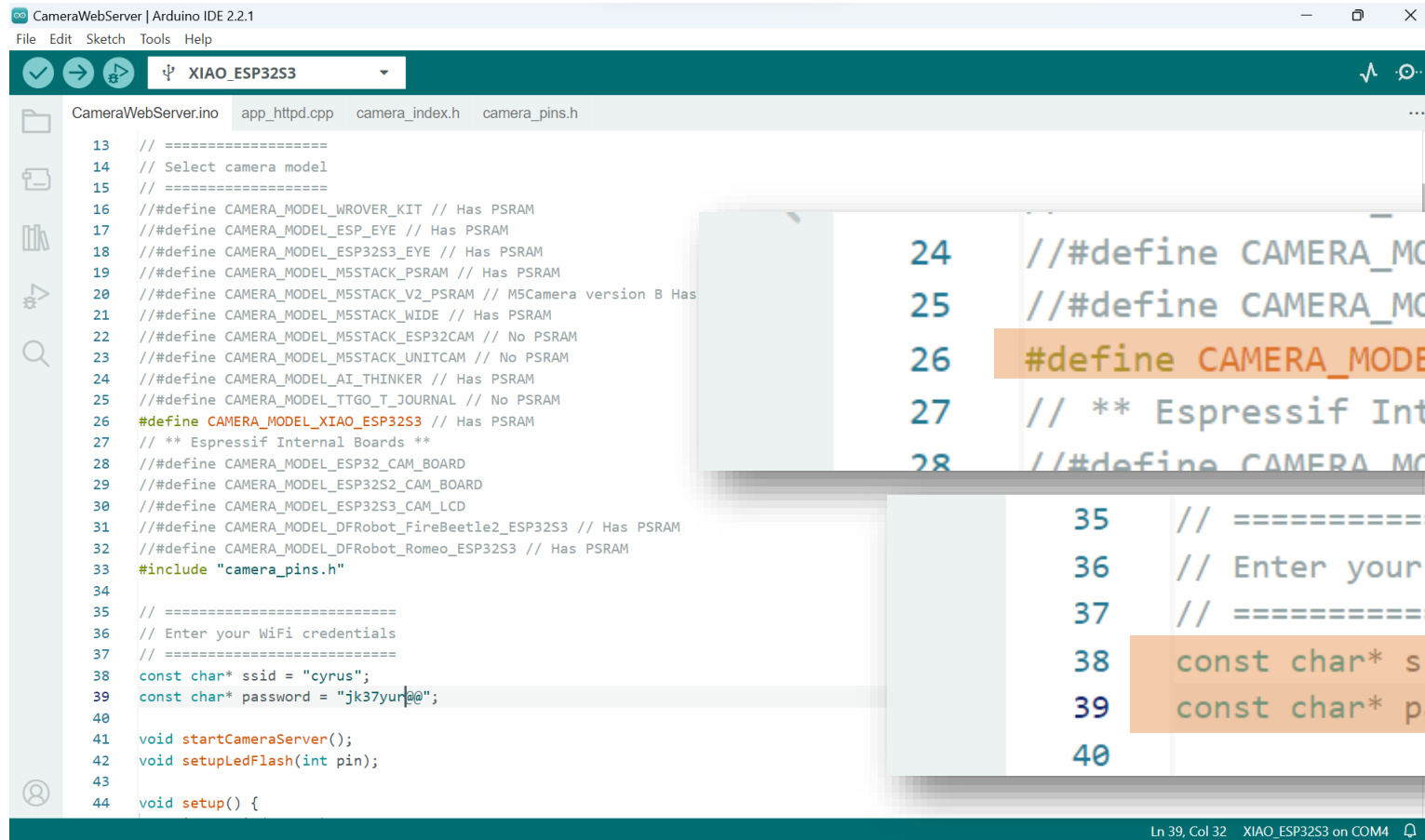
SELECT THE BOARD AND PORT



UPLOAD THE PROGRAM



UPLOAD THE PROGRAM AND CHANGE THE WIFI AND CAMERA SETTINGS



```
CameraWebServer | Arduino IDE 2.2.1
File Edit Sketch Tools Help
XIAO_ESP32S3
CameraWebServer.ino app_httpd.cpp camera_index.h camera_pins.h

13 // =====
14 // Select camera model
15 // =====
16 //#define CAMERA_MODEL_WROVER_KIT // Has PSRAM
17 //#define CAMERA_MODEL_ESP_EYE // Has PSRAM
18 //#define CAMERA_MODEL_ESP32S3_EYE // Has PSRAM
19 //#define CAMERA_MODEL_M5STACK_PSRAM // Has PSRAM
20 //#define CAMERA_MODEL_M5STACK_V2_PSRAM // M5Camera version B Has
21 //#define CAMERA_MODEL_M5STACK_WIDE // Has PSRAM
22 //#define CAMERA_MODEL_M5STACK_ESP32CAM // No PSRAM
23 //#define CAMERA_MODEL_M5STACK_UNITCAM // No PSRAM
24 //#define CAMERA_MODEL_AI_THINKER // Has PSRAM
25 //#define CAMERA_MODEL_TTGO_T_JOURNAL // No PSRAM
26 #define CAMERA_MODEL_XIAO_ESP32S3 // Has PSRAM
27 // ** Espressif Internal Boards **
28 //#define CAMERA_MODEL_ESP32_CAM_BOARD
29 //#define CAMERA_MODEL_ESP32S2_CAM_BOARD
30 //#define CAMERA_MODEL_ESP32S3_CAM_LCD
31 //#define CAMERA_MODEL_DFRobot_FireBeetle2_ESP32S3 // Has PSRAM
32 //#define CAMERA_MODEL_DFRobot_Romeo_ESP32S3 // Has PSRAM
33 #include "camera_pins.h"
34
35 // =====
36 // Enter your WiFi credentials
37 // =====
38 const char* ssid = "cyrus";
