

# Arduino Setup Steps

Thursday, April 14, 2022 6:48 PM



The screenshot shows the Arduino IDE interface with the title bar "mp3-argb | Arduino 1.8.19". The "File" menu is open, displaying various options like "New", "Open...", "Save", and "Preferences". The "Preferences" option is highlighted with a blue selection bar. The main code editor area contains C++ code for an MP3 player project. The code includes declarations for a servo, constants for PWM values, and setup functions for the servo. It also includes FastLED related code with defines for LED counts and pin assignments.

```
// Servo related stuff
Servo servo;
// Published values for SG90 servos; adjust if needed
int minUs = 900;
int maxUs = 2100;
int servoPin = 23;

int pos = 0;      // position in degrees
ESP32PWM pwm;
void setupServo() {
    // Allow allocation of all timers
    ESP32PWM::allocateTimer(0);
    servo.setPeriodHertz(50);      // Standard 50hz servo
    servo.attach(servoPin, minUs, maxUs);
}

// FastLED related stuff
#define NUM_LEDS 150  // maximum length per set
#define NUM_SETS 1
#define DATA_PIN1 21

CRGB led_set[NUM_SETS+1][NUM_LEDS];
```

```
#define DATA_PIN1 21

CRGB led_set[NUM_SETS+1][NUM_LEDS];
int set_length[NUM_SETS+1]={0 /* dummy */, 20 /* set 1 */};

static long cycle_count=0;
static int red=0;
static int blue=0;
static int green=0;
static int brightness=255;
static int intensity=128;
```

9

NodeMCU-32S, 80MHz, 921600 on COM24

mp3-argb | Arduino 1.8.19

File Edit Sketch Tools Help

mp3-argb

```
*****
Lights+Sound for B9 Robot.
Uses DFPlayer - A Mini MP3 Player For Arduino and FastLED library for addressable RGB lights
*****
```

```
#include "Arduino.h"
#include "FastLED.h"
#include "DFRobotDFPPlayerMini.h"
#include <ESP32Servo.h>

// Servo related stuff
Servo servo;
// Published values for SG90
int minUs = 900;
int maxUs = 2100;
int servoPin = 23;
```

