

DOCUMENTATION

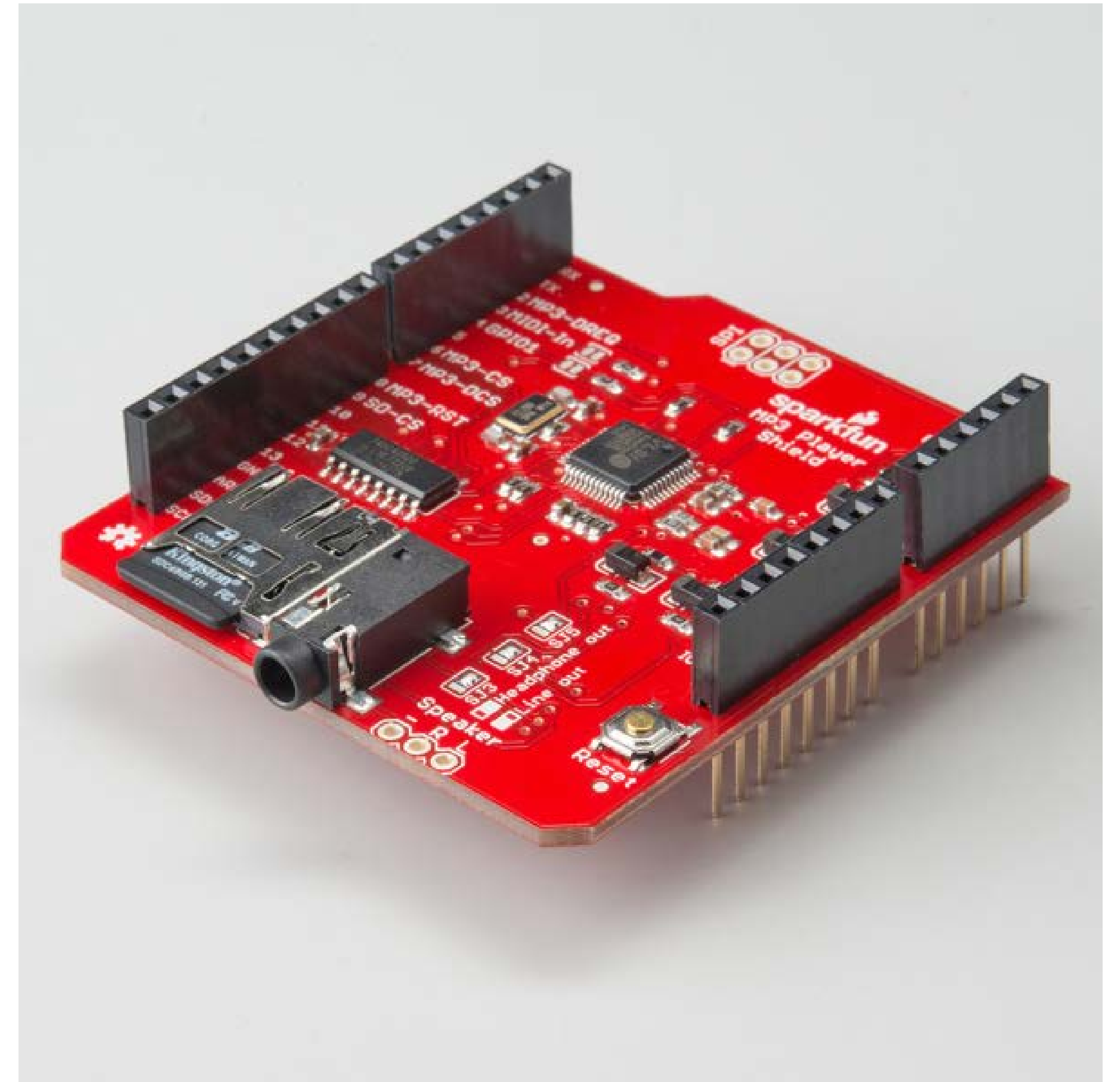
ACTIVITY

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USEFUL LINKS

SPARKFUN MP3 SHIELD

Trigger sounds with Arduino



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SOUND WITH ARDUINO?

The Arduino Board cannot process audio files by itself.

This is because audio playback requires more memory, data handling, and processing power than Arduino can offer on its own.

