PART A

<https://www.tinkercad.com/things/cZS45iXG0ke-super-elzing-fulffy/editel?sharecode=soh0_Vur141B2zME8zv1iG1tjNxhNIxhmb5IbNTf5rg>

Diagram

Description automatically generated

Diagram, schematic

Description automatically generated

Above 2.5 v the 2nd led connected to D2 gets off. Stays on for all values of input below that.

4.87v for output

At 1.4v the 1st led d1 starts to turn on very dimly & peak brightness around 3v.

PART B

Diagram

Description automatically generated with medium confidence

Diagram, schematic

Description automatically generated

void setup() {

pinMode(3, OUTPUT);

pinMode(2, OUTPUT); //(NOT, OR, AND, XOR, NOR, NAND)

}

void loop() {

digitalWrite(3, HIGH);

digitalWrite(2, HIGH);

}

<https://www.tinkercad.com/things/3PeCEjT0rRd-super-duup-elzing/editel?sharecode=wMog8GRO6xcDIhkPmF0pNiBdYQrUDPDu2HPaVg8e5EA>

P3

<https://www.tinkercad.com/things/2LBxB4WaO5f-brave-leelo-bombul/editel?sharecode=psbldqI1jciKnn-7ffn7bd-X5LnJj-1fJmlBsVPsA4Y>

// C++ code

//

int x,y;

void setup()

{

pinMode(3, OUTPUT);

pinMode(2, OUTPUT);

Serial.begin(9600);

}

void loop()

{

if(Serial.available() > 0)

{

x = Serial.read(); // x would be an integer between 0 and 255

// depending on the ascii value of the character read

x = x - '0'; // Subtracting ascii value of 0 from x.

digitalWrite(3,x);

}

if(Serial.available() > 0)

{

y = Serial.read(); // y would be an integer between 0 and 255

// depending on the ascii value of the character read

y = y - '0'; // Subtracting ascii value of 0 from y.

digitalWrite(2,y);

}

}

P4

https://www.tinkercad.com/things/8FJD2PdlGQB-funky-snaget-bojo/editel?sharecode=1cygphFy5l1gG4rjnyLoK\_73uwIuGOfK2IlDw8brAX4