39 const char* password = "jk37yur@@";
40
41 void startCameraServer();
42 void setupLedFlash(int pin);
43
44 void setup() {
```

```
24 //#define CAMERA_MODEL_AI_THINKER // Has PSRAM
25 //#define CAMERA_MODEL_TTGO_T_JOURNAL // No PSRAM
26 #define CAMERA_MODEL_XIAO_ESP32S3 // Has PSRAM
27 // ** Espressif Internal Boards **
28 //#define CAMERA_MODEL_ESP32_CAM_BOARD

35 // =====
36 // Enter your WiFi credentials
37 // =====
38 const char* ssid = "cyrus";
39 const char* password = "jk37yur@@";
40
```

COMPILE AND UPLOAD



The screenshot displays the Arduino IDE interface for the 'CameraWebServer' project on a 'XIAO_ESP32S3' board. The main editor window shows the 'CameraWebServer.ino' file with the following code:

```
25 // #define CAMERA_MODEL_TTGO_T_JOURNAL // No PSRAM
26 #define CAMERA_MODEL_XIAO_ESP32S3 // Has PSRAM
27 // ** Espressif Internal Boards **
28 // #define CAMERA_MODEL_ESP32_CAM_BOARD
29 // #define CAMERA_MODEL_ESP32S2_CAM_BOARD
30 // #define CAMERA_MODEL_ESP32S3_CAM_LCD
31 // #define CAMERA_MODEL_DFRobot_FireBeetle2_ESP32S3 // Has PSRAM
32 // #define CAMERA_MODEL_DFRobot_Romeo_ESP32S3 // Has PSRAM
33 #include "camera_pins.h"
34
35 // =====
36 // Enter your WiFi credentials
37 // =====
38 const char* ssid = "cyrus";
39 const char* password = "B810186448r@";
40
41 void startCameraServer();
42 void setupLedFlash(int pin);
43
```