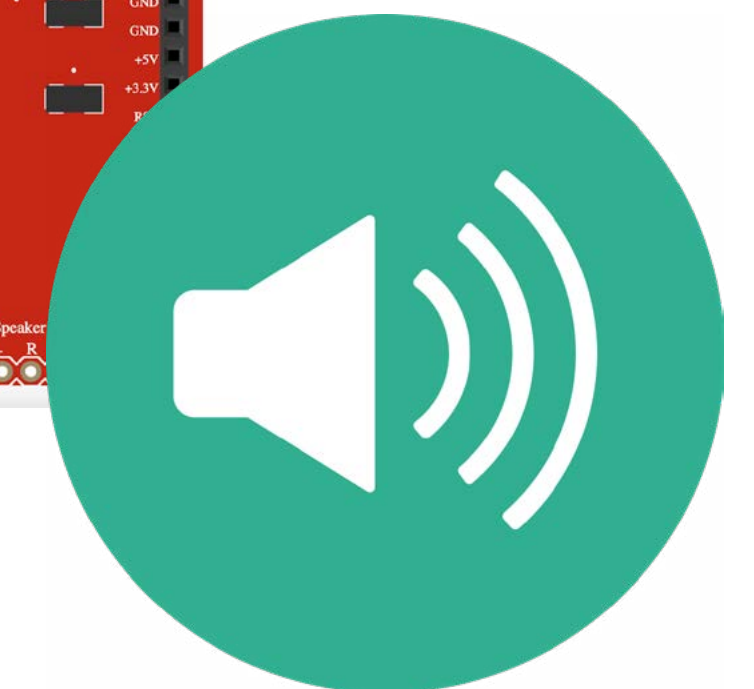
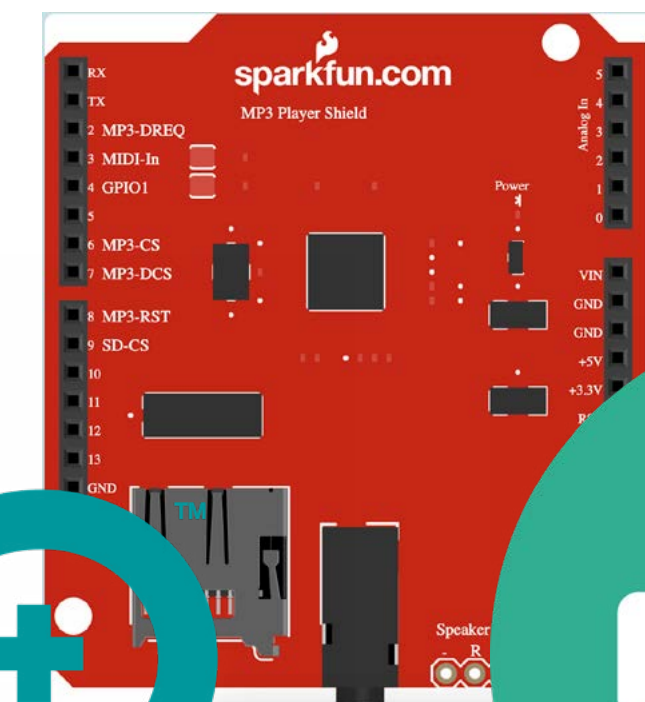


WHAT IS A MP3 SHIELD?

The MP3 Shield is an add-on board that gives Arduino the ability to play music and sound effects from a microSD card.

With this shield, your Arduino can now react with sound to buttons, sensors, motion, or any other input!

[More About ARDUINO SHIELDS](#)