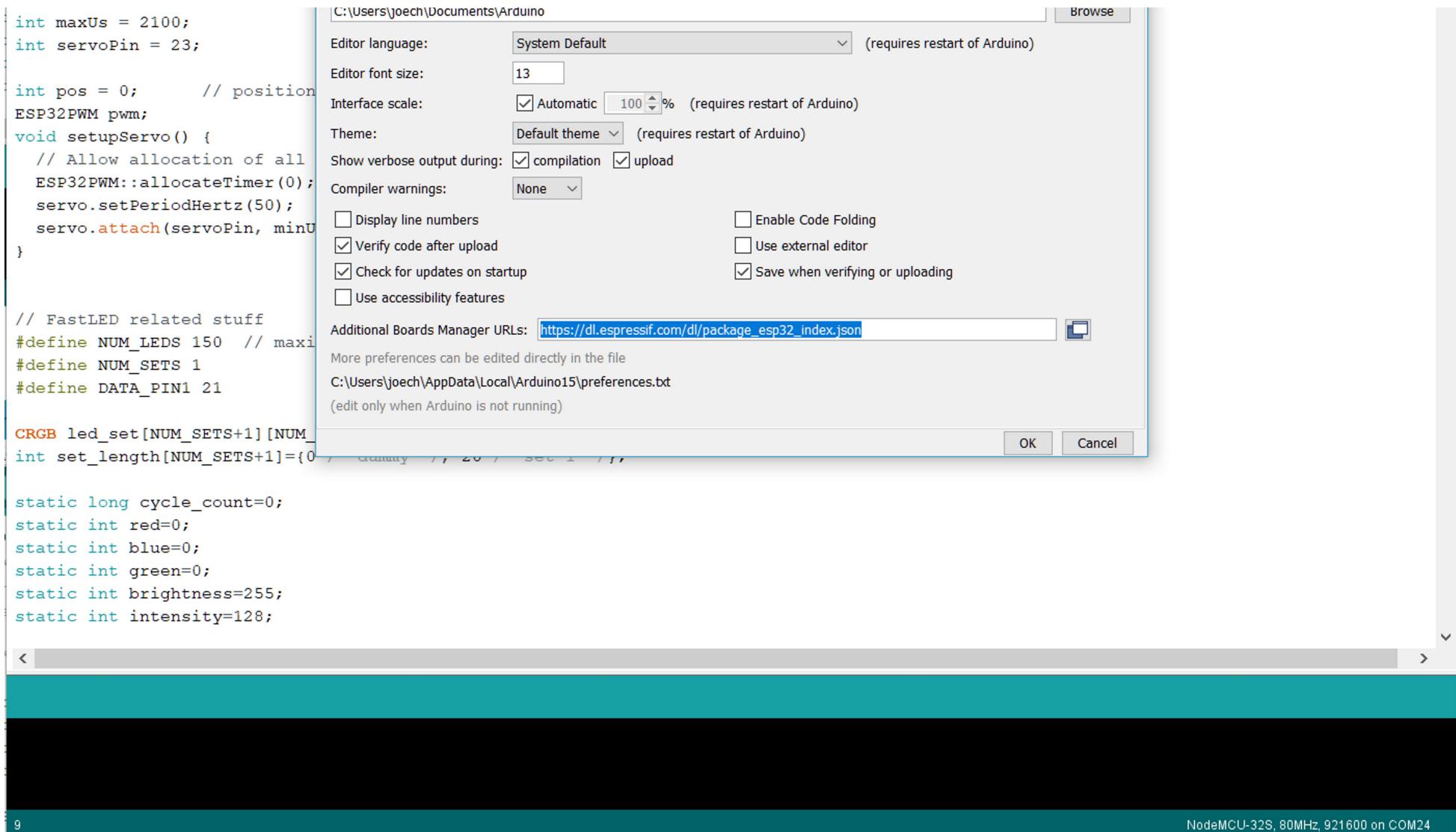
Preferences

Settings Network

Sketchbook location: C:\Users\joech\Documents\Arduino

Editor language: System Default (requires restart of Arduino)

Editor font size: 13



add this to the additional boards manager urls text box: [https://dl.espressif.com/dl/package\\_esp32\\_index.json](https://dl.espressif.com/dl/package_esp32_index.json) and then click OK.

go to the boards manager and install the esp32 board package (the install process can take several minutes)



mp3-argb | Arduino 1.8.19

File Edit Sketch Tools Help

mp3-argb

```
/* Lights+Sound
Uses DFPlay
*****
WiFi101 / WiFiNINA Firmware Updater
***** */

#include "Arduino.h"
#include "FastLED.h"
#include "DFPlayer.h"
#include <ESP32PWM.h>
#include <Servo.h>

// Servo related stuff
Servo servo;
// Published values for SG90 servos; adjust if needed
int minUs = 900;
int maxUs = 2100;
int servoPin = 23;

int pos = 0;      // position in degrees
ESP32PWM pwm;
void setupServo() {
    // Allow allocation of all timers
    ESP32PWM::allocateTimer(0);
    servo.setPeriodHertz(50);      // Standard 50hz servo
    servo.attach(servoPin, minUs, maxUs);
}

// FastLED related stuff
#define NUM_LEDS 150  // maximum length per set
#define NUM_SETS 1
#define DATA_PIN1 21

CRGB led_set[NUM_SETS+1][NUM_LEDS];
int set_length[NUM_SETS+1]={0 /* dummy */, 20 /* set 1 */};

static long cycle_count=0;
static int red=0;
static int blue=0;
static int green=0;
static int brightness=255;
```