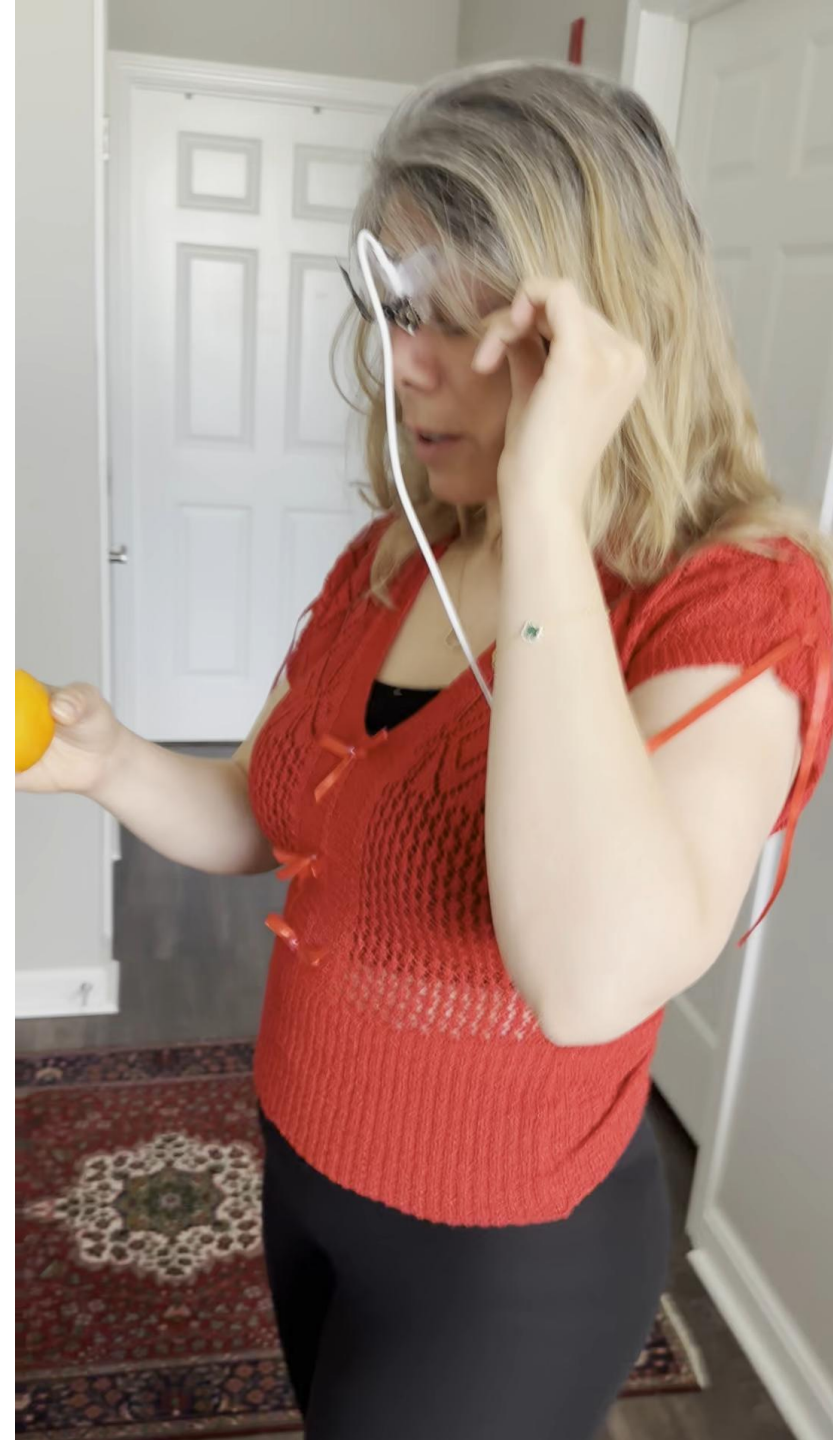
The Serial Monitor at the bottom shows the output of the program. The baud rate is set to 9600. The output includes the following messages:

```
.....
WiFi connected
Camera Ready! Use 'http://10.0.0.198' to connect
.....
WiFi connected
Camera Ready! Use 'http://10.0.0.198' to connect
```

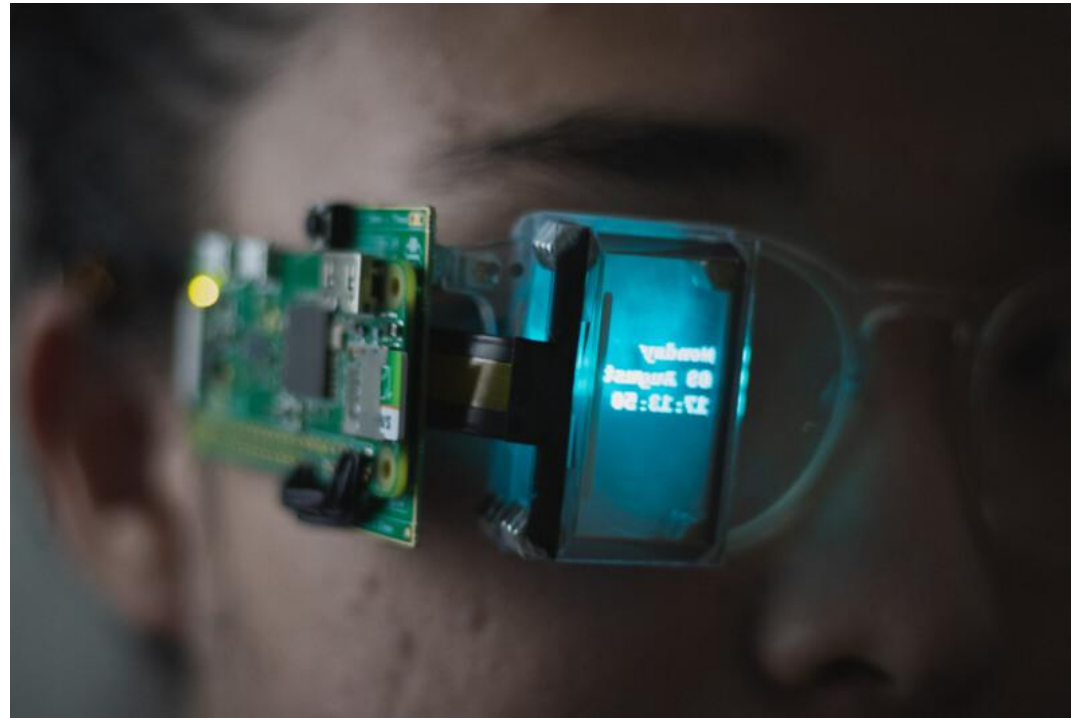
The status bar at the bottom indicates the current line is 39, column 36, and the board is 'XIAO_ESP32S3 on COM4'.