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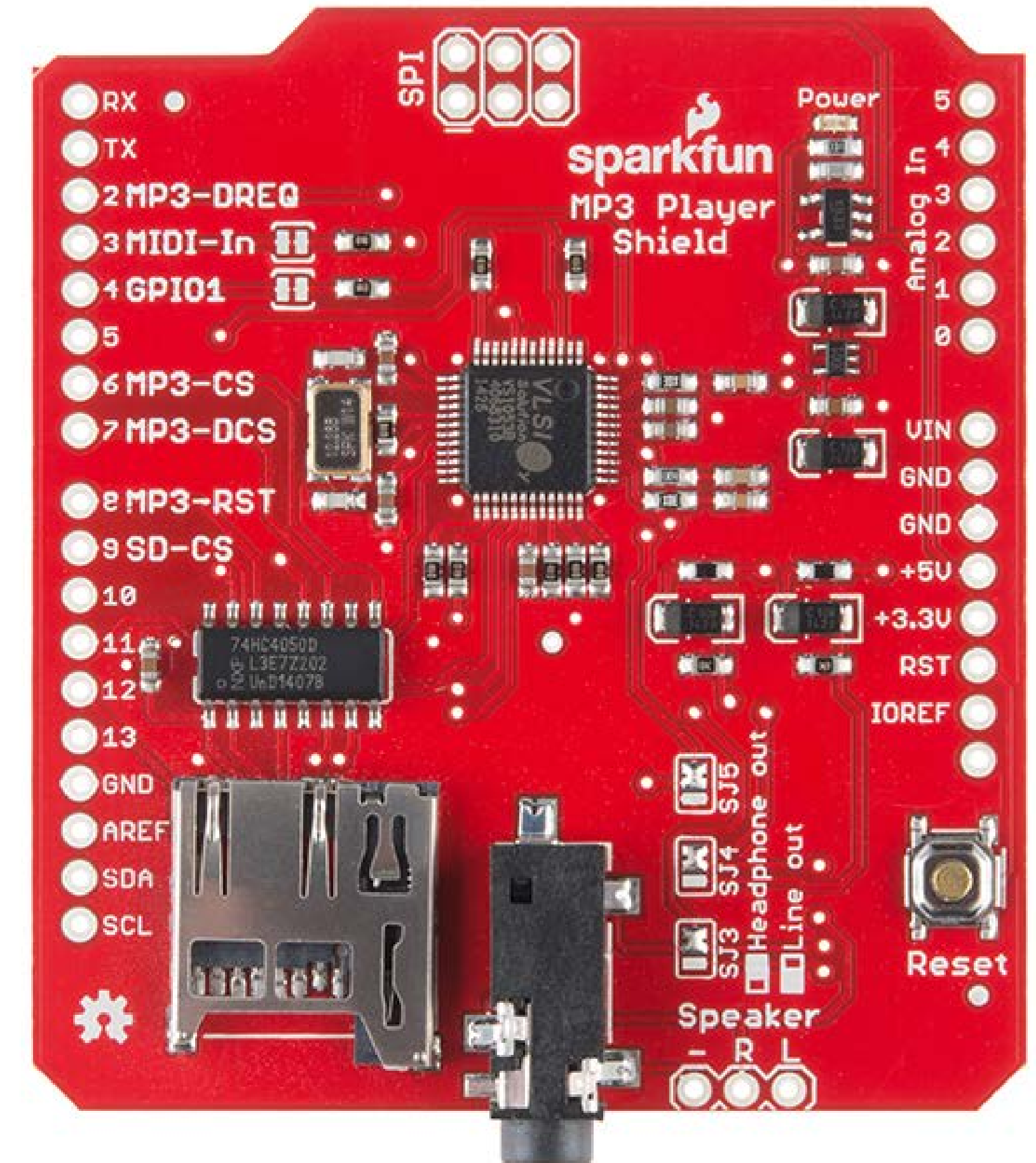
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IMPORTANT TIPS!

- This MP3 shield is **not-polyphonic**, it can only play one track at a time.
- It only supports up to **9 audio tracks**.
- Audio files must be in **MP3 format only**.
- **File names** must follow this format:
track000.mp3, track001.mp3, track 002.mp3, etc.
- Most digital pins on the shield are used for audio functions. To connect buttons, sensors, or actuators, use:
 - All analog pins: A0–A5
 - Only digital pins: D5 and D10 (both PWM)
- Need More Pins? Consider switching from an Arduino UNO to an Arduino MEGA

[More about SparkFun MP3 Shield](#)