Auto Format Ctrl+T

Archive Sketch

Fix Encoding & Reload

Manage Libraries... Ctrl+Shift+I

Serial Monitor Ctrl+Shift+M

Serial Plotter Ctrl+Shift+L

FastLED library for addressable RGB lights

WiFi101 / WiFiNINA Firmware Updater

Board: "Arduino Uno" >

Port >

Get Board Info >

Programmer: "AVR ISP" >

Burn Bootloader >

Boards Manager... >

Arduino AVR Boards >

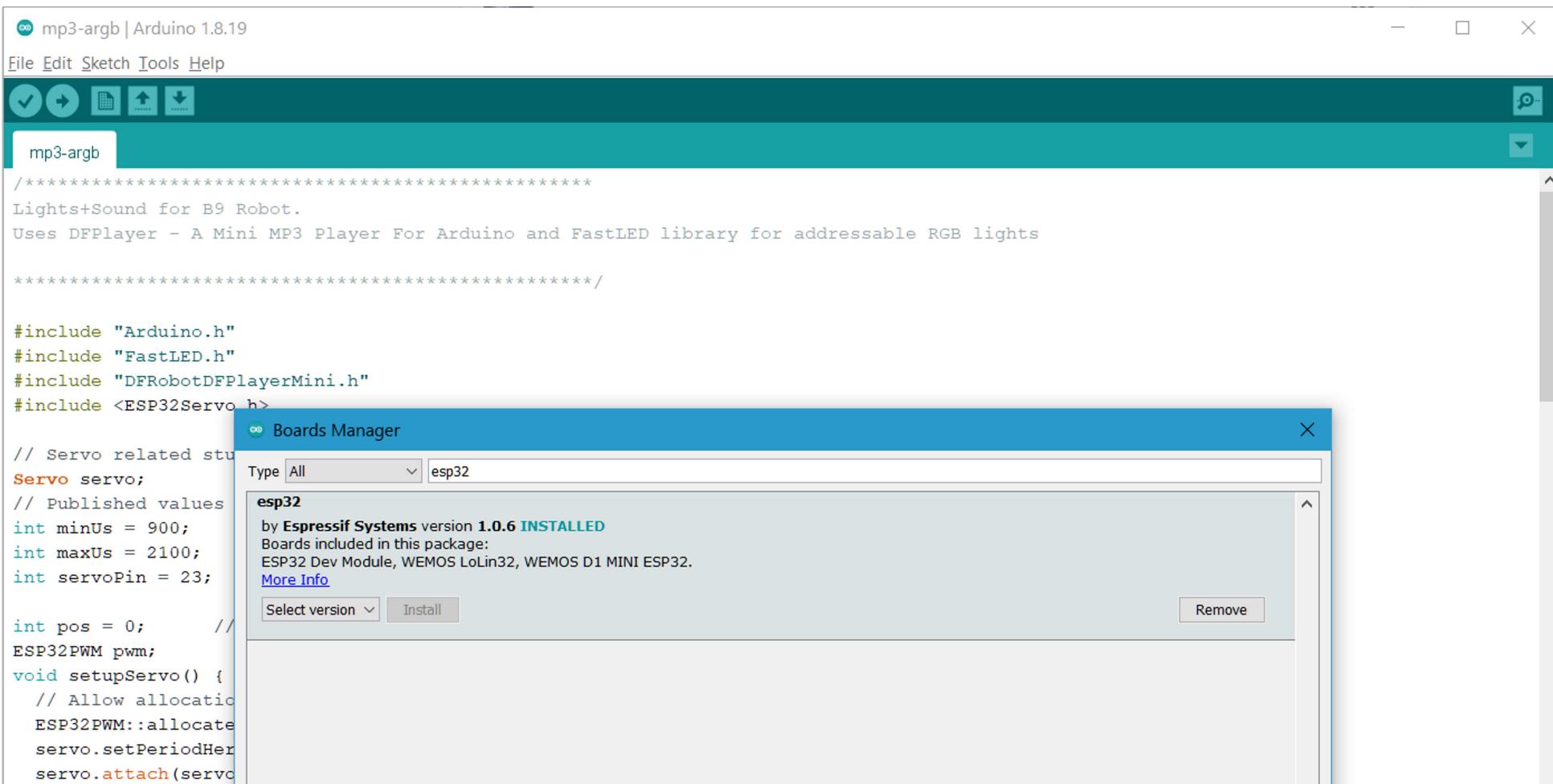
Arduino megaAVR Boards >

ESP32 Arduino >

Nordic Semiconductor nRF5 Boards >

RedBearLab Boards >

