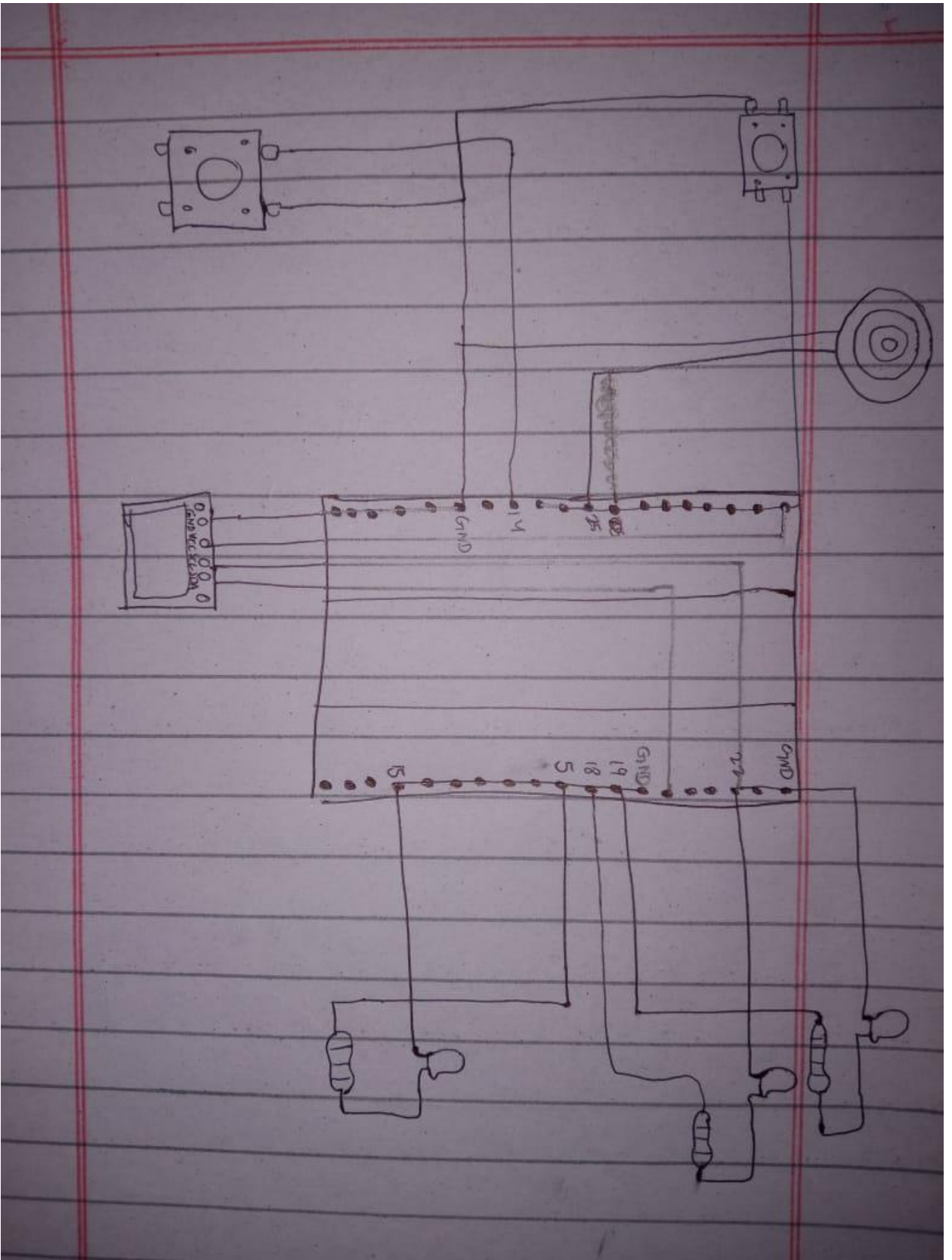


DIAGRAM



TASK A

```

// Task A
// Name: Muhammad Dawood Qaiser
// Reg: 23-NTU-CS-1065
// CS B5th

#include <Wire.h>
#include <Adafruit-GFX.h>
#include <Adafruit-SSD1306.h>

#define BTN_MODE 14
#define BTN_RESET 27
#define LED1 5
#define LED2 18
#define LED3 19
#define BUZZER 25

#define SCREEN_WIDTH 128
#define SCREEN_HEIGHT 64
#define OLED_ADDR 0x3C
Adafruit_SSD1306 display(SCREEN_WIDTH, SCREEN_HEIGHT, &Wire, -1);

int mode = 0, fade = 0, state = 0;
bool fadeUp = true;
unsigned long LastTime = 0;

const char* modes[] = {"OFF", "BLINK", "ALL ON", "BWM"};

void setup() {
  Serial.begin(115200);
  pinMode
  for (int p: {M, R, L1, L2, L3}) pinMode(p, INPUT_PULLUP);

  d.begin(SSD1306_SWITCHCAPVCC, 0x3C);
  for (int p: {L1, L2, L3}) {digitalWrite(p, 1); delay(150);
    digitalWrite(p, 0); u();}

  void loop() {
    if (1 & digitalRead(M)) {m = (m + 1) % 4; u(); delay(200);}
    if (1 & digitalRead(R)) {m = 0; u(); delay(200);}
    m == 0 ? off() : m == 1 ? bl() : m == 2 ? on() : fade(1);
  }
}

```

```

void off() {for(int p:{L1,L2,L3}) digitalWrite(p,0);}
void on() {for(int p:{L1,L2,L3}) digitalWrite(p,1);}
void b() {if(millis()-t>400){t=millis();off();
digitalWrite(L1,L2,L3){SHIF3},1);}}
void fade() {
if(millis()-t>25){
t=millis(); f+=up?5:-5;
if(fL=0||f>225)up=!up;
analogWrite(L3,f);
digitalWrite(L1,f>100);
digitalWrite(L2,f>100);
}}
void uL() {d.clearDisplay();d.setTextSize(1);d.
d.setCursor(0,10);d.printIn("Muhammad Dawood
Qaiser");d.setTextSize
size(2);
d.setCursor(0,30);d.printIn(n(m));d.display();}

```


TASK B

```
// Task B
// Name: Muhammad Dawood Qaiser
// Registration 23-NTU-CS-1098
// CS B 5th

#include <Wire.h>
#include <Adafruit-SSD1306.h>
#define B 24
#define L 5
#define Z 25
#define T 1500

Adafruit-SSD1306 d(128,64,&Wire,-1);
bool s=0, p=0; unsigned long t=0;

void setup() {
  Serial.begin(115200);
  pinMode(B, INPUT_PULLUP); pinMode(L, 1);
  pinMode(Z, 1);

  d.begin(SSD1306_SWITCHCAPVCC, 0x3C);
  d.clearDisplay(); d.setTextSize(2); d.setTextAlign(1);
  d.setCursor(15, 15); d.printIn("Welcome");
  d.setCursor(35, 40); d.printIn("Muhammad Dawood Qaiser"); d.display(1);
}

void loop() {
  bool r = digitalRead(B);
  if (r && !p) { p=1; t = millis(); }
  if (!r && p) { p=0; if (millis() - t > T) { s=!s;
    digitalWrite(L, s); }
    if (p && millis() - t > T) { tone(Z, 1000, 500);
    p=0; }
  }
  delay(50);
}
```