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MP3 SHIELD SET-UP

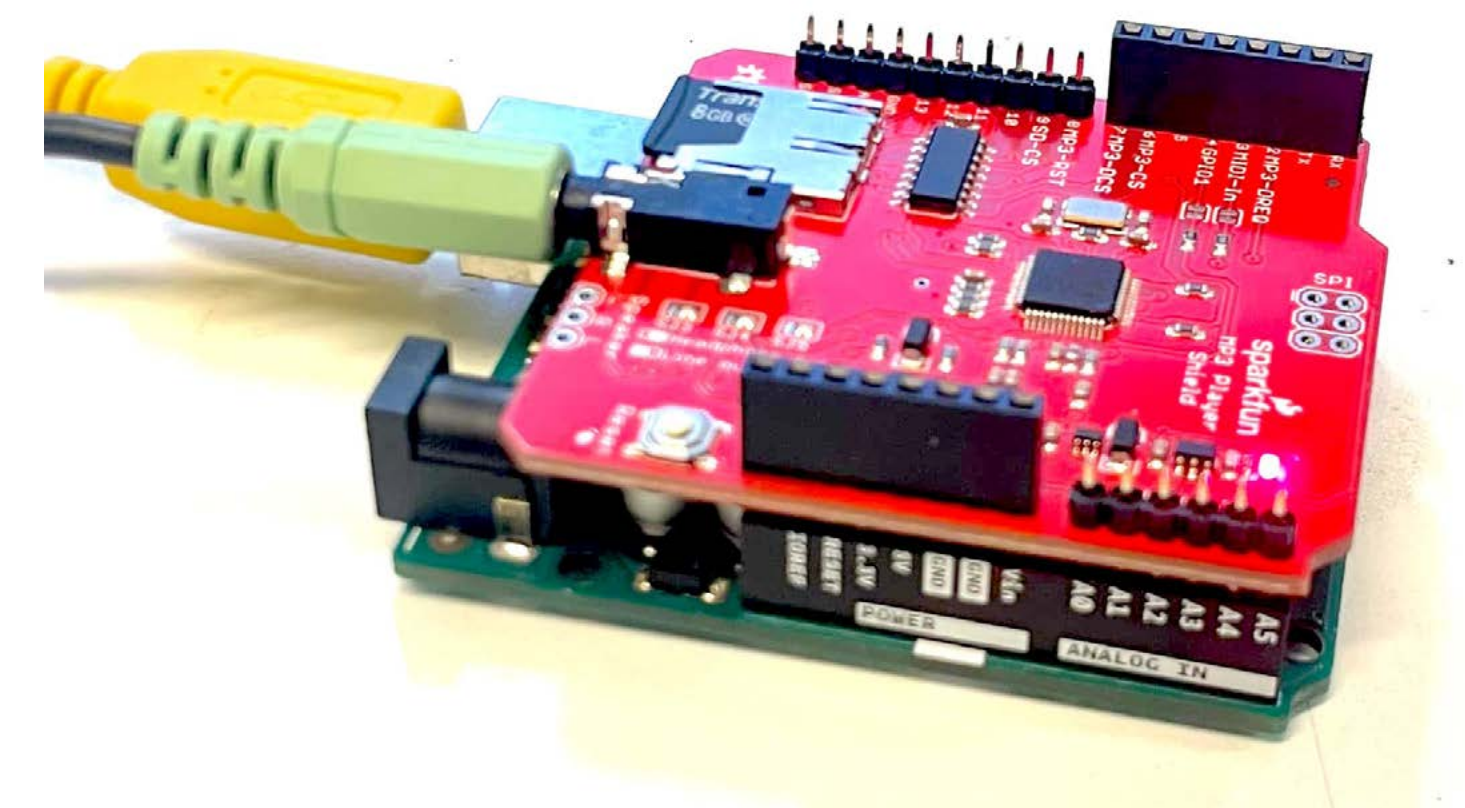
HARDWARE

1. Mount your MP3-Shield on top of the Arduino UNO, like stacking LEGO bricks. Make sure all the pins are correctly mounted.
2. Insert the microSD card with only audios in it. Remember to name them correctly.
3. Plug the speaker to the shield (turn it on, charge it if necessary). You can also use headphones.

SOFTWARE

1. Install the SFEMP3Shield Library in your computer. Follow this instructions:

<https://learn.sparkfun.com/tutorials/mp3-player-shield-hookup-guide-v15#using-the-sfemp3shield-library>