```
static int blue=0;
static int green=0;
static int brightness=255;
static int intensity=128;
```



```
ESP32PWM::allocate
servo.setPeriodHertz(50);
servo.attach(servoPin);

// FastLED related settings
#define NUM_LEDS 150
#define NUM_SETS 1
#define DATA_PIN1 21

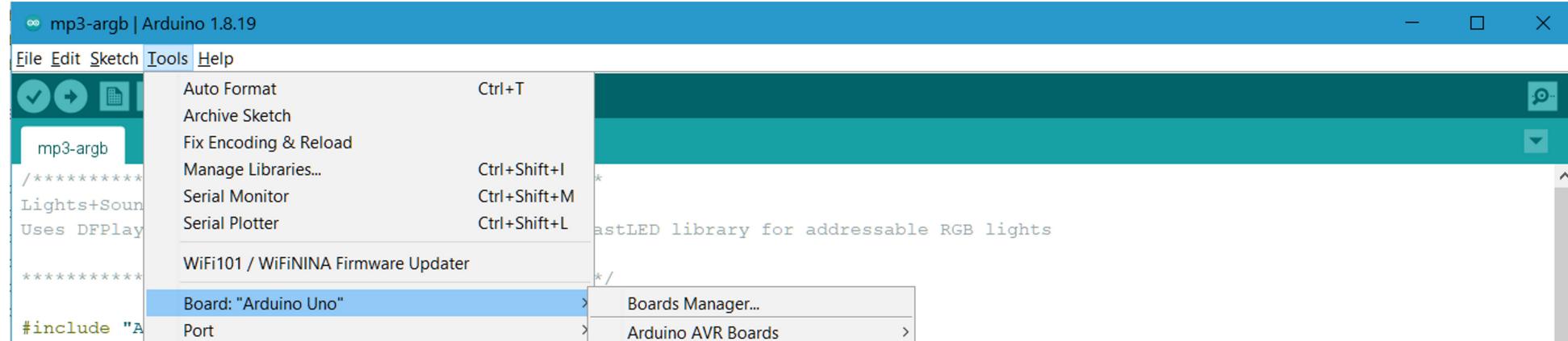
CRGB led_set[NUM_SETS];
int set_length[NUM_SETS];

static long cycle_count=0;
static int red=0;
static int blue=0;
static int green=0;
static int brightness=255;
static int intensity=128;
```

