

GUEST SPEAKER 1: A lights game, where basically if you tap on the red light, you increase your score. And each time you tap correctly, it keeps switching in between. And so, the original concept for this game was a kind of a game sort of like Guitar Hero or Dance Dance Revolution, where you have the music synced with the light. So you're tapping them in rhythm. And if you get then in rhythm and at the right time, the right buttons, that's when you get the highest score.

But we were having a lot of issues with regards to just getting this hardware and software set up, so we decided to throw it on the stove for the project. It's not my plain theory. We could apply this very easily to that type of project.

So basically what the components we have here are, we have capacitive sensors. So basically just a wire where you just touch it, it just changes the capacitance of the circuit so you can just register that. They're pretty receptive, pretty receptive. Lost the [INAUDIBLE] somewhere.

GUEST SPEAKER 2: And they're in rainbow order. You hit them in rainbow order, so you have the ability to project ahead. You know it's going to go here, here, here, here, here. No problem.

GUEST SPEAKER 1: See, you follow the orange one, you see that one is what becomes red next.

GUEST SPEAKER 3: Oh, you told them the--

[LAUGHTER]

--secret.

GUEST SPEAKER 4: And one of the cool things that we realized is that, upon making this, that actually having LED set up farther away from the acrylic covering actually makes the squares seem brighter because the light kind of diffuses. As opposed to being right next to the acrylic where you just see the LEDs. But if you back off, you actually get a lot more illumination. One of the cool lessons.

GUEST SPEAKER 1: We would love to give a lot of credit to Tay. He was the guy in our group who made this acrylic with a laser printer, and put the wood so that each of the squares were in their own places. He just made this beautiful set up. Unfortunately, he's not here today.

GUEST SPEAKER Also a lot of the soldering back here. There's a lot of soldering that's going on. These are
4: really cool.

Also, they sell LEDs. These LEDs were actually one series of LEDs down the strip. So there's
like 150 LEDs on a couple of meters of this kind of a--

GUEST SPEAKER A spool.

5:

GUEST SPEAKER On a spool. And you can actually control each one individually with Arduino. Just be careful not
4: to power up all of the, because you'll actually pass a lot of current through your USB. Probably
damage your USB Arduino. One of the things that we learned about wiring and knowing how
much current's going through.

GUEST SPEAKER Luckily, we learned--

1:

AUDIENCE: Are you going to continue to USB, or?

GUEST SPEAKER No, we learned this one.

1:

GUEST SPEAKER Luckily Andrew had the magic line of code which allows you to just limit the total amount of
5: current you're putting out. So even if you ask it to draw a ton of current, you just dim LEDs.

GUEST SPEAKER We were actually warned about a minute before we were going to try it, so it saved a laptop
4: from being destroyed. So it was a big lesson.

GUEST SPEAKER Anybody want to have a try?

3:

GUEST SPEAKER Well, firstly, do you want to say anything?

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GUEST SPEAKER That was about the right summary. And we will maybe attempt to continue to add more
3: features, including timing so you get more points for ending it in the rhythm with lights or
music. We were originally going to include some of the processing code that the Arduino team
used last time to make some lights that flash and sync with the beat of the music. But due to

technical difficulties with wiring, and capacity, et cetera. That's going to be in a later version.

GUEST SPEAKER Yeah, so, that's our project.

1:

[APPLAUSE]

Yeah?

AUDIENCE: You mentioned an acrylic piece was printed.