https://wiki.seeedstudio.com/xiao_esp32s3_getting_started/

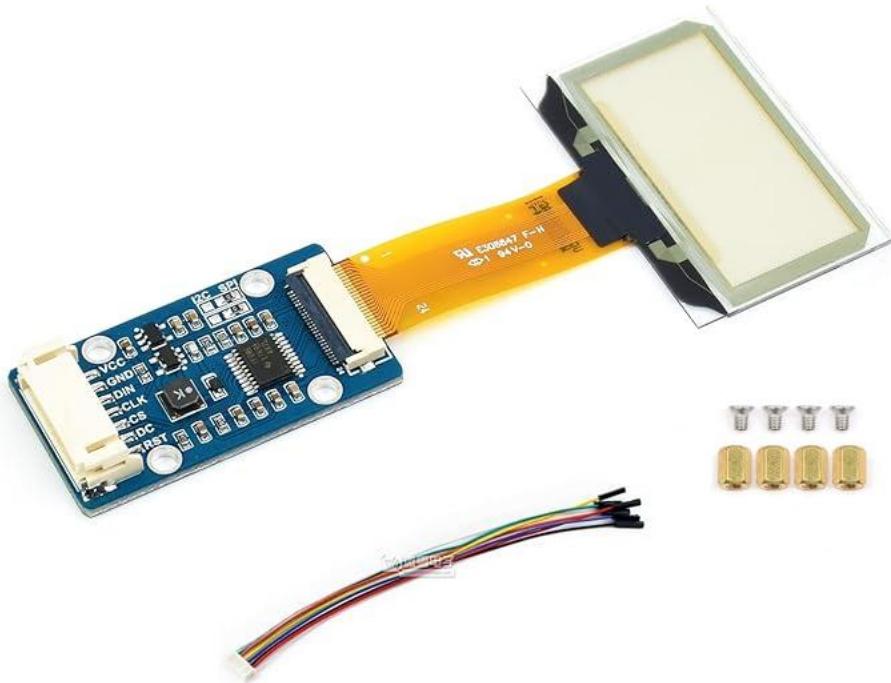
I MADE A VIDEO...