Close

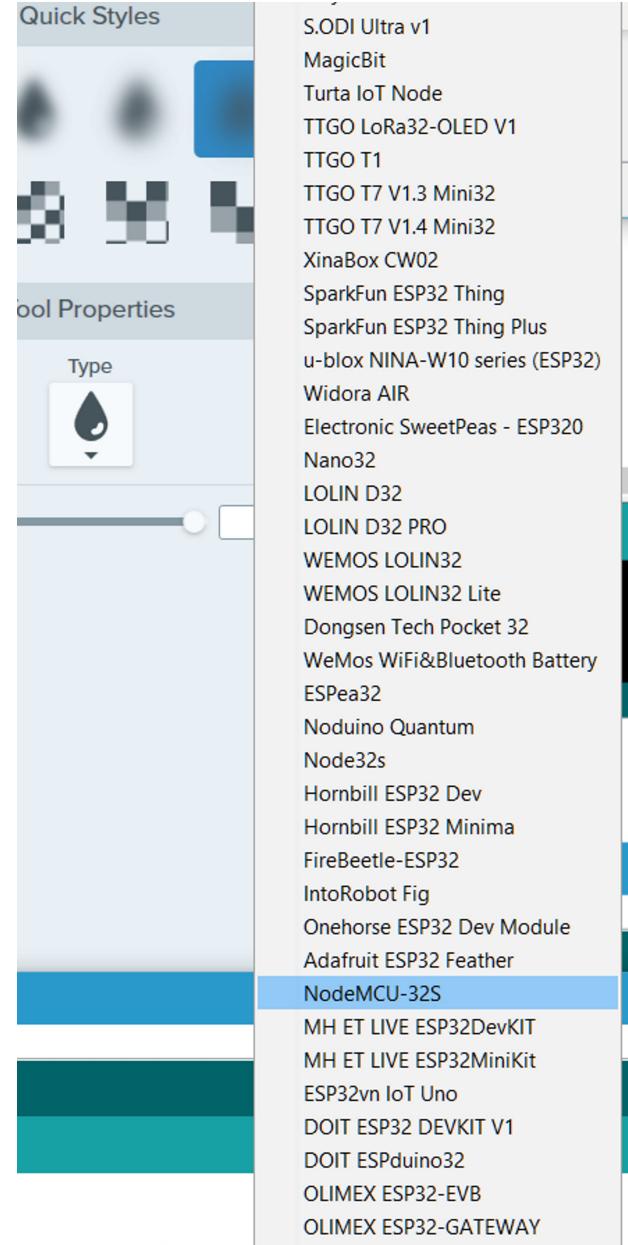
9 Arduino Uno on COM24

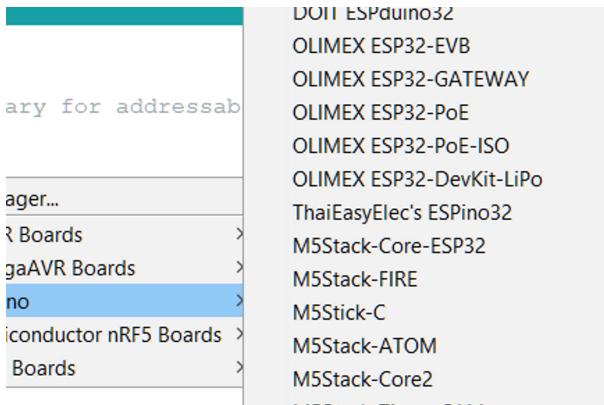
Go to the list of boards for ESP32 Arduino



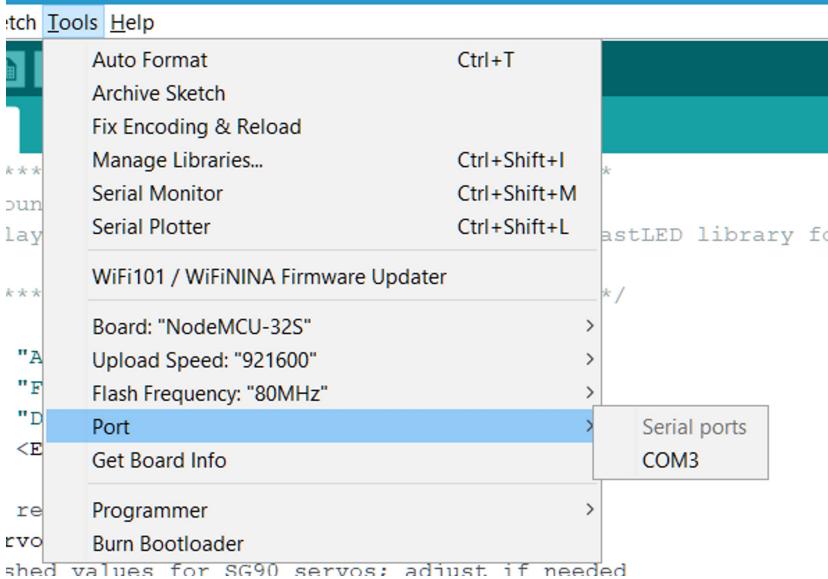
```
***** / ***** Boards Manager...  
Board: "Arduino Uno" >| Arduino AVR Boards  
Port >| Arduino megaAVR Boards  
Get Board Info  
Programmer: "AVR ISP" >| ESP32 Arduino  
Burn Bootloader  
Nordic Semiconductor nRF5 Boards  
RedBearLab Boards  
  
// Servo related stuff  
Servo servo;  
// Published values for SG90 servos; adjust if needed  
int minUs = 900;  
int maxUs = 2100;  
int servoPin = 23;  
  
int pos = 0; // position in degrees  
ESP32PWM pwm;  
void setupServo() {  
    // Allow allocation of all timers  
    ESP32PWM::allocateTimer(0);  
    servo.setPeriodHertz(50); // Standard 50hz servo  
    servo.attach(servoPin, minUs, maxUs);  
}  
  
// FastLED related stuff  
#define NUM_LEDS 150 // maximum length per set  
#define NUM_SETS 1  
#define DATA_PIN1 21  
  
CRGB led_set[NUM_SETS+1][NUM_LEDS];  
int set_length[NUM_SETS+1]={0 /* dummy */, 20 /* set 1 */};  
  
static long cycle_count=0;  
static int red=0;  
static int blue=0;  
static int green=0;  
static int brightness=255;  
static int intensity=128;
```

pick the NodeMCU-32S





It should look like this:



