Audio Reactive LED Turntable

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Audio Reactive LED Turntable

Background

Developed by Michelle Brown, January 2022.

The idea is to create an audio reactive LED lighting option for a turntable using micro-controllers.

For Xmas 2021, we got a Pro-Ject turntable with a lovely translucent glass platter. This gave me the idea of adding an RGB lighting system under the plate to create something pretty and fun for the lounge room.

After looking online at what some other people had being doing for this idea, it seems pretty straightforward to get some fun RGBs happening, but I also thought, let's make this a bit trickier! So I have added the idea of making the LEDs audio reactive to push the creative brain muscles some more.

First thing to decide on is materials, I've been watching a few tutorials online to see how others have approached this so sharing these links below.

Turntable LED options

Keep in mind that most of these videos are of similar model turntables to mine, but as long as you have a record player that has a removable plate and space underneath, you could add some lighting.

I liked this one for simplicity and neatness - https://www.youtube.com/watch?v=djDAA7gOexk

There are several DIY 'neatness' options if I wanted to choose strip lighting instead of a circular LED system, I'd probably 3D print something though if I went down this path -

https://www.youtube.com/watch?v=VsbFWXwdayw

https://www.youtube.com/watch?v=0atG-iPt17I

https://www.youtube.com/watch?v=cfDfywQ99r0

There are a couple of options that could be used for the neat circular LEDs;

1. Like the first video above is an RGB LED Angel Eyes Halo Ring (131mm), made for car headlights mainly, a plug-n-play solution if we didn't want to add our own programming.
2. Adafruit has NeoPixel ring lights that are programmable, but keep in mind you purchase as quarter pieces https://www.adafruit.com/product/2874

For this project prototyping I am going to testing with both strip LEDs and the NeoPixel option.

Audio Reactivity Resources

Looking into the simplest and easiest way to achieve some audio reactivity, I found a few options and have compiled below;

https://create.arduino.cc/projecthub/buzzandy/music-reactive-led-strip-5645ed

https://www.easyprogramming.net/raspberrypi/audio_reactive_led.php

https://www.circuitschools.com/diy-smart-led-strip-with-sound-reactive-effects-using-esp8266-esp32-wifi/

Electronics

Basing on this workflow but with an Arduino UNO - https://create.arduino.cc/projecthub/buzzandy/music-reactive-led-strip-5645ed

Purchases for prototyping;

NeoPixel 1/4 60 Ring - WS2812 5050 RGB LED w/ Integrated Drivers ADA1768 4 $75.60

Arduino Nano V3.2 A000005 1 $36.95

Electret Microphone Amplifier - MAX4466 with Adjustable Gain ADA1063 1 $13.20

5V DC 2A Fixed 2.1mm Tip Appliance Plugpack AM8904 1 $19.95

Prototype Workshop Template

Please replace placeholder with a high quality finished outcome pic

Add the month and year plus name of workshop developer/s

Acknowledgement

We acknowledge Aboriginal and Torres Strait Islander peoples and their continuing connection to land and as custodians of stories for millennia. We respectfully acknowledge the land on which we all meet today, and pay our respects to elders past, present and emerging.

Summary

Skills Introduced

- Skill 1
- Skill 2
- Skill 3

Materials

If your workshop does not require any materials (maybe digital only) delete this section or change to something more appropriate.

Material	Quantity	Cost	Supplier
Material 1	1	$0.00	Supplier 1
Material 2	1	$0.00	Supplier 2
Material 3	1	$0.00	Supplier 2
Material 4	0.1	$0.00	Supplier 3
	Total	$0.00	

Tools and Preparation

Again, if your workshop does not require physical tools, delete or change this to something like Software required.

Tools

- Tool 1
- Tool 2
- Tool 3
- Tool 4

Preparation

Before the workshop you will need to ...

Workshop Walk through

Step 1

Sub-Step 1

Sub-Step 2

Step 2

Sub-Step 2-1

Sub-Step 2-2

Step 3

Sub-Step 3-1

Sub-Step 3-2

Step 4

Sub-Step 4-1

Sub-Step 4-2

References

- Reference Link

Downloads

Add any slide presentations, instructions, software etc. here

If you wish to make a slide deck to include, please follow a similar example of colour and Wiki styling.