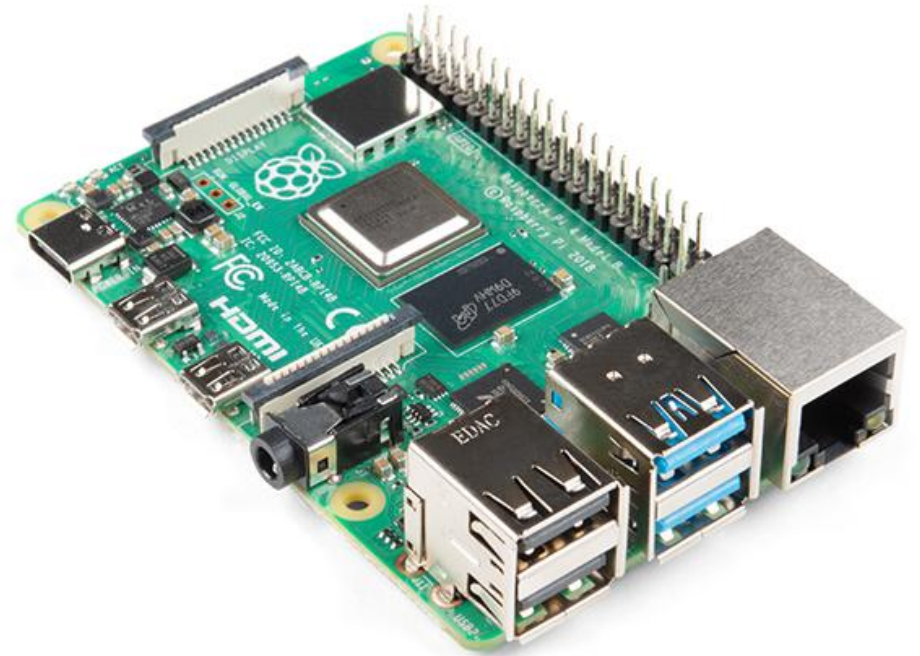
2. TRANSPARENT SCREEN



HARDWARE

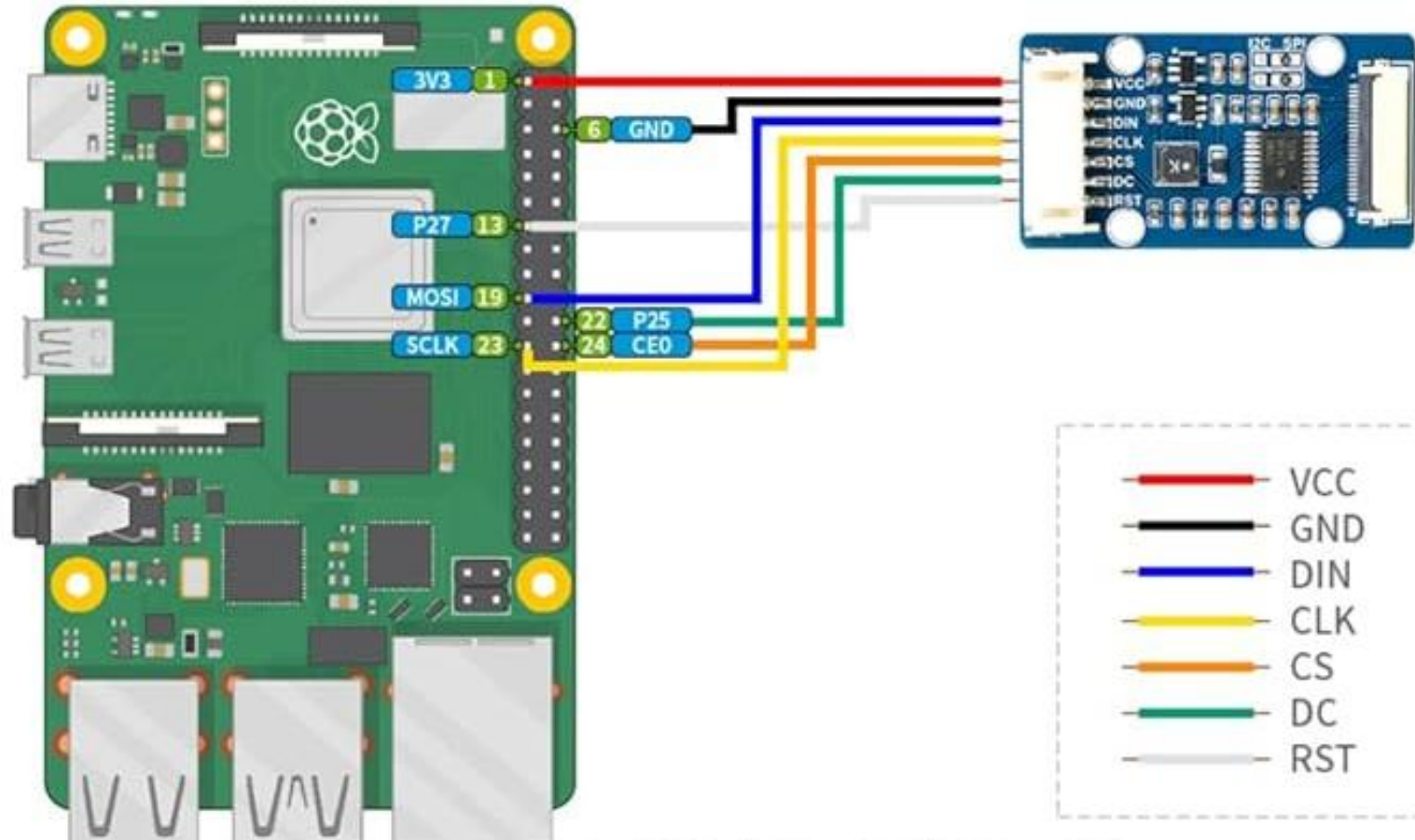


Transparent OLED



Raspberry pi 4

CONNECTIONS





LINUX!!!!!!

I am not good at Linux, I just followed the following wiki and ran the C++ code for the screen and it worked, but I burned my face and the screen.



https://www.waveshare.com/wiki/1.51inch_Transparent_OLED



SAFEWAY



usbank

Pharmacy



NO PARKING

THANK YOU

