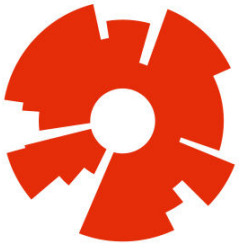

HÁSKÓLINN Í REYKJAVÍK
REYKJAVIK UNIVERSITY

Engineering Department

Embedded System Programming

T-738-EMBE

Assignment 5.2

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1 Part 1

1.1 Connect the Raspberry Pi and Arduino serial ports (see L5.2). Make sure to use a level translator or a voltage divider to protect the Raspberry Pi Rx input. Connect an LED to Arduino pin 11 through a 1K resistor to ground.

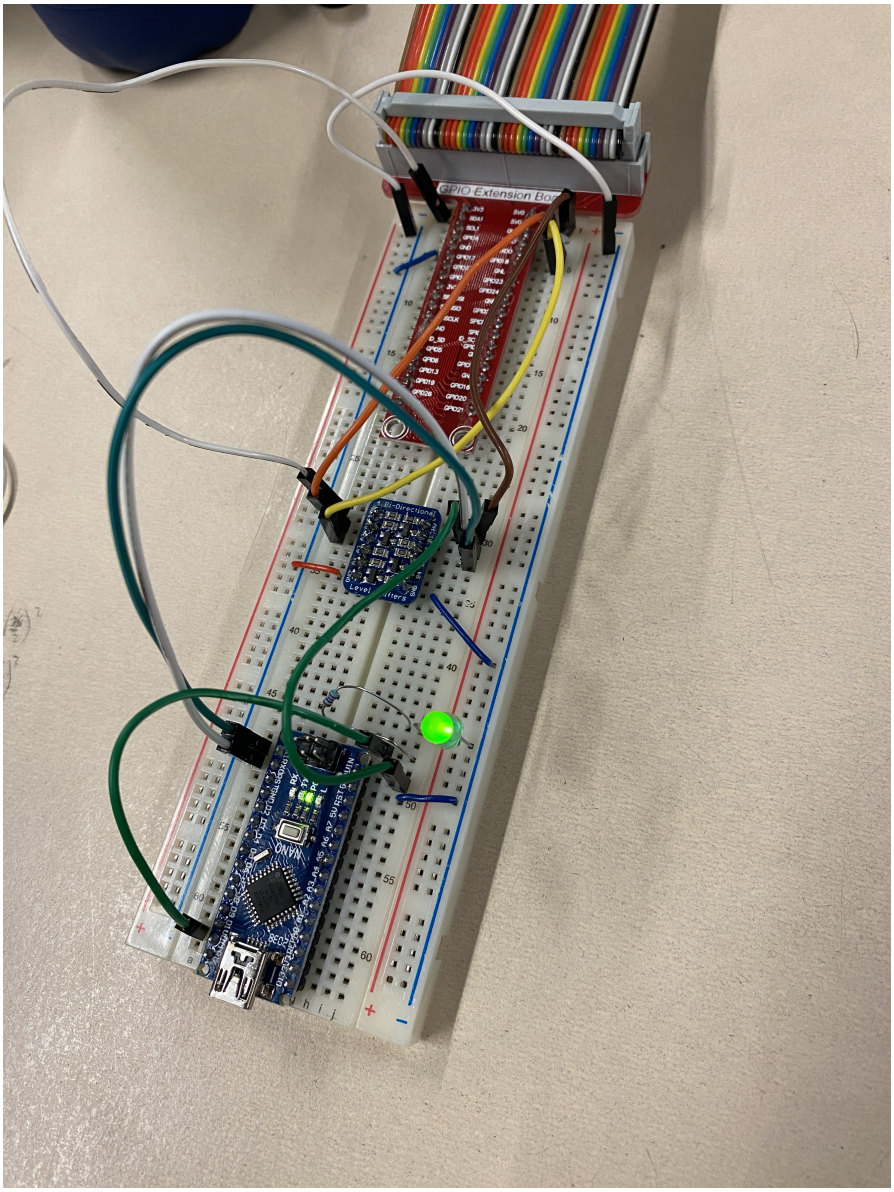

Figure 1: Picture of circuit

2 Part 2

Establish communication between the Raspberry Pi and the Arduino.

2.1 Output without changes

2.1.1 Does the brightness of the diode change with the commanded value?

Yes, the brightness of the diode changes with the commanded value.

