Q.1 Increase the brightness of the inbuilt LED which has a delay of 10ms and fade of 10ms.

A picture containing text, electronics

Description automatically generated

void setup()

{

pinMode(2, OUTPUT);

}

void loop()

{

analogWrite(2,0);

delay(10);

analogWrite(2,10);

delay(10);

analogWrite(2,50);

delay(10);

analogWrite(2,150);

delay(10);

analogWrite(2,255);

delay(10);

analogWrite(2,150);

delay(10);

analogWrite(2,50);

delay(10);

analogWrite(2,10);

delay(10);

analogWrite(2,0);

delay(10);

}

Q.2 Increase the brightness of 2 External LED alternatively.

Diagram

Description automatically generated

void setup()

{

pinMode(2, OUTPUT);

pinMode(1, OUTPUT);

}

void loop()

{

analogWrite(2,0);

analogWrite(1,255);

delay(100);

analogWrite(2,10);

analogWrite(1,150);

delay(100);

analogWrite(2,50);

analogWrite(1,50);

delay(100);

analogWrite(2,150);

analogWrite(1,10);

delay(100);

analogWrite(2,255);

analogWrite(1,0);

delay(100);

analogWrite(2,255);

analogWrite(1,0);

delay(100);

analogWrite(2,150);

analogWrite(1,10);

delay(100);

analogWrite(2,50);

analogWrite(1,50);

delay(100);

analogWrite(2,10);

analogWrite(1,150);

delay(100);

analogWrite(2,0);

analogWrite(1,255);

delay(100);

}

Q.3 Reading using potentiometer

A picture containing text, electronics

Description automatically generated

void setup()

{

pinMode(2, OUTPUT);

pinMode(A0,INPUT);

Serial.begin(9600);

}

void loop()

{

int a = analogRead(A0);

Serial.println(a);

}

Q4. Using potentiometer to control LED brightness

A picture containing text, electronics

Description automatically generated

void setup()

{

pinMode(2, OUTPUT);

pinMode(A0,INPUT);

Serial.begin(9600);

}

void loop()

{

int a = analogRead(A0);

int y = map(a,0,1023,0,255);

analogWrite(2,y);

if(a>512){

digitalWrite(2,LOW);

}

else{

digitalWrite(2,HIGH);

}

Serial.println(a);

Serial.println(y);

delay(1000);

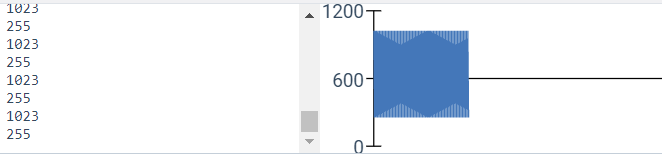
}

Q.5 Displaying potentiometer resistance on serial monitor.

Q.6 Displaying potentiometer (variable resistance) on serial plotter.

A picture containing text, electronics

Description automatically generated



void setup()

{

pinMode(2, OUTPUT);

pinMode(A0,INPUT);

Serial.begin(9600);

}

void loop()

{

int a = analogRead(A0);

int y = map(a,0,1023,0,255);

analogWrite(2,y);

Serial.println(a);

Serial.println(y);

delay(1000);

}

Q7. Controlling multiple LEDs using button or switch

Graphical user interface

Description automatically generated

void setup()

{

pinMode(6,OUTPUT);

pinMode(4,OUTPUT);

pinMode(2,OUTPUT);

pinMode(1,INPUT);

}

void loop()

{

int a = digitalRead(1);

if(a==HIGH){

digitalWrite(6,HIGH);

digitalWrite(4,HIGH);

digitalWrite(2,HIGH);

}

else {

digitalWrite(6,LOW);

digitalWrite(4,LOW);

digitalWrite(2,LOW);

}

delay(100);

}

Q.8 Controlling single LED using switch or button.

Diagram

Description automatically generated

void setup()

{

pinMode(6,OUTPUT);

pinMode(1,INPUT);

}

void loop()

{

int a = digitalRead(1);

if(a==HIGH){

digitalWrite(6,HIGH);

}

else {

digitalWrite(6,LOW);

}

delay(100);

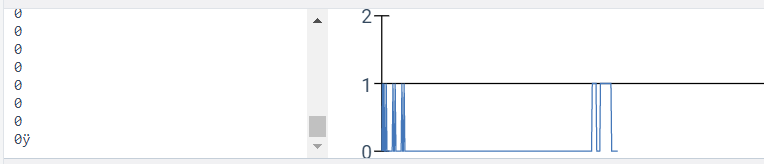
}

Q.9 Displaying switch state or button state on serial plotter

Q .10 Reading inputs from a switch or button on serial monitor

Diagram

Description automatically generated



int pushButton = 1;

void setup() {

Serial.begin(9600);

pinMode(pushButton, INPUT);

}

void loop() {

int buttonState = digitalRead(pushButton);

Serial.println(buttonState);

delay(1);

}