Also add the following libraries in the Manage Libraries



```
File Import...
```

```
Manage Libraries... Ctrl+Shift+L
```

```
Serial Monitor Ctrl+Shift+M
```

```
Serial Plotter Ctrl+Shift+L
```

```
* FastLED library for addressable RGB lights
```

```
WiFi101 / WiFiNINA Firmware Updater
```

```
Board: "NodeMCU-32S" >
```

```
Upload Speed: "921600" >
```

```
Flash Frequency: "80MHz" >
```

```
Port >
```

```
Get Board Info
```

```
Programmer >
```

```
Burn Bootloader
```

```
*****
```

```
import FastLED
```

```
*****
```

```
Lights+Sound
```

```
Uses DFPlay
```

```
*****
```

```
#include "A.h"
```

```
#include "F.h"
```

```
#include "D.h"
```

```
#include <ESP32.h>
```

```
// Servo related code
```

```
Servo servo
```

```
// Published values for SG90 servos; adjust if needed
```

```
int minUs = 900;
```

```
int maxUs = 2100;
```

```
int servoPin = 23;
```

```
  
int pos = 0; // position in degrees
```

```
ESP32PWM pwm;
```

```
void setupServo() {
```

```
    // Allow allocation of all timers
```

```
    ESP32PWM::allocateTimer(0);
```

```
    servo.setPeriodHertz(50); // Standard 50hz servo
```

```
    servo.attach(servoPin, minUs, maxUs);
```

```
}
```

```
  
// FastLED related stuff
```

```
#define NUM_LEDS 150 // maximum length per set
```

```
#define NUM_SETS 1
```

```
#define DATA_PIN1 21
```

```
  
CRGB led_set[NUM_SETS+1][NUM_LEDS];
```

```
int set_length[NUM_SETS+1]={0 /* dummy */, 20 /* set 1 */};
```

```
  
static long cycle_count=0;
```