2.1.2 Does the Raspberry Pi print the reply from the Arduino?

No it doesn't print the reply, this is because the RPI expects a null character/EOL character to be present at the end of the string.

```
pi@raspberrypi:~/Desktop/Assignment 5.2/src $ ./command "LED 255"
Failed to read from the input
: Resource temporarily unavailable
pi@raspberrypi:~/Desktop/Assignment 5.2/src $ ./command "LED 100"
Failed to read from the input
: Resource temporarily unavailable
pi@raspberrypi:~/Desktop/Assignment 5.2/src $ ./command "LED 10"
Failed to read from the input
: Resource temporarily unavailable
pi@raspberrypi:~/Desktop/Assignment 5.2/src $ ./command "LED 10"
Failed to read from the input
: Resource temporarily unavailable
pi@raspberrypi:~/Desktop/Assignment 5.2/src $
```

Figure 2: Command output without changes

2.2 Output with changes

2.2.1 Does the brightness of the diode change with the commanded value?

Yes, the brightness of the diode changes with the commanded value.

2.2.2 Does the Raspberry Pi print the reply from the Arduino?

Yes the RPI now prints the reply from the arduino, this is because I added "\n" to the end of each response string.

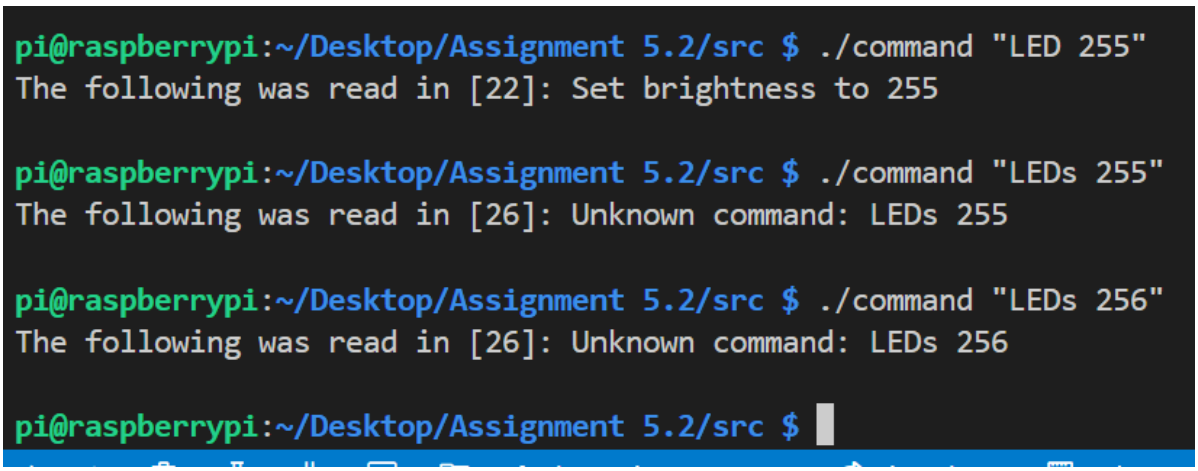

Figure 3: Command output without changes

3 Part 3

Both the LEDs brightness changed accordingly, and a response was received from the arduino.

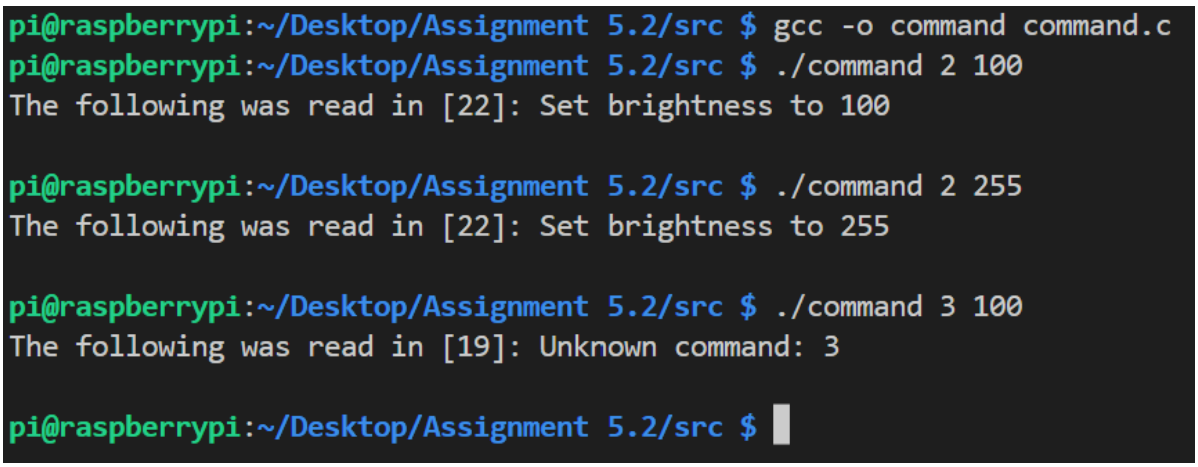

Figure 4: Output from binary commands