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TEST: Play a sound

Download Code - link

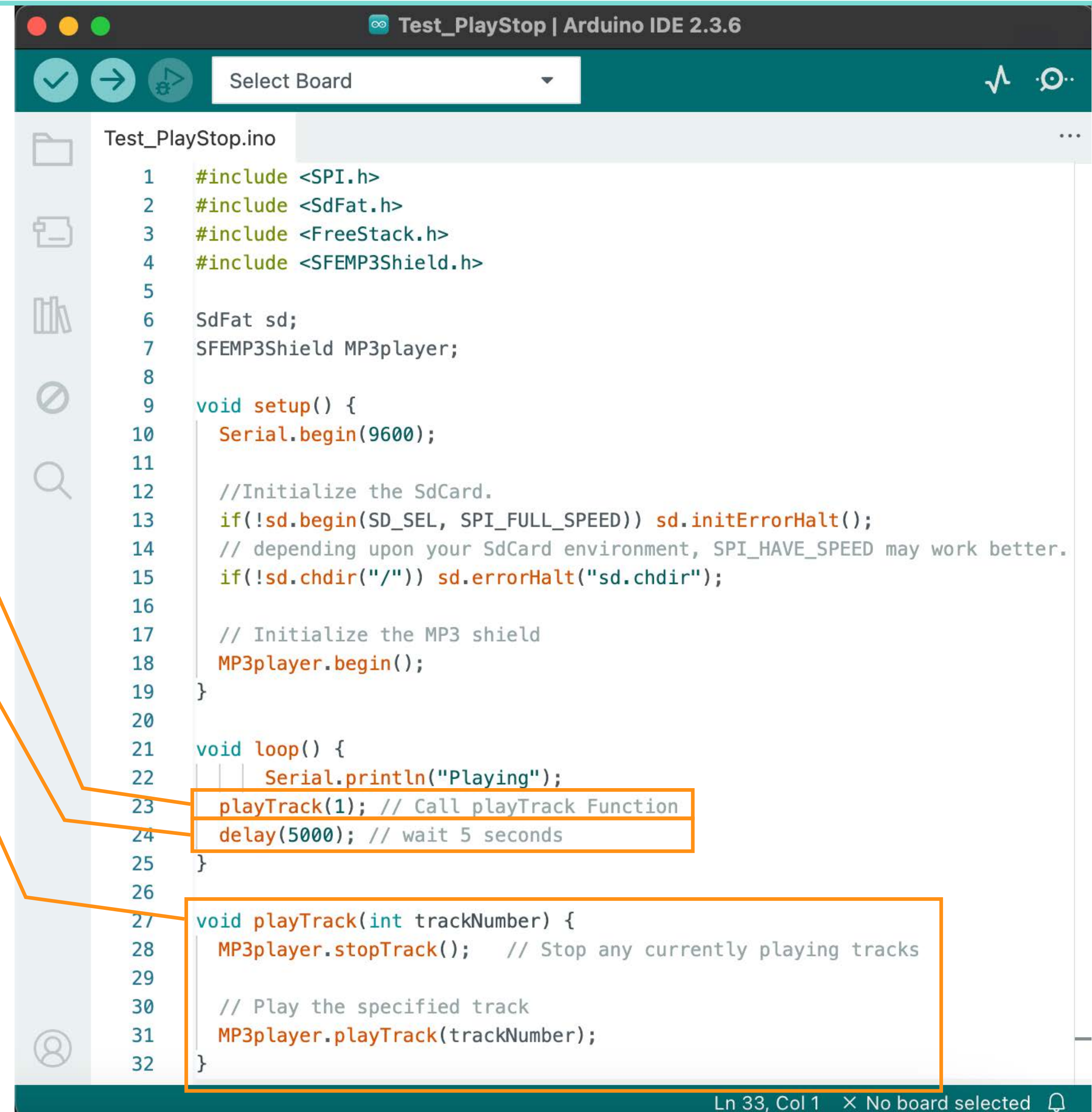
In the loop(), we call the function playTrack().

After that, we wait 5 seconds before the loop restarts.

playTrack() :

- Stops any currently playing track (if playing)
- Starts playing track001.mp3 from the beginning

— meaning the same track is triggered again and again every 5 seconds.



```
Test_PlayStop.ino
1  #include <SPI.h>
2  #include <SdFat.h>
3  #include <FreeStack.h>
4  #include <SFEMP3Shield.h>
5
6  SdFat sd;
7  SFEMP3Shield MP3player;
8
9  void setup() {
10     Serial.begin(9600);
11
12     //Initialize the SdCard.
13     if(!sd.begin(SD_SEL, SPI_FULL_SPEED)) sd.initErrorHalt();
14     // depending upon your SdCard environment, SPI_HAVE_SPEED may work better.
15     if(!sd.chdir("/")) sd.errorHalt("sd.chdir");
16
17     // Initialize the MP3 shield
18     MP3player.begin();
19 }
20
21 void loop() {
22     Serial.println("Playing");
23     playTrack(1); // Call playTrack Function
24     delay(5000); // wait 5 seconds
25 }
26
27 void playTrack(int trackNumber) {
28     MP3player.stopTrack(); // Stop any currently playing tracks
29
30     // Play the specified track
31     MP3player.playTrack(trackNumber);
32 }
```

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CHALLENGE:

1. Download and Run this code:

MP3Shiel_Library_Demo

https://github.com/madsci1016/Sparkfun-MP3-Player-Shield-Arduino-Library/blob/master/SFEMP3Shield/Examples/MP3Shield_Library_Demo/MP3Shield_Library_Demo.ino?

2. Can you make it play the sounds? Follow the instructions at the top of the code.

VIDEO UPLOAD

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FURTHER LEARNING

- [Trigger Sounds by pressing a Button](#)
- [MP3 Library Class Reference](#)
- [More about SparkFun MP3 Shield](#)