

Progress Report #2

20220827

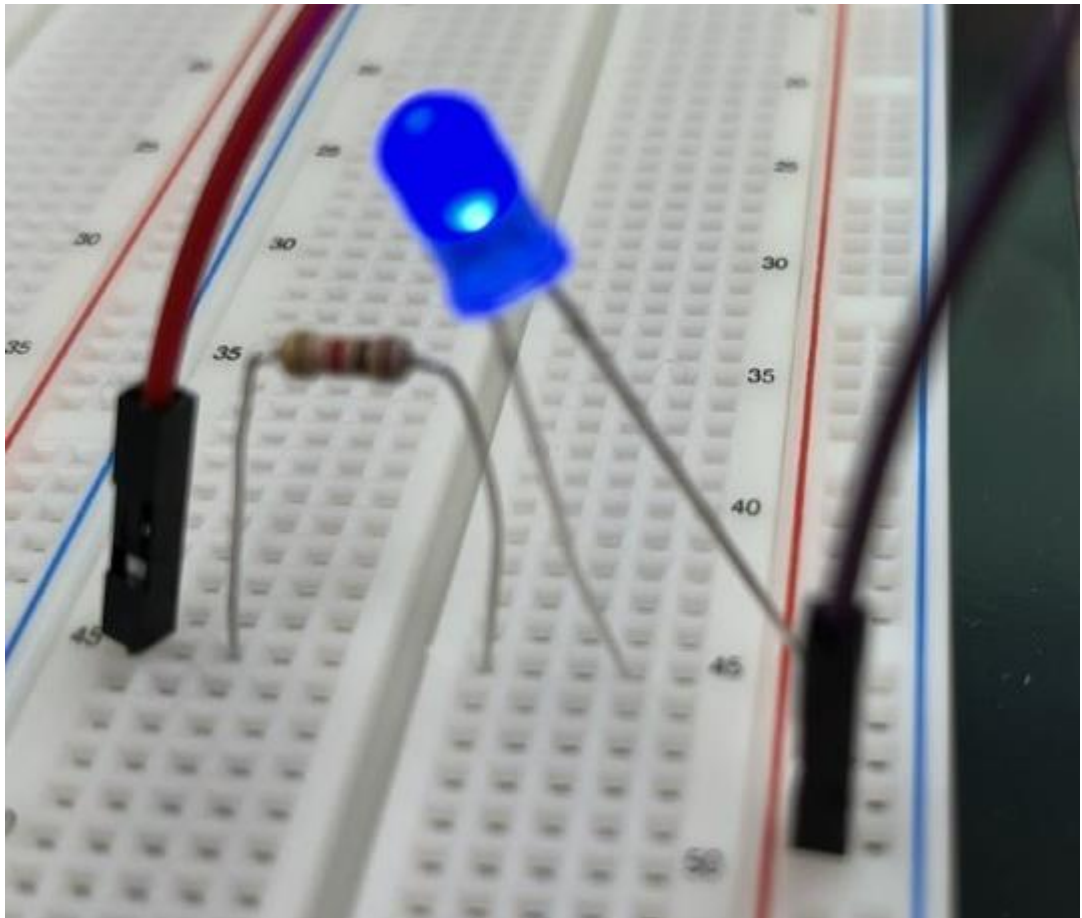
Fang Wenqu

1. Theory

- a) Downloading Arduino IDE and DUE package
- b) void setup(): executed once; void loop(): executed over and over again until it is terminated
- c) digitalWrite(port_number, HIGH/LOW):
write through the port specified by the port number (e.g. 13). HIGH means 5V while LOW means 3V (built-in constant)
- d) analogWrite(port_number, i) where i is an integer between 0 to 255. i = 255 corresponds to 5V while i = 0 corresponds to 0V.
- e) delay(number_of_milliseconds): indicate the number of milliseconds for which the current state is maintained
- f) Serial.begin(integer): sets the baud rate for serial data communication.
- g) Serial.print(): equivalent to printf(value, format)

2. Implementation

- a) On-Off:



```

const int LED = 13;

void setup() {
  // put your setup code here, to run once:
  pinMode(LED, OUTPUT);
  Serial.begin(9600);
  char* name;
  printf("hello, ");
  scanf("%s", &name);
  printf("hello, %s", name);
}

void loop() {
  // put your main code here, to run repeatedly:
  /*
  On for 1 seconds and off for .5 seconds
  */
  digitalWrite(LED, HIGH);
  delay(1000);
  digitalWrite(LED, LOW);
  delay(500);
}

```

b) Fade

```

const int LED = 13;
int brightness = 0;
void setup() {
  // put your setup code here, to run once:
  pinMode(LED, OUTPUT);
}

void loop() {
  // put your main code here, to run repeatedly:
  for (brightness = 0; brightness <= 255; brightness += 5) {
    analogWrite(LED, brightness);
    delay(30);
  }
  for (brightness = 255; brightness >= 0; brightness -= 5) {
    analogWrite(LED, brightness);
    delay(30);
  }
}

```