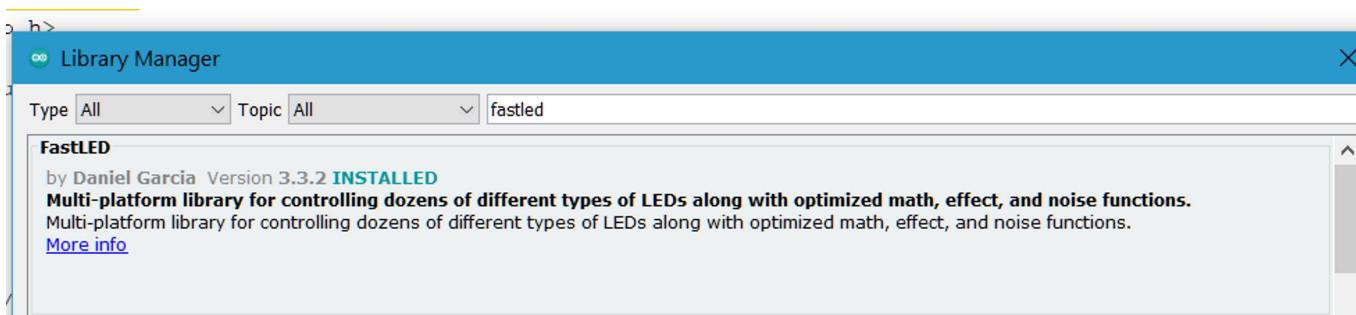
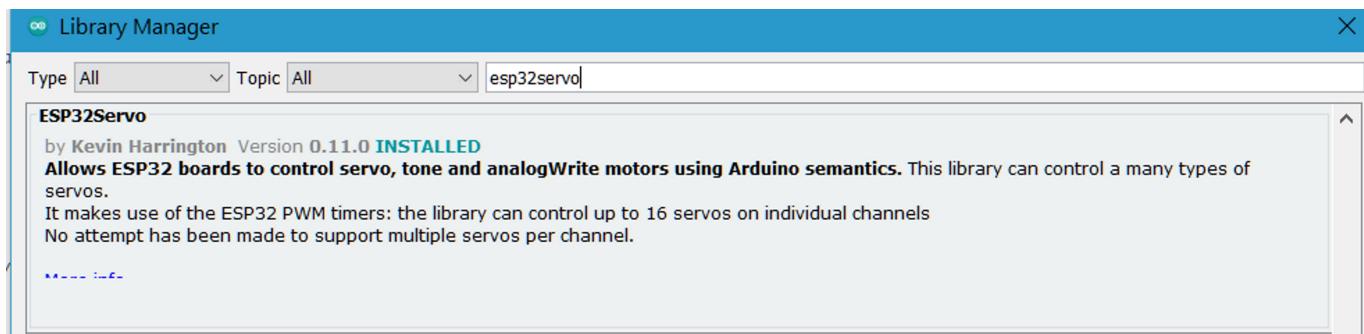
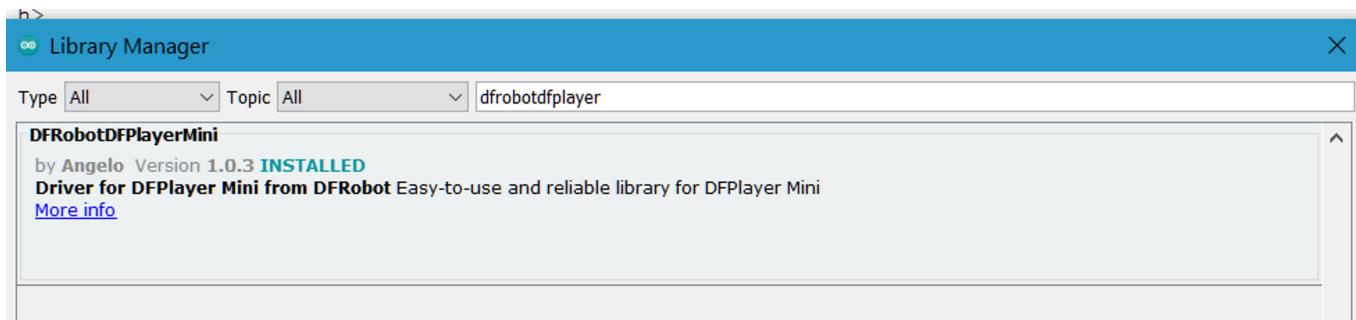
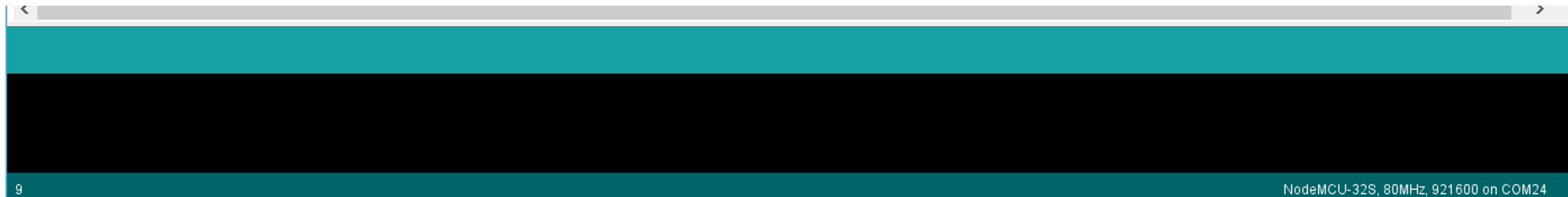
```
static int red=0;
```

```
static int blue=0;
```

```
static int green=0;
```

```
static int brightness=255;
```

```
static int intensity=128;
```





I believe this is all you need to then build this code!