IoT dice roll

From Jannik Buehring and Marie Reutter

For our project we constructed a device to simulate a dice roll where an 8x8 LED Matrix displays the result. You can “roll” the die by clapping (or making any other loud noise).

However, this die is rigged. Pressing the corresponding button on the infrared-remote will make the next dice roll have exactly the output you want it to have. We also connected the whole thing to the internet so you can turn it on and off via webserver.

Link for final product: https://youtu.be/An_W-xOOr1M

What we used:

- 8x8 LED Matrix for displaying the die. We used and adapted the files from the lecture (smiley) to get it to work. First, we constructed something to fit the matrix onto a cube to make it look like a real die, but the connections were not stable enough, so we had to place it on the breadboard ☹.
- KY-038 sound sensor. If the noise level is above a certain threshold, the digital output is 1.
- Infrared-sensor and remote. We used this to manipulate the dice rolls. Pressing the numbers 1 to 6 on the remote will result in the next dice roll being equal to that number. After the manipulated one, the dice rolls will resume to be random.
- Esp32 dev kit. We used it to host a web server to turn the device on and off remotely. We made it work by establishing a serial connection (TX and RX ports).

We also handed in a fritzing of the wiring and our code. Here’s a picture of our final product.