**Arduino LED Reaction Test**

**Game Introduction**

This is a simple reaction time game using an LED strip

A line of 10 LEDs will bounce up and down the strip, test your reactions by pressing the button when the green LEDs turn red while in the yellow section in the centre of the strip, if you hit the button at the right time, the LEDs will flash in a blue configuration and your score will be increased by 1, the movement of the LEDs will then speed up. Your score will be shown on the 4-digit display.

**Setup Guide**

To set up this game using the Arduino Uno, you will need:

* 1 Arduino/Elegoo Uno board
* 1 Breadboard
* 1 Buzzer
* 1 60 LED Neopixel strip (connectors attached)
* 16 wires for connections to the breadboard
* 1 small/large button to connect to breadboard
* 1 4-digit 7 segment display
* 1 100kΩ resistor for the button

Wire up the circuit using the following guide:

|  |  |
| --- | --- |
| Arduino Pin | Connects to |
| 2 | 4-digit display pin 11 (See below) |
| 3 | 4-digit display pin 7 |
| 4 | 4-digit display pin 4 |
| 5 | 4-digit display pin 2 |
| 6 | 4-digit display pin 1 |
| 7 | 4-digit display pin 10 |
| 8 | 4-digit display pin 5 |
| 9 | 4-digit display pin 12 |
| 10 | 4-digit display pin 9 |
| 11 | 4-digit display pin 8 |
| 12 | 4-digit display pin 6 |
| 13 | Button Input Read |
| 3.3V | Button power (into resistor) |
| Ground (GND) | Button grounding |
| Ground | LED Strip grounding (black wire) |
| Ground | Buzzer grounding |
| A4 | LED Strip Control (blue wire) |
| V in | LED Strip red wire |
| A5 | Buzzer output |

The 4-digit 7 segment display pin arrangement